BAKER HUGHES

HIGH DEFINITION INDUCTION LOG SM
COMPENSATED NEUTRON LOG
COMPENSATED Z-DENSILOG SM
GAMMA RAY LOG
CALIPER LOG

FILE NO: 633672

API NO: 05045216660000

COMPANY WPX ENERGY

WELL DUGGAN RWF 14-29

FIELD RULISON

COUNTY GARFIELD STATE COLORADO

Ver. 3.87

S29-T6S-R94W

PAD: RWF 14-29

RIG: NABORS 573

LOCATION:

SHL: 513' FSL & 599' FWL; 29T6SR94W

BHL: 450' FSL & 1036' FWL

SEC 29 TWP 6S RGE 94W

OTHER SERVICES

NONE

PERMANENT DATUM GL ELEVATION 5445.2 FT

LOG MEASURED FROM KB 26 FT ABOVE P.D.

DRILL. MEAS. FROM KB

ELEVATIONS:

KB 5445.2 FT

DF 5445.2 FT

GL 5419.2 FT

DATE		09-JUN-2013			
RUN	TRIP	1	1		
SERVICE ORDER		633672			
DEPTH DRILLER		7906 FT			
DEPTH LOGGER		7906 FT			
BOTTOM LOGGED INTERVAL		7903 FT			
TOP LOGGED INTERVAL		0 FT			
CASING DRILLER		9.625 IN	@1118 FT	@	
CASING LOGGER		1118 FT			
BIT SIZE		8.75 IN			
TYPE OF FLUID IN HOLE		LSND			
DENSITY	VISCOSITY	14.5 LB/G	78 S		
PH	FLUID LOSS	8.5	6.4 C3		
SOURCE OF SAMPLE		FLOWLINE			
RM AT MEAS. TEMP.		2.8 OHMM	@76.28 DEGF	@	
RMF AT MEAS. TEMP.		1.96 OHMM	@75.46 DEGF	@	
RMC AT MEAS. TEMP.		3.36 OHMM	@75.16 DEGF	@	
SOURCE OF RMF	RMC	MEASURED	MEASURED		
RM AT BHT		0.918 OHMM	@189.88 DEGF	@	
TIME SINCE CIRCULATION		11.5 HOURS			
MAX. RECORDED TEMP.		193 DEGF			
EQUIP. NO.	LOCATION	HL-6726	ROCK SPRNGS		
RECORDED BY		KRONBERG			
WITNESSED BY		FAMSON			

REMARKS

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

BVOL AND CVOL PRESENTED IN CUBIC FEET
CVOL CALCULATED USING 4.5" CASING
CALIPER VERIFIED IN CASING

REPEAT LOG RECORDED AT CASING

CN MATRIX: SANDSTONE
RHO MATRIX: 2.68 G/CC
RHO FUILD: 1.00 G/CC

BRIDGED OFF AT 5449' FIRST ATTEMPT REMOVED DECENTRALIZER
CN DECENTRALIZER NOT RUN PER CUSTOMER REQUEST

HDIL RUN WITH 1.5" STANDOFF

THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE
CREW: FLEMMING, MORTON
RIG: NABORS 573

EQUIPMENT DATA					
RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TTRM	3981XA	10217216	FREE
1	1	WTS	3514XB	10308615	FREE
1	1	GR	1329XA	370718	FREE
1	1	CN	2446XA	10068420	DECENTRALIZED
1	1	ZDL	2234XA	10334913	PAD/ DECENTRALIZED
1	1	KNJT	3939XA	12396931	DOUBLE KNUCKLE
1	1	HDIL	1515EA/MA	10400248/364355	1.5" STANDOFF

MAIN LOG 2"/100FT SCALE

ECLIPS 6.1i Aug 06, 2010
Updates: 1,2 Patches: 2

Mon Jun 10 06:08:23 2013

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/633672/m876g_MSLAM03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1034.500 ft BOTTOM DEPTH: 7920.652 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		''	''
	FILTER (.1)	medium (1)		''	''
Y AXIS CALIPER	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''
CALIPER	FILTER ()	medium (1)		''	''
	FILTER (.h)	medium (1)		''	''
	FILTER (.1)	medium (1)		''	''
SP-SPDH	FILTER ()	medium (1)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
BIT SIZE	BIT SIZE	8.750	In	TOP	BOTTOM
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	''	''
	MUD SAMPLE RES	1.000	ohm.m	''	''
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	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh*)	8.750	In	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		''	''

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		''	''
	ABC to CALCULATE	STANDOFF		''	''
	STANDOFF	1.50	In	''	''
	TOOL POSITION	ECCENTERED		''	''
	Rmud MULTIPLIER	1.000		''	''

CURVE DESCRIPTION REPORT

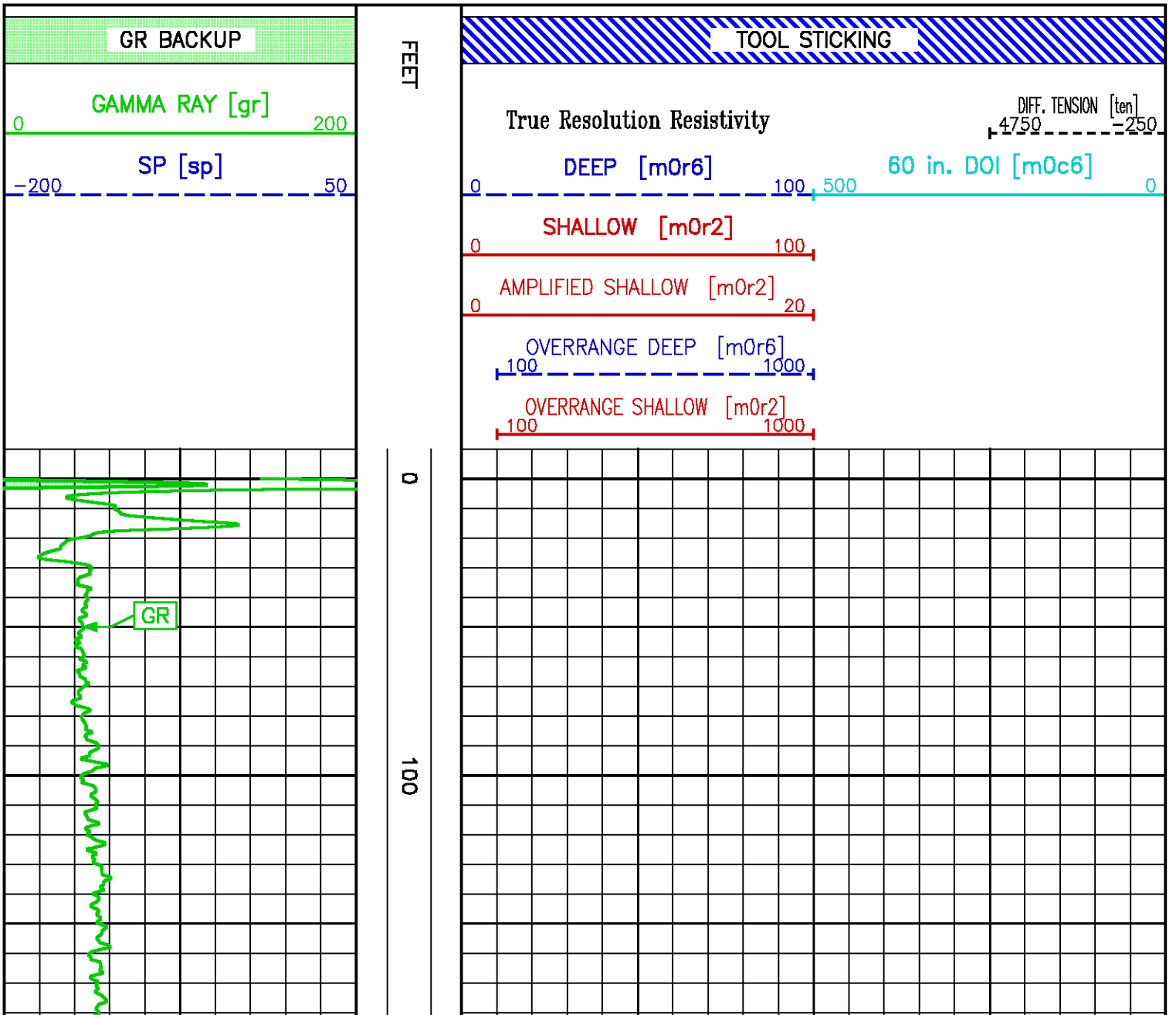
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:GR	Jun 10 01:52:40 2013	GAMMA RAY
F1:MOC6	Jun 10 01:52:40 2013	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:MOR2	Jun 10 01:52:40 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:MOR6	Jun 10 01:52:40 2013	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Jun 10 01:52:40 2013	SPONTANEOUS POTENTIAL
F1:TEN	Jun 10 01:52:40 2013	DIFFERENTIAL TENSION

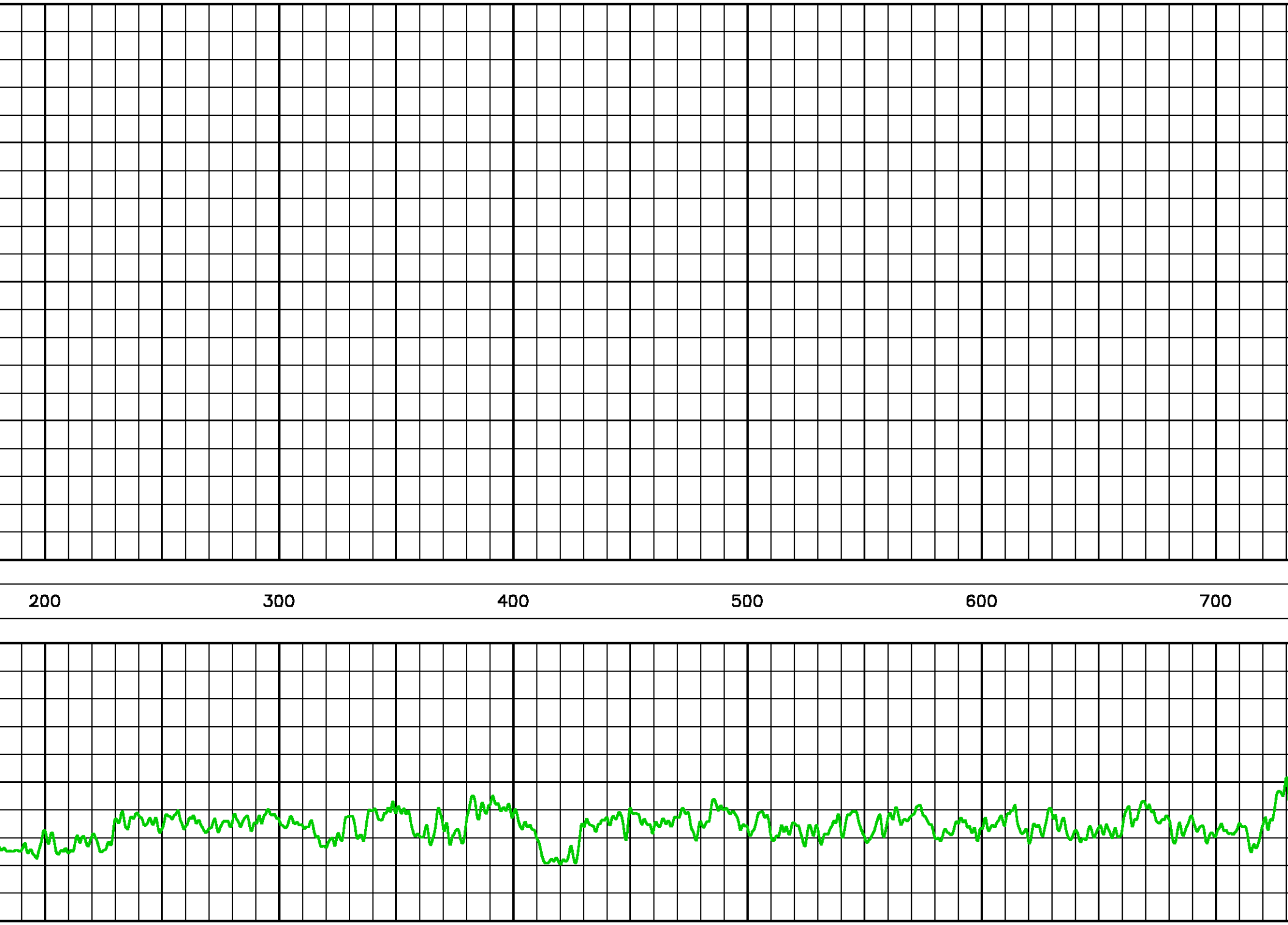
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
GR	52.25	MOR2	8.00	SP	14.00		
MOC6	8.00	MOR6	8.00	TEN	0.00		

Presentation : rks6726:/dat1a/633672/hdillin.pdf [2"/100' Scale]
Plot Interval : -4.25 - 7920 Feet

Data File 1 : F1 : rks6726:/dat1a/633672/MAIN.xtf
Created On : Jun 10 01:52:40 2013
Company : WPX ENERGY
Well : DUGGAN RWF 14-29
Field : RULISON
File Interval : -4.25 - 7920 Feet
Oct : m876g_MS

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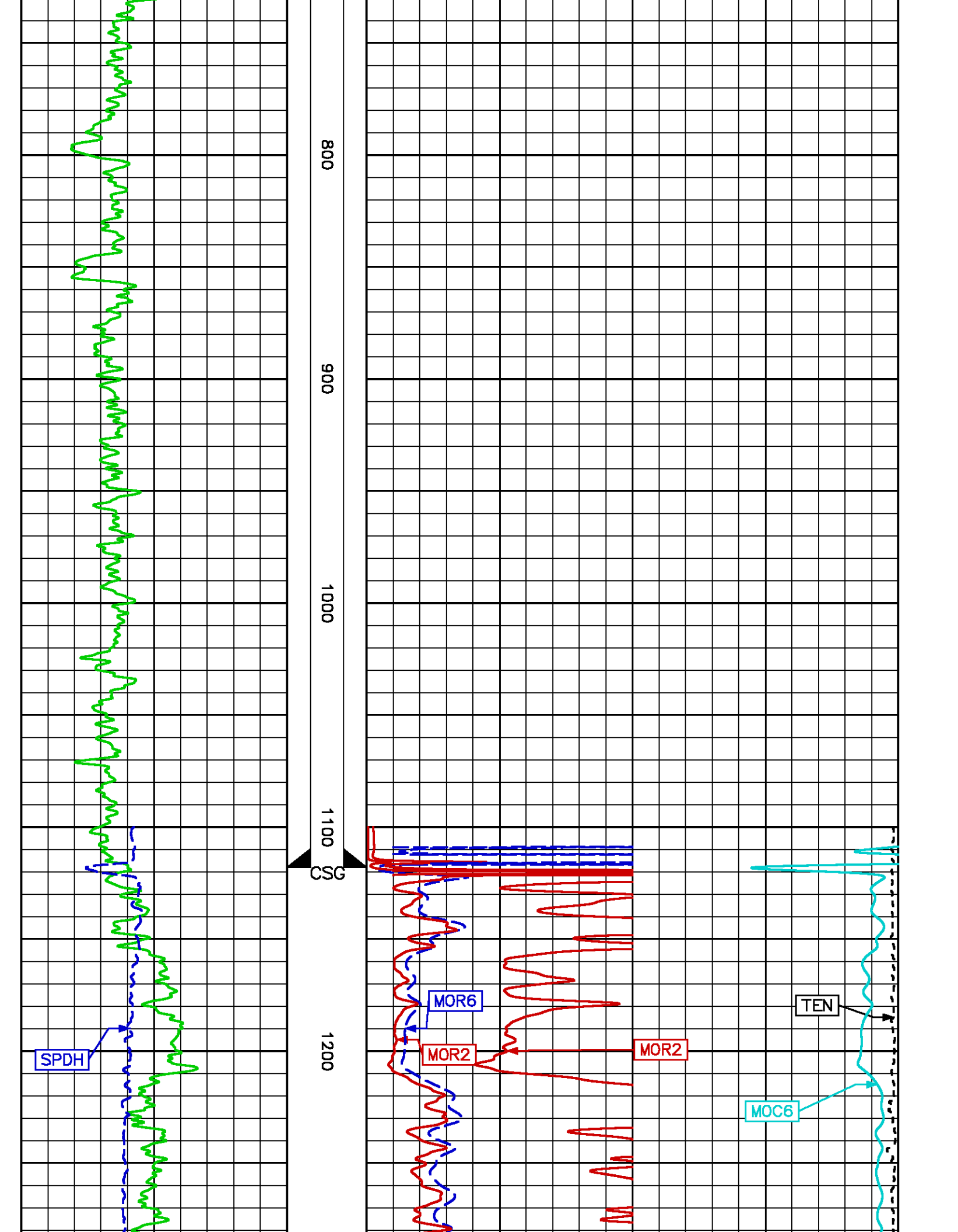
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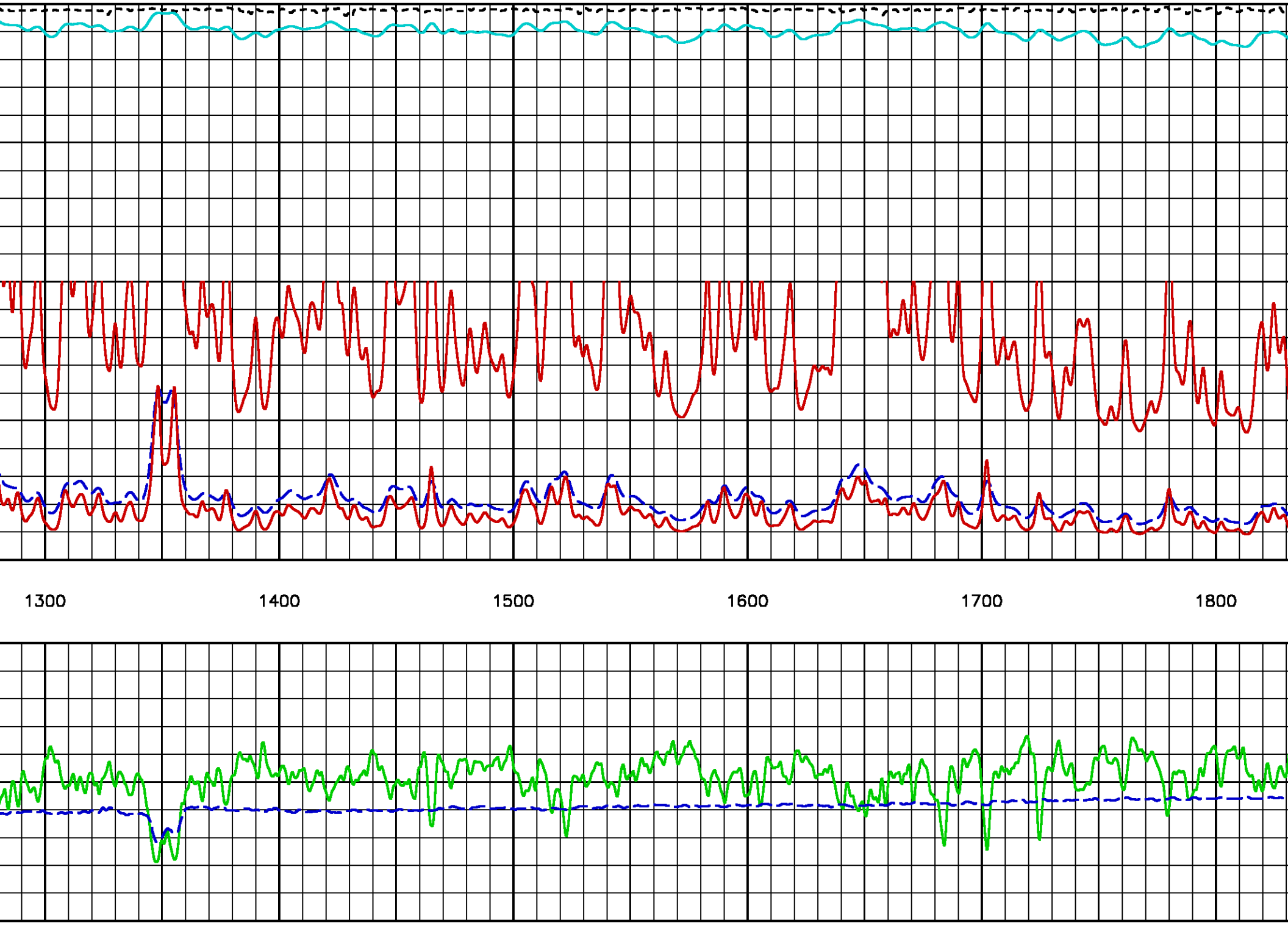
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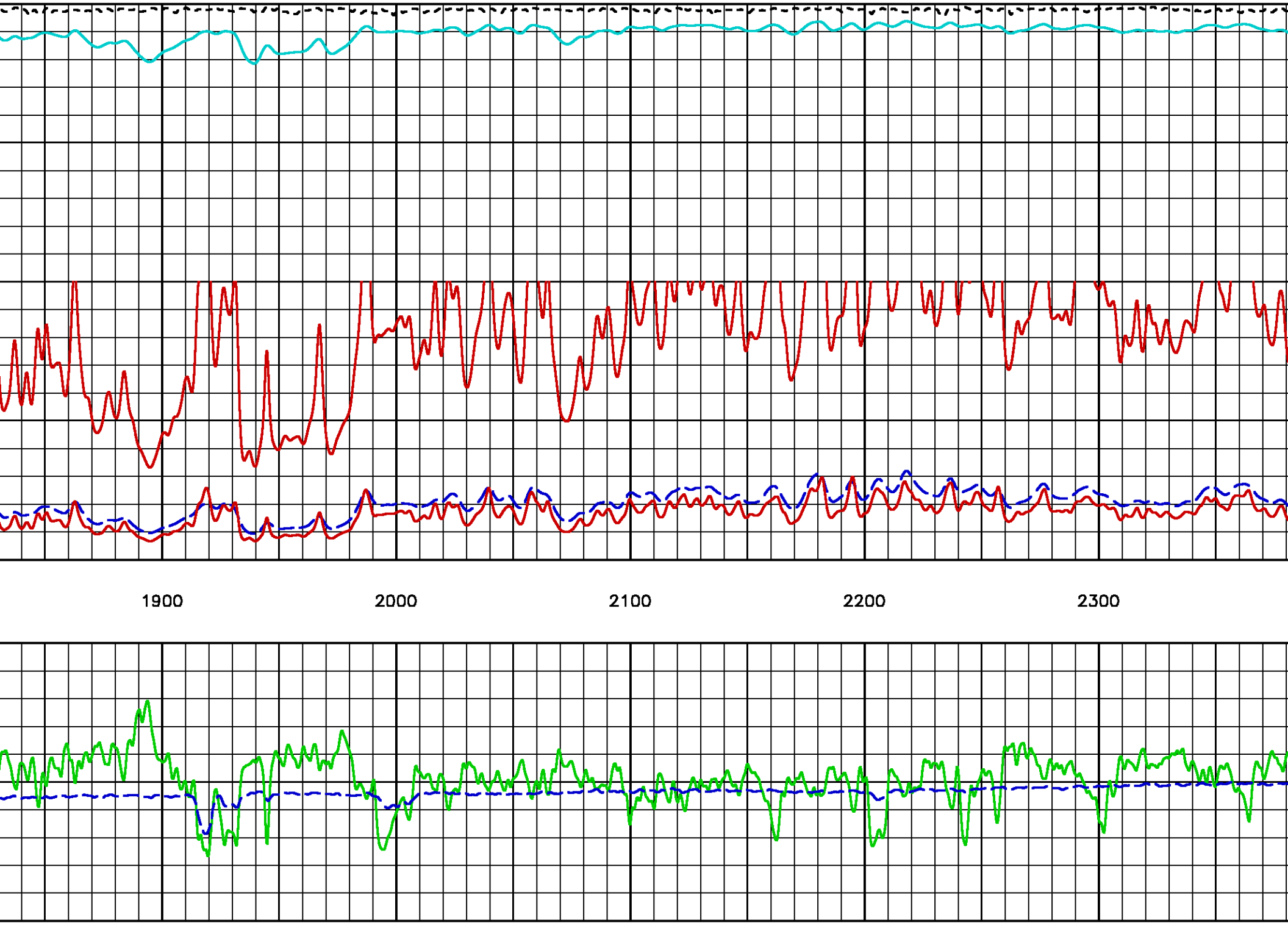
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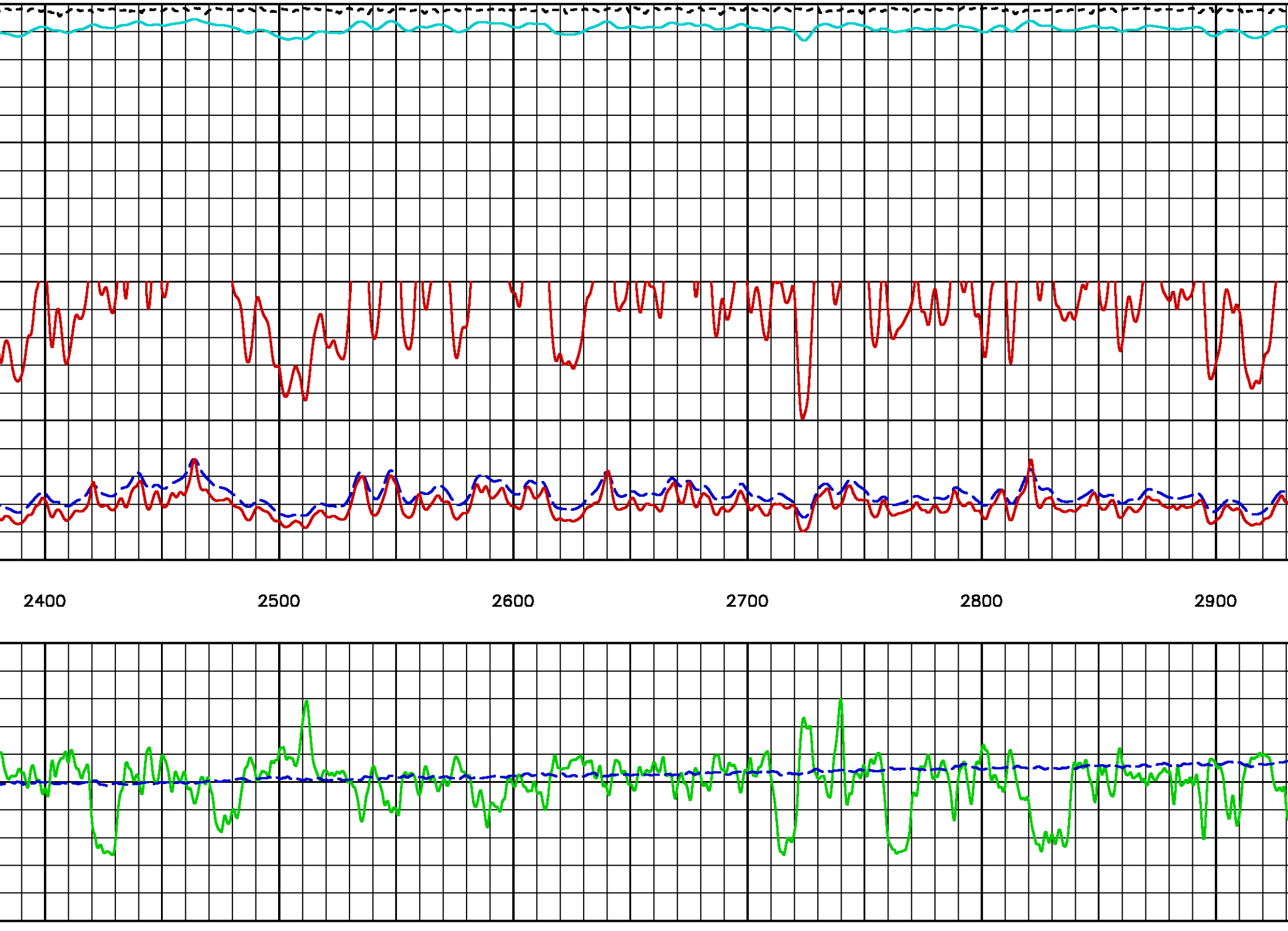
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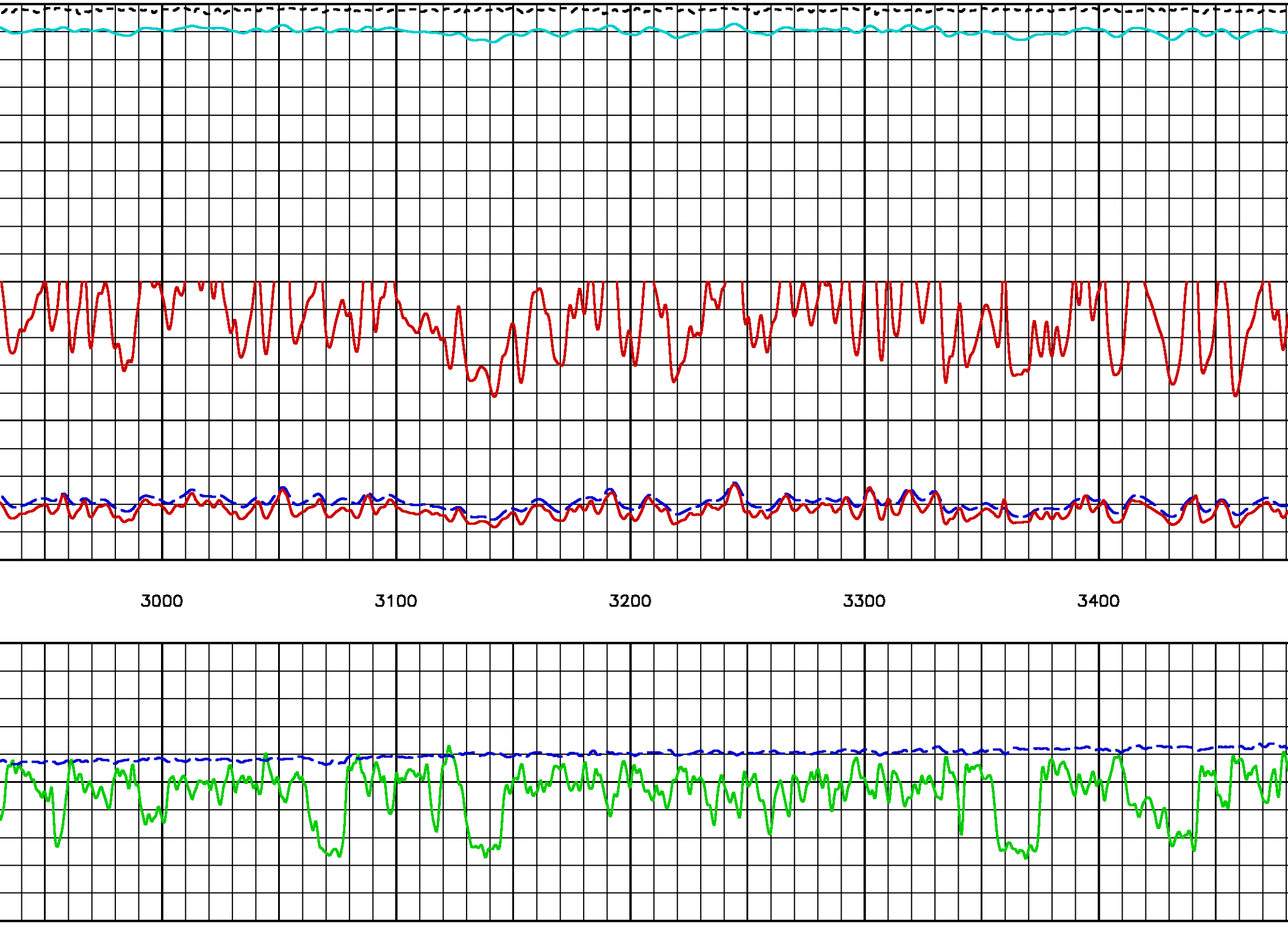
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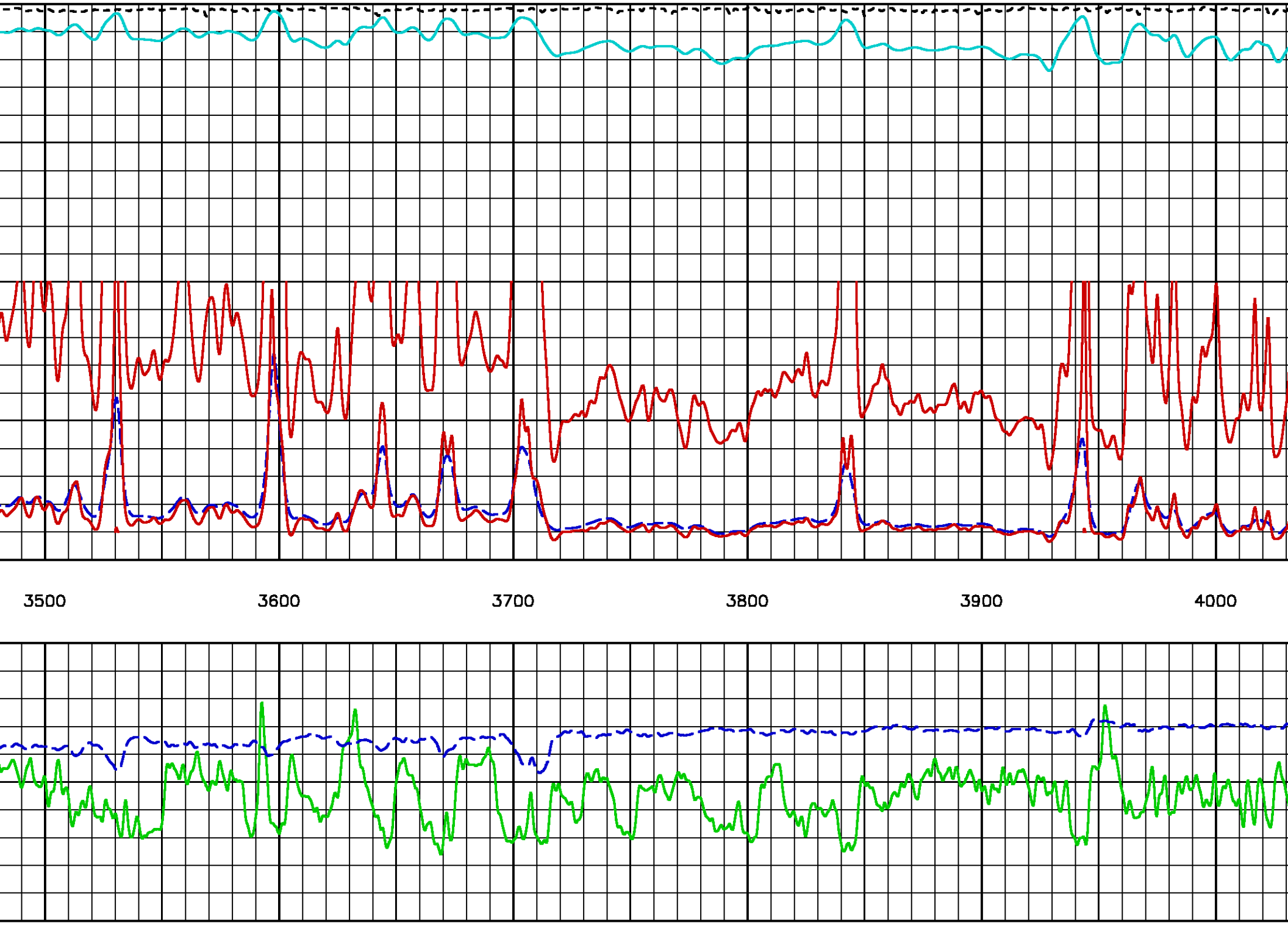
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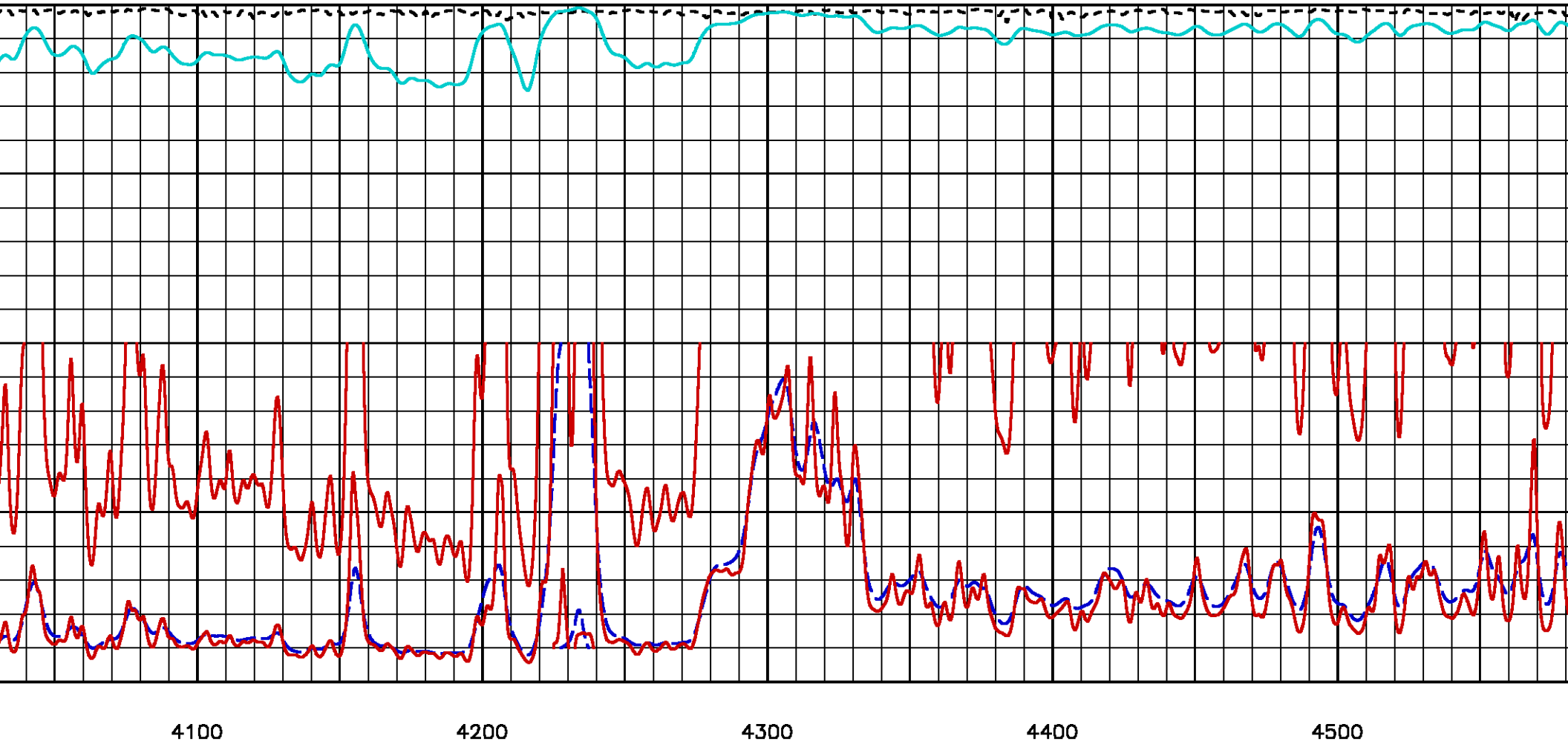
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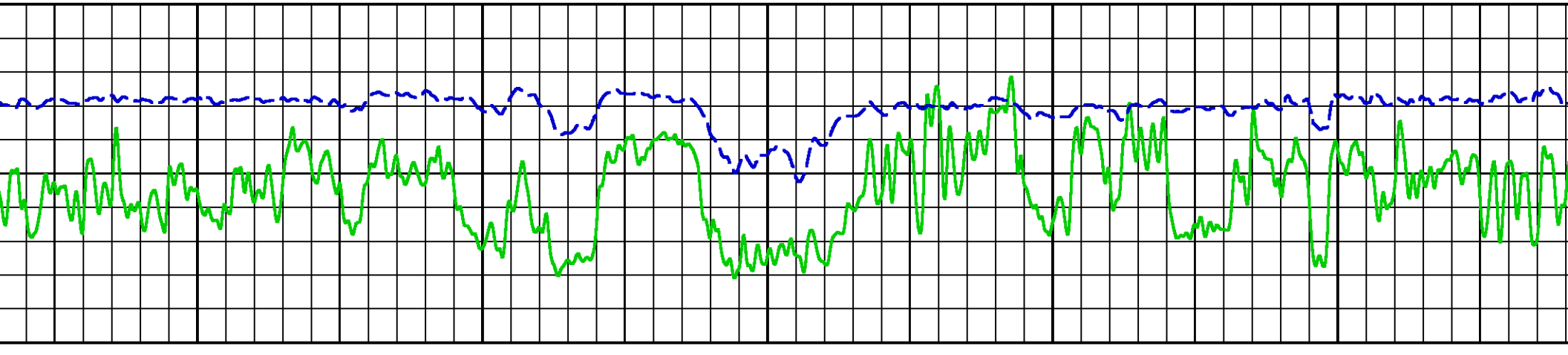

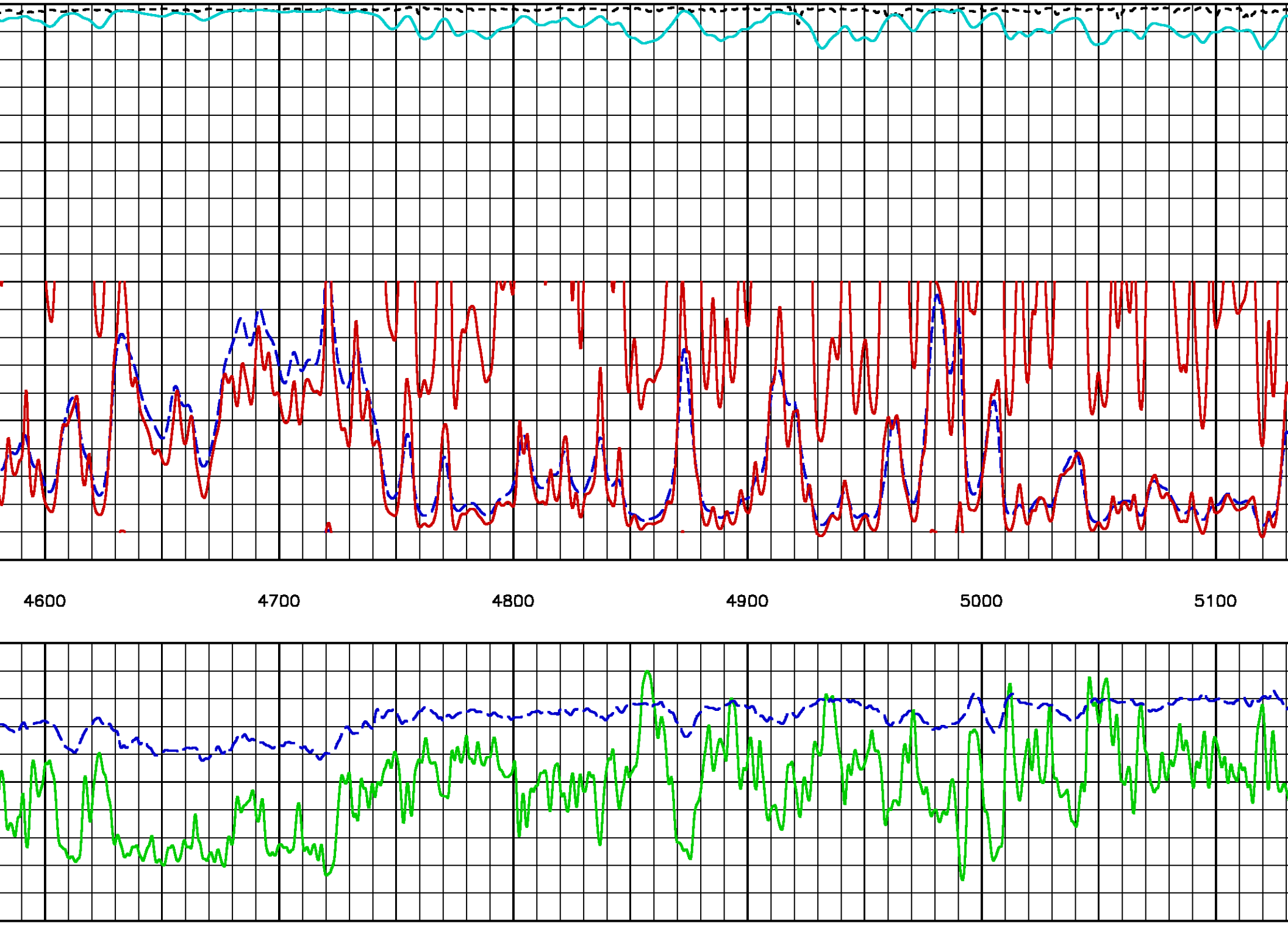
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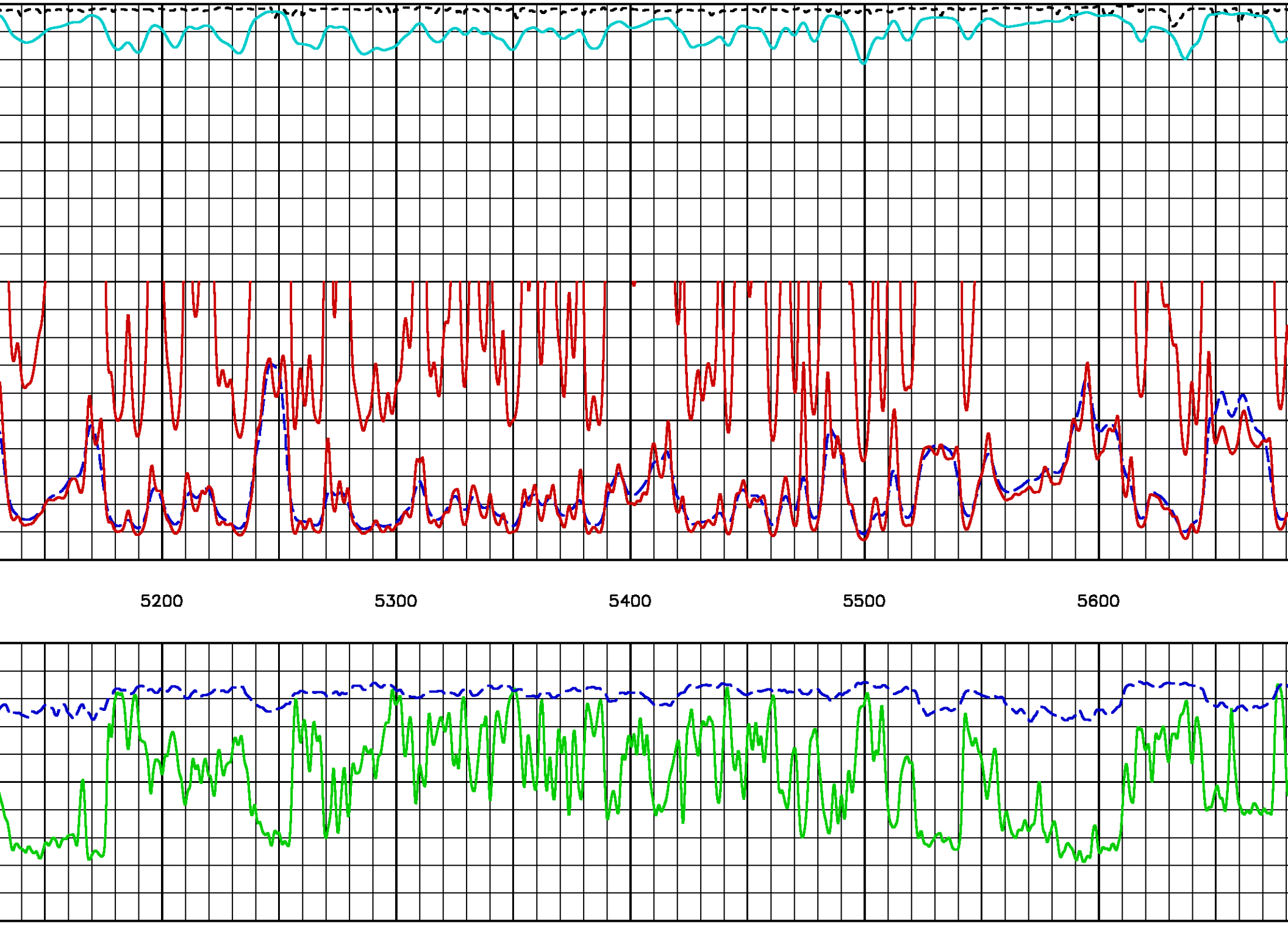
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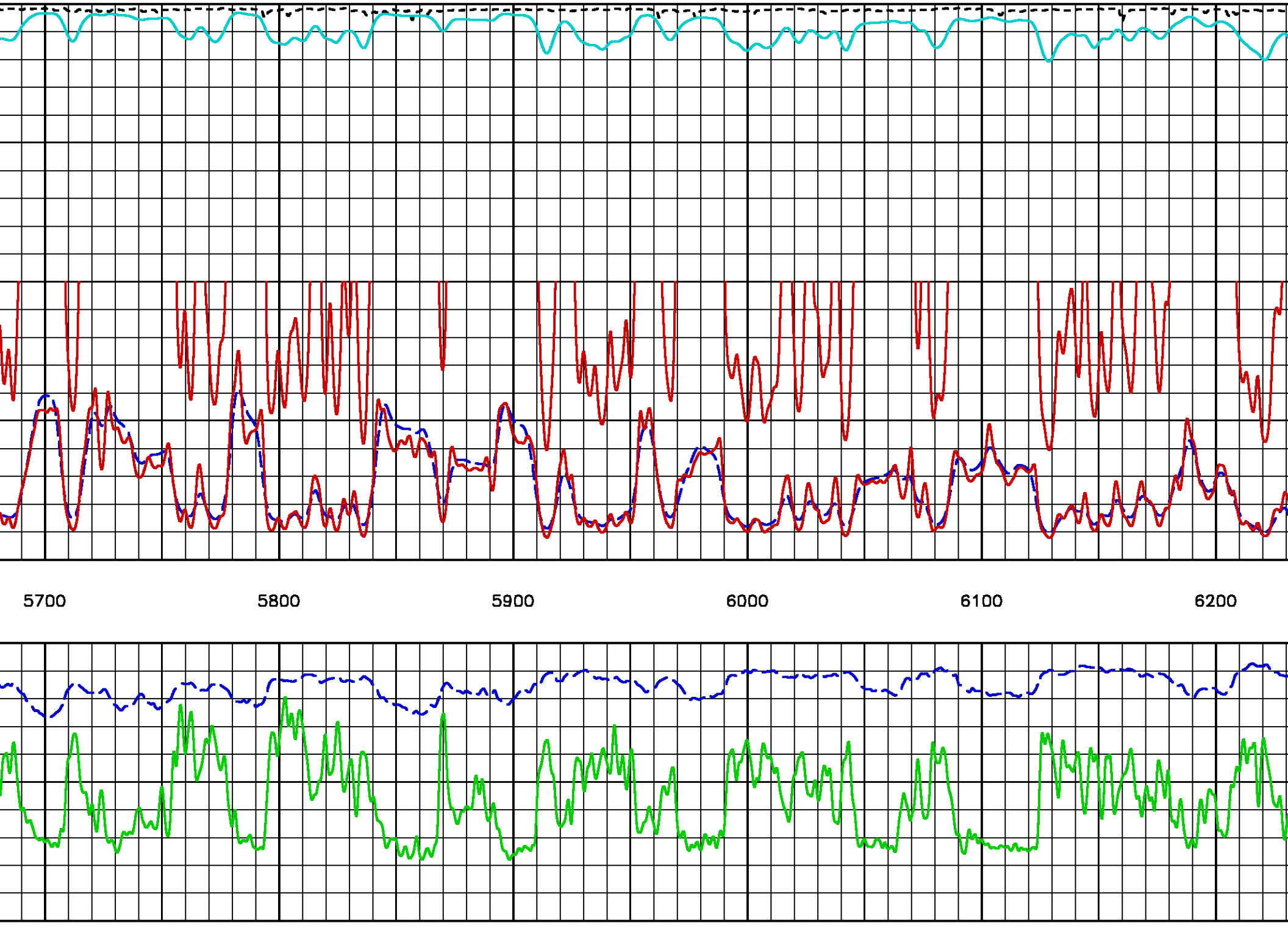
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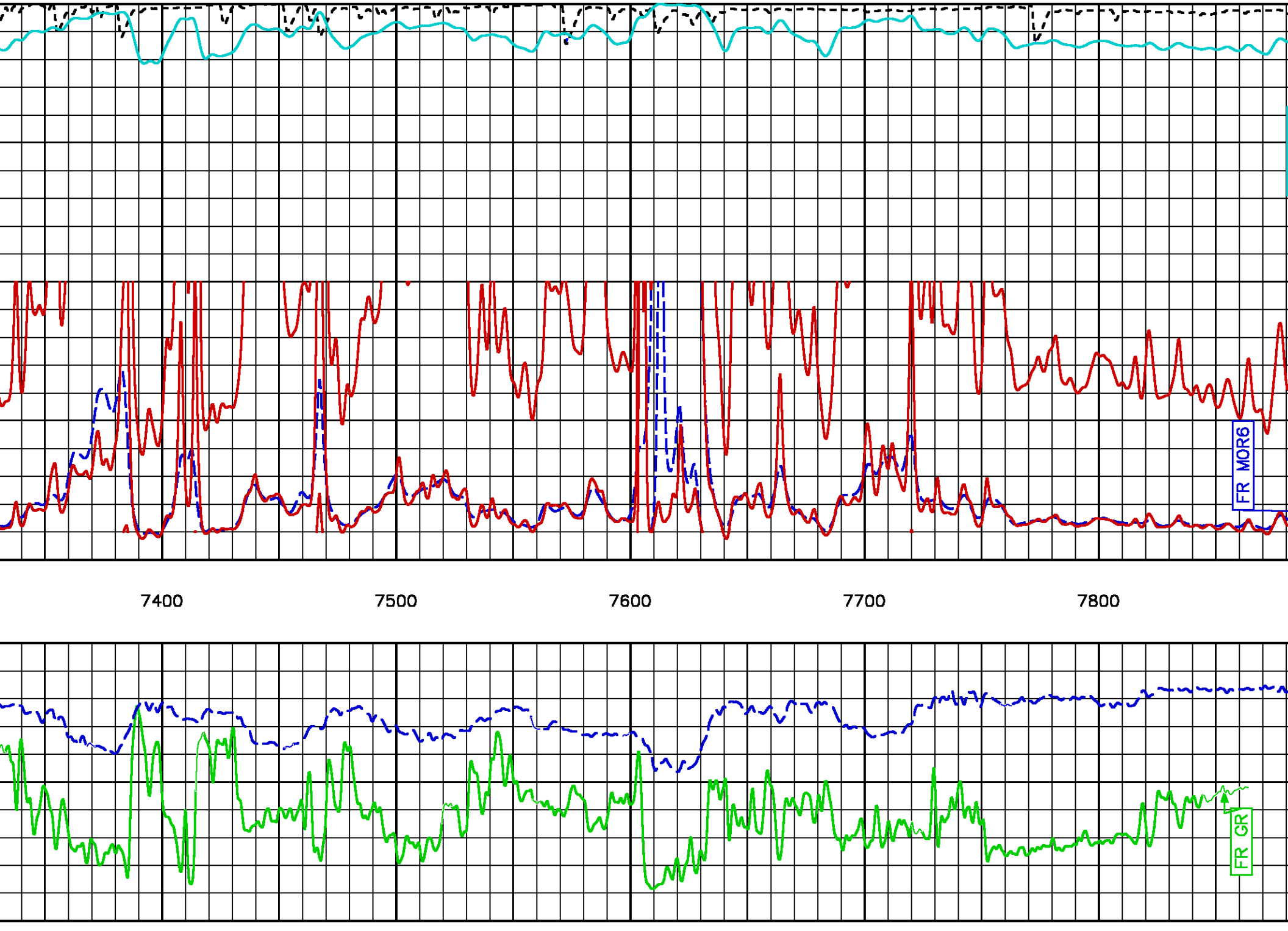
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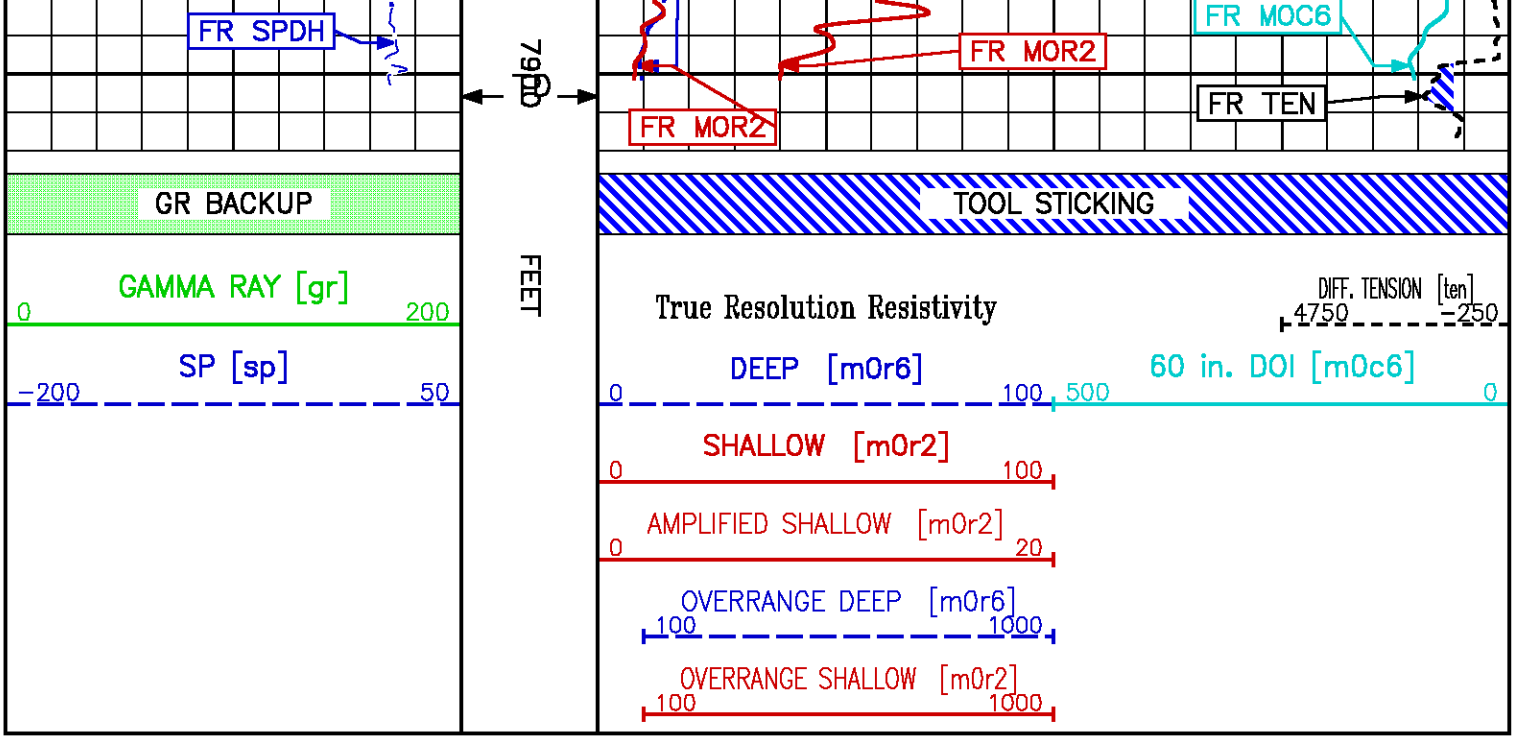


MAIN LOG 5"/100FT SCALE

ECLIPS 6.1i Aug 06, 2010
Updates: 1,2 Patches: 2

Mon Jun 10 06:21:39 2013

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/633672/m876g_MSLAM03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 1034.500 ft BOTTOM DEPTH: 7920.652 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.1)	medium (1)		"	"
Y AXIS CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
	FILTER (.h)	medium (1)		"	"
	FILTER (.1)	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT

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

	CASING THICKNESS	0.000	in	''	''
BIT SIZE	BIT SIZE	8.750	in	''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	''	''
	MUD SAMPLE RES	1.000	ohm.m	''	''
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	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	In	''	''
	FIXED DIAMETER (mbh*)	8.750	In	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		''	''

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	900	ppm	''	''
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNG	7.875	In	''	''

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MUD DENSITY	MUD DENSITY	14.50	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.680	g/cm3	''	''
	RHOfluid	1.000	g/cm3	''	''
ZDL	DENX TRACKING	ON		''	''

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		''	''
	ABC to CALCULATE	STANDOFF		''	''
	STANDOFF	1.50	In	''	''
	TOOL POSITION	ECCENTERED		''	''
	Rmud MULTIPLIER	1.000		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Jun 10 01:52:40 2013	BIT SIZE
F1:BVOL	Jun 10 01:52:40 2013	BOREHOLE VOLUME
F1:CAL	Jun 10 01:52:40 2013	CALIPER
F1:CNCF	Jun 10 01:52:40 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Jun 10 01:52:40 2013	CEMENT VOLUME
F1:GR	Jun 10 01:52:40 2013	GAMMA RAY
F1:M2R1	Jun 10 01:52:40 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Jun 10 01:52:40 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Jun 10 01:52:40 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Jun 10 01:52:40 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Jun 10 01:52:40 2013	CORRECTED POROSITY
F1:SP	Jun 10 01:52:40 2013	SPONTANEOUS POTENTIAL
F1:TEN	Jun 10 01:52:40 2013	DIFFERENTIAL TENSION
F1:ZCOR	Jun 10 01:52:40 2013	DENSITY CORRECTION

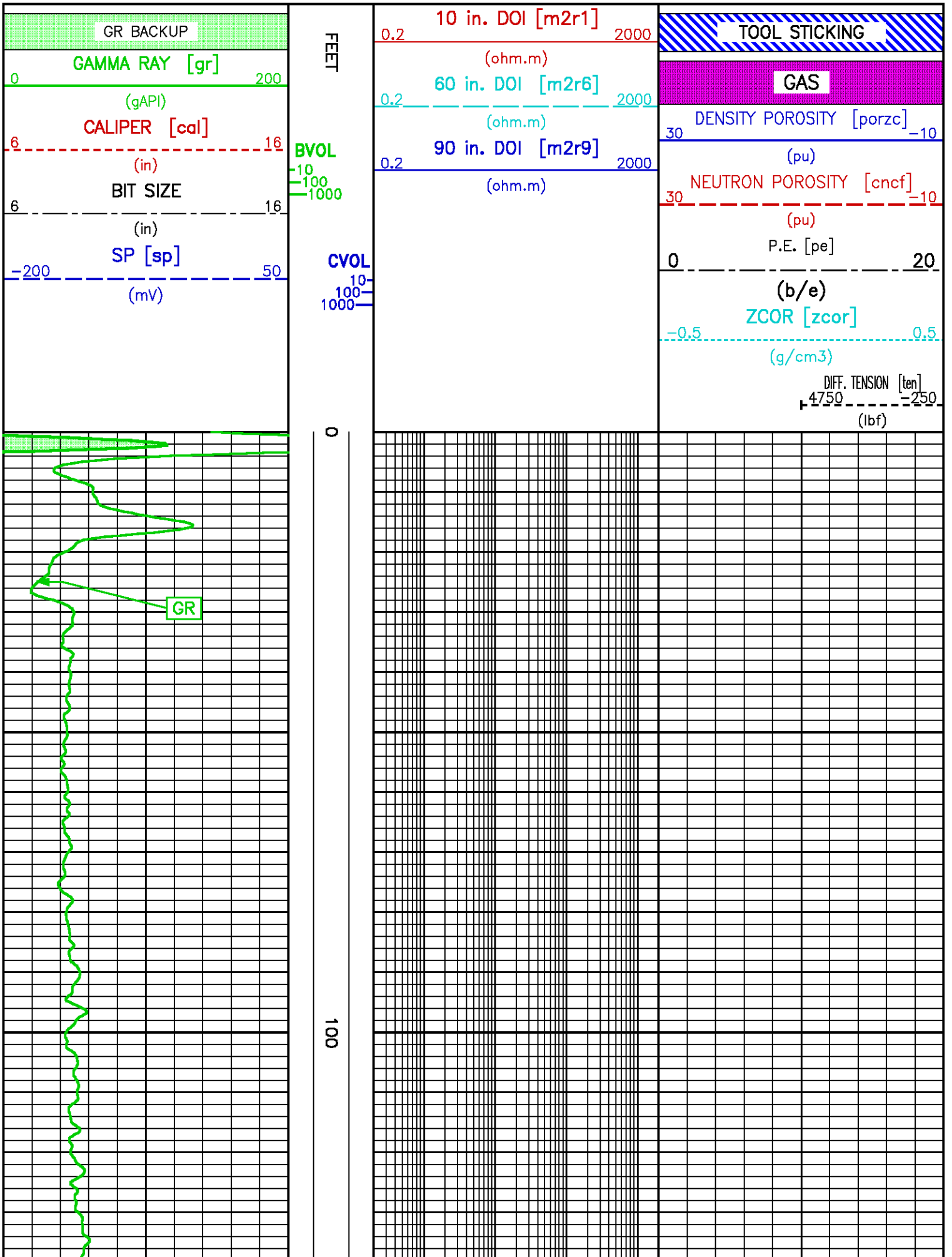
CURVE MEASURE POINT OFFSET

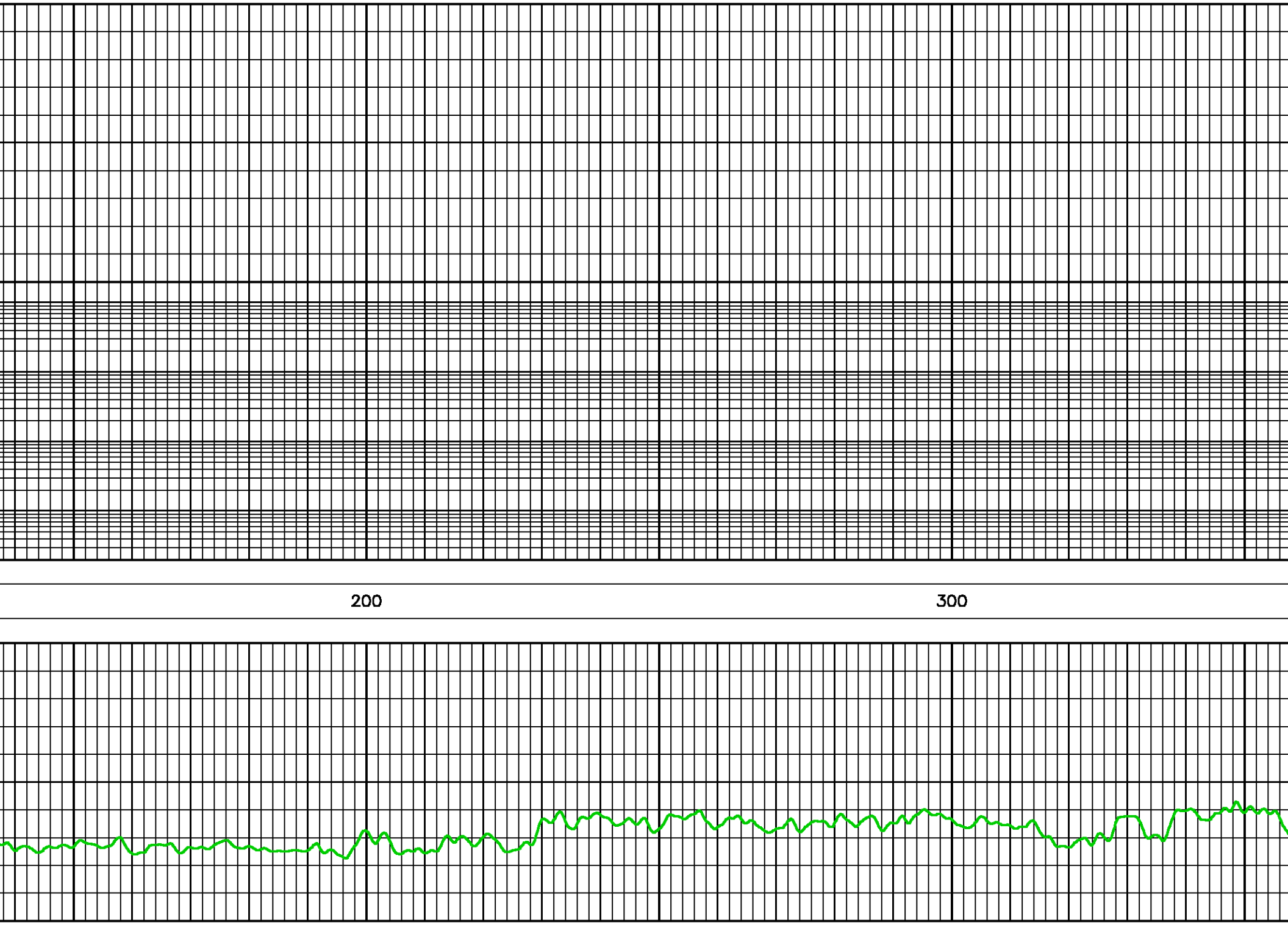
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	52.25	M2R9	8.00	SP	14.00
CAL	35.00	M2R1	8.00	PE	34.25	TEN	0.00
CNCF	45.25	M2R6	8.00	PORZC	34.25	ZCOR	34.25

Presentation : rks6726:/dat1a/633672/COMPOSITE_MAIN.pdf [5"/100' Scale]
Plot Interval : 0 - 7920 Feet

Data File 1 : F1 : rks6726:/dat1a/633672/MAIN.xtf
Created On : Jun 10 01:52:40 2013
Company : WPX ENERGY
Well : DUGGAN RWF 14-29

Field : RULISON
File Interval : -4.25 - 7920 Feet
Oct : m876g_MS

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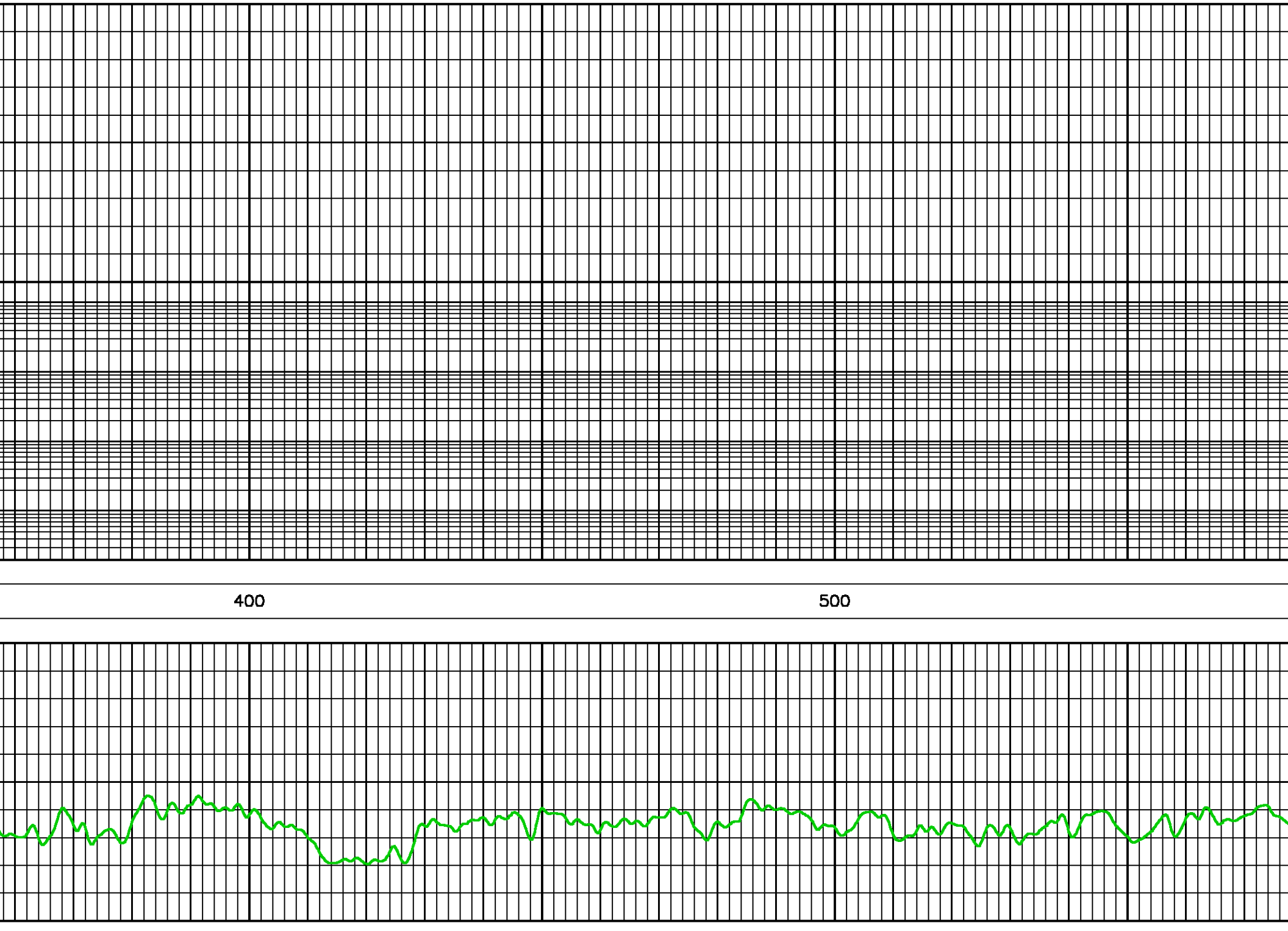
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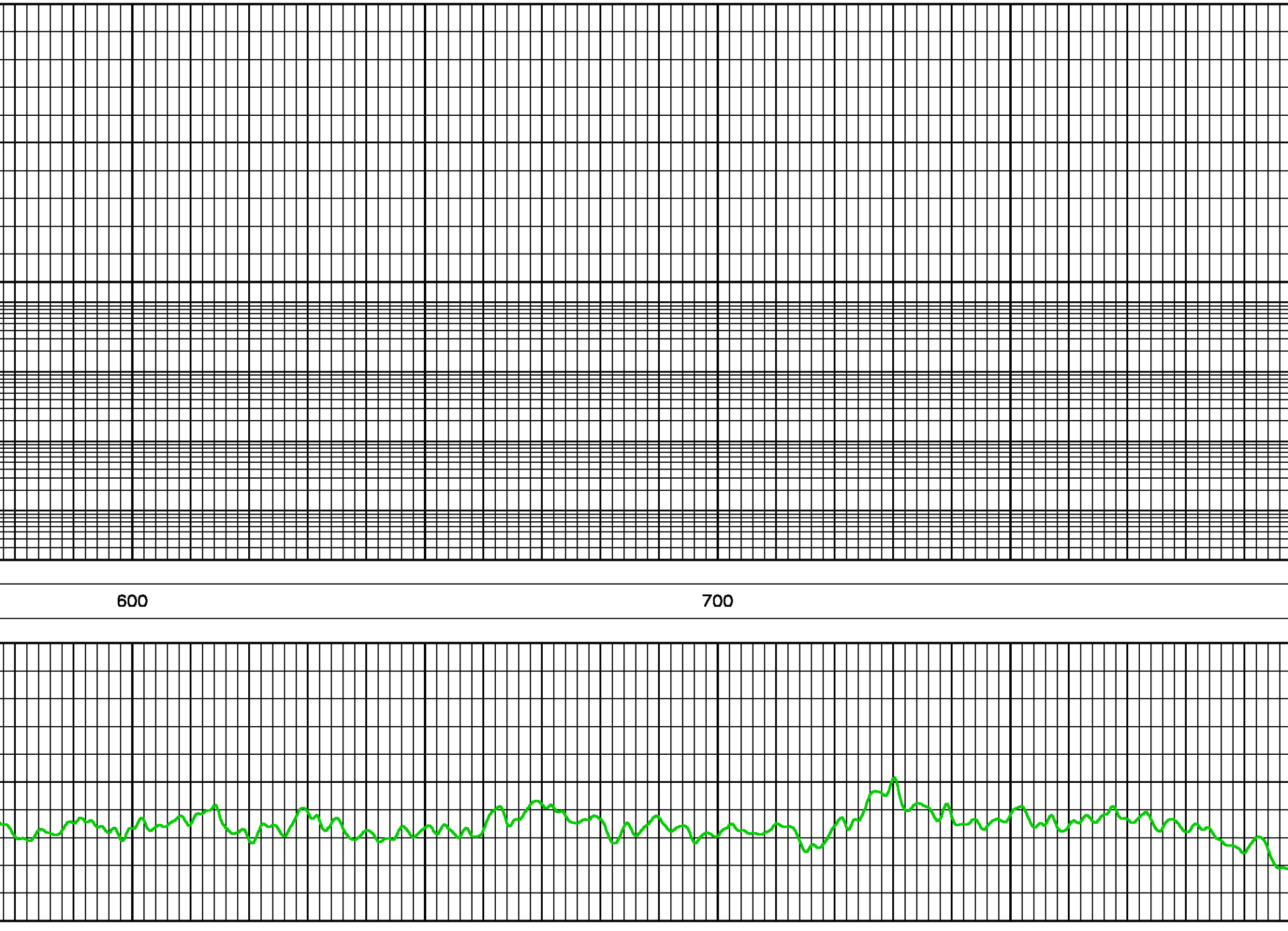
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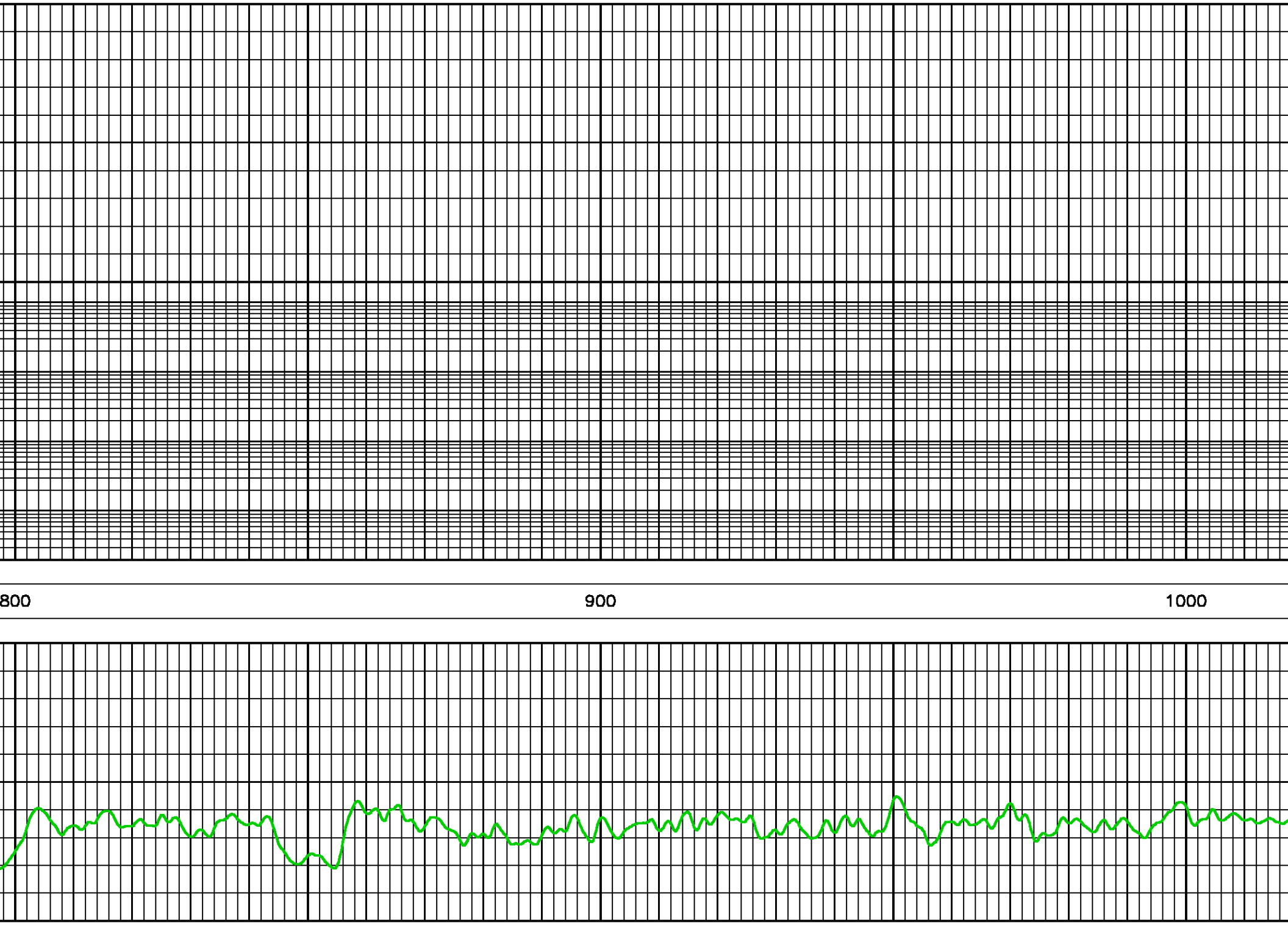
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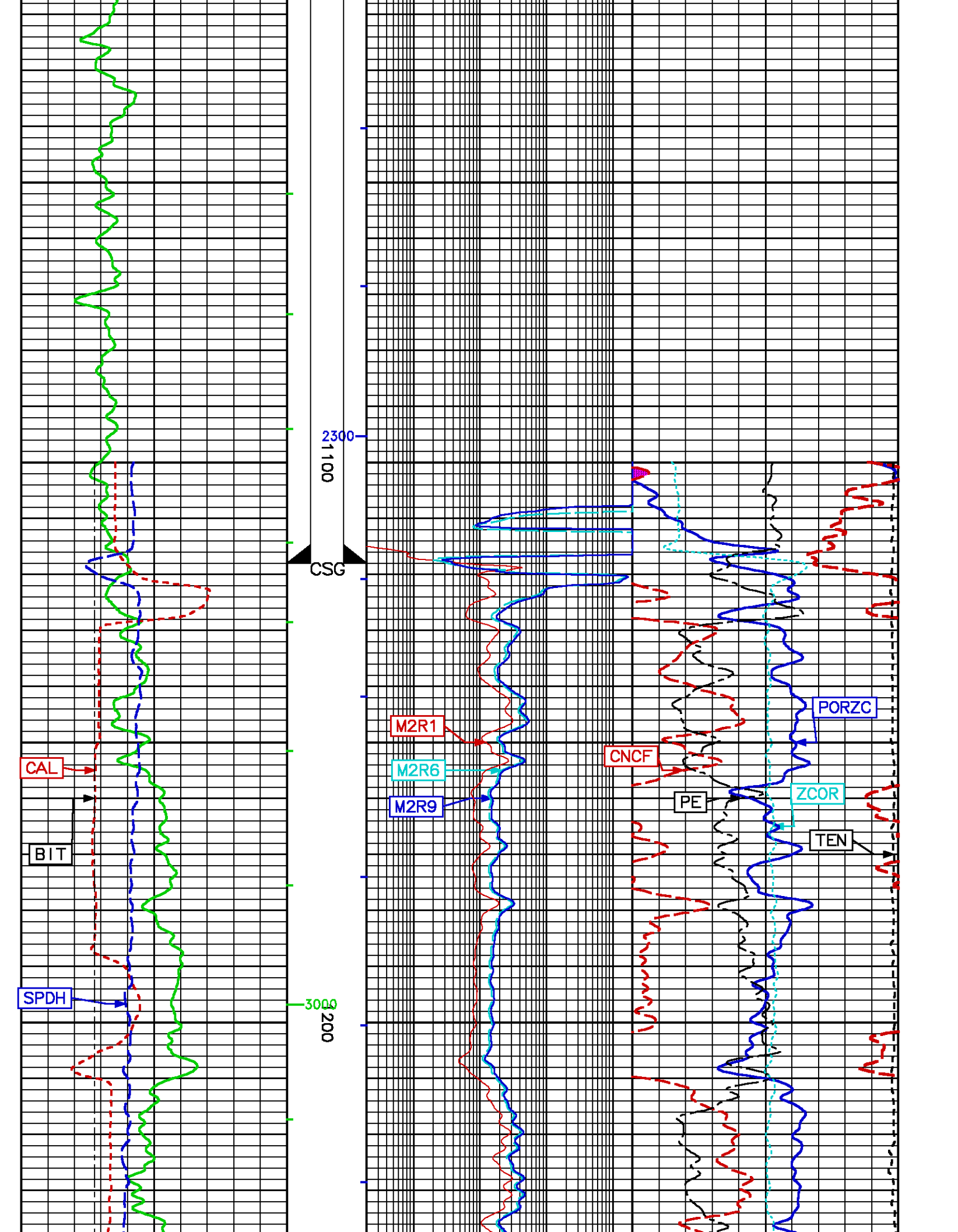
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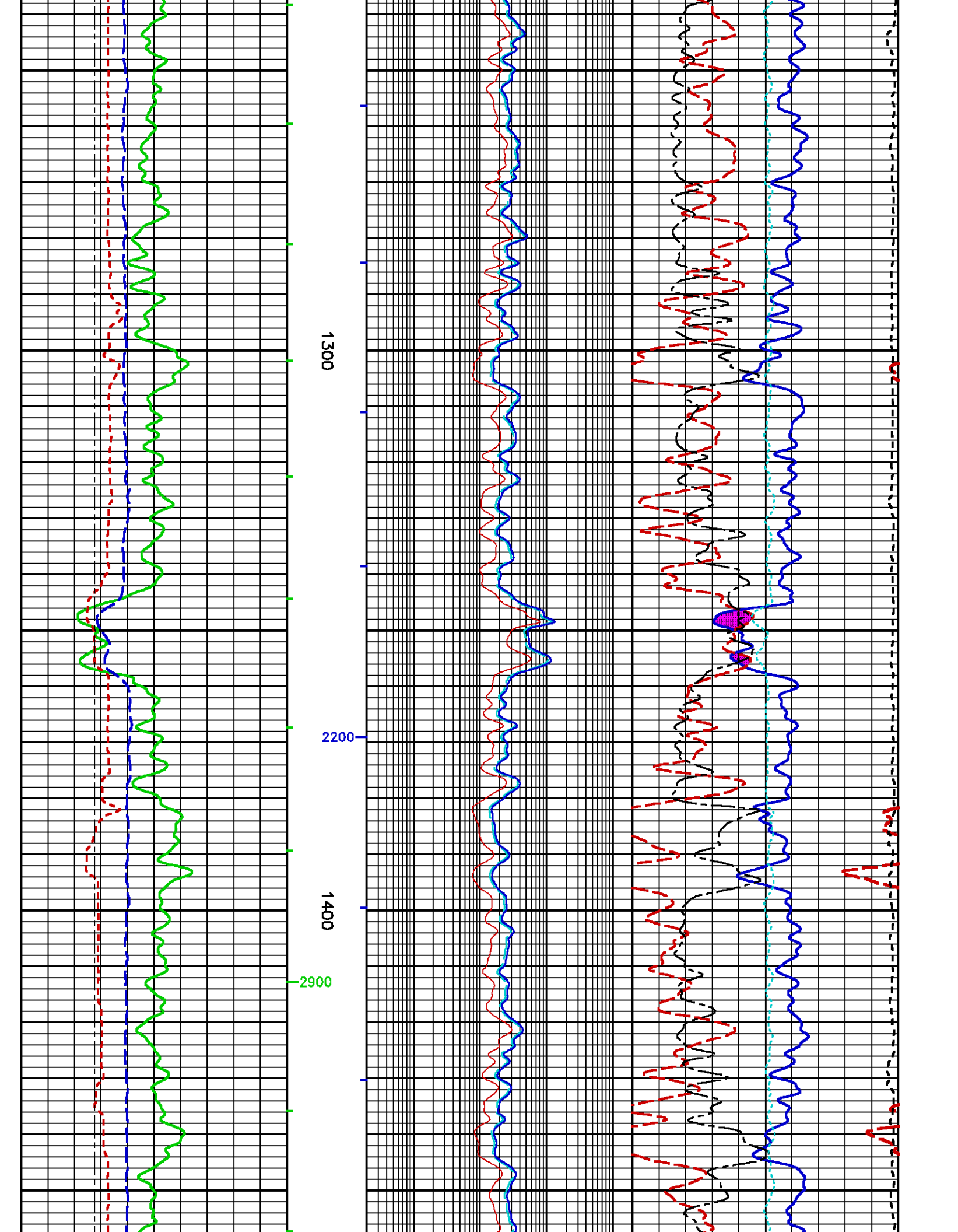
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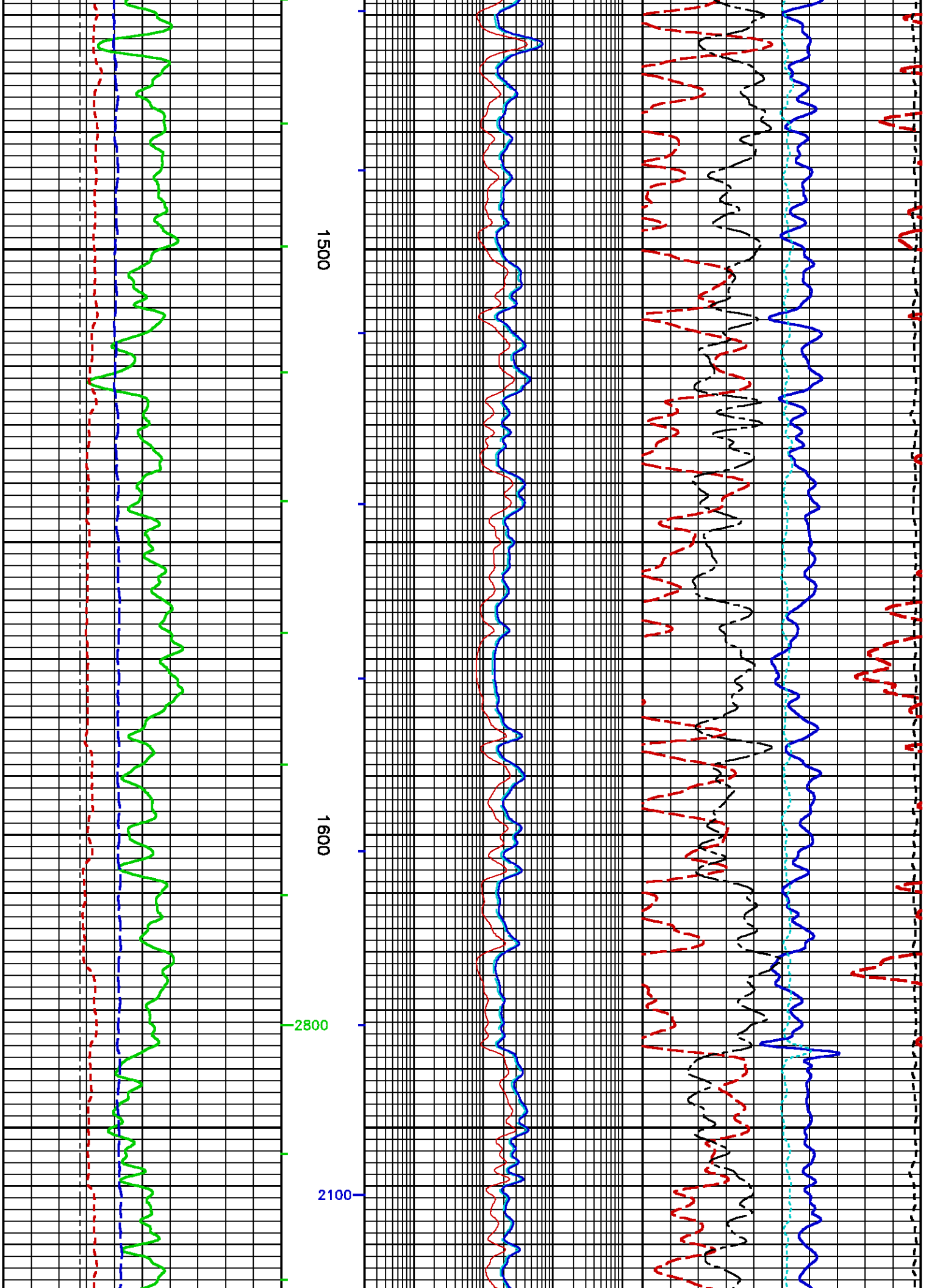
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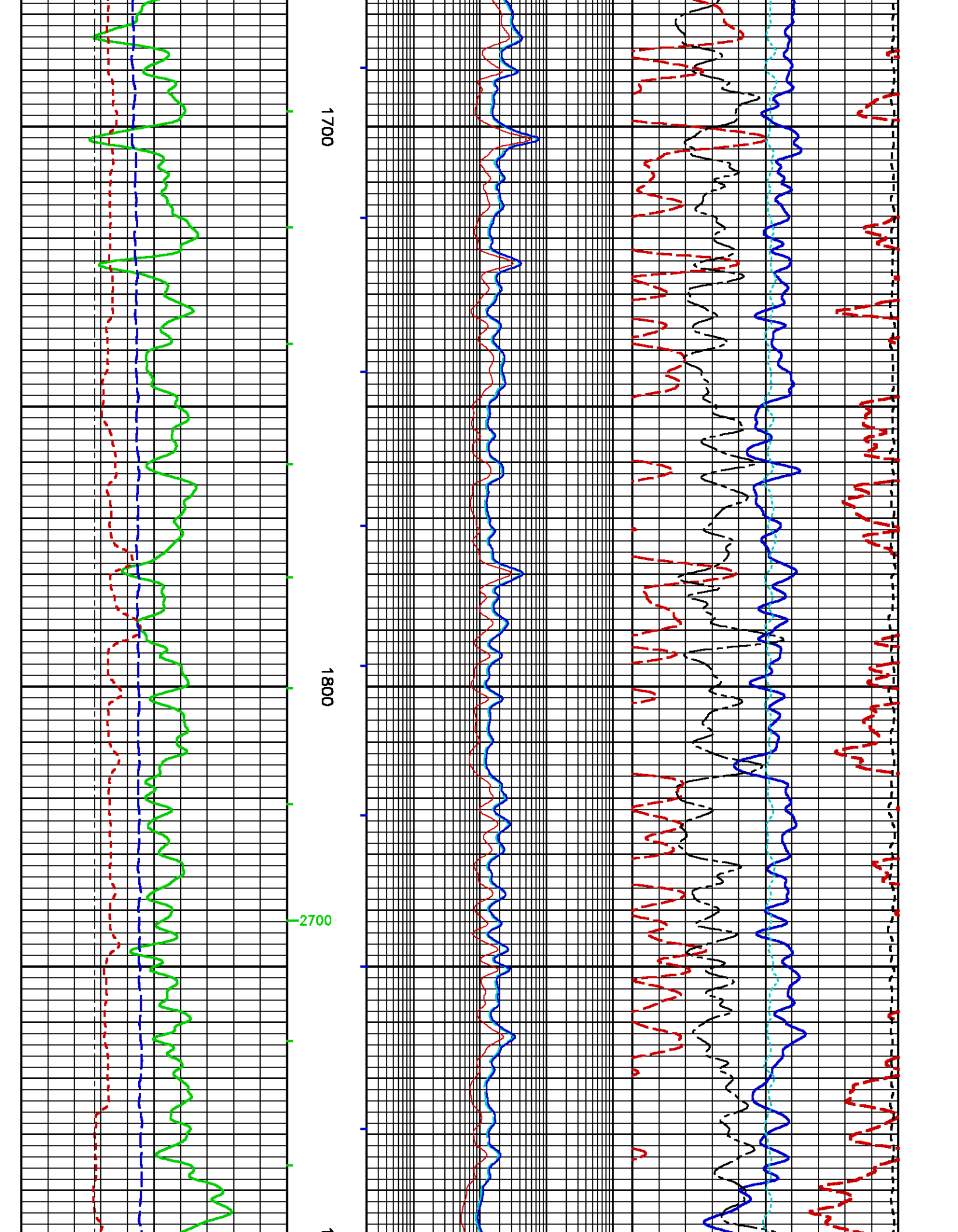
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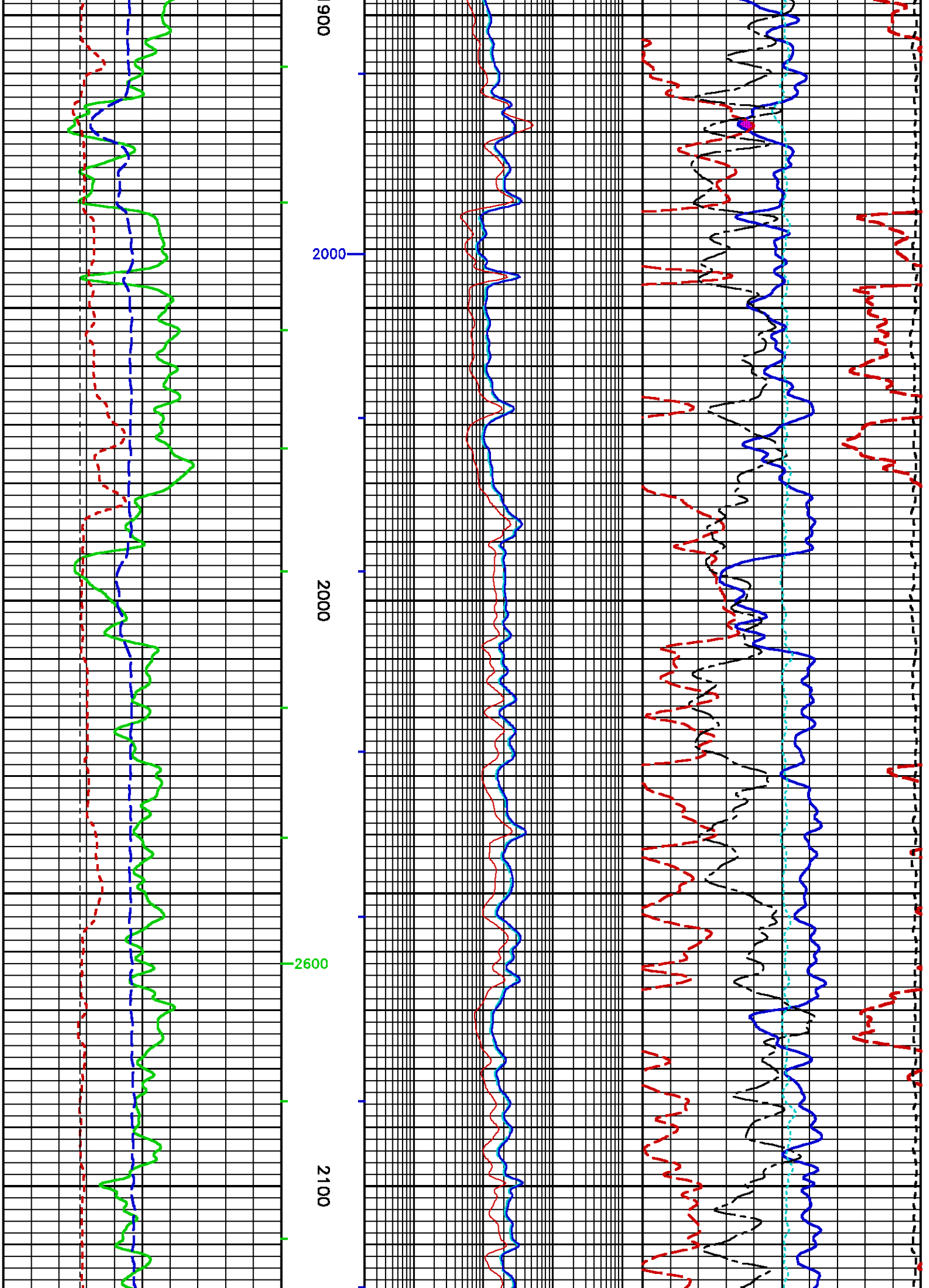
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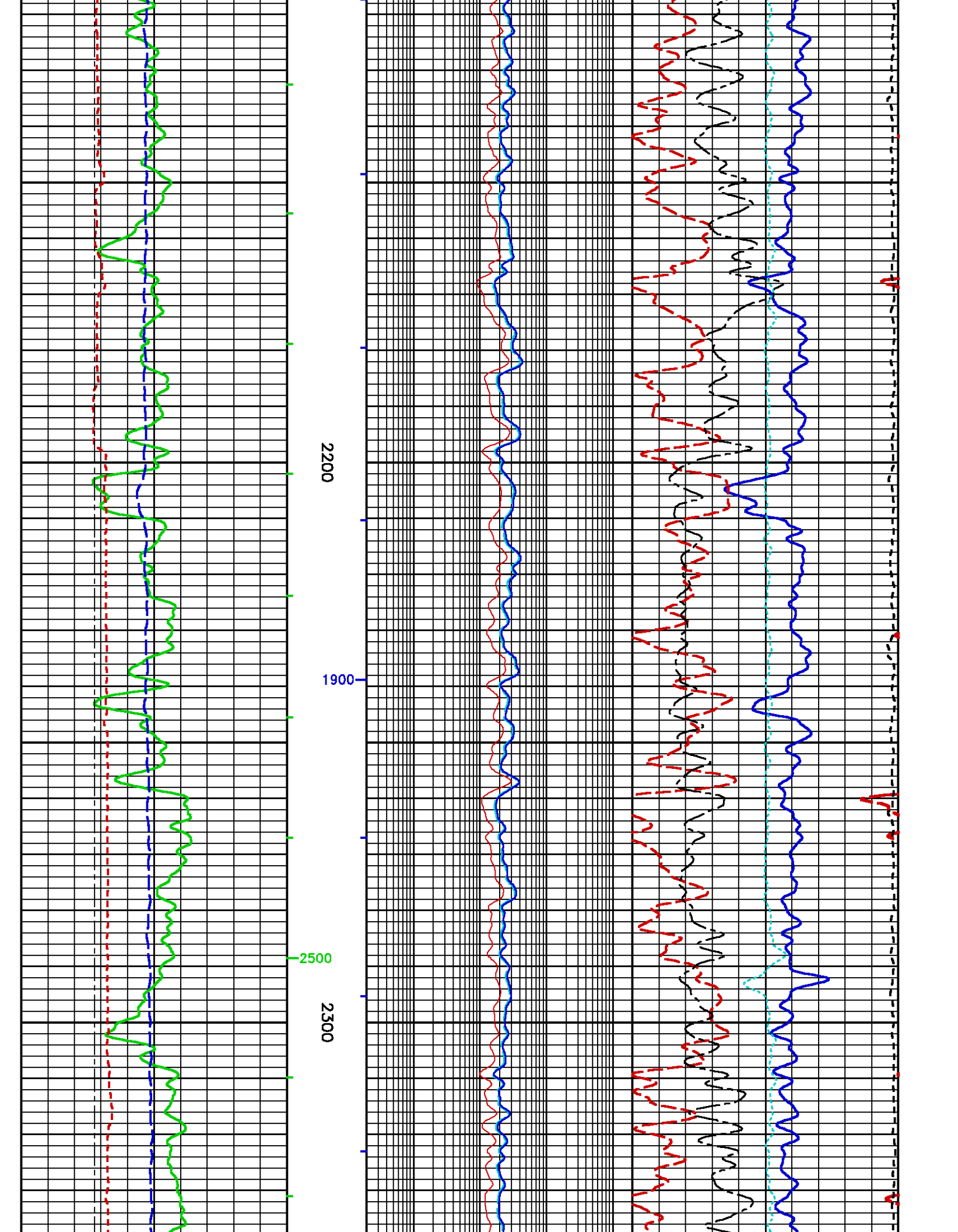
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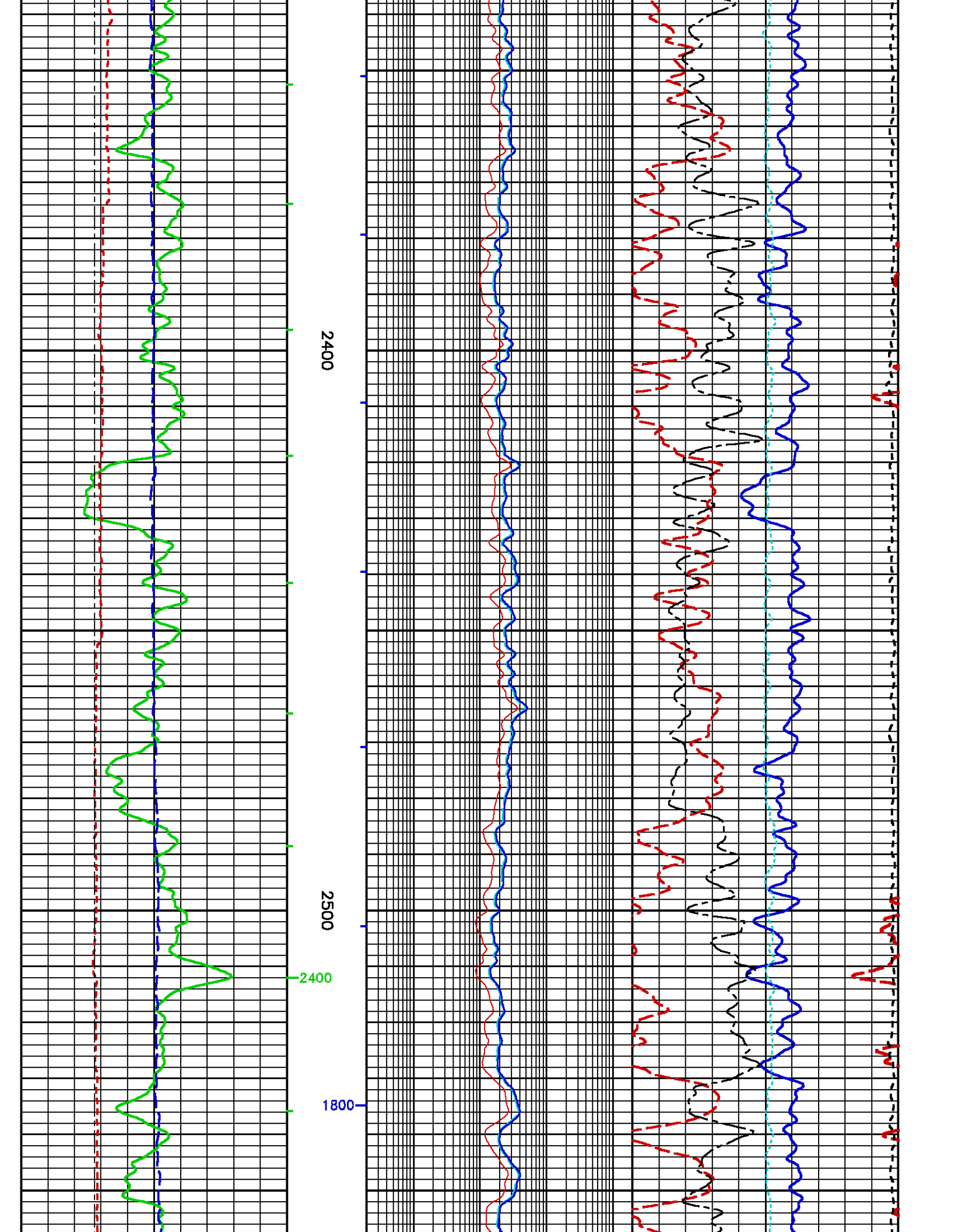
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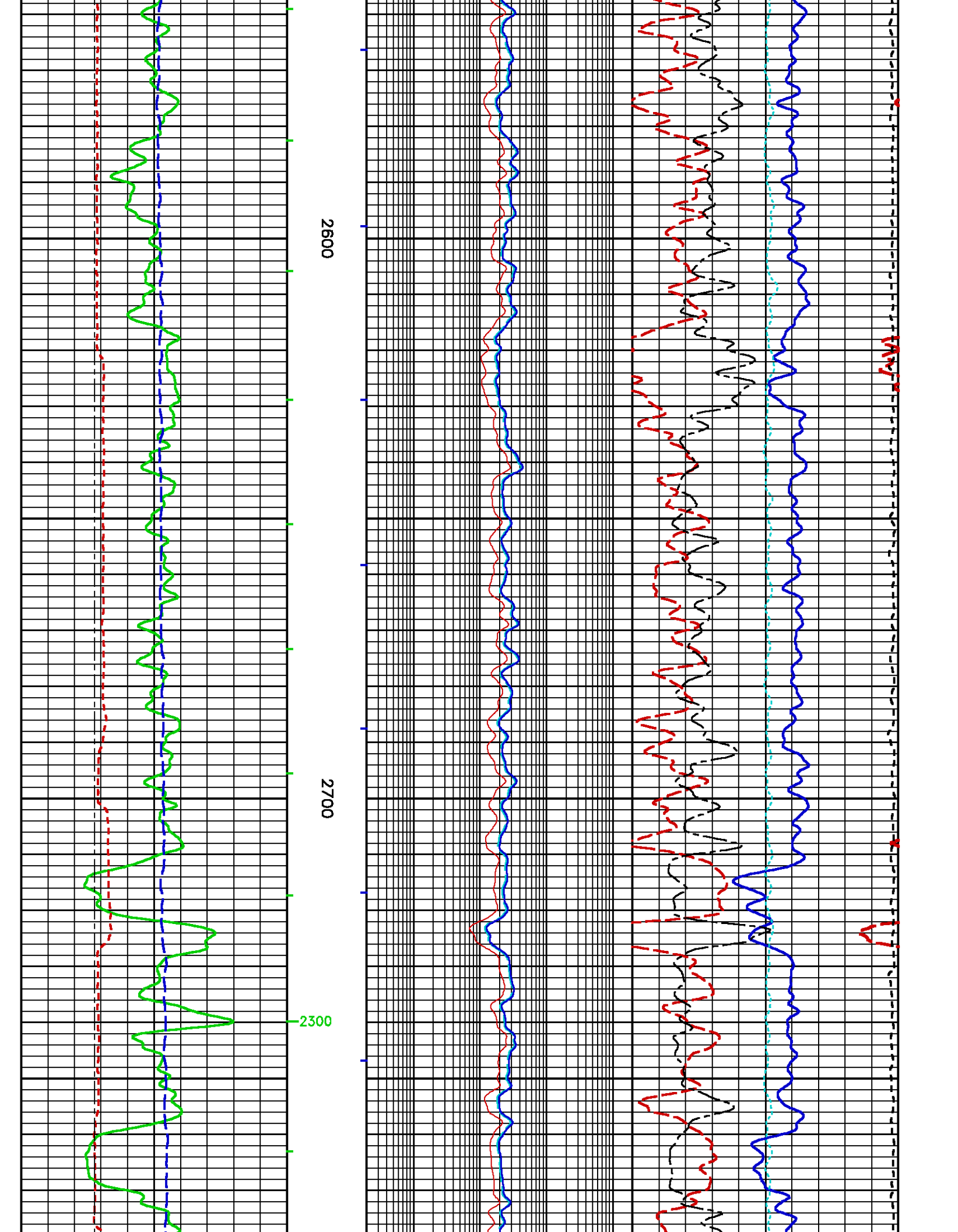
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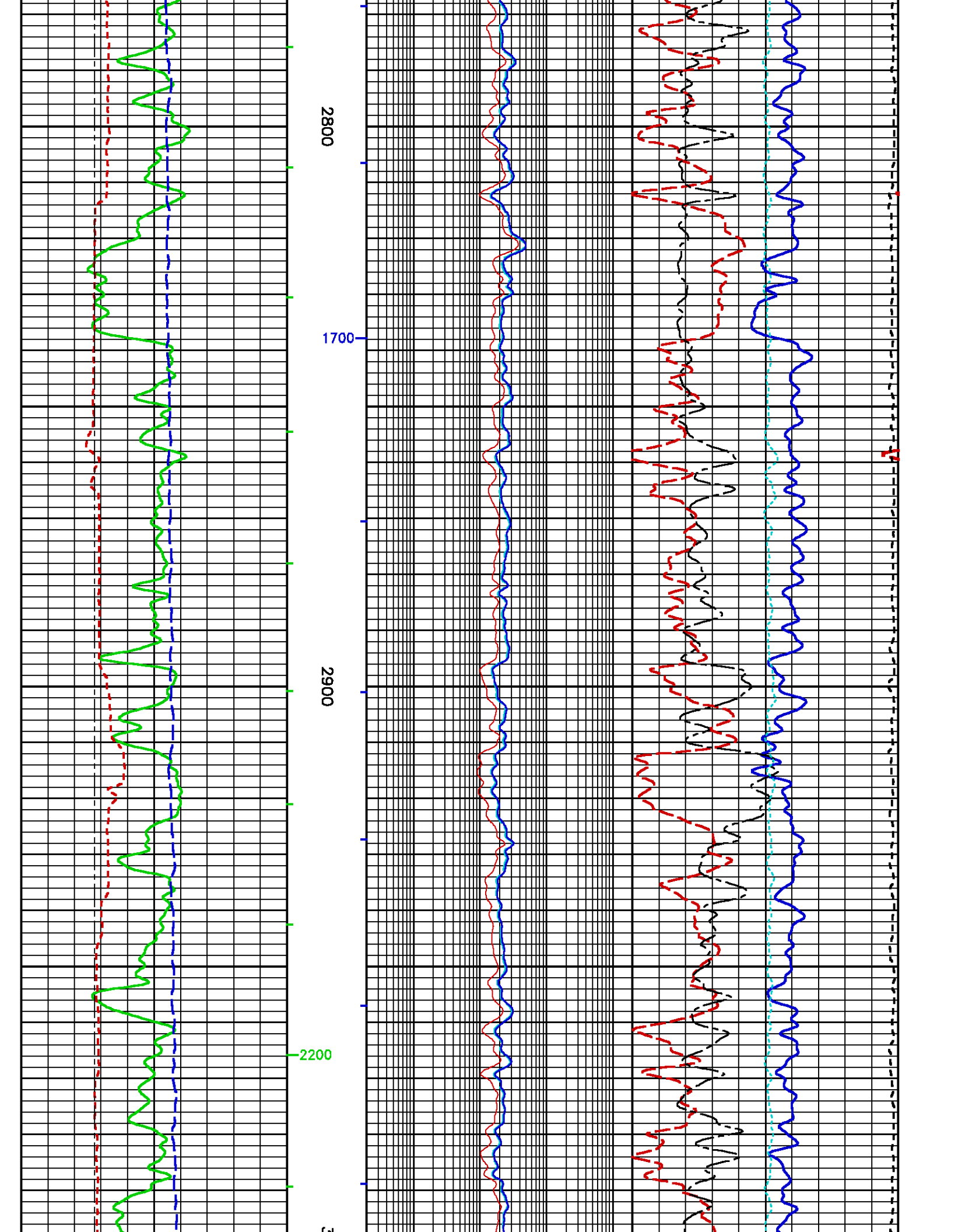
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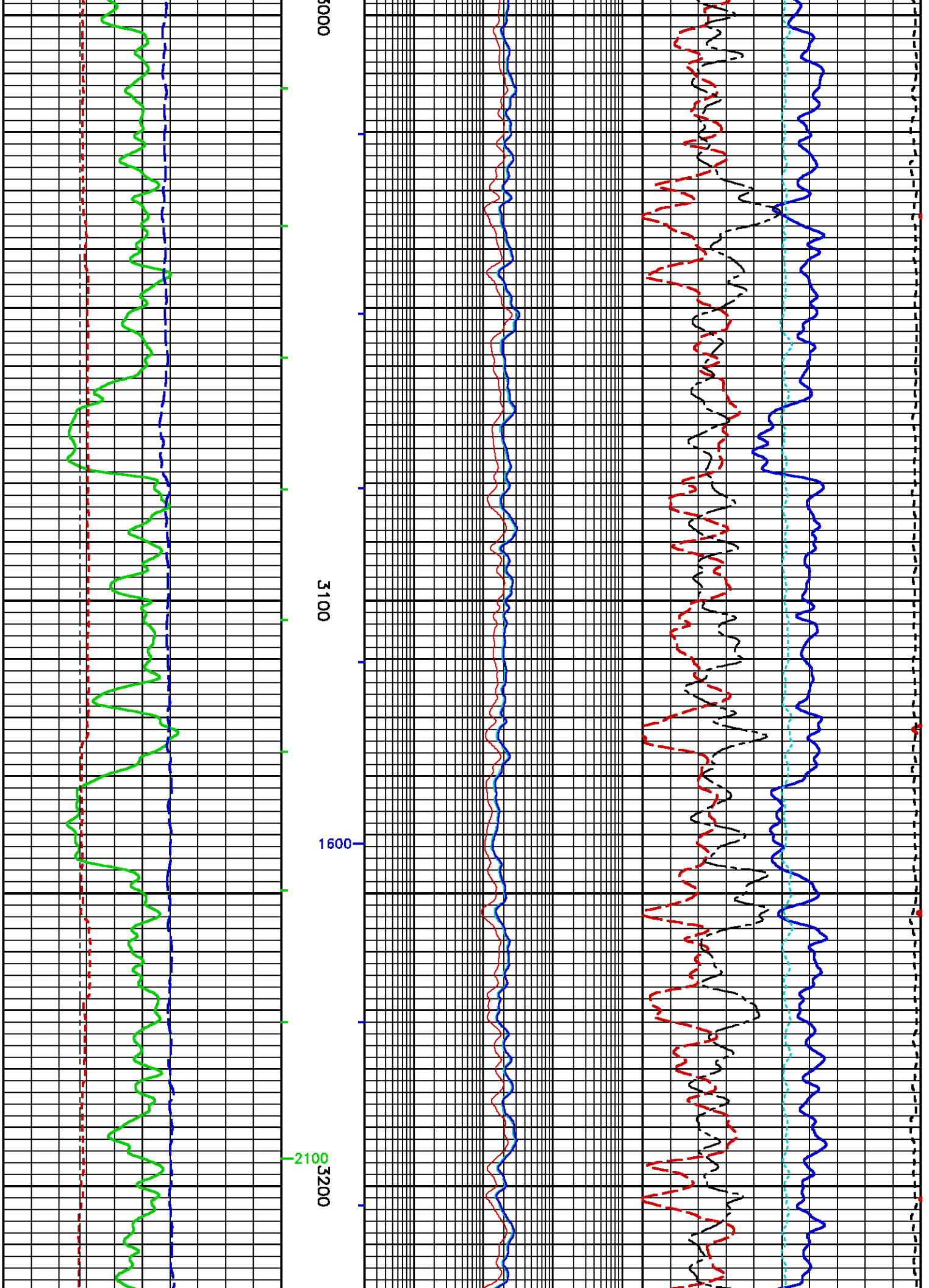
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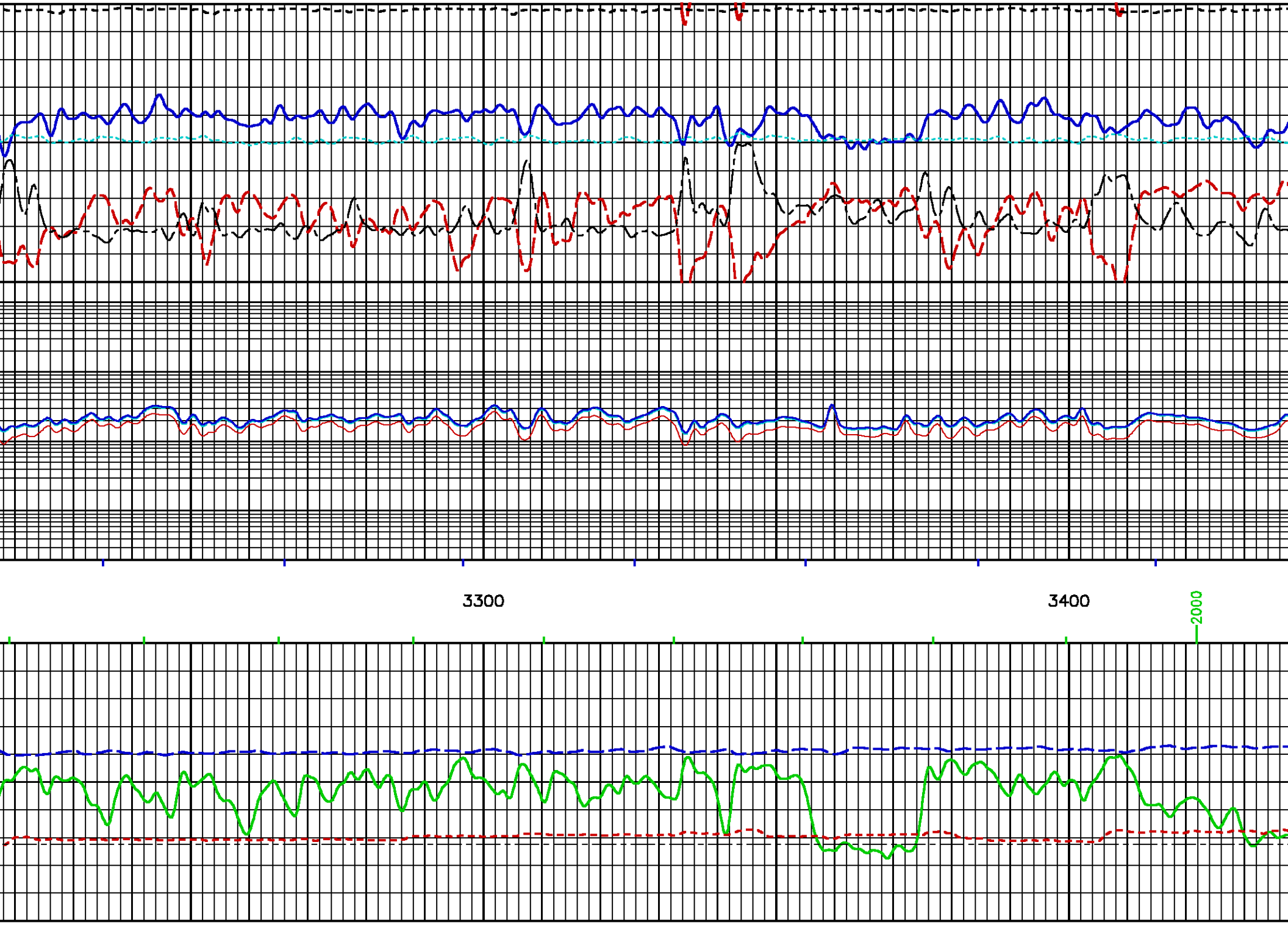
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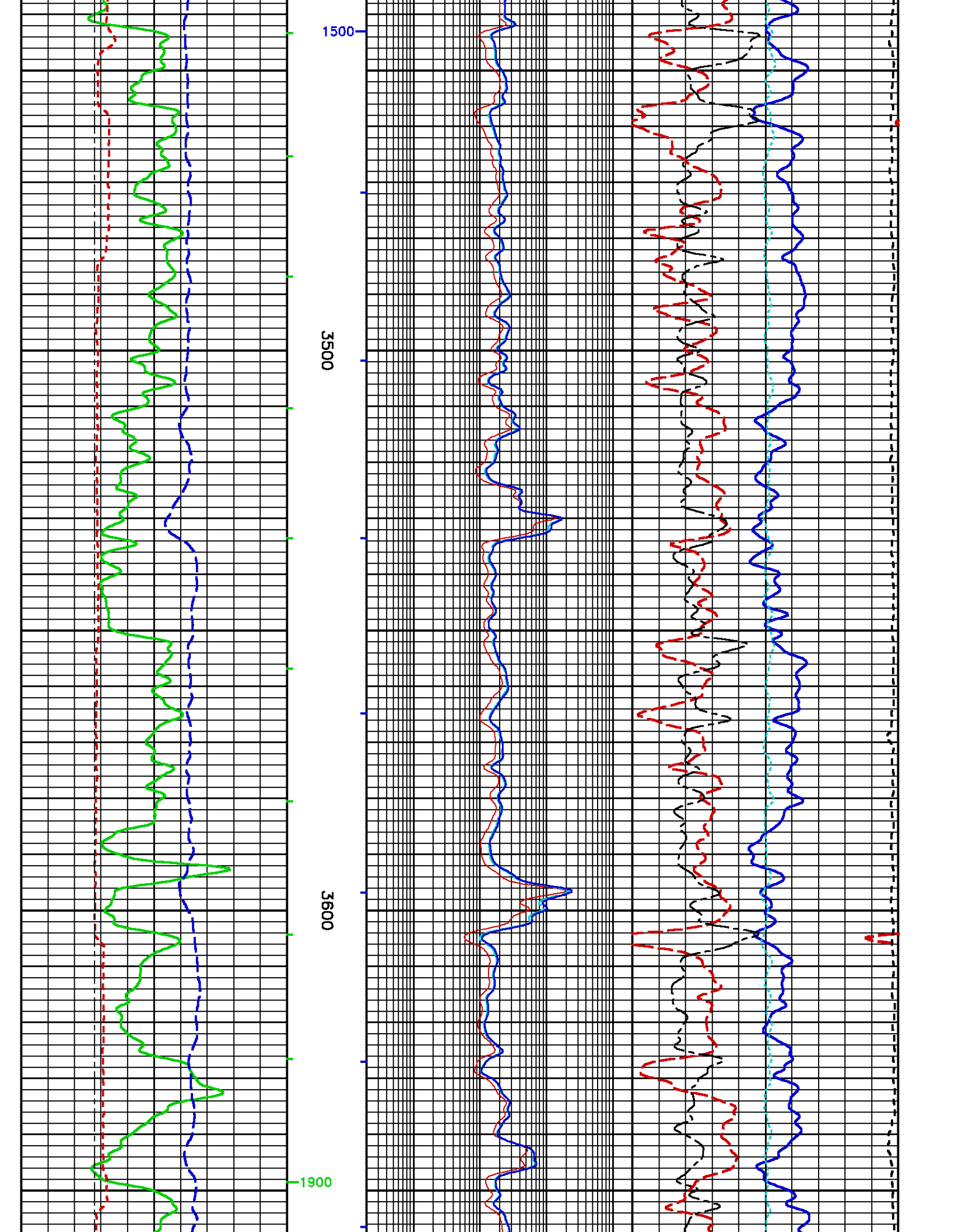
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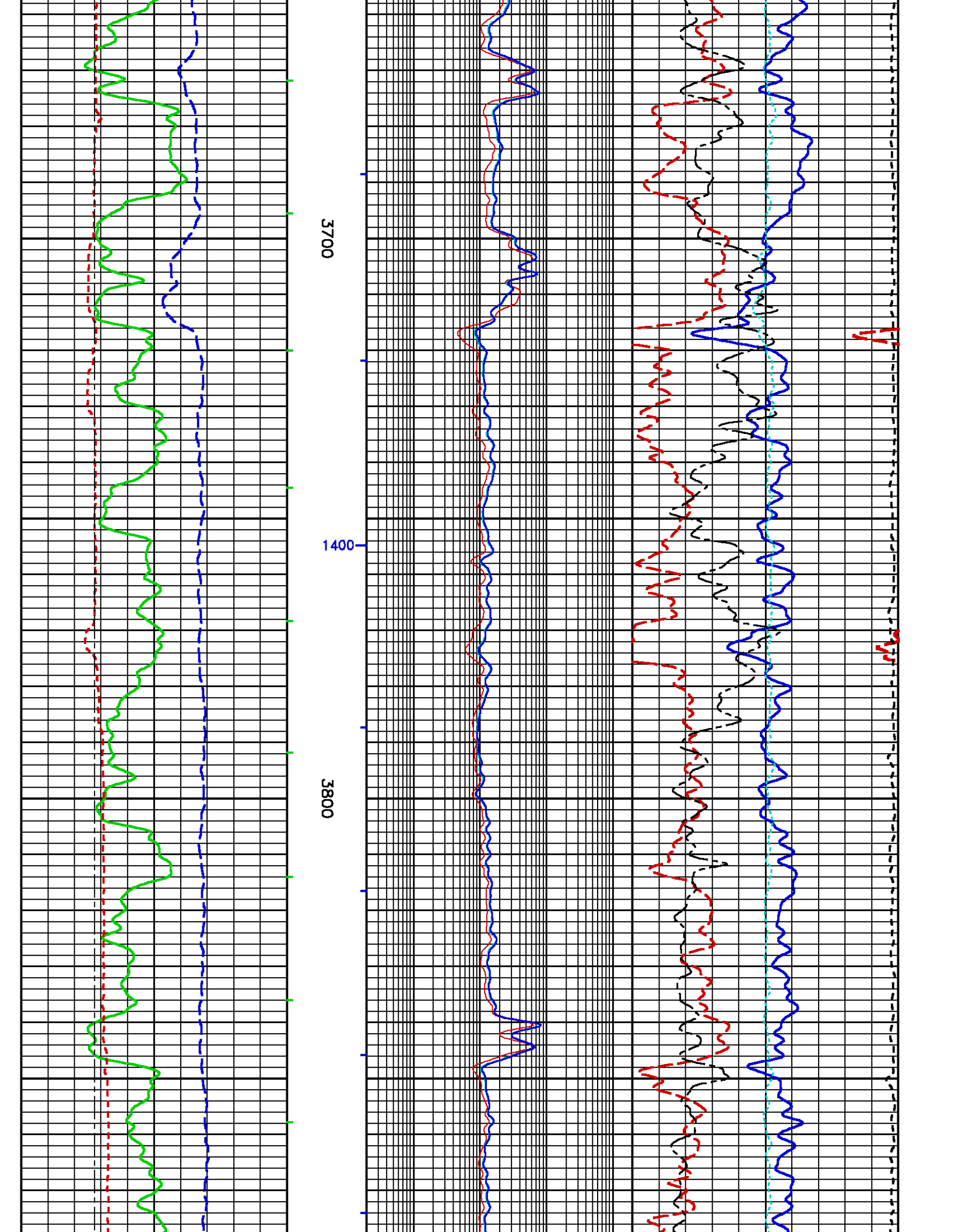
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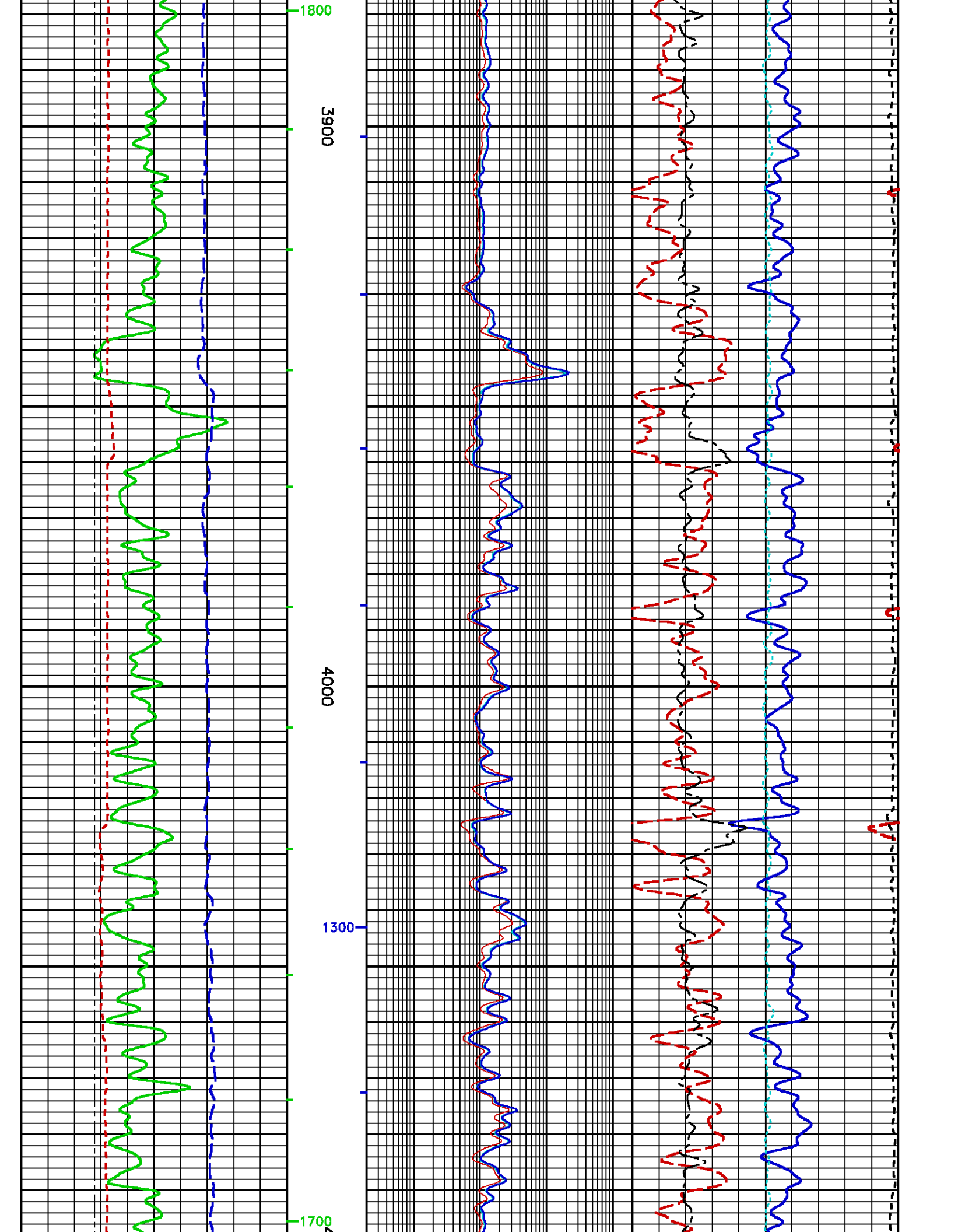
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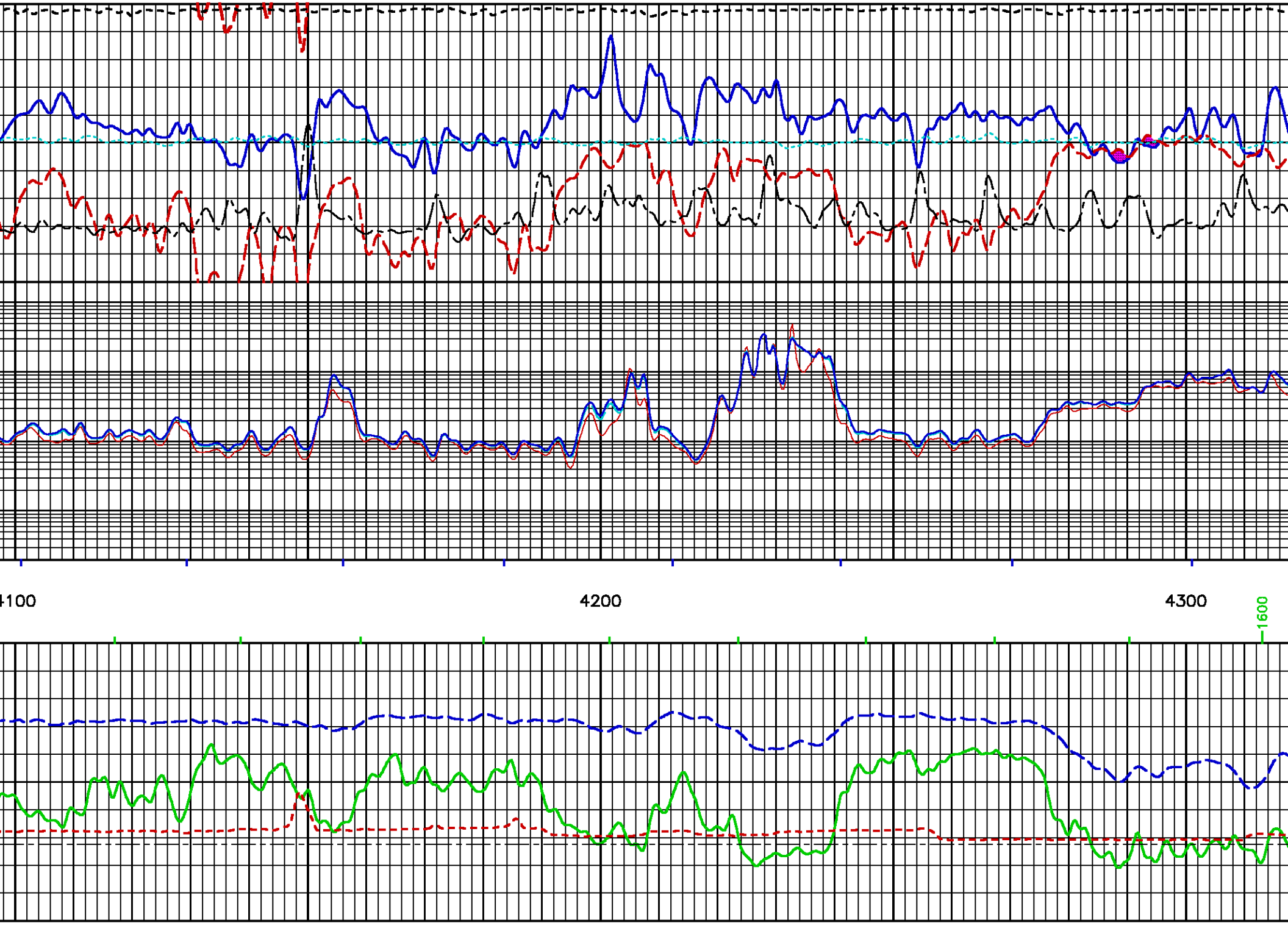
1300
1700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4200
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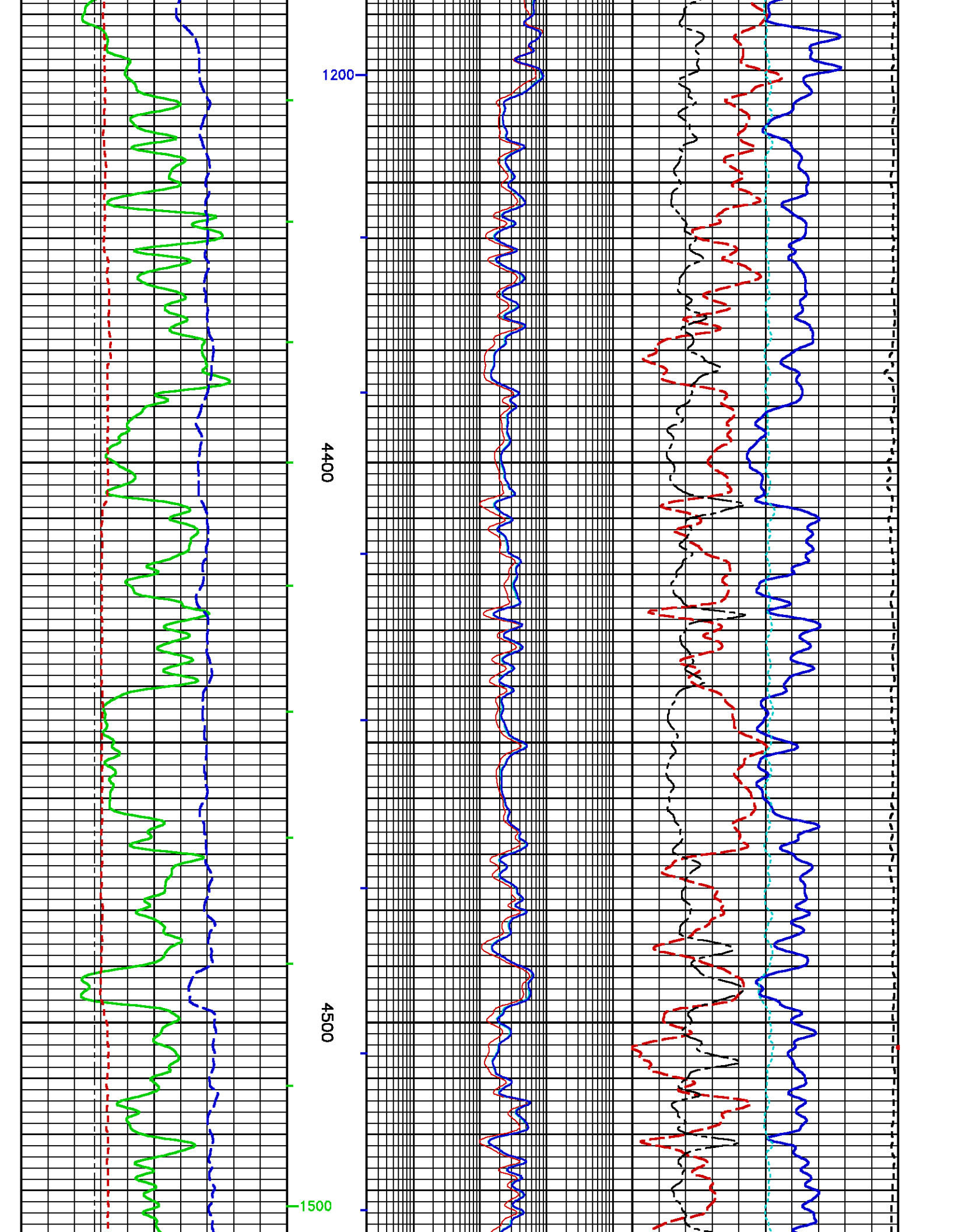
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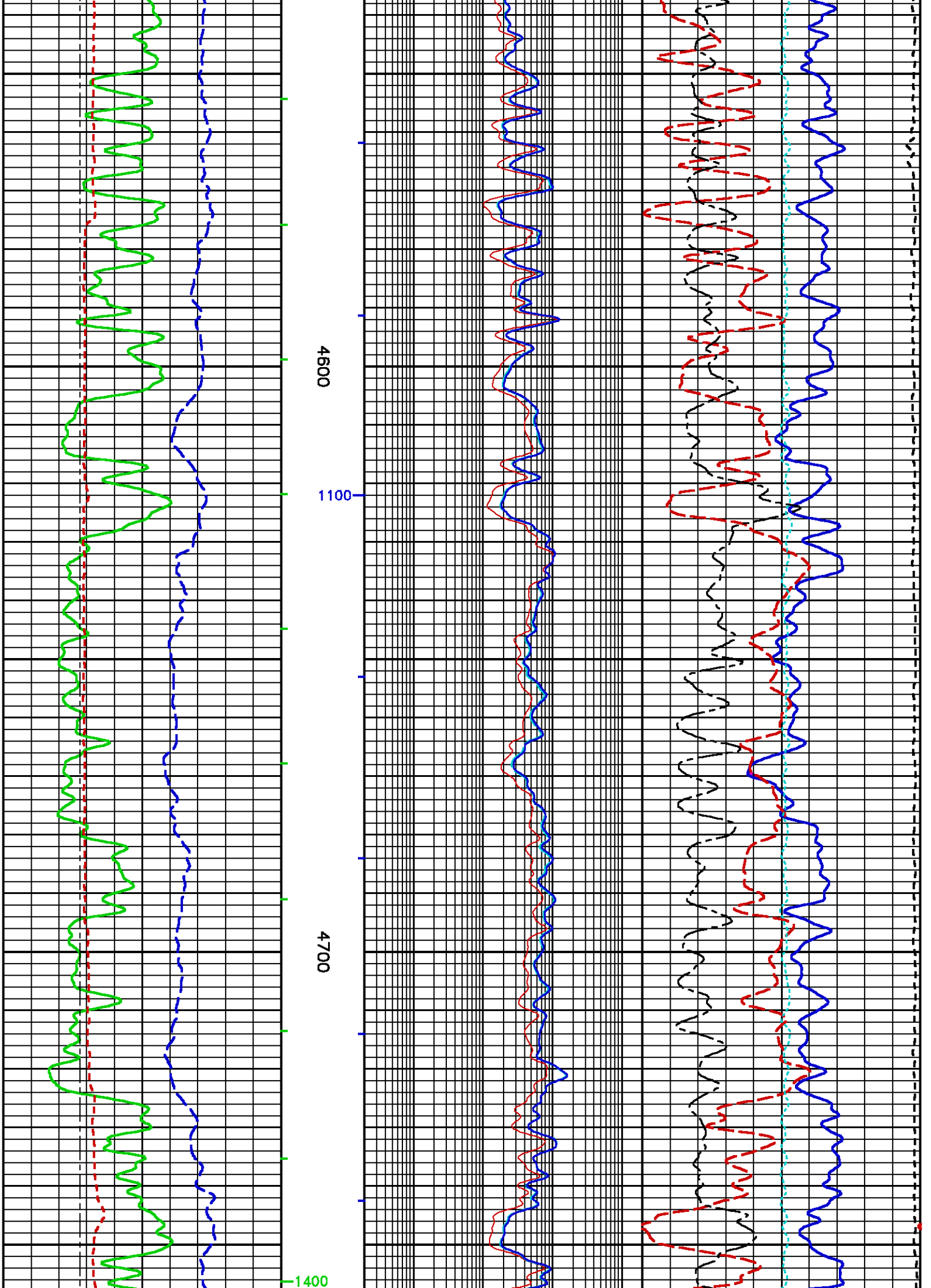
1500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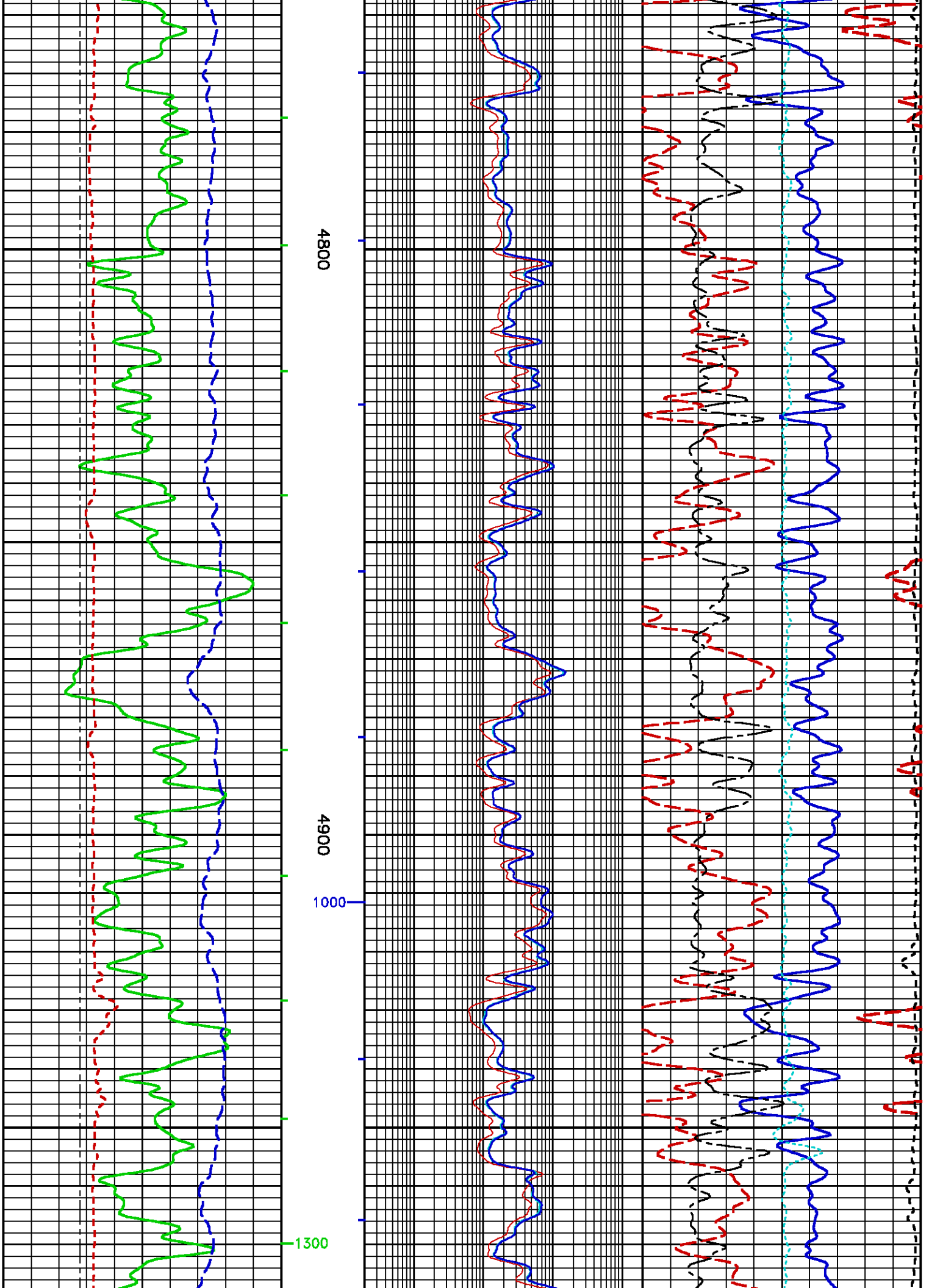
1400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4900
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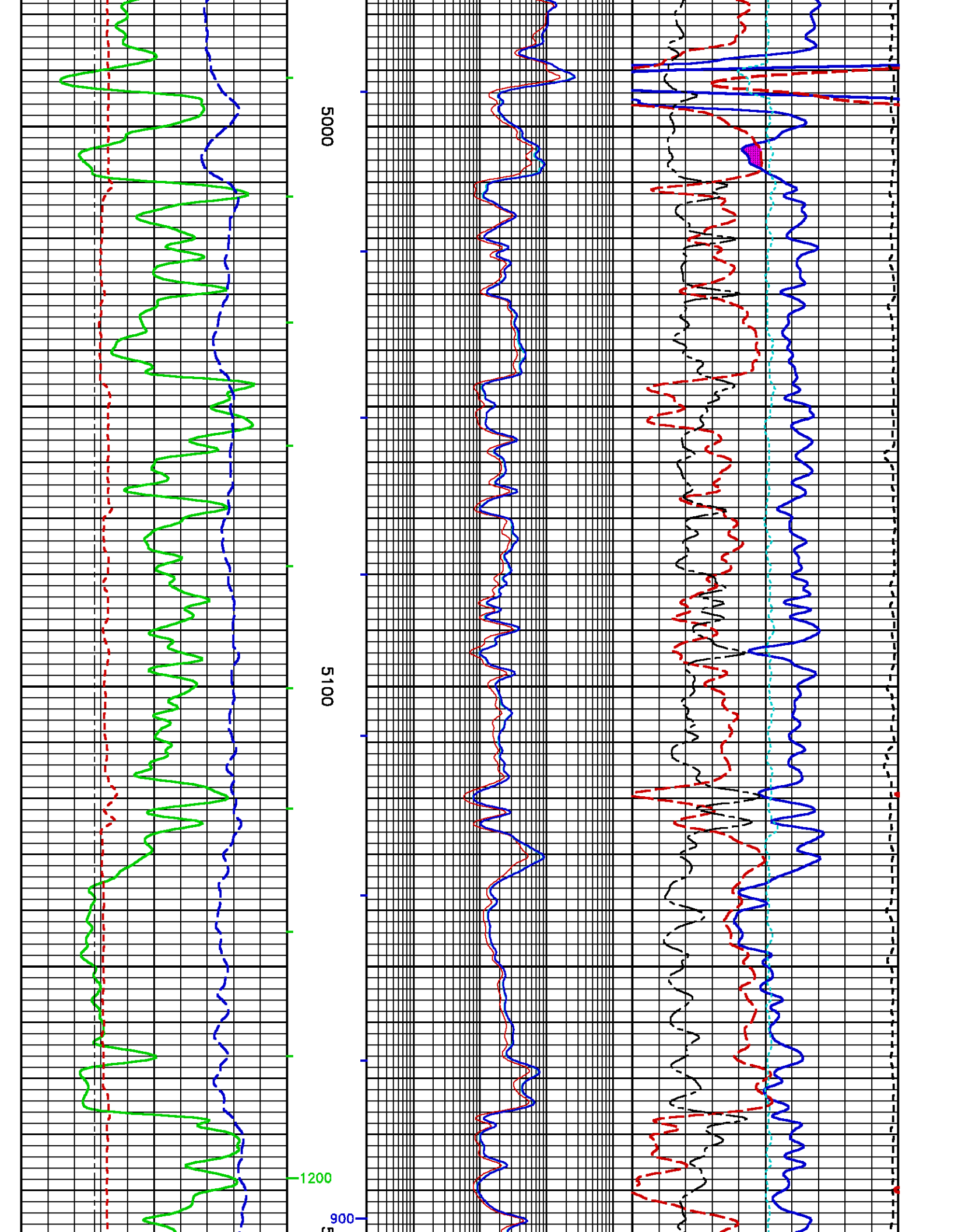
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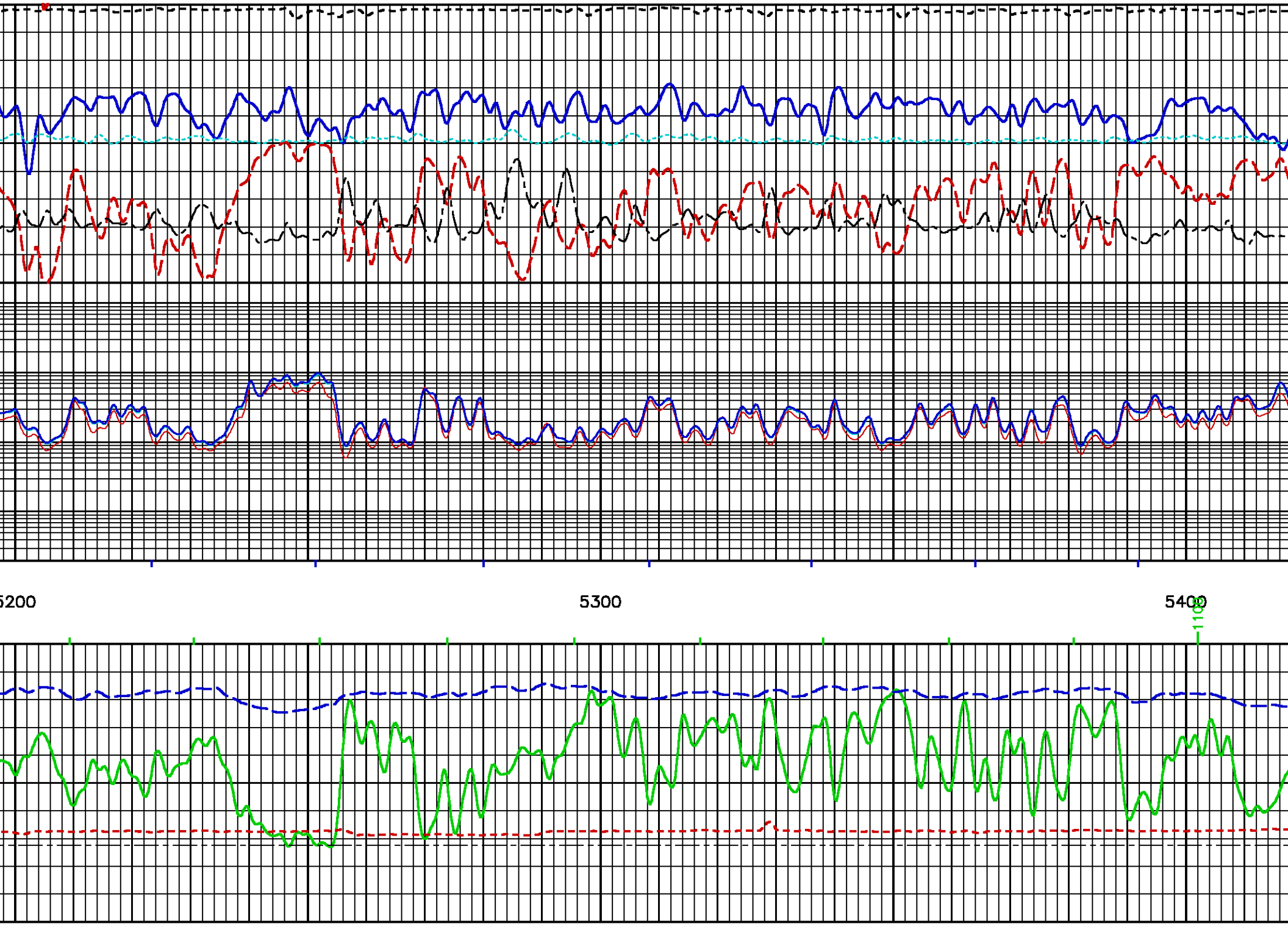
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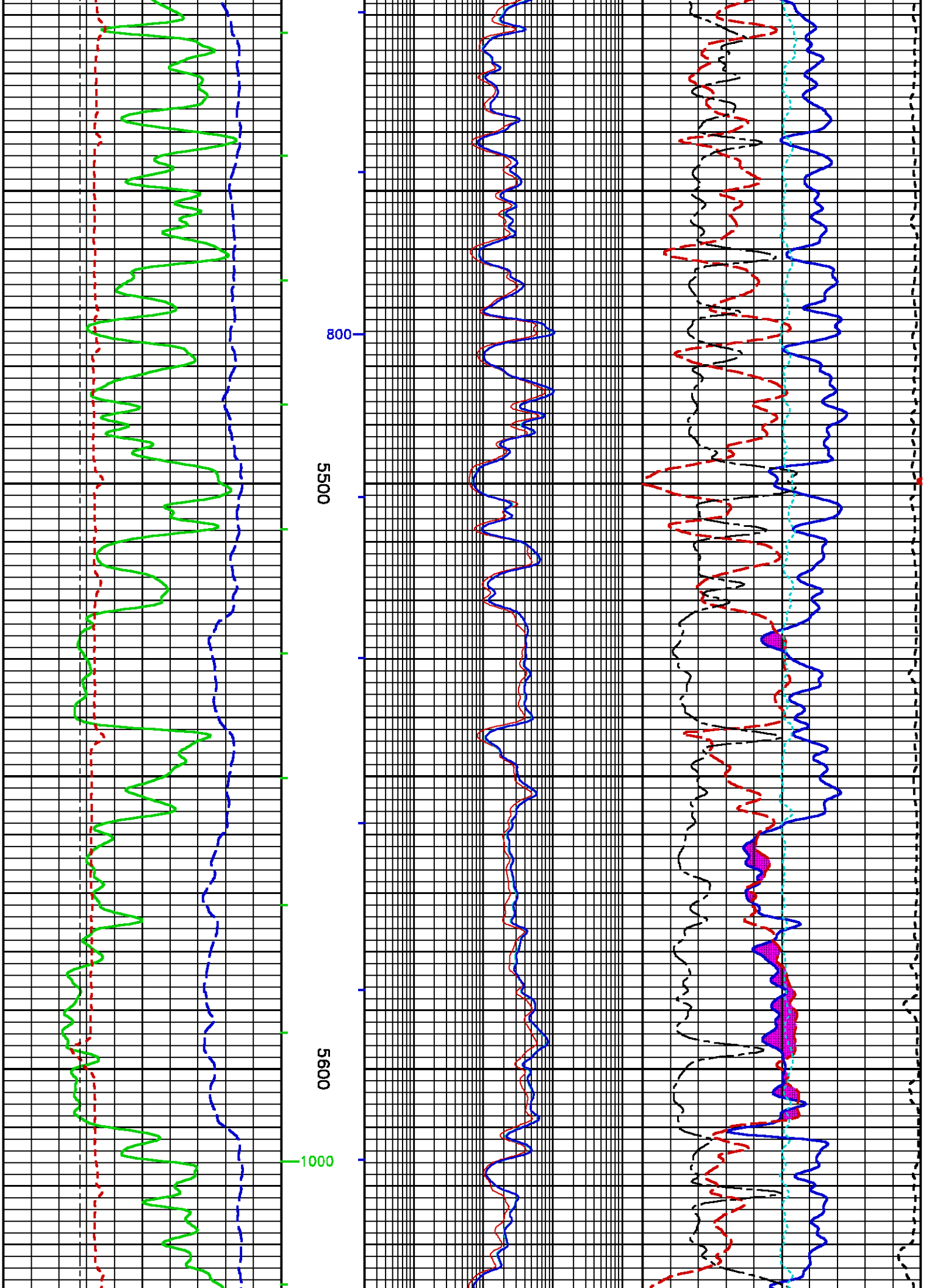
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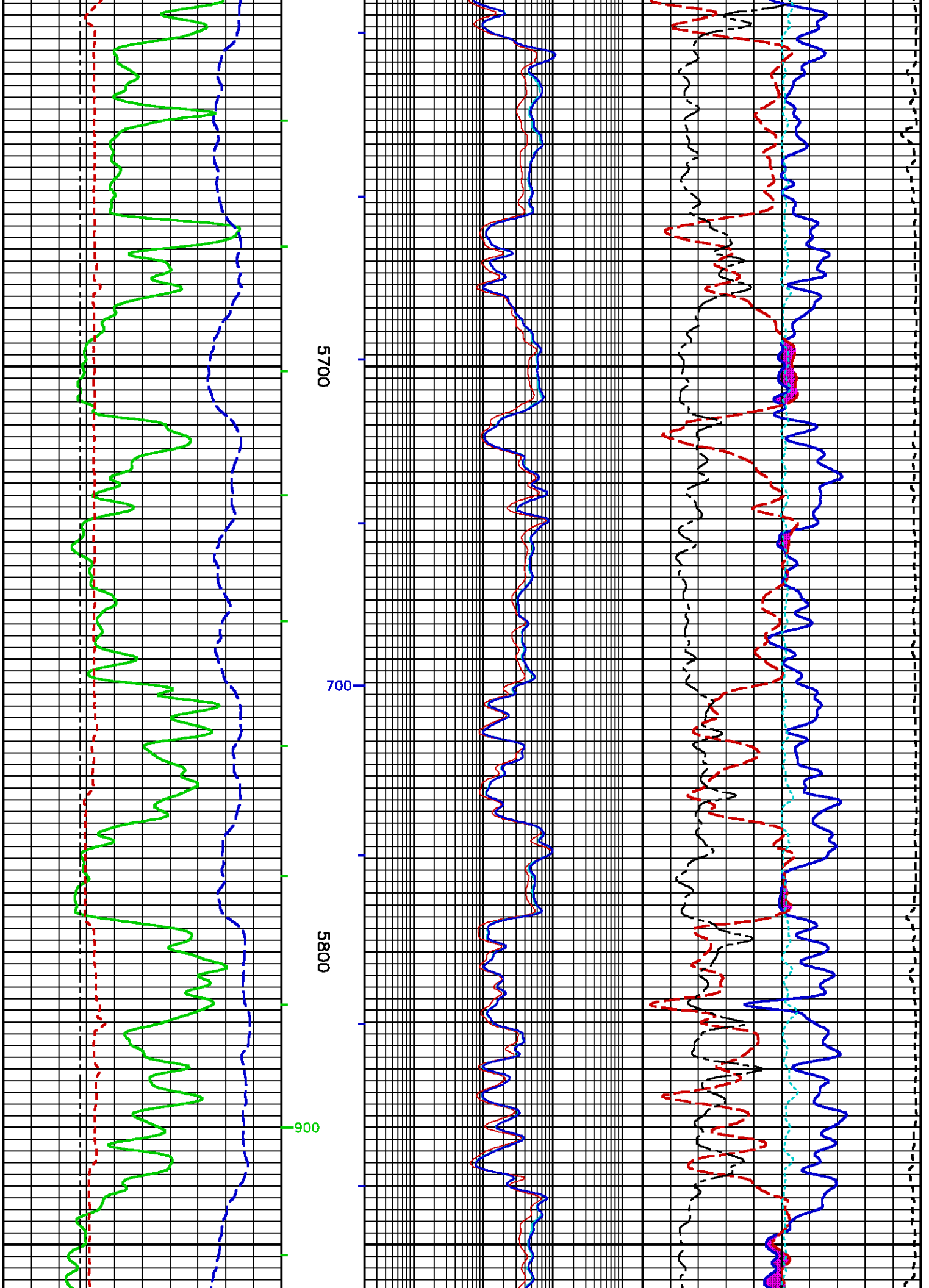
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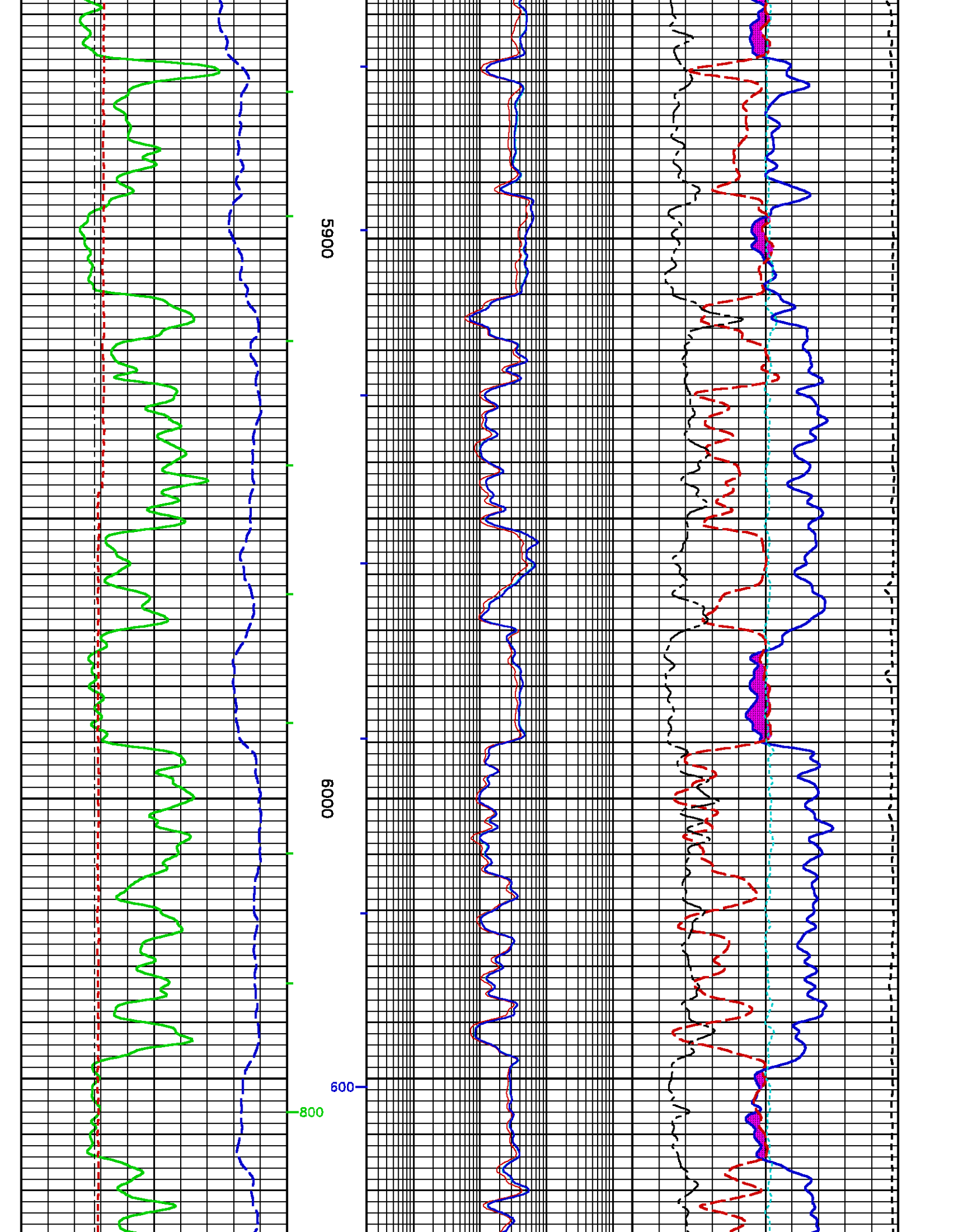
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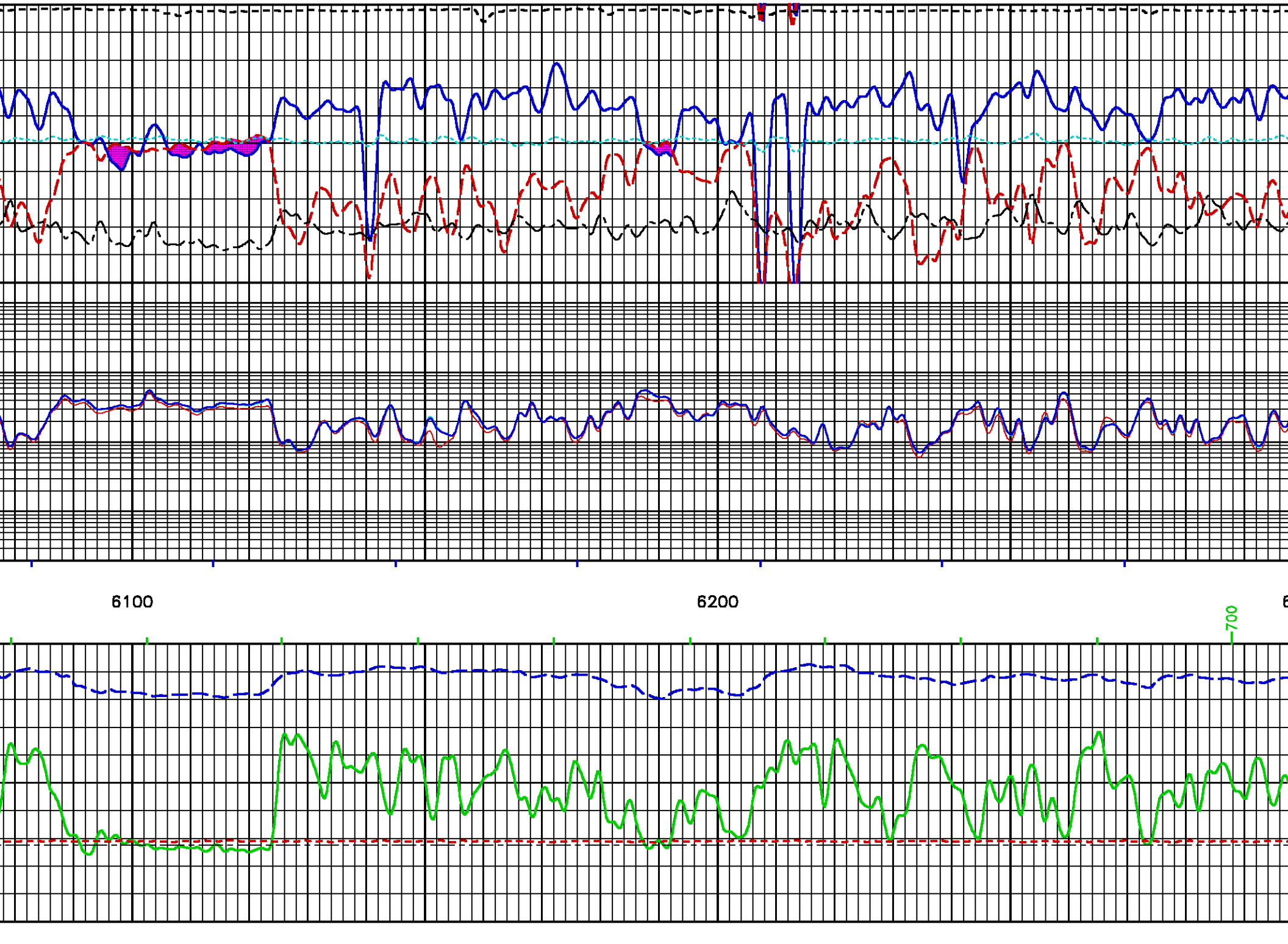
600
800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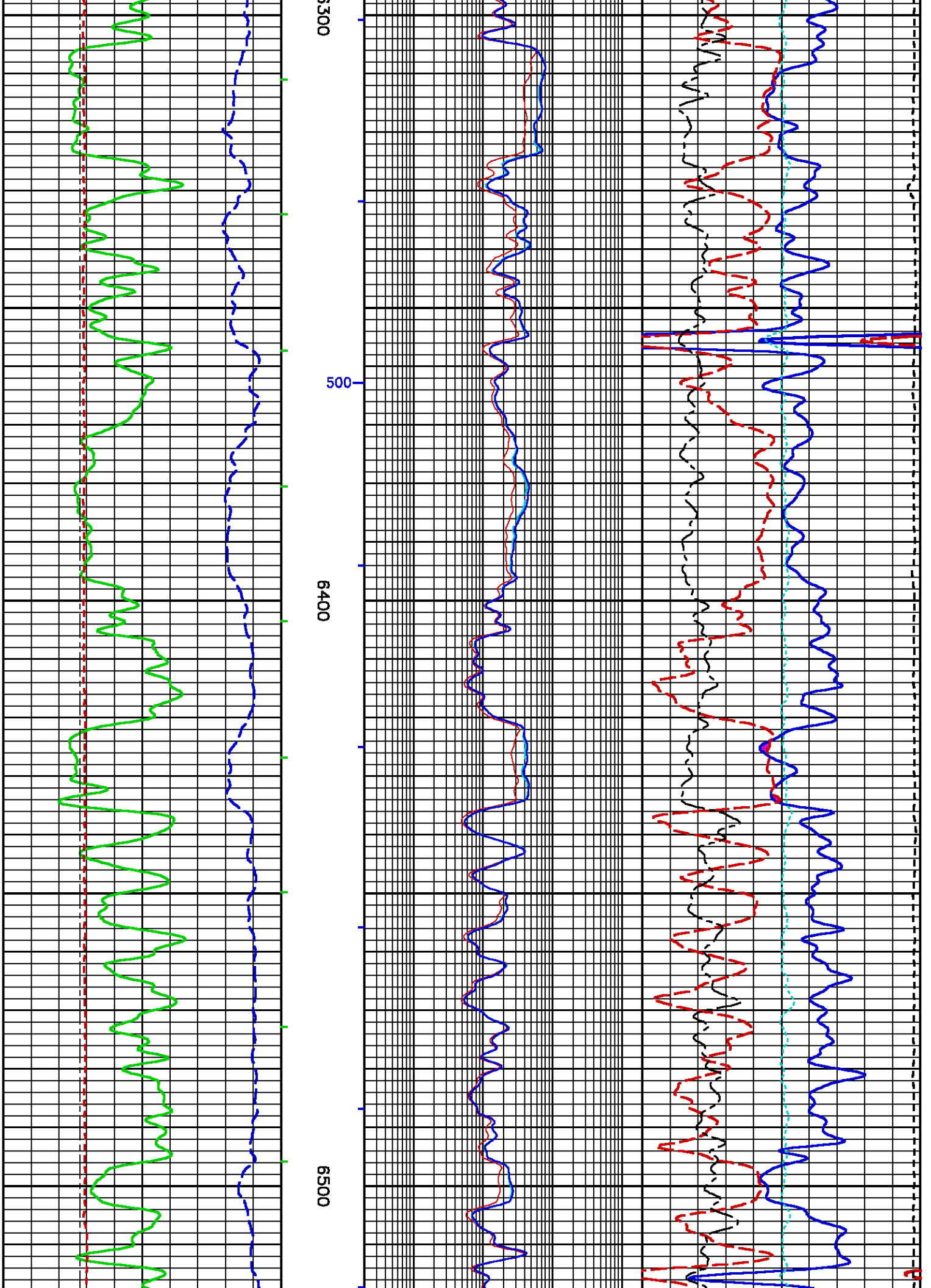
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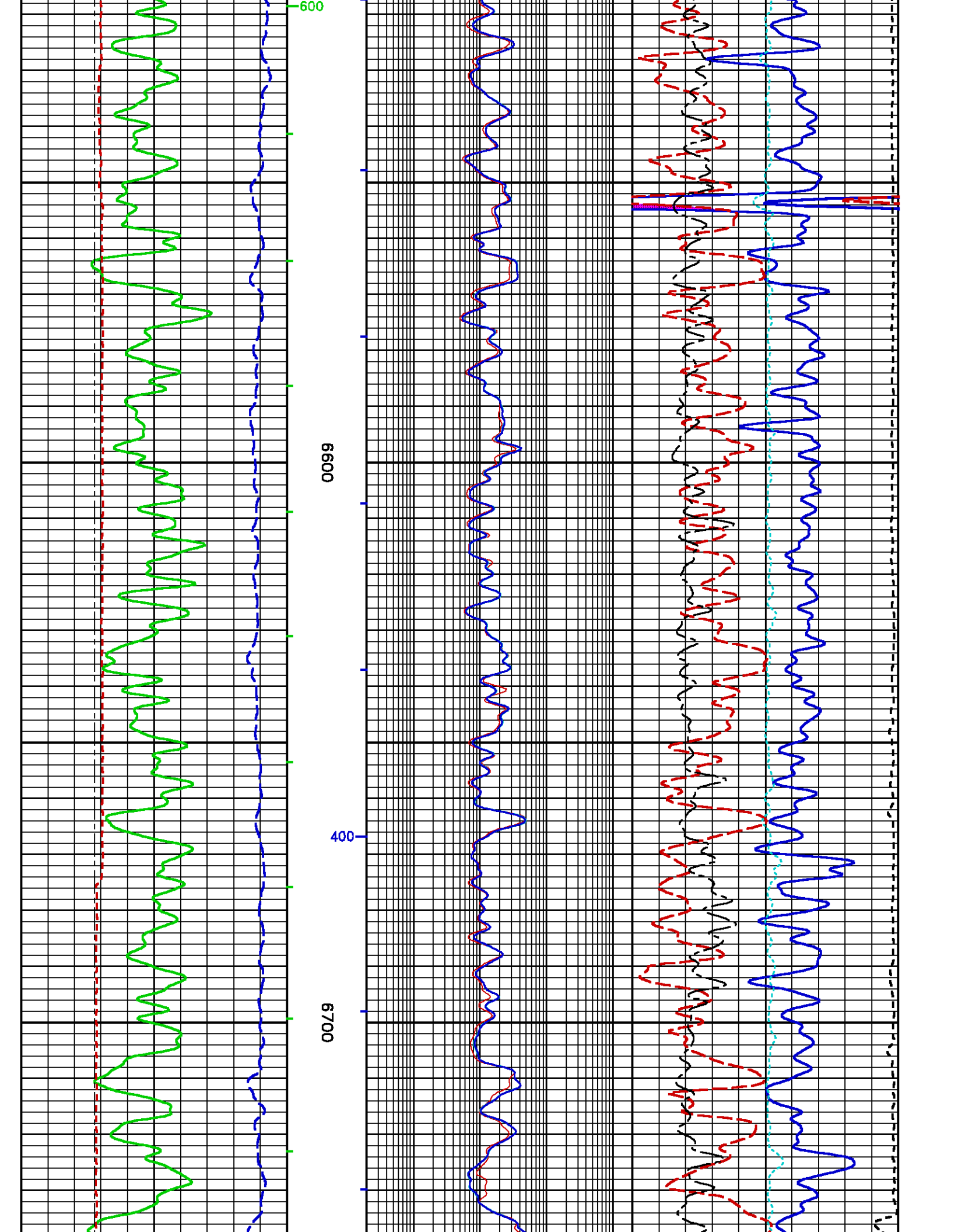
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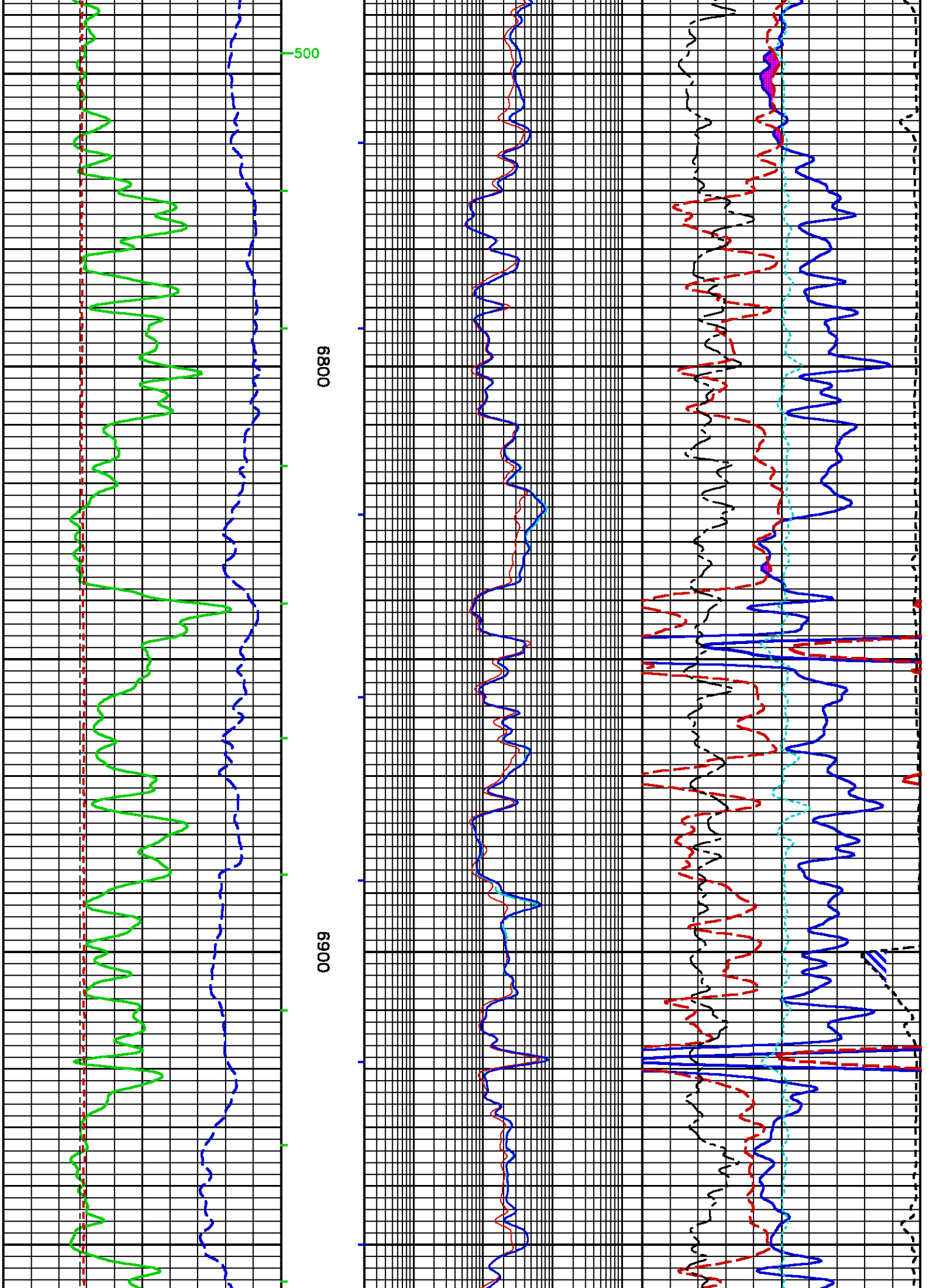
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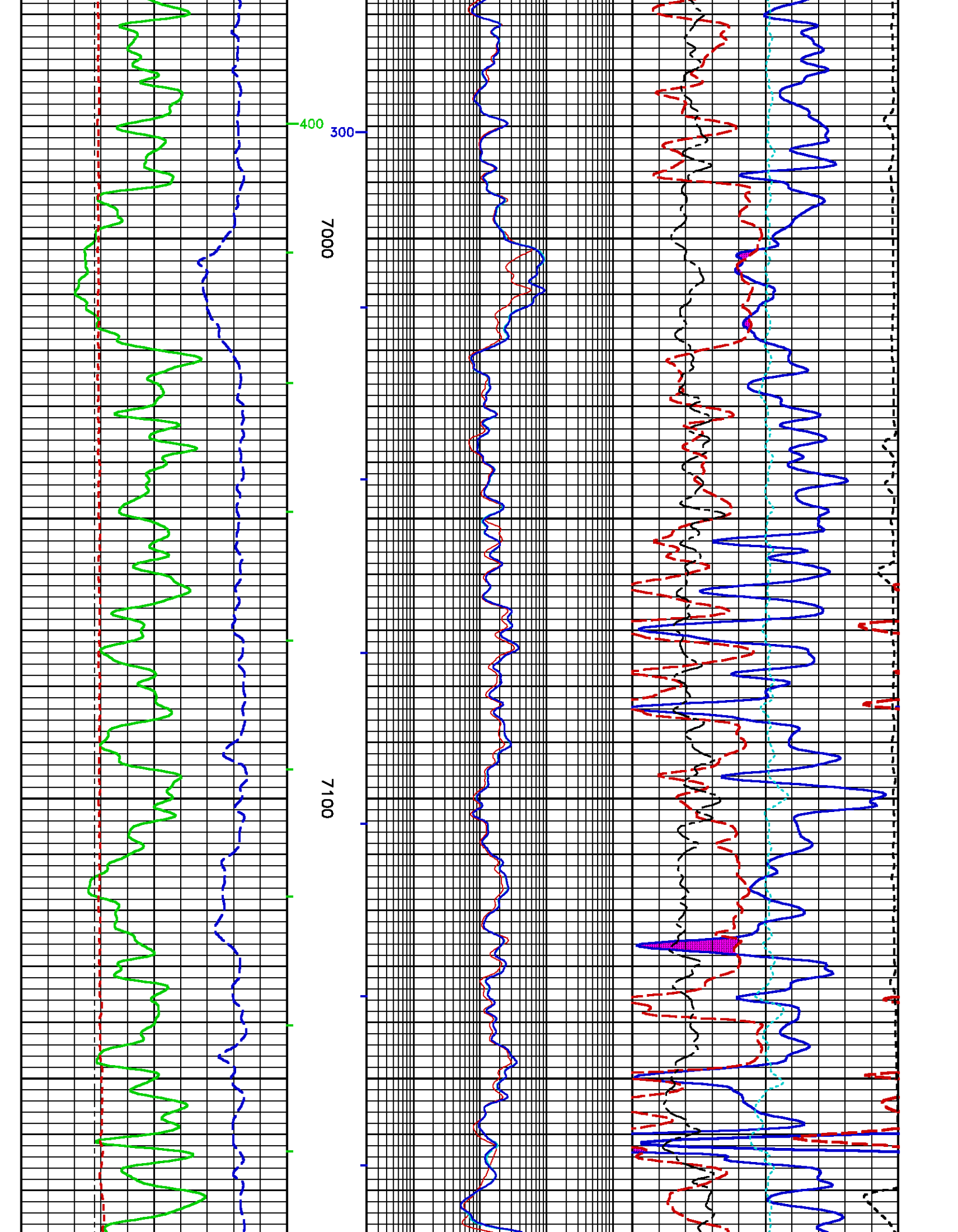
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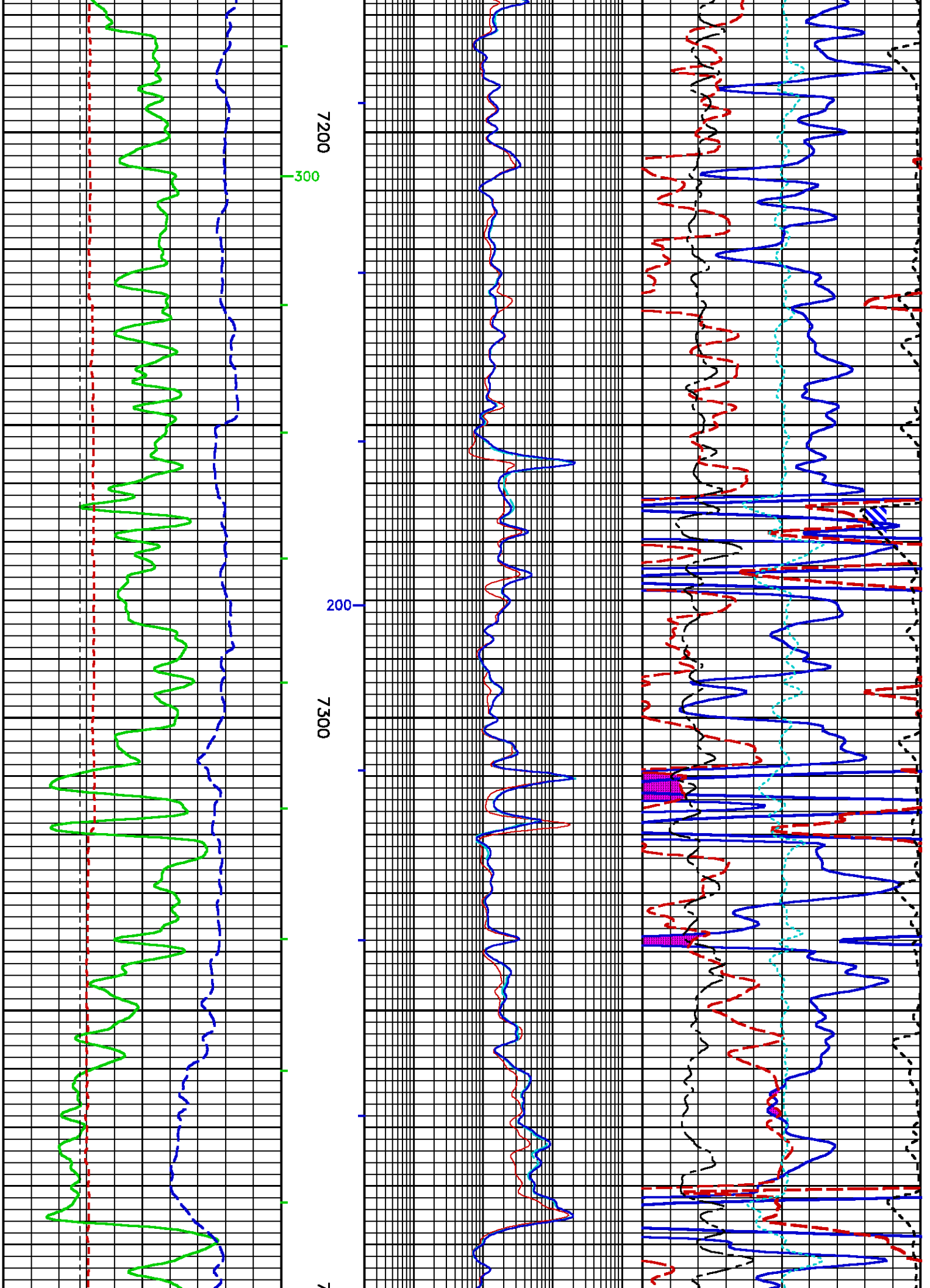
7100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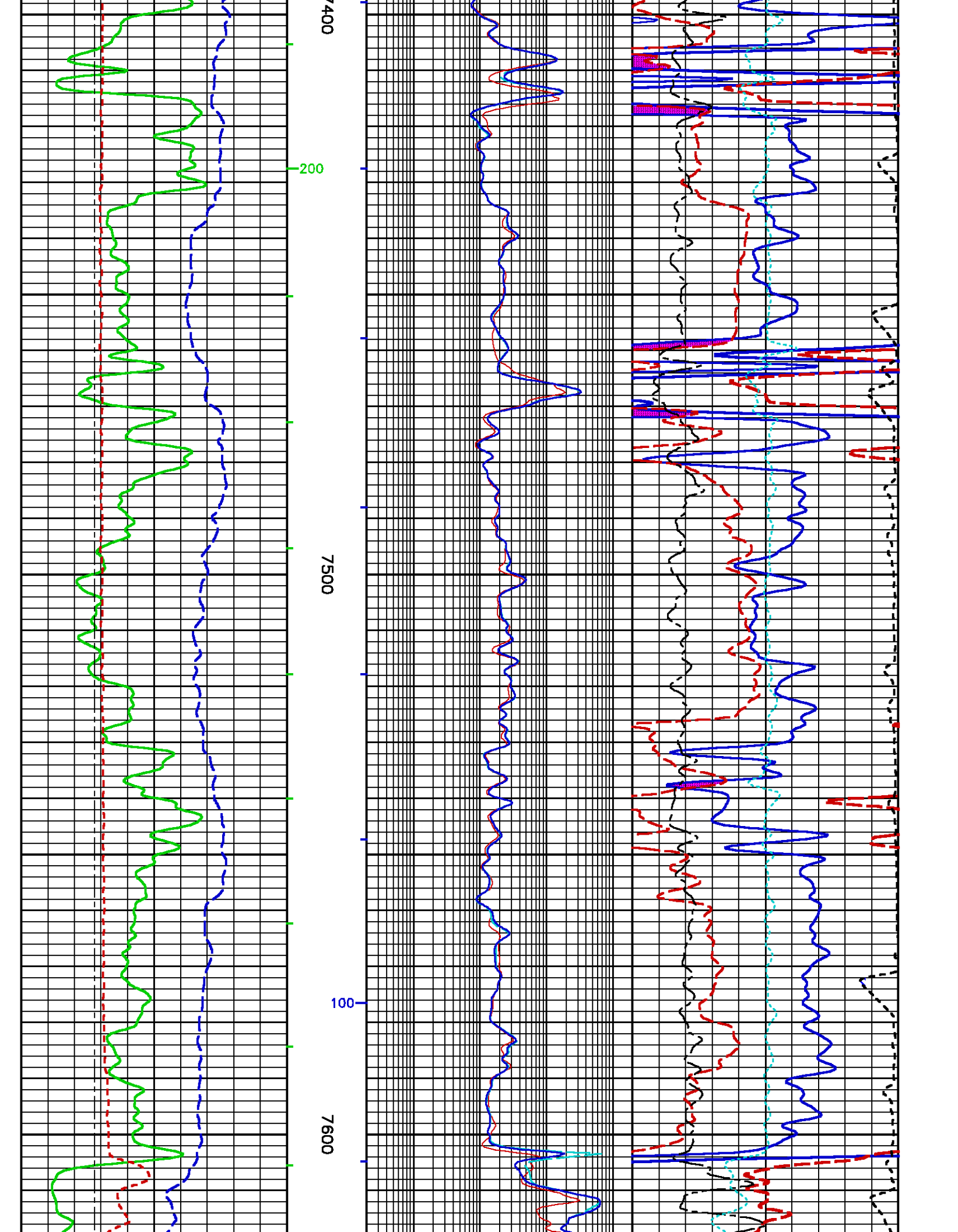
7300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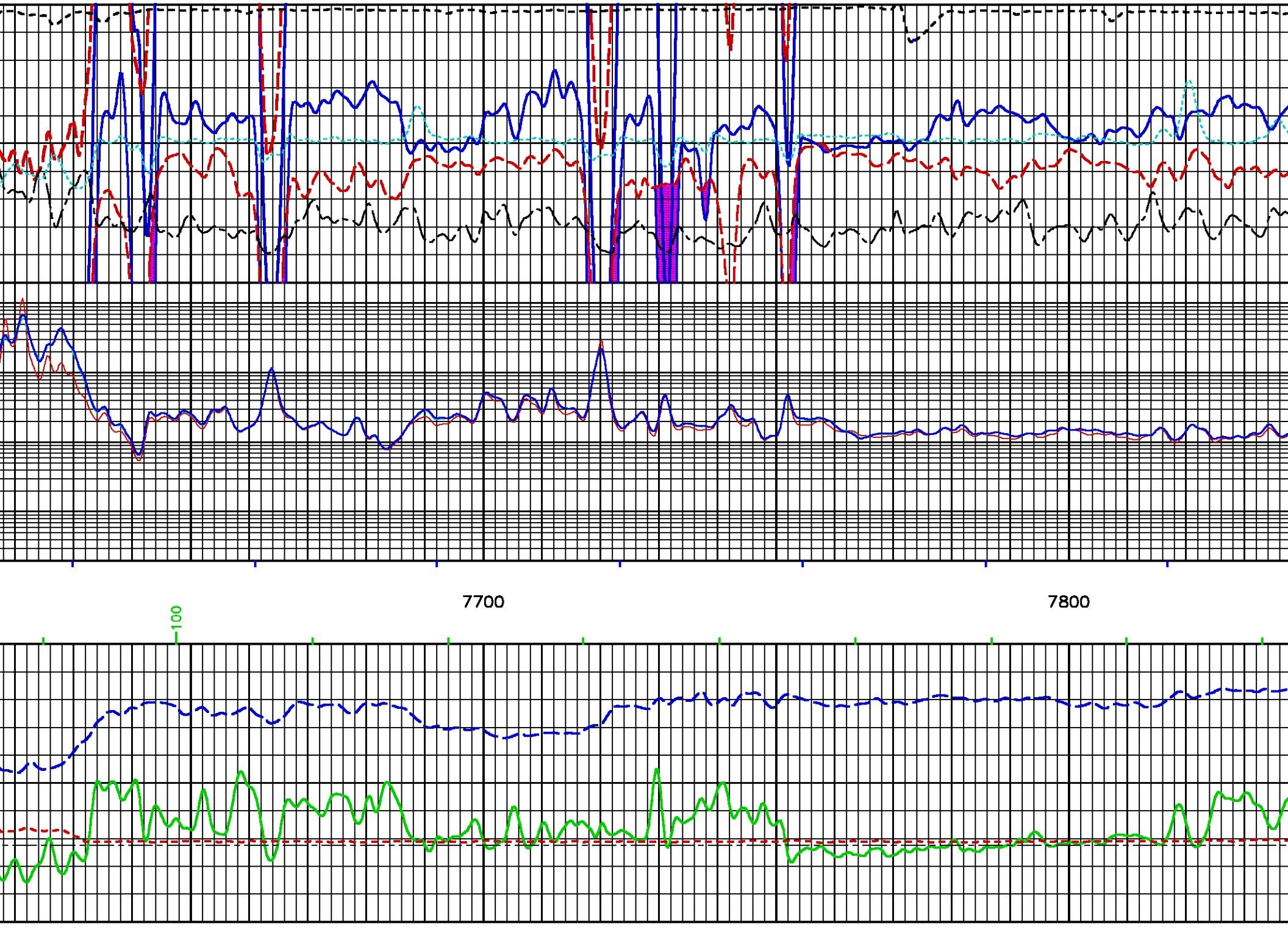
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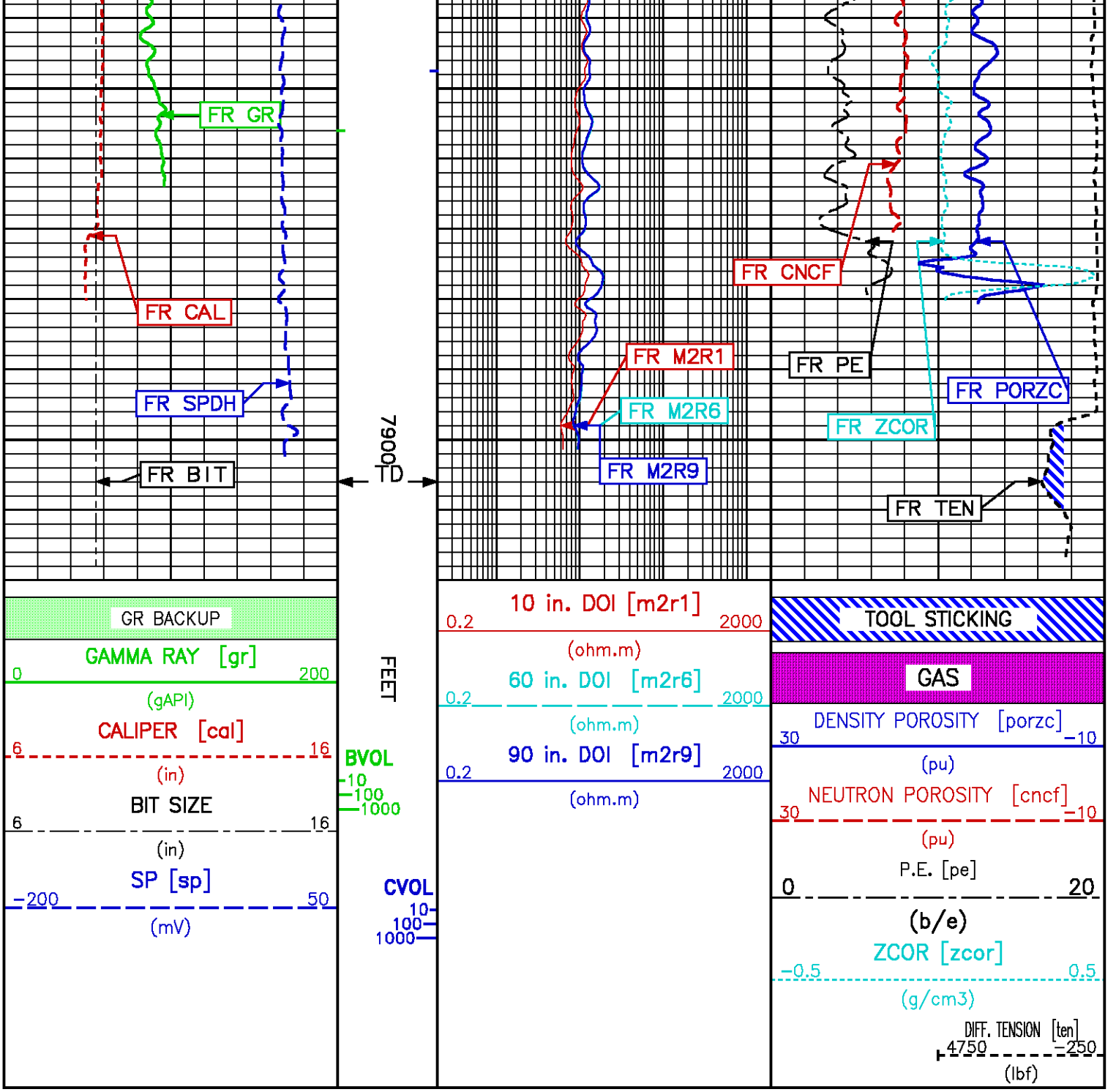


REPEAT LOG

ECLIPS 6.1i Aug 06, 2010
Updates: 1,2 Patches: 2

Mon Jun 10 06:22:32 2013

Pcrplt /main/62 Cplot Pdf_Cpp /main/16 Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/633672/m876a_MSLAM02.prm
LOGGING MODE: DEPTH DIRECTION: UP

TOP DEPTH: 1038.500 ft BOTTOM DEPTH: 1447.207 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		''	''
	FILTER (.1)	medium (1)		''	''
Y AXIS CALIPER	FILTER ()	medium (1)		''	''
TENSION	FILTER ()	medium (1)		''	''
GR	FILTER ()	medium (1)		''	''
CN	FILTER ()	medium (1)		''	''
CALIPER	FILTER ()	medium (1)		''	''
	FILTER (.h)	medium (1)		''	''
	FILTER (.1)	medium (1)		''	''
ZDL MED RES	FILTER (hrd1*)	medium		''	''
	FILTER (hrd1s*)	medium		''	''
	FILTER (hrd2*)	medium		''	''
	FILTER (hrd2s*)	medium		''	''
	FILTER (soft*)	medium		''	''
SP-SPDH	FILTER ()	medium (1)		''	''

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	In	TOP	BOTTOM
	CASING THICKNESS	0.000	In	''	''
BIT SIZE	BIT SIZE	8.750	In	''	''
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	77.0	degF	''	''
	MUD SAMPLE RES	1.000	ohm.m	''	''
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	''	''
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		''	''
	CALIPER/FIXED DIA. (zdbh*)	USE CALIPER		''	''
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	In	''	''
	FIXED DIAMETER (mbh*)	8.750	In	''	''
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		''	''

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
2446 CN MATRIX	2446 MATRIX	SANDSTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY	900	ppm	''	''
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		''	''
	BIT SIZE BEHIND CSNG	7.875	In	''	''

ZDL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
MUD DENSITY	MUD DENSITY	14.50	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.680	g/cm3	''	''
	RHOfluid	1.000	g/cm3	''	''
ZDL	DENX TRACKING	ON		''	''

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft) TOP	BOTTOM
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		''	''
	ABC to CALCULATE	STANDOFF		''	''
	STANDOFF	1.50	In	''	''
	TOOL POSITION	ECCENTERED		''	''
	Rmud MULTIPLIER	1.000		''	''

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Jun 9 22:05:13 2013	BIT SIZE
F1:BVOL	Jun 9 22:05:13 2013	BOREHOLE VOLUME
F1:CAL	Jun 9 22:05:13 2013	CALIPER

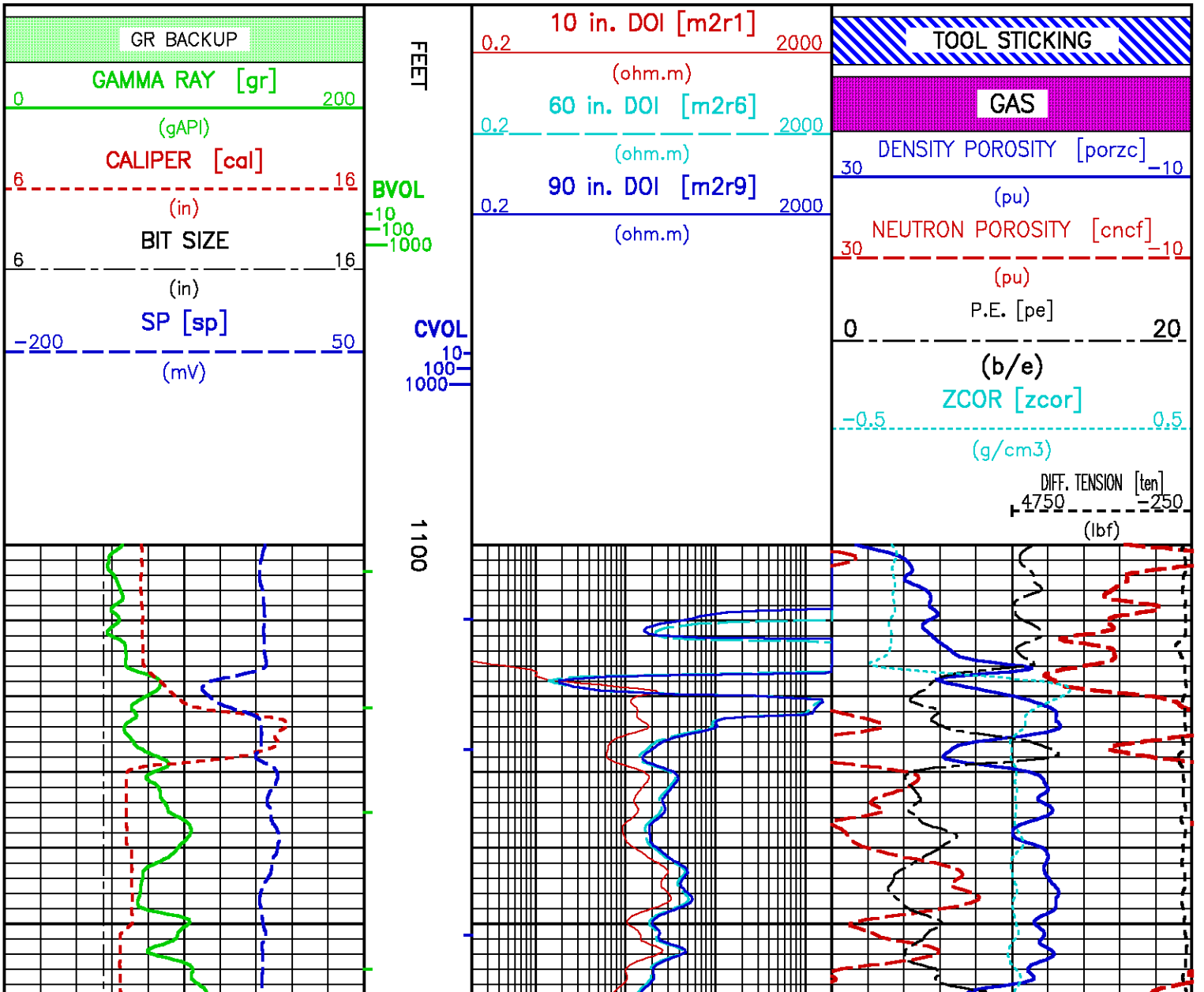
F1:CNCF	Jun 9 22:05:13 2013	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Jun 9 22:05:13 2013	CEMENT VOLUME
F1:GR	Jun 9 22:05:13 2013	GAMMA RAY
F1:M2R1	Jun 9 22:05:13 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Jun 9 22:05:13 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Jun 9 22:05:13 2013	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Jun 9 22:05:13 2013	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Jun 9 22:05:13 2013	CORRECTED POROSITY
F1:SP	Jun 9 22:05:13 2013	SPONTANEOUS POTENTIAL
F1:TEN	Jun 9 22:05:13 2013	DIFFERENTIAL TENSION
F1:ZCOR	Jun 9 22:05:13 2013	DENSITY CORRECTION

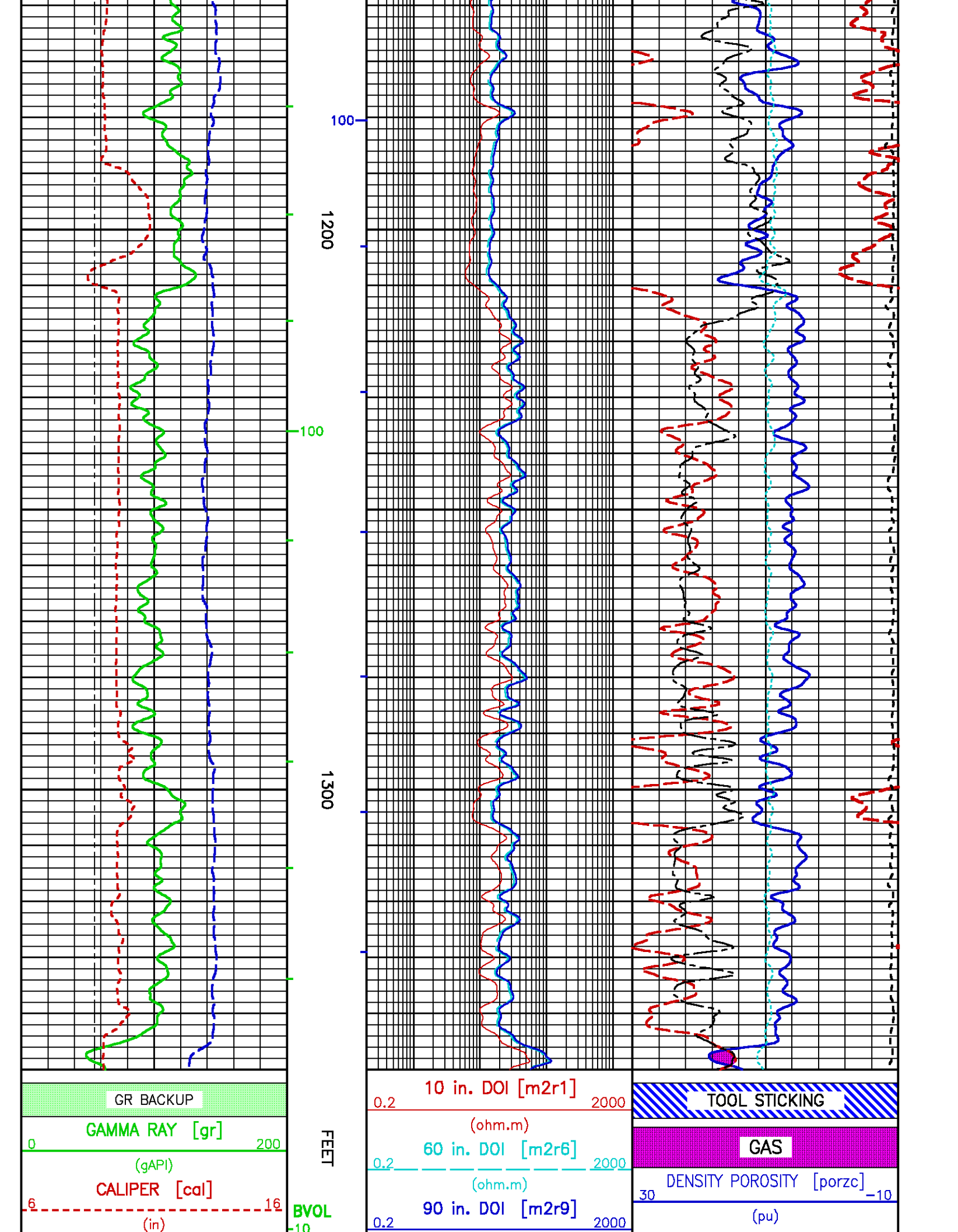
CURVE MEASURE POINT OFFSET

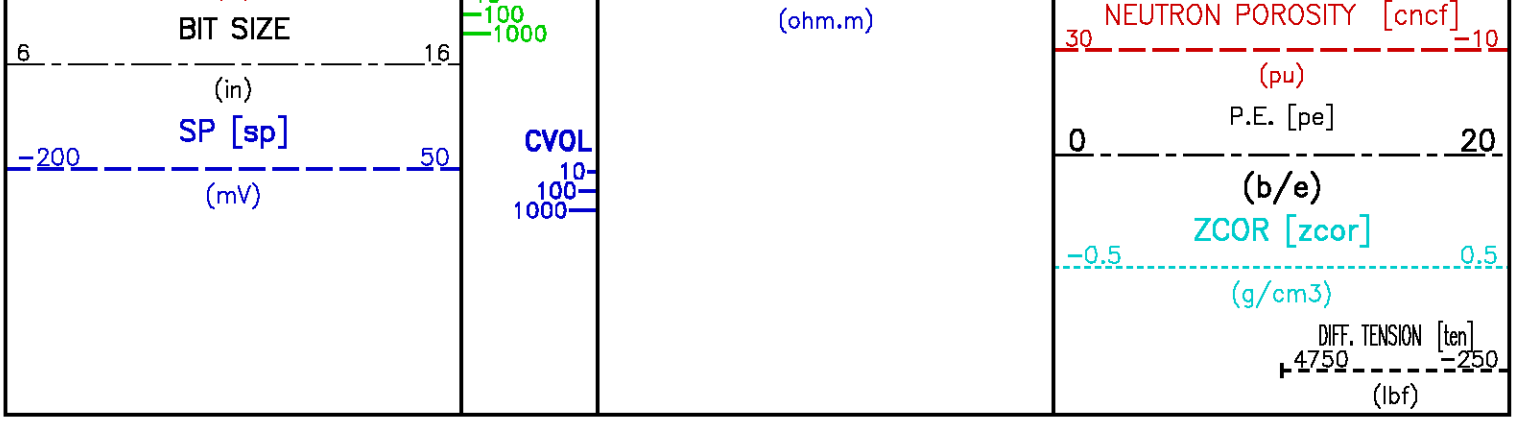
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	52.25	M2R9	8.00	SP	14.00
CAL	35.00	M2R1	8.00	PE	34.25	TEN	0.00
CNCF	45.25	M2R6	8.00	PORZC	34.25	ZCOR	34.25

Presentation : rks6726:/dat1a/633672/COMPOSITE_REPEAT.pdf [5"/100' Scale]
Plot Interval : 1100 - 1350 Feet

Data File 1 : F1 : rks6726:/dat1a/633672/REPEAT.xtf
Created On : Jun 9 22:05:13 2013
Company : WPX ENERGY
Well : DUGGAN RWF 14-29
Field : RULISON
File Interval : 975.25 - 1447.5 Feet
Oct : m876g_MS




100
1200
100
1300
FEET
GR BACKUP
GAMMA RAY [gr]
0
200
(gAPI)
CALIPER [cal]
6
16
(in)
BVOL
10
10 in. DOI [m2r1]
0.2
2000
(ohm.m)
60 in. DOI [m2r6]
0.2
2000
(ohm.m)
90 in. DOI [m2r9]
0.2
2000
TOOL STICKING
GAS
DENSITY POROSITY [porzc]
30
-10
(pu)



CALIBRATION / VERIFICATION SUMMARY

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XA 370718 DATE/TIME PERFORMED: Thu Jun 6 11:09:53 2013

UNIT #: 3885TD HL6726 CALB JIG #: 4702NK DA-501

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	478.73	1358.91	880.2 (830.0 960.0)	0.170	81.59	231.59	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XA 370718 DATE/TIME PERFORMED: Thu Jun 6 11:18:16 2013

UNIT #: 3885TD HL6726 VERI JIG #: 4702NK DA-501

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	491.40	1360.53	0.170	83.74	231.86	148.12 (140.00 160.00)

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1329XA 370718 DATE/TIME PERFORMED: Sun Jun 9 21:18:48 2013 DAYS SINCE CAL: 3

UNIT #: 3885TD HL6726 VERI JIG #: 4702NK DA-501

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	140.98	997.44	0.170	24.03	169.98	145.96 (138.12 158.12)

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 1329XA 370718 DATE/TIME PERFORMED: Mon Jun 10 05:26:35 2013 DAYS SINCE CAL: 3

UNIT #: 3885TD HL6726 VERI JIG #: 4702NK DA-501

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	140.04	1033.98	0.170	23.87	176.21	152.34 (135.96 155.86)

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2446XA 10068420 DATE/TIME PERFORMED: Wed Jun 5 15:25:06 2013

UNIT #: 3885TD HL6726 CALIBRATOR #: 2437XB 12170130 SOURCE #: 4717XS 0N-918

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	NOMINAL SSN/LSN	CORRECTION FACTOR	POROSITY (pu)
LSN	623.32	632.79				
SSN	1608.44	1661.90				
RATIO			2.62631	2.75100	1.04748 (0.97000 1.07000)	
CN						21.358

CN PRIMARY VERIFICATION SUMMARY

TOOL #: 2446XA 10068420 DATE/TIME PERFORMED: Wed Jun 5 15:31:44 2013

UNIT #: 3885TD HL6726 ICE BLOCK #: 4717ND 0D-035

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	1907.49	1999.05				
SSN	4275.36	4675.20				
RATIO			2.33871	1.04748	2.45097	
CN						17.200

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2446XA 10068420 DATE/TIME PERFORMED: Sun Jun 9 21:21:41 2013 DAYS SINCE CAL: 4

UNIT #: 3885TD HL6726 ICE BLOCK #: 4717ND 0D-035

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	1924.98	2018.28				
SSN	4323.34	4732.66				
RATIO			2.34489	1.04748	2.45798	
CN						17.297 (15.200 19.200)

CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2446XA 10068420 DATE/TIME PERFORMED: Mon Jun 10 05:23:12 2013 DAYS SINCE CAL: 4

UNIT #: 3885TD HL6726 ICE BLOCK #: 4717ND 0D-035

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	1961.74	2058.72				
SSN	4336.14	4748.03				
RATIO			2.30630	1.04748	2.41721	
CN						16.754 (15.297 19.297)

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2234XA 10334913 DATE/TIME PERFORMED: Wed Jun 5 11:24:22 2013

UNIT #: 3885TD HL6726

	SMALL RING	LARGE RING	MULT	ADD	SMALL RING (in)	LARGE RING (in)
CALIPER	2530.4	1738.8	-0.00774	27.45396	7.875	14.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913 DATE/TIME PERFORMED: Sun Jun 9 21:58:47 2013 DAYS SINCE CAL: 4

UNIT #: 3885TD HL6726

	I.D.	MULT	ADD	I.D. (in)
CALIPER	2404.4	-0.00774	27.60503	9.001

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913 DATE/TIME PERFORMED: Mon Jun 10 04:56:20 2013 DAYS SINCE CAL: 4

UNIT #: 3885TD HL6726

	I.D.	MULT	ADD	I.D. (in)
CALIPER	2394.0	-0.00774	27.60503	9.081 (8.501 – 9.501)

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2234XA 10334913 DATE/TIME PERFORMED: Wed Jun 5 11:59:36 2013

UNIT: 3885TD HL6726 CALB BLKS: 2225XA 094299 CS SRC: 4703NT 27771B

SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)
223.9 (220.0 – 230.0)	223.8 (220.0 – 230.0)	1460.3	1570.3

	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	24120.6	12858.3	0.619 (0.585 – 0.665)	1.699	0.003	2.150
AL	13955.3	1276.7		2.695	-0.009	
AL + SHIM	19274.3	2243.7		2.613	0.157	
MG + SHIM (HI PE)	12031.6	6182.0	0.246 (0.210 – 0.270)			8.700
RATIO AL + SHIM/AL	1.38 (1.32 – 1.42)	1.76 (1.64 – 1.84)				
RATIO MG/AL	1.73 (1.65 – 1.78)	10.07 (9.40 – 10.20)				

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913 DATE/TIME PERFORMED: Sun Jun 9 21:17:50 2013 DAYS SINCE CAL: 4

UNIT #: 3885TD HL6726

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1546.6 (1470.3 – 1670.3)	224.6 (220.0 – 230.0)	1170.1 (1100.0 – 1550.0)
SS	1458.5 (1360.3 – 1560.3)	224.7 (220.0 – 230.0)	1258.2 (1100.0 – 1550.0)

LV (V)	PAD CURRENT (mA)
5.0 (4.8 – 5.2)	65.8 (50.0 – 120.0)

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA 10334913 DATE/TIME PERFORMED: Mon Jun 10 05:21:31 2013 DAYS SINCE CAL: 4

UNIT #: 3885TD HL6726

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1569.4 (1470.3 – 1670.3)	225.6 (220.0 – 230.0)	1178.4 (1100.0 – 1550.0)
SS	1456.2 (1360.3 – 1560.3)	224.0 (220.0 – 230.0)	1265.8 (1100.0 – 1550.0)

LV (V)	PAD CURRENT (mA)
5.0 (4.8 – 5.2)	65.3 (50.0 – 120.0)

HDIL PRIMARY CALIBRATION SUMMARY

TOOL #: 1515MA 364355 DATE/TIME PERFORMED: Wed Feb 13 13:28:44 2013

UNIT #: ncl1 r612 GRCOND ID & DATE: DFAULT 0618102

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	0.002 (-0.200 – 0.200)	0.003 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.003 (-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 0 Q	0.004 (-1.000 – 1.000)	0.005 (-0.200 – 0.200)	0.002 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.000 (-0.100 – 0.100)
Coil 1 R	-0.005 (-0.200 – 0.200)	0.003 (-0.100 – 0.100)	0.005 (-0.100 – 0.100)	0.003 (-0.100 – 0.100)	0.003 (-0.100 – 0.100)	0.003 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.000 (-0.100 – 0.100)
Coil 1 Q	0.004 (-1.000 – 1.000)	0.004 (-0.200 – 0.200)	0.000 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)
Coil 2 R	0.011 (-0.200 – 0.200)	0.004 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.003 (-0.100 – 0.100)	0.006 (-0.100 – 0.100)	0.008 (-0.100 – 0.100)
Coil 2 Q	-0.006 (-1.000 – 1.000)	-0.006 (-0.200 – 0.200)	-0.002 (-0.100 – 0.100)	-0.002 (-0.100 – 0.100)	-0.003 (-0.100 – 0.100)	-0.005 (-0.100 – 0.100)	-0.003 (-0.100 – 0.100)	-0.003 (-0.100 – 0.100)
Coil 3 R	0.003 (-0.100 – 0.100)	0.005 (-0.100 – 0.100)	0.003 (-0.100 – 0.100)	0.007 (-0.100 – 0.100)	0.006 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	0.003 (-0.100 – 0.100)	0.004 (-0.100 – 0.100)
Coil 3 Q	-0.009 (-0.500 – 0.500)	-0.007 (-0.200 – 0.200)	-0.004 (-0.100 – 0.100)	0.000 (-0.100 – 0.100)	-0.000 (-0.100 – 0.100)	0.001 (-0.100 – 0.100)	0.002 (-0.100 – 0.100)	-0.001 (-0.100 – 0.100)
Coil 4 R	-0.013 (-0.200 – 0.200)	0.001 (-0.200 – 0.200)	-0.002 (-0.200 – 0.200)	-0.005 (-0.200 – 0.200)	-0.002 (-0.200 – 0.200)	0.001 (-0.200 – 0.200)	0.005 (-0.200 – 0.200)	-0.000 (-0.200 – 0.200)
Coil 4 Q	-0.010 (-1.000 – 1.000)	0.005 (-0.400 – 0.400)	-0.000 (-0.200 – 0.200)	0.001 (-0.200 – 0.200)	-0.002 (-0.200 – 0.200)	-0.004 (-0.200 – 0.200)	-0.005 (-0.200 – 0.200)	0.001 (-0.200 – 0.200)
Coil 5 R	-0.004 (-0.400 – 0.400)	0.002 (-0.400 – 0.400)	0.013 (-0.400 – 0.400)	0.005 (-0.400 – 0.400)	-0.000 (-0.400 – 0.400)	0.010 (-0.400 – 0.400)	0.005 (-0.400 – 0.400)	-0.005 (-0.400 – 0.400)
Coil 5 Q	-0.010 (-2.000 – 2.000)	0.001 (-0.800 – 0.800)	-0.003 (-0.400 – 0.400)	-0.005 (-0.400 – 0.400)	0.007 (-0.400 – 0.400)	0.007 (-0.400 – 0.400)	-0.004 (-0.400 – 0.400)	0.001 (-0.400 – 0.400)
Coil 6 R	0.002 (-1.000 – 1.000)	-0.007 (-1.000 – 1.000)	-0.005 (-1.000 – 1.000)	-0.031 (-1.000 – 1.000)	-0.011 (-1.000 – 1.000)	-0.008 (-1.000 – 1.000)	0.007 (-1.000 – 1.000)	0.012 (-1.000 – 1.000)
Coil 6 Q	-0.002 (-5.000 – 5.000)	0.011 (-2.000 – 2.000)	0.012 (-1.000 – 1.000)	-0.017 (-1.000 – 1.000)	-0.009 (-1.000 – 1.000)	-0.021 (-1.000 – 1.000)	0.004 (-1.000 – 1.000)	-0.015 (-1.000 – 1.000)

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	125.91 (100.00 – 150.00)	124.36 (100.00 – 150.00)	121.51 (98.00 – 150.00)	117.45 (96.00 – 140.00)	112.55 (92.00 – 140.00)	106.45 (87.00 – 130.00)	99.64 (82.00 – 120.00)	91.66 (76.00 – 110.00)
Coil 0 P	7.796 (6.000 – 9.000)	24.552 (19.000 – 28.000)	40.889 (32.000 – 47.000)	57.115 (44.000 – 66.000)	73.242 (57.000 – 85.000)	89.333 (70.000 – 100.000)	105.282 (82.000 – 120.000)	121.159 (95.000 – 140.000)
Coil 1 M	221.04 (180.00 – 270.00)	218.25 (180.00 – 270.00)	213.11 (170.00 – 260.00)	205.78 (170.00 – 250.00)	196.94 (160.00 – 250.00)	185.80 (160.00 – 230.00)	173.33 (150.00 – 220.00)	158.98 (140.00 – 200.00)
Coil 1 P	7.390 (6.000 – 9.000)	24.857 (19.000 – 28.000)	41.604 (32.000 – 48.000)	58.212 (45.000 – 67.000)	74.687 (57.000 – 86.000)	91.129 (70.000 – 110.000)	107.370 (83.000 – 120.000)	123.544 (96.000 – 140.000)
Coil 2 M	446.98 (360.00 – 540.00)	440.94 (360.00 – 540.00)	430.04 (350.00 – 530.00)	414.71 (340.00 – 510.00)	396.28 (330.00 – 500.00)	373.56 (310.00 – 470.00)	348.51 (300.00 – 440.00)	319.84 (270.00 – 410.00)
Coil 2 P	8.086 (6.000 – 9.000)	25.402 (19.000 – 29.000)	42.275 (32.000 – 48.000)	59.011 (45.000 – 67.000)	75.590 (58.000 – 87.000)	92.118 (71.000 – 110.000)	108.394 (84.000 – 130.000)	124.701 (96.000 – 140.000)
Coil 3 M	714.89 (590.00 – 880.00)	705.49 (580.00 – 870.00)	688.50 (570.00 – 850.00)	664.85 (550.00 – 830.00)	636.00 (530.00 – 800.00)	600.27 (500.00 – 760.00)	560.29 (470.00 – 710.00)	514.35 (440.00 – 650.00)
Coil 3 P	8.071 (6.000 – 10.000)	25.393 (20.000 – 29.000)	42.286 (33.000 – 49.000)	59.057 (46.000 – 69.000)	75.700 (59.000 – 89.000)	92.322 (72.000 – 110.000)	108.719 (85.000 – 130.000)	125.061 (98.000 – 150.000)
Coil 4 M	1138.6 (900.0 – 1400.0)	1123.3 (900.0 – 1300.0)	1095.5 (900.0 – 1300.0)	1056.3 (850.0 – 1300.0)	1008.2 (800.0 – 1200.0)	950.3 (800.0 – 1200.0)	885.4 (750.0 – 1100.0)	811.7 (700.0 – 1000.0)
Coil 4 P	8.239 (6.000 – 10.000)	25.858 (20.000 – 30.000)	43.048 (33.000 – 50.000)	60.094 (46.000 – 70.000)	76.993 (60.000 – 90.000)	93.842 (73.000 – 110.000)	110.481 (86.000 – 130.000)	127.015 (99.000 – 150.000)

Coil 5 M	2308.4 1900.0 2800.0	2280.2 1800.0 2800.0	2229.1 1800.0 2700.0	2155.8 1800.0 2600.0	2066.1 1700.0 2500.0	1953.2 1600.0 2400.0	1825.7 1500.0 2200.0	1677.1 1400.0 2100.0
Coil 5 P	8.420 6.000 10.000	26.295 20.000 31.000	43.808 34.000 51.000	61.234 48.000 72.000	78.626 62.000 93.000	95.982 76.000 110.000	113.212 89.000 130.000	130.438 100.000 150.000
Coil 6 M	6077.5 4700.0 7100.0	5987.5 4700.0 7000.0	5822.3 4800.0 6900.0	5592.8 4400.0 6800.0	5317.8 4200.0 6400.0	4985.3 4000.0 6000.0	4626.1 3700.0 5800.0	4217.3 3400.0 5100.0
Coil 6 P	8.625 7.000 10.000	27.156 22.000 32.000	45.192 36.000 54.000	63.043 51.000 76.000	80.686 65.000 98.000	98.219 80.000 120.000	115.451 94.000 140.000	132.597 110.000 150.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	303 -200 800	-143 -500 200	-179 -800 100	-186 -600 50	-187 -500 20	-187 -500 20	-186 -500 20	-185 -500 20
Coil 0 Q	2580 -3000 6000	863 -1000 2000	482 -1000 1200	306 -500 900	199 -400 700	125 -400 600	67 -400 500	19 -400 400
Coil 1 R	514 450 650	66 20 130	12 -30 60	-6 -50 40	-14 -55 30	-19 -60 20	-22 -60 10	-24 -60 10
Coil 1 Q	1417 0 2500	541 0 900	332 0 600	238 0 450	183 0 350	147 0 300	121 0 250	101 0 250
Coil 2 R	185.3 140.0 230.0	29.3 0.0 51.0	9.8 -10.0 25.0	3.0 -15.0 15.0	-0.5 -16.0 10.0	-2.7 -16.0 7.0	-3.7 -16.0 5.0	-4.6 -16.0 3.0
Coil 2 Q	354.2 -200.0 1000.0	146.4 0.0 350.0	95.2 0.0 220.0	72.8 0.0 160.0	60.6 0.0 130.0	52.9 0.0 110.0	47.8 0.0 100.0	44.5 0.0 90.0
Coil 3 R	53.5 37.0 62.0	9.0 0.0 12.0	3.1 -3.0 6.0	0.9 -4.0 4.0	-0.1 -5.0 2.0	-0.7 -5.0 1.0	-1.3 -6.0 1.0	-2.1 -6.0 1.0
Coil 3 Q	71.3 -140.0 280.0	34.1 -40.0 100.0	25.4 -20.0 70.0	22.4 -10.0 60.0	21.3 -10.0 50.0	21.4 -10.0 50.0	22.2 -10.0 50.0	22.4 -10.0 50.0
Coil 4 R	11.49 2.00 18.00	0.79 -3.00 5.00	-0.47 -3.50 3.00	-0.99 -3.90 2.00	-1.05 -4.20 2.00	-1.24 -4.50 2.00	-1.29 -4.70 2.00	-1.47 -5.00 2.00
Coil 4 Q	29.32 -100.00 100.00	14.52 -30.00 50.00	12.82 -20.00 40.00	13.50 -10.00 40.00	14.91 -10.00 40.00	16.74 -10.00 45.00	18.64 -10.00 50.00	20.81 -10.00 60.00
Coil 5 R	2.49 -2.00 5.80	-0.05 -3.20 2.40	-0.44 -4.50 3.10	-0.59 -4.70 3.20	-0.71 -4.80 3.20	-0.76 -5.00 3.30	-0.97 -5.20 3.40	-1.10 -5.40 3.50
Coil 5 Q	-6.89 -60.00 70.00	1.10 -20.00 30.00	4.66 -20.00 30.00	7.49 -20.00 35.00	10.29 -20.00 45.00	12.91 -20.00 50.00	15.45 -20.00 60.00	18.05 -30.00 70.00
Coil 6 R	-1.59 -4.80 1.00	-0.66 -5.70 3.80	-0.70 -6.50 4.90	-0.70 -6.90 5.40	-0.73 -7.30 5.80	-0.85 -7.50 6.00	-0.90 -7.70 6.10	-0.94 -7.90 6.30
Coil 6 Q	1.75 -30.00 30.00	2.87 -20.00 25.00	4.94 -20.00 35.00	7.02 -30.00 50.00	9.17 -35.00 80.00	11.35 -40.00 70.00	13.54 -50.00 80.00	15.65 -60.00 100.00

MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	0.993 0.900 1.100	0.992 0.900 1.100	0.987 0.900 1.100	0.986 0.900 1.100	0.985 0.900 1.100	0.983 0.900 1.100	0.982 0.900 1.100	0.982 0.900 1.100
Coil 0 P	0.152 -2.000 2.000	0.212 -2.000 2.000	0.305 -2.000 2.000	0.252 -2.000 2.000	0.163 -2.000 2.000	0.104 -2.000 2.000	0.040 -2.000 2.000	0.013 -2.000 2.000
Coil 1 M	0.989 0.900 1.100	0.988 0.900 1.100	0.984 0.900 1.100	0.983 0.900 1.100	0.982 0.900 1.100	0.980 0.900 1.100	0.979 0.900 1.100	0.979 0.900 1.100
Coil 1 P	0.112 -2.000 2.000	0.228 -2.000 2.000	0.288 -2.000 2.000	0.304 -2.000 2.000	0.266 -2.000 2.000	0.236 -2.000 2.000	0.192 -2.000 2.000	0.172 -2.000 2.000
Coil 2 M	0.997 0.900 1.100	0.994 0.900 1.100	0.993 0.900 1.100	0.992 0.900 1.100	0.991 0.900 1.100	0.991 0.900 1.100	0.990 0.900 1.100	0.988 0.900 1.100
Coil 2 P	0.132 -2.000 2.000	0.100 -2.000 2.000	0.092 -2.000 2.000	0.121 -2.000 2.000	0.088 -2.000 2.000	0.120 -2.000 2.000	0.085 -2.000 2.000	0.162 -2.000 2.000
Coil 3 M	0.999 0.900 1.100	0.998 0.900 1.100	0.997 0.900 1.100	0.996 0.900 1.100	0.996 0.900 1.100	0.995 0.900 1.100	0.995 0.900 1.100	0.996 0.900 1.100
Coil 3 P	0.118 -2.000 2.000	0.071 -2.000 2.000	0.083 -2.000 2.000	0.088 -2.000 2.000	0.057 -2.000 2.000	0.038 -2.000 2.000	-0.033 -2.000 2.000	-0.016 -2.000 2.000
Coil 4 M	1.006 0.900 1.100	1.005 0.900 1.100	1.004 0.900 1.100	1.003 0.900 1.100	1.002 0.900 1.100	1.000 0.900 1.100	0.999 0.900 1.100	0.997 0.900 1.100
Coil 4 P	0.080 -2.000 2.000	0.074 -2.000 2.000	0.059 -2.000 2.000	0.077 -2.000 2.000	0.042 -2.000 2.000	0.049 -2.000 2.000	0.007 -2.000 2.000	-0.020 -2.000 2.000
Coil 5 M	1.022 0.900 1.100	1.021 0.900 1.100	1.021 0.900 1.100	1.019 0.900 1.100	1.018 0.900 1.100	1.018 0.900 1.100	1.016 0.900 1.100	1.015 0.900 1.100
Coil 5 P	0.097 -2.000 2.000	0.039 -2.000 2.000	0.095 -2.000 2.000	0.095 -2.000 2.000	0.109 -2.000 2.000	0.059 -2.000 2.000	0.085 -2.000 2.000	0.121 -2.000 2.000
Coil 6 M	1.019 0.900 1.100	1.020 0.900 1.100	1.018 0.900 1.100	1.015 0.900 1.100	1.015 0.900 1.100	1.019 0.900 1.100	1.019 0.900 1.100	1.015 0.900 1.100
Coil 6 P	0.077 -2.000 2.000	0.201 -2.000 2.000	0.131 -2.000 2.000	0.219 -2.000 2.000	0.126 -2.000 2.000	0.051 -2.000 2.000	0.027 -2.000 2.000	-0.028 -2.000 2.000

PARMS	TCID 0	TCID 1	Cal Temp (degF)	T Factor
IDs	1.356	0.760	79.2	1.04

HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1515MA 364355 DATE/TIME PERFORMED: Mon Jun 10 01:48:54 2013 DAYS SINCE CAL: 116

UNIT #: 3885TD HL6726

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	0.002 -0.100 0.100	-0.001 -0.100 0.100	-0.003 -0.100 0.100	-0.001 -0.100 0.100	-0.000 -0.100 0.100	-0.001 -0.100 0.100
Coil 0 Q	0.007 -1.000 1.000	0.009 -0.200 0.200	0.004 -0.100 0.100	0.003 -0.100 0.100	0.003 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100
Coil 1 R	0.001 -0.200 0.200	0.003 -0.100 0.100	0.005 -0.100 0.100	0.004 -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 1 Q	0.001 -1.000 1.000	0.002 -0.200 0.200	0.001 -0.100 0.100	0.002 -0.100 0.100	0.003 -0.100 0.100	0.002 -0.100 0.100	-0.000 -0.100 0.100	-0.002 -0.100 0.100
Coil 2 R	0.009 -0.200 0.200	0.005 -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	0.002 -0.100 0.100	0.006 -0.100 0.100
Coil 2 Q	-0.006 -1.000 1.000	-0.002 -0.200 0.200	0.001 -0.100 0.100	0.001 -0.100 0.100	-0.003 -0.100 0.100	-0.006 -0.100 0.100	-0.006 -0.100 0.100	-0.005 -0.100 0.100
Coil 3 R	0.006 -0.100 0.100	0.005 -0.100 0.100	0.007 -0.100 0.100	0.007 -0.100 0.100	0.005 -0.100 0.100	0.003 -0.100 0.100	0.003 -0.100 0.100	0.001 -0.100 0.100
Coil 3 Q	-0.012 -0.500 0.500	-0.011 -0.200 0.200	-0.003 -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	-0.001 -0.100 0.100
Coil 4 R	-0.013 -0.200 0.200	-0.000 -0.200 0.200	-0.001 -0.200 0.200	-0.000 -0.200 0.200	-0.005 -0.200 0.200	-0.003 -0.200 0.200	-0.001 -0.200 0.200	-0.000 -0.200 0.200
Coil 4 Q	0.004 -1.000 1.000	0.008 -0.400 0.400	0.001 -0.200 0.200	-0.003 -0.200 0.200	0.000 -0.200 0.200	0.000 -0.200 0.200	-0.005 -0.200 0.200	-0.002 -0.200 0.200
Coil 5 R	-0.008 -0.400 0.400	0.006 -0.400 0.400	0.002 -0.400 0.400	0.004 -0.400 0.400	0.001 -0.400 0.400	-0.000 -0.400 0.400	-0.007 -0.400 0.400	-0.006 -0.400 0.400
Coil 5 Q	-0.005 -2.000 2.000	0.002 -0.800 0.800	0.001 -0.400 0.400	0.005 -0.400 0.400	0.005 -0.400 0.400	0.005 -0.400 0.400	0.006 -0.400 0.400	-0.005 -0.400 0.400
Coil 6 R	-0.004 -1.000 1.000	0.018 -1.000 1.000	0.004 -1.000 1.000	-0.007 -1.000 1.000	-0.009 -1.000 1.000	0.011 -1.000 1.000	-0.001 -1.000 1.000	0.003 -1.000 1.000
Coil 6 Q	-0.008 -5.000 5.000	-0.002 -2.000 2.000	-0.014 -1.000 1.000	0.000 -1.000 1.000	-0.003 -1.000 1.000	-0.015 -1.000 1.000	0.003 -1.000 1.000	0.001 -1.000 1.000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	125.79 100.00 150.00	124.30 100.00 150.00	121.55 98.00 150.00	117.46 95.00 140.00	112.61 92.00 140.00	106.43 87.00 130.00	99.54 82.00 120.00	91.57 76.00 110.00
Coil 0 P	7.744 6.000 9.000	24.519 19.000 28.000	40.919 32.000 47.000	57.217 44.000 66.000	73.398 57.000 85.000	89.564 70.000 100.000	105.572 82.000 120.000	121.615 95.000 140.000
Coil 1 M	221.96 180.00 270.00	219.29 180.00 270.00	214.30 170.00 260.00	206.81 170.00 250.00	197.99 160.00 250.00	186.69 160.00 230.00	174.11 150.00 220.00	159.58 140.00 200.00
Coil 1 P	7.909 6.000 9.000	24.999 19.000 28.000	41.721 32.000 48.000	58.343 45.000 67.000	74.850 57.000 86.000	91.344 70.000 110.000	107.658 83.000 120.000	123.963 96.000 140.000
Coil 2 M	446.61 360.00 540.00	440.90 360.00 540.00	430.31 350.00 530.00	414.81 340.00 510.00	396.41 330.00 500.00	373.39 310.00 470.00	348.54 300.00 440.00	319.37 270.00 410.00
Coil 2 P	8.033 6.000 9.000	25.368 19.000 29.000	42.318 32.000 48.000	59.108 45.000 67.000	75.740 58.000 87.000	92.377 71.000 110.000	108.731 84.000 130.000	125.143 96.000 140.000
Coil 3 M	724.08 580.00 880.00	714.86 580.00 870.00	698.24 570.00 850.00	673.70 550.00 830.00	644.51 530.00 800.00	607.71 500.00 760.00	567.14 470.00 710.00	520.01 440.00 650.00
Coil 3 P	8.056 6.000 10.000	25.459 20.000 29.000	42.465 33.000 49.000	59.338 46.000 69.000	76.103 59.000 89.000	92.839 72.000 110.000	109.374 85.000 130.000	125.894 98.000 150.000
Coil 4 M	1143.7 900.0 1400.0	1128.7 900.0 1300.0	1101.5 900.0 1300.0	1061.6 850.0 1300.0	1013.9 800.0 1200.0	954.5 800.0 1200.0	889.2 750.0 1100.0	814.1 700.0 1000.0
Coil 4 P	8.199 6.000 10.000	25.872 20.000 30.000	43.151 33.000 50.000	60.283 46.000 70.000	77.267 60.000 90.000	94.225 73.000 110.000	110.928 86.000 130.000	127.639 99.000 150.000
Coil 5 M	2329.8 1900.0 2800.0	2303.0 1800.0 2800.0	2253.0 1800.0 2700.0	2178.3 1800.0 2600.0	2088.4 1700.0 2500.0	1973.2 1600.0 2400.0	1844.2 1500.0 2200.0	1693.1 1400.0 2100.0
Coil 5 P	8.363 6.000 10.000	26.304 20.000 31.000	43.900 34.000 51.000	61.432 48.000 72.000	78.891 62.000 93.000	96.387 76.000 110.000	113.707 89.000 130.000	131.077 100.000 150.000
Coil 6 M	6100.0 4700.0 7100.0	6012.8 4700.0 7000.0	5853.7 4800.0 6900.0	5621.8 4400.0 6600.0	5348.0 4200.0 6400.0	5010.4 4000.0 6000.0	4646.2 3700.0 5600.0	4235.1 3400.0 5100.0
Coil 6 P	8.548 7.000 10.000	27.126 22.000 32.000	45.237 36.000 54.000	63.156 51.000 76.000	80.889 65.000 98.000	98.516 80.000 120.000	115.874 94.000 140.000	133.146 110.000 160.000

HDIL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1515MA 364355 DATE/TIME PERFORMED: Mon Jun 10 04:53:40 2013 DAYS SINCE CAL: 116

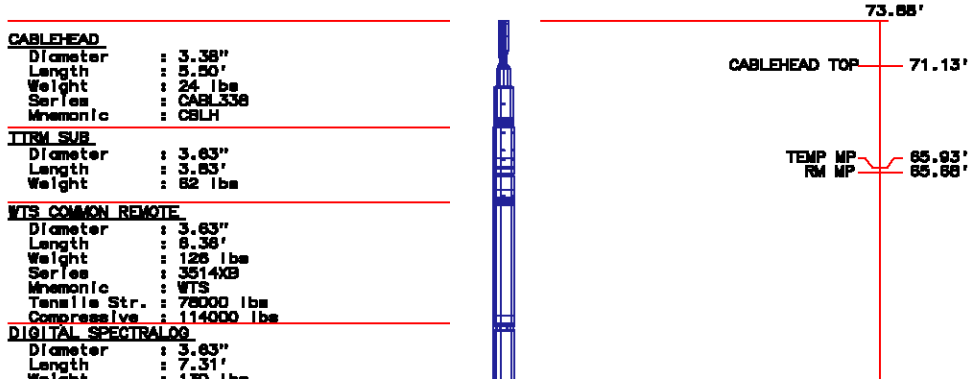
UNIT #: 3885TD HL6726

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.005 -0.085 0.075	-0.001 -0.060 0.060	0.000 -0.028 0.032	-0.003 -0.031 0.028	-0.004 -0.033 0.027	-0.002 -0.031 0.028	-0.003 -0.030 0.030	-0.004 -0.031 0.029
Coil 0 Q	0.008 -0.033 0.047	0.011 -0.111 0.129	0.004 -0.026 0.034	0.002 -0.027 0.033	0.003 -0.027 0.033	-0.000 -0.029 0.031	-0.001 -0.031 0.029	-0.000 -0.030 0.030
Coil 1 R	0.001 -0.079 0.081	0.003 -0.047 0.053	0.004 -0.025 0.035	0.003 -0.026 0.034	0.002 -0.028 0.031	0.002 -0.028 0.031	0.001 -0.031 0.028	-0.001 -0.031 0.029

Coil 1 Q	0.001 -0.399 0.401	0.003 -0.098 0.102	0.001 -0.029 0.031	0.000 -0.028 0.032	0.002 -0.027 0.033	0.001 -0.028 0.032	0.001 -0.030 0.030	-0.000 -0.032 0.028
Coil 2 R	0.011 -0.081 0.079	0.004 -0.025 0.035	-0.002 -0.032 0.028	-0.000 -0.030 0.030	0.001 -0.029 0.031	0.001 -0.031 0.029	0.003 -0.028 0.032	0.006 -0.024 0.036
Coil 2 Q	-0.005 -0.356 0.344	-0.004 -0.102 0.098	-0.000 -0.029 0.031	0.001 -0.029 0.031	-0.003 -0.033 0.027	-0.005 -0.036 0.024	-0.003 -0.036 0.024	-0.003 -0.035 0.025
Coil 3 R	0.012 -0.034 0.046	0.006 -0.035 0.045	0.004 -0.033 0.047	0.003 -0.033 0.047	0.007 -0.035 0.045	0.003 -0.037 0.043	0.003 -0.037 0.043	0.003 -0.039 0.041
Coil 3 Q	-0.012 -0.212 0.188	-0.009 -0.091 0.069	-0.004 -0.043 0.037	0.001 -0.041 0.039	-0.000 -0.040 0.040	-0.001 -0.040 0.040	0.003 -0.039 0.041	-0.002 -0.041 0.039
Coil 4 R	-0.013 -0.073 0.047	-0.004 -0.060 0.060	0.001 -0.061 0.059	-0.005 -0.060 0.060	-0.003 -0.065 0.055	0.001 -0.063 0.057	0.001 -0.061 0.059	0.000 -0.060 0.060
Coil 4 Q	0.003 -0.296 0.304	0.008 -0.092 0.108	0.002 -0.059 0.061	0.001 -0.063 0.057	-0.002 -0.060 0.060	-0.000 -0.060 0.060	-0.004 -0.065 0.055	-0.005 -0.062 0.052
Coil 5 R	-0.002 -0.128 0.112	0.006 -0.114 0.126	0.003 -0.118 0.122	0.002 -0.116 0.124	0.006 -0.119 0.121	0.001 -0.120 0.120	-0.001 -0.127 0.113	0.005 -0.125 0.114
Coil 5 Q	0.005 -0.605 0.595	0.006 -0.248 0.252	0.001 -0.119 0.121	0.001 -0.115 0.125	0.008 -0.115 0.125	0.006 -0.115 0.125	-0.003 -0.114 0.126	0.003 -0.125 0.115
Coil 6 R	0.015 -0.304 0.296	-0.018 -0.282 0.318	-0.010 -0.296 0.304	-0.024 -0.307 0.293	0.002 -0.309 0.291	0.008 -0.289 0.311	0.002 -0.301 0.299	0.007 -0.297 0.303
Coil 6 Q	0.006 -1.508 1.492	0.024 -0.602 0.598	-0.001 -0.314 0.286	-0.005 -0.300 0.300	-0.014 -0.303 0.297	-0.004 -0.315 0.285	0.015 -0.297 0.303	-0.002 -0.299 0.301

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	125.93 123.28 128.31	124.31 121.82 126.79	121.39 119.12 123.98	117.25 115.11 119.61	112.21 110.35 114.86	106.01 104.30 108.56	98.89 97.55 101.53	90.78 89.74 93.40
Coil 0 P	7.815 4.744 10.744	24.636 21.519 27.519	41.039 37.919 43.819	57.332 54.217 60.217	73.519 70.398 76.398	89.671 86.564 92.564	105.611 102.572 108.572	121.541 118.515 124.615
Coil 1 M	221.96 217.52 226.40	219.04 214.90 223.87	213.75 210.01 218.58	206.21 202.87 210.94	197.09 194.03 201.95	185.70 182.96 190.43	172.78 170.82 177.59	158.17 156.38 162.77
Coil 1 P	7.980 4.909 10.909	25.117 21.999 27.999	41.830 38.721 44.721	58.448 55.343 61.343	74.961 71.850 77.850	91.403 88.344 94.344	107.675 104.658 110.658	123.858 120.963 126.963
Coil 2 M	446.12 437.68 455.55	439.93 432.06 449.72	428.72 421.70 436.91	413.26 406.51 423.11	394.22 388.48 404.34	370.90 365.92 380.85	345.33 341.57 355.51	316.11 312.98 325.75
Coil 2 P	8.106 5.033 11.033	25.487 22.368 28.368	42.438 39.318 45.318	59.231 56.108 62.108	75.856 72.740 78.740	92.460 89.377 95.377	108.788 105.731 111.731	125.059 122.143 128.143
Coil 3 M	722.61 709.50 738.56	712.65 700.56 729.18	695.14 684.28 712.21	670.65 660.22 687.17	640.58 631.62 657.40	603.49 595.56 619.87	561.89 555.79 578.48	514.72 509.61 530.41
Coil 3 P	8.122 5.056 11.056	25.559 22.459 28.459	42.554 39.465 45.465	59.424 56.338 62.338	76.181 73.103 79.103	92.867 89.839 95.839	109.355 106.374 112.374	125.784 122.894 128.894
Coil 4 M	1143.0 1120.8 1166.5	1126.8 1106.2 1151.3	1098.2 1079.5 1123.6	1058.2 1040.4 1082.8	1009.1 993.6 1034.2	949.2 935.4 973.6	882.3 871.4 907.0	806.9 797.9 830.4
Coil 4 P	8.263 5.199 11.199	25.971 22.872 28.872	43.236 40.151 46.151	60.368 57.283 63.283	77.337 74.257 80.257	94.245 91.225 97.225	110.910 107.928 113.928	127.517 124.639 130.639
Coil 5 M	2323.0 2283.2 2376.4	2293.7 2256.9 2349.0	2240.7 2207.9 2298.1	2165.9 2134.8 2221.9	2073.3 2046.7 2130.2	1957.0 1933.7 2012.7	1824.8 1807.3 1881.1	1672.4 1659.2 1727.0
Coil 5 P	8.435 5.363 11.363	26.413 23.304 29.304	44.000 40.900 46.900	61.523 58.432 64.432	78.982 75.891 81.891	96.430 93.387 99.387	113.707 110.707 116.707	130.974 128.077 134.077
Coil 6 M	6089.6 5978.0 6222.0	5995.8 5892.6 6133.1	5828.7 5736.6 5970.8	5594.9 5509.4 5734.3	5313.0 5241.0 5455.0	4975.3 4910.1 5110.8	4603.6 4553.3 4739.2	4187.5 4150.4 4319.8
Coil 6 P	8.625 5.548 11.548	27.238 24.126 30.126	45.341 42.237 48.237	63.261 60.156 66.156	80.968 77.859 83.859	98.555 95.516 101.516	115.814 112.874 118.874	133.024 130.146 136.146

INSTRUMENT CONFIGURATION



Weight : 130 lbs
Series : 1329XA
Mnemonic : DSL
Tensile Str. : 78000 lbs
Compressive : 85000 lbs

COMPENSATED NEUTRON
Diameter : 3.63"
Length : 7.50'
Weight : 150 lbs
Series : 2446XA
Mnemonic : CN
Tensile Str. : 78000 lbs
Compressive : 78000 lbs

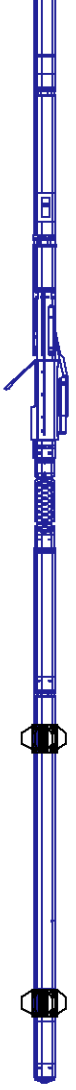
Z-DENSILOG
Diameter : 4.88"
Length : 11.22'
Weight : 360 lbs
Series : 2234XA
Mnemonic : ZDL
Tensile Str. : 78000 lbs
Compressive : 74500 lbs

KNUCKLE JOINT (DOUBLE)
Diameter : 3.38"
Length : 4.65'
Weight : 90 lbs
Series : 3939XA
Mnemonic : KNJT

HIGH DEFINITION INDUCTION TOOL
Diameter : 3.62"
Length : 27.13'
Weight : 415 lbs
Series : 1515XA
Mnemonic : HDIL
Tensile Str. : 36000 lbs
Compressive : 1900 lbs

BULL PLUG 3 3/8

TOTAL LENGTH: 73.88'
TOTAL WEIGHT: 1383 lbs
MAX DIAMETER: 0'4.88"



GR MP — 52.48'
LSN MP — 45.92'
SSN MP — 45.52'
CAL MP — 35.26'
LSD MP — 34.54'
SSD MP — 34.14'
SP MP — 14.19'
XMTR MP — 7.72'
0.00'

BAKER HUGHES
EOLIPS

COMPANY	WPX ENERGY		FILE NO: 633672
WELL	DUGGAN RWF 14-29		API NO: 05045216660000
FIELD	RULISON		
COUNTY	GARFIELD	STATE COLORADO	

LOCATION:
SHL: 513' FSL & 599' FWL; 29T6SR94W
BHL: 450' FSL & 1036' FWL

SEC 29 TWP 6S RGE 94W

ELEVATIONS:
KB 5445.2 FT
DF 5445.2 FT
GL 5419.2 FT

S29-T6S-R94W
PAD: RWF 14-29
RIG: NABORS 573

DATE 09-JUN-2013

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