

FILE NO:
US090762

COMPANY
WELL
FIELD
COUNTY

WPX ENERGY ROCK MTN LLC
FEDERAL SG 442-28
GRAND VALLEY
GARFIELD STATE CO

OTHER SERVICES
NONE

Ver. 3.87
RIG: H&P 318
PAD: SG 43-28
S28 T7S R96W

LOCATION:
SHL: 2262' FSL 473' FEL
BHL: 2192' FNL 150' FEL
SEC 28 TWP 7S RGE 96W

ELEVATIONS:
KB 5143 FT
DF
GL 5119 FT

PERMANENT DATUM
LOG MEASURED FROM
DRILL MEAS. FROM

GL
KB
DF
GL 5119 FT

DATE	19-Sep-2014
RUN	1
TRIP	1
SERVICE ORDER	QH090762J
DEPTH DRILLER	5265 FT
DEPTH LOGGER	5265 FT
BOTTOM LOGGED INTERVAL	5250 FT
TOP LOGGED INTERVAL	0 FT
CASING DRILLER	9.625 IN @ 995 FT
CASING LOGGER	995 FT
BIT SIZE	8.75 IN
TYPE OF FLUID IN HOLE	LSND
DENSITY	10.10 LB/G
VISCOSITY	50 CP
PH	8.5
FLUID LOSS	4.8 C3
SOURCE OF SAMPLE	FLOWLINE
RM AT MEAS. TEMP.	84 OHMM @ 86 DEGF
RMF AT MEAS. TEMP.	63 OHMM @ 81 DEGF
RMC AT MEAS. TEMP.	1.05 OHMM @ 81 DEGF
SOURCE OF RMF	RMC
RM AT BHT	CALCULATED
RM AT BHT	584 OHMM @ 155 DEGF
TIME SINCE CIRCULATION	8 HR
MAX. RECORDED TEMP.	157 DEGF
EQUIP. NO.	6670
LOCATION	GRAND JCT
RECORDED BY	D SMITH
WITNESSED BY	C WILSON

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

BOREHOLE RECORD

BIT SIZE	FROM	TO
13.5 IN	0 FT	995 FT
8.75 IN	995 FT	5265 FT

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN	32.32 LB/F		0 FT	995 FT

REMARKS

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

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

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

CN MATRIX: SANDSTONE
CN RAN DECENTRALIZED

HDIL RAN WITH 1.5" STANDOFFS

ABC TO CALCULATE: MUD CONDUCTIVITY

THANK YOU FOR CHOOSING BAKER HUGHES WIRELINE SERVICES

CREW: SMITH/HOLLAR/OLSON/SANTUCCI

RIG: H&P 318

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	SWIVEL	3950XA	10102176	FREE
1	1	TTMA	3980XA	10120299	FREE
1	1	TEL/GR	3518FB/3518EB	10126400/10139870	DECENTRALIZED
1	1	NEUTRON	2436XA	10137930	DECENTRALIZED
1	1	DENSITY	2223XA	10123024	DECENTRALIZED
1	1	KNUCKLE	3930XA	10139400/10087279	FREE
1	1	HDIL	1530XA	10118612	CENTRALIZED

MAIN LOG 2"/100FT SCALE

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

Updates: 1 Patches: 2

Plotted: Fri Sep 19 23:36:31 2014

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/OH090762/n970a03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 887.250 ft BOTTOM DEPTH: 5267.191 ft

SYMMETRIC FILTER

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

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
BIT SIZE	BIT SIZE	8.750	in	TOP	BOTTOM
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh*)	8.750	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	86.0	degF	"	"
	MUD SAMPLE RES	0.820	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	"	"

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)	
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HDIL TEMPERATURE CORRECTION
ADAPTIVE BOREHOLE CORRECTION

TEMP CORRECTION
ABC PROCESSING
ABC to CALCULATE
STANDOFF
TOOL POSITION
Rmud MULTIPLIER

ON
ON
MUD CONDUCTIVITY
1.50 in
ECCENTERED
1.000

TOP
"
"
"
"
"
"

BOTTOM
"
"
"
"
"
"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
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F1:GR	Sep 19 21:20:14 2014	GAMMA RAY
F1:MOC6	Sep 19 21:20:14 2014	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:MOR2	Sep 19 21:20:14 2014	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:MOR6	Sep 19 21:20:14 2014	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Sep 19 21:20:14 2014	SPONTANEOUS POTENTIAL
F1:TEN	Sep 19 21:20:14 2014	DIFFERENTIAL TENSION

CURVE MEASURE POINT OFFSET

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

Presentation : HL6670:WPX_2IN.fvpdf [2"/100' Scale]
Plot Interval : 6.5 - 5271 Feet

Data File 1 : F1 : HL6670:/dat1a/OH090762/MAIN.xtf
Created On : Sep 19 21:20:14 2014
Company : WPX ENERGY ROCK MTN LLC
Well : FEDERAL SG 442-28
Field : GRAND VALLEY
File Interval : 6.5 - 5271 Feet
OCT : n970a

GR BACKUP

GAMMA RAY [gr]

0 200

SP [sp]

-200 50

FEET

100

TOOL STICKING

DEEP [m0r6]

0 100

SHALLOW [m0r2]

0 100 500

AMPLIFIED SHALLOW [m0r2]

0 20

OVERRANGE DEEP [m0r6]

100 1000

OVERRANGE SHALLOW [m0r2]

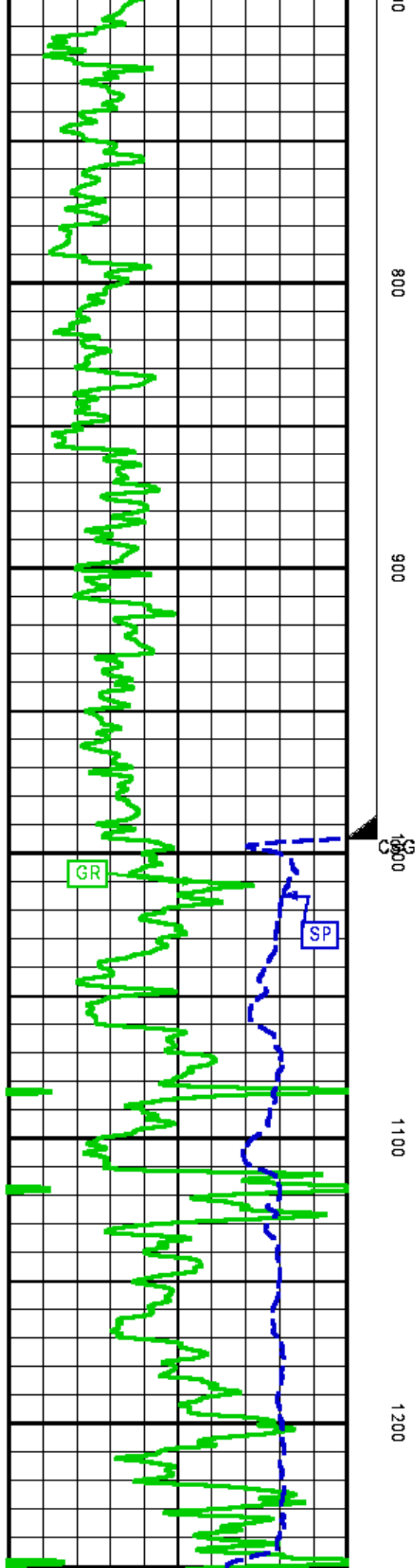
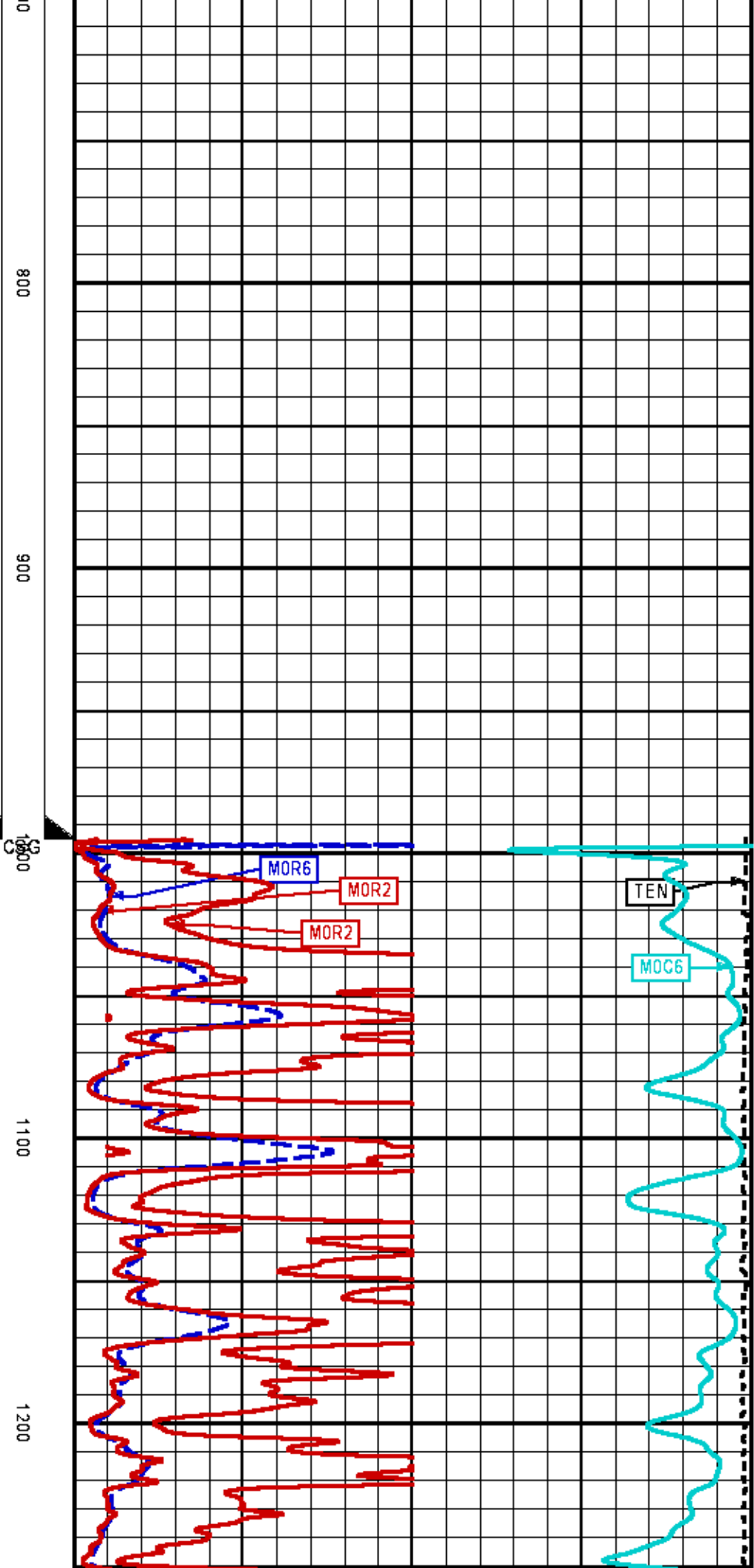
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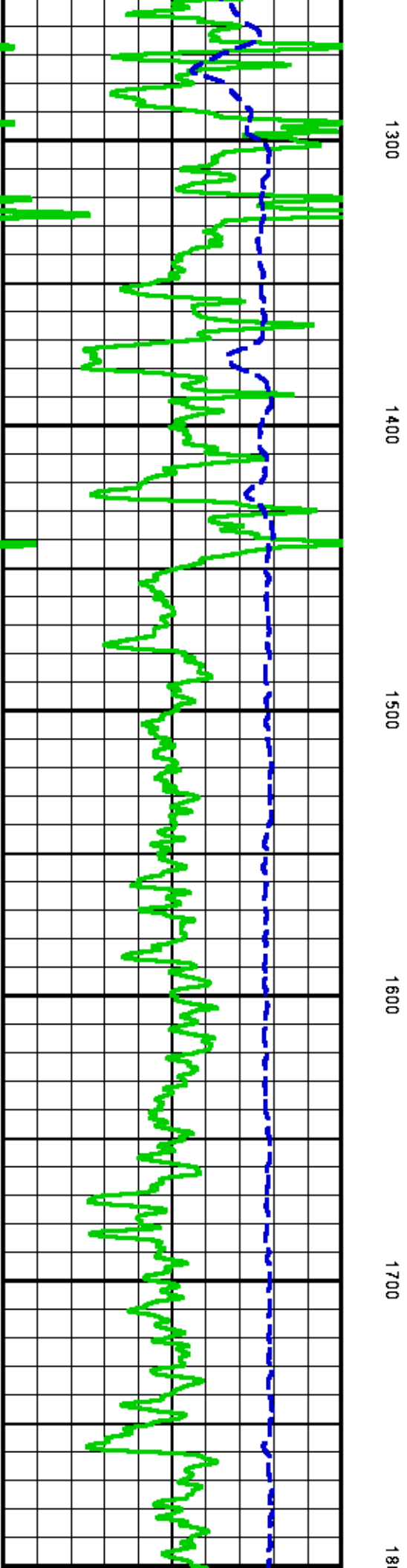
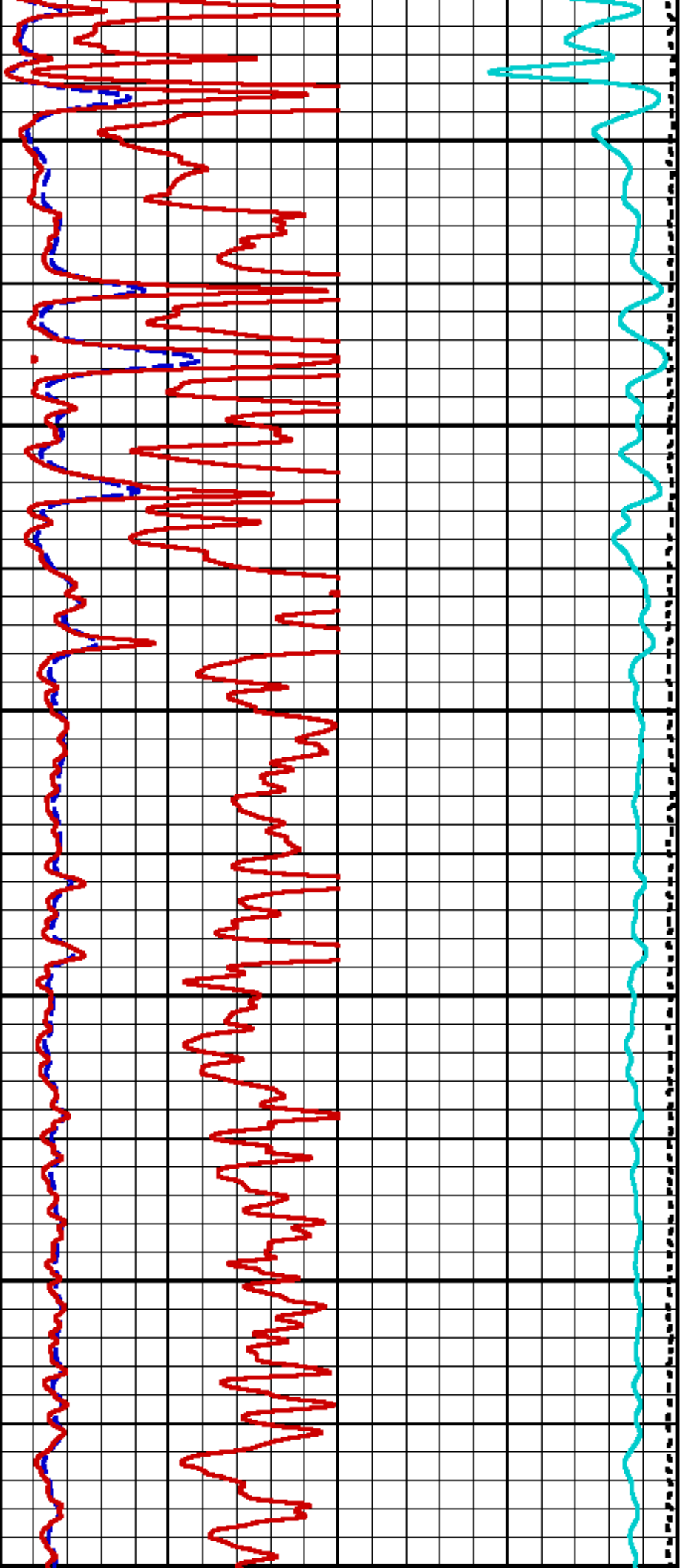
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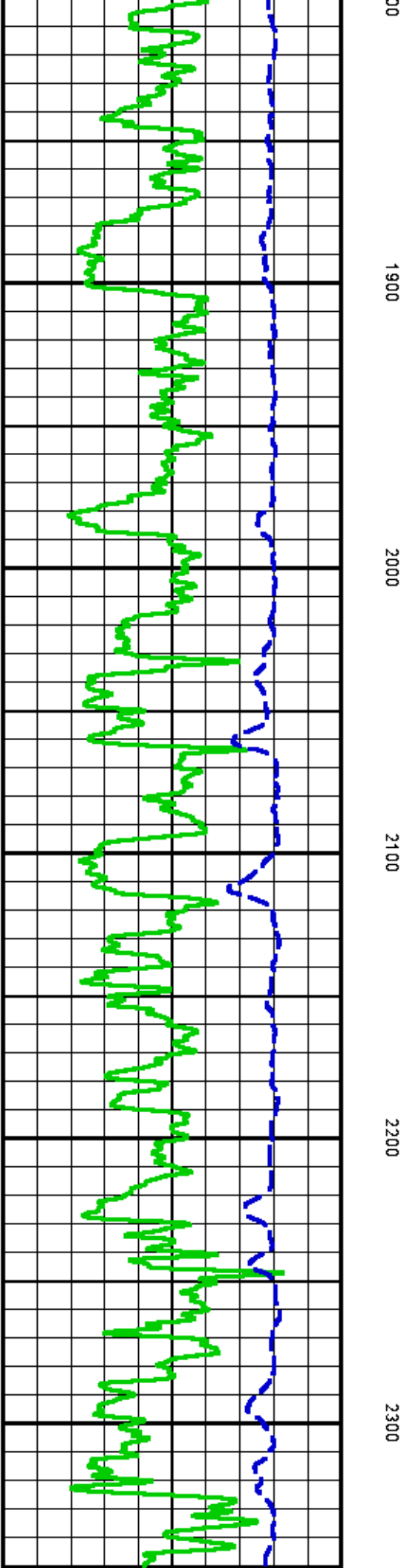
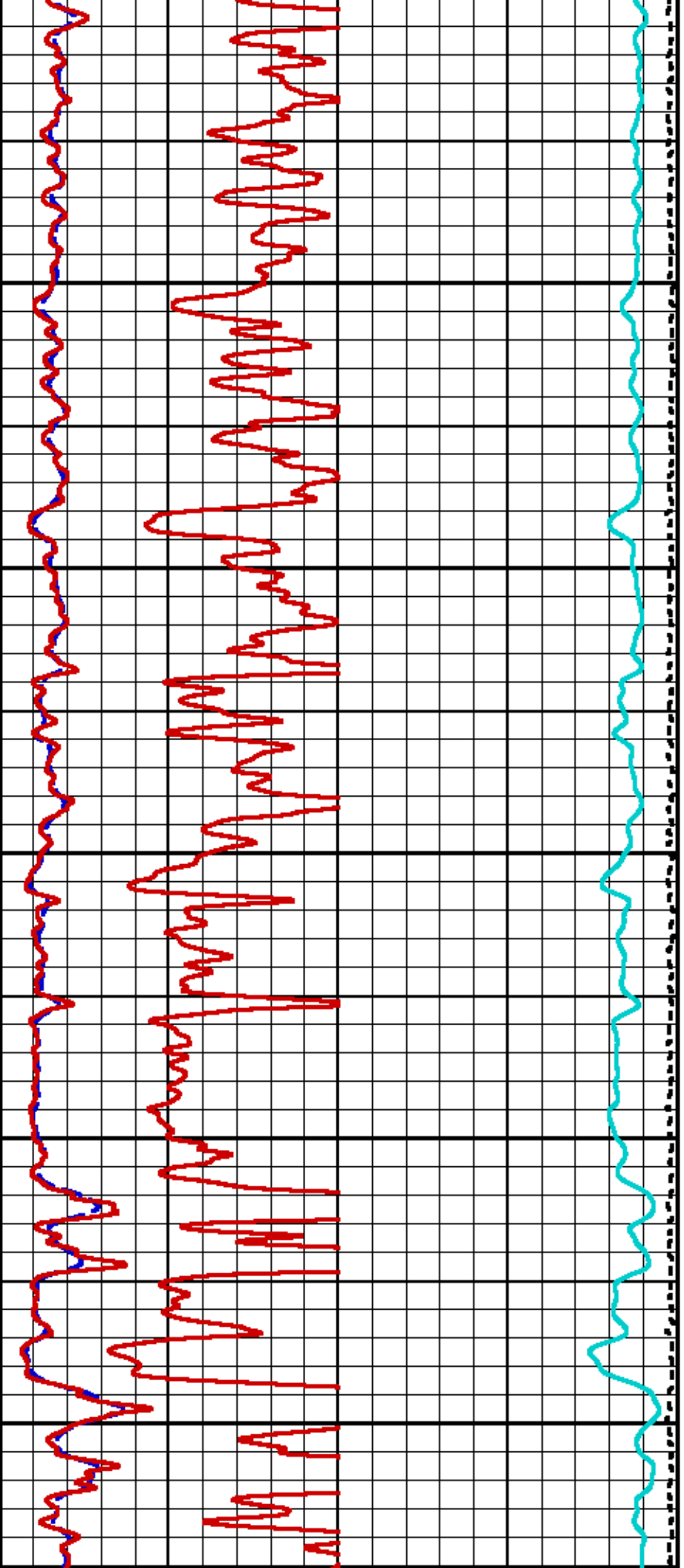
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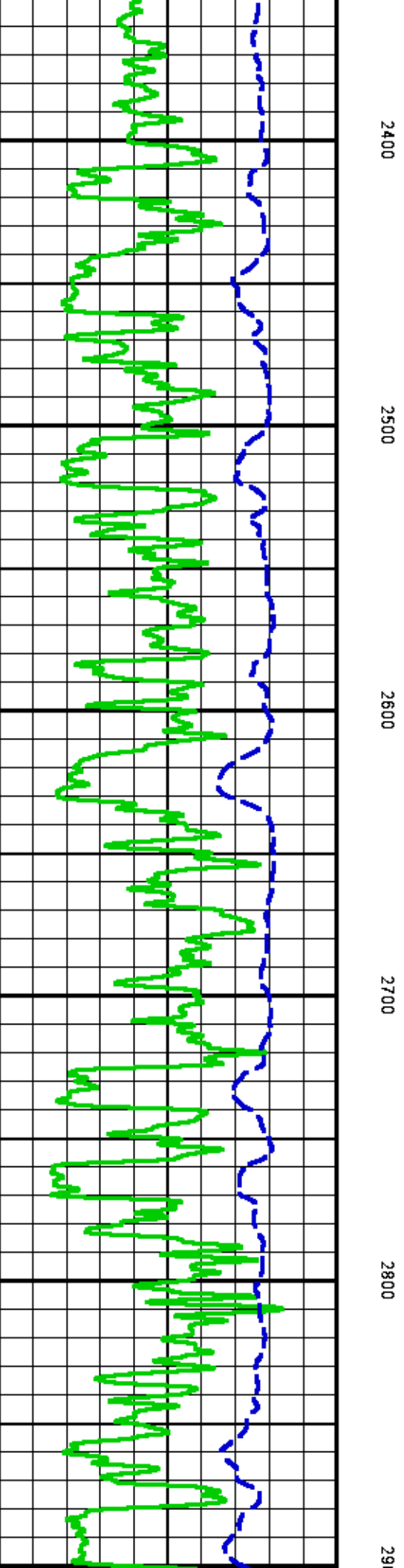
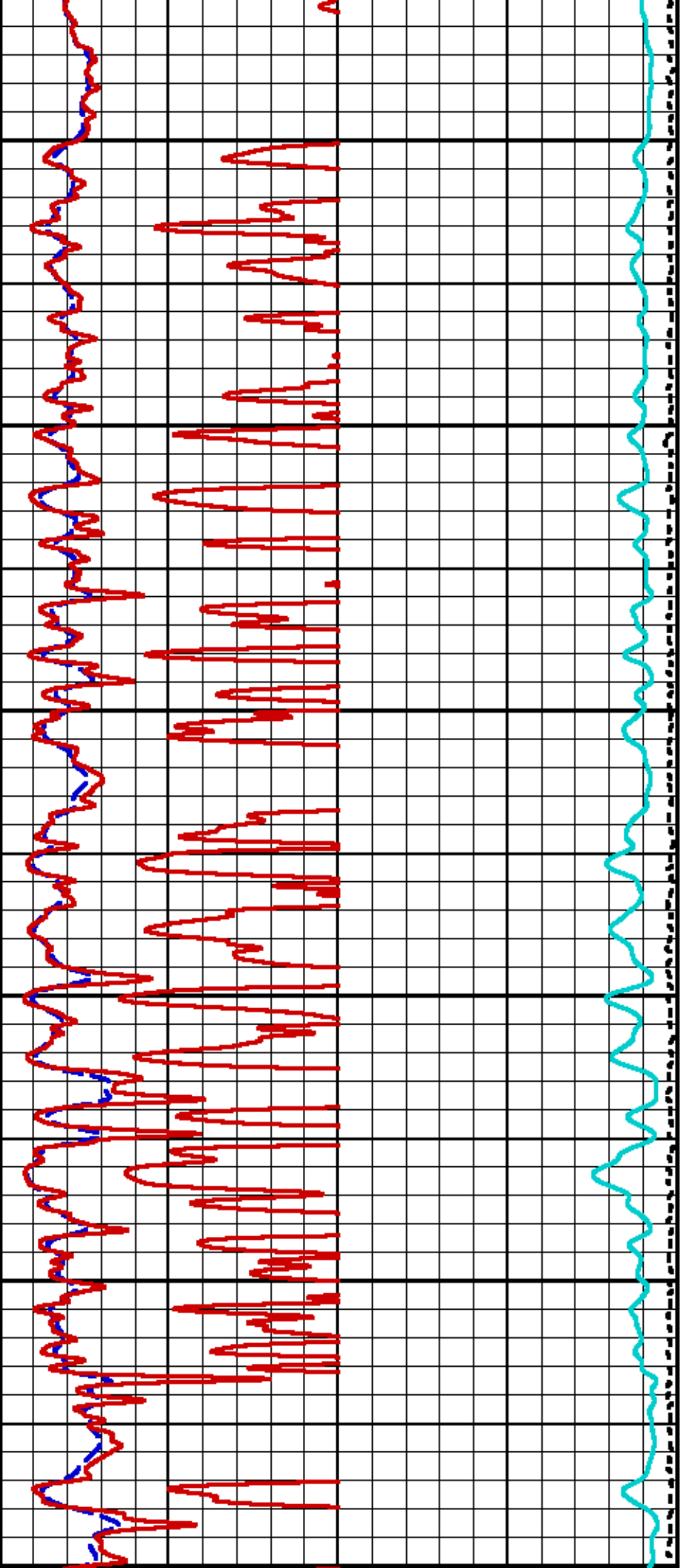
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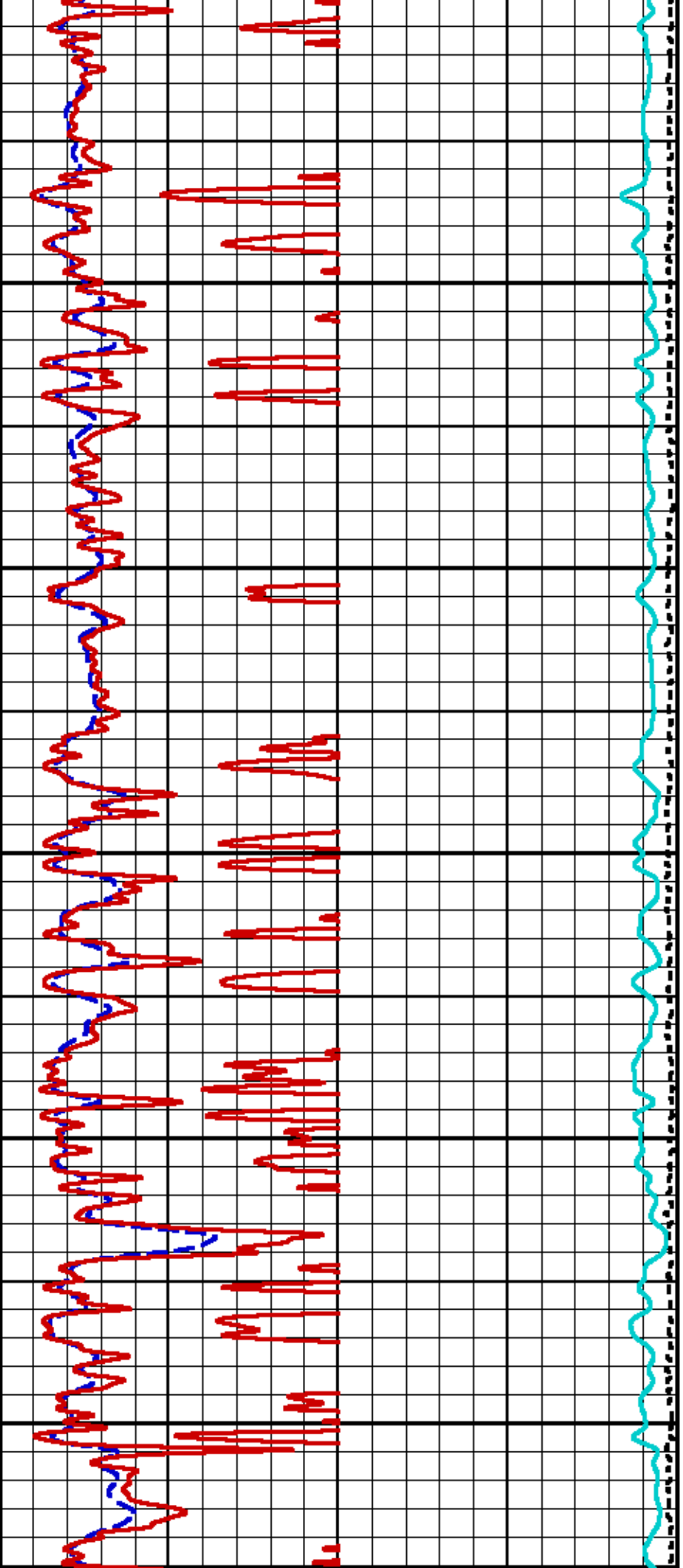
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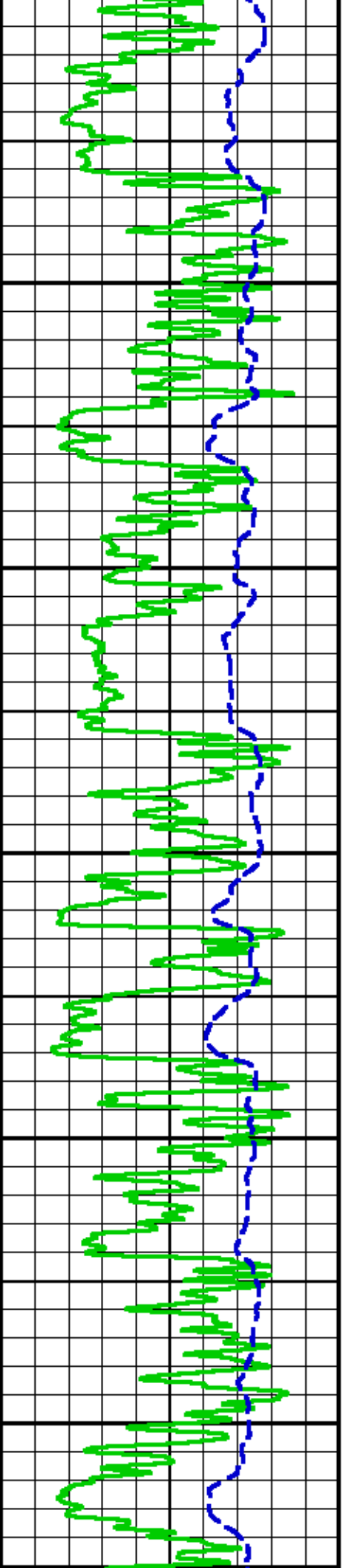
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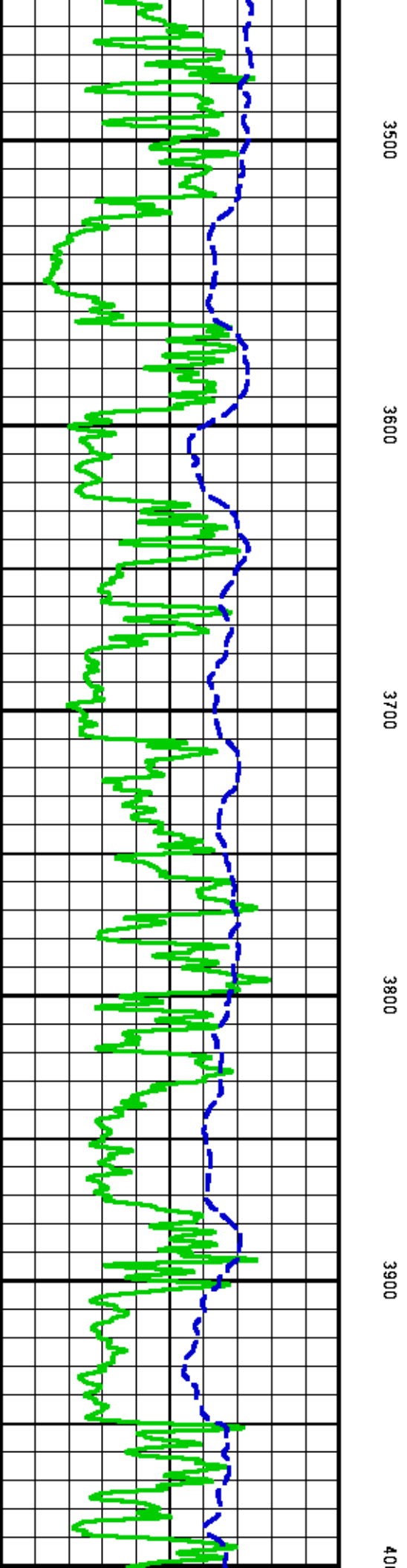
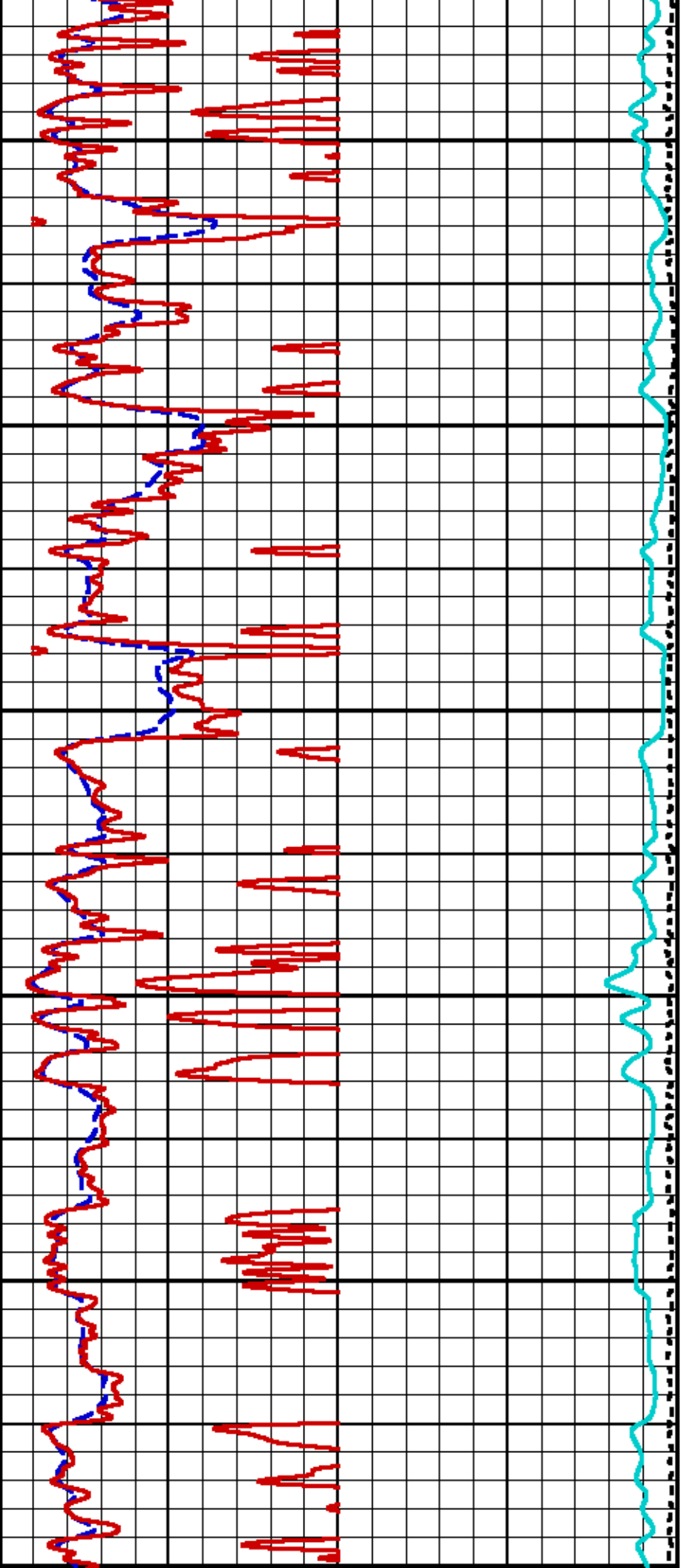
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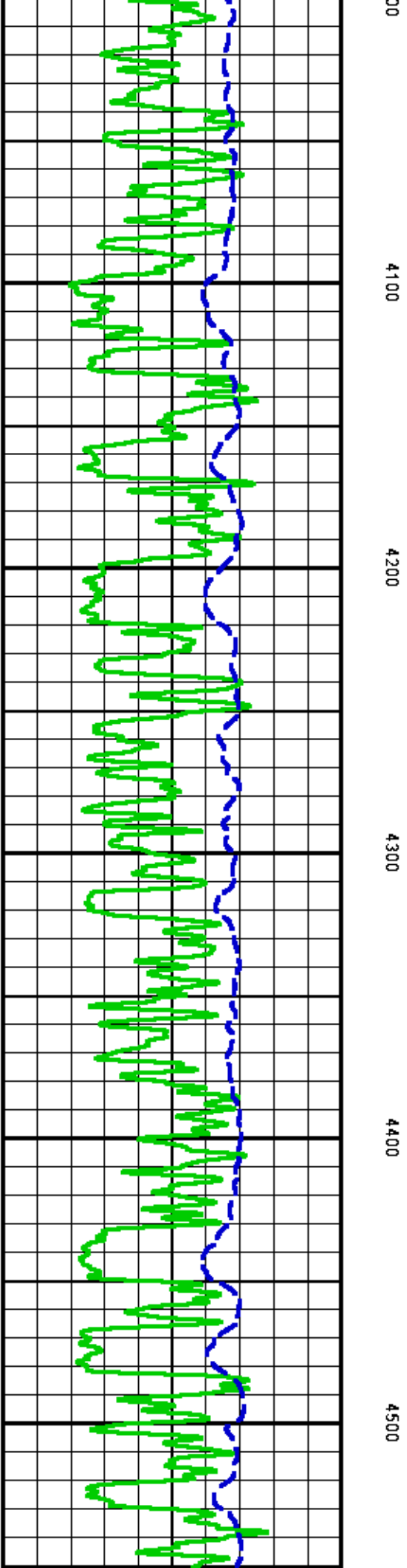
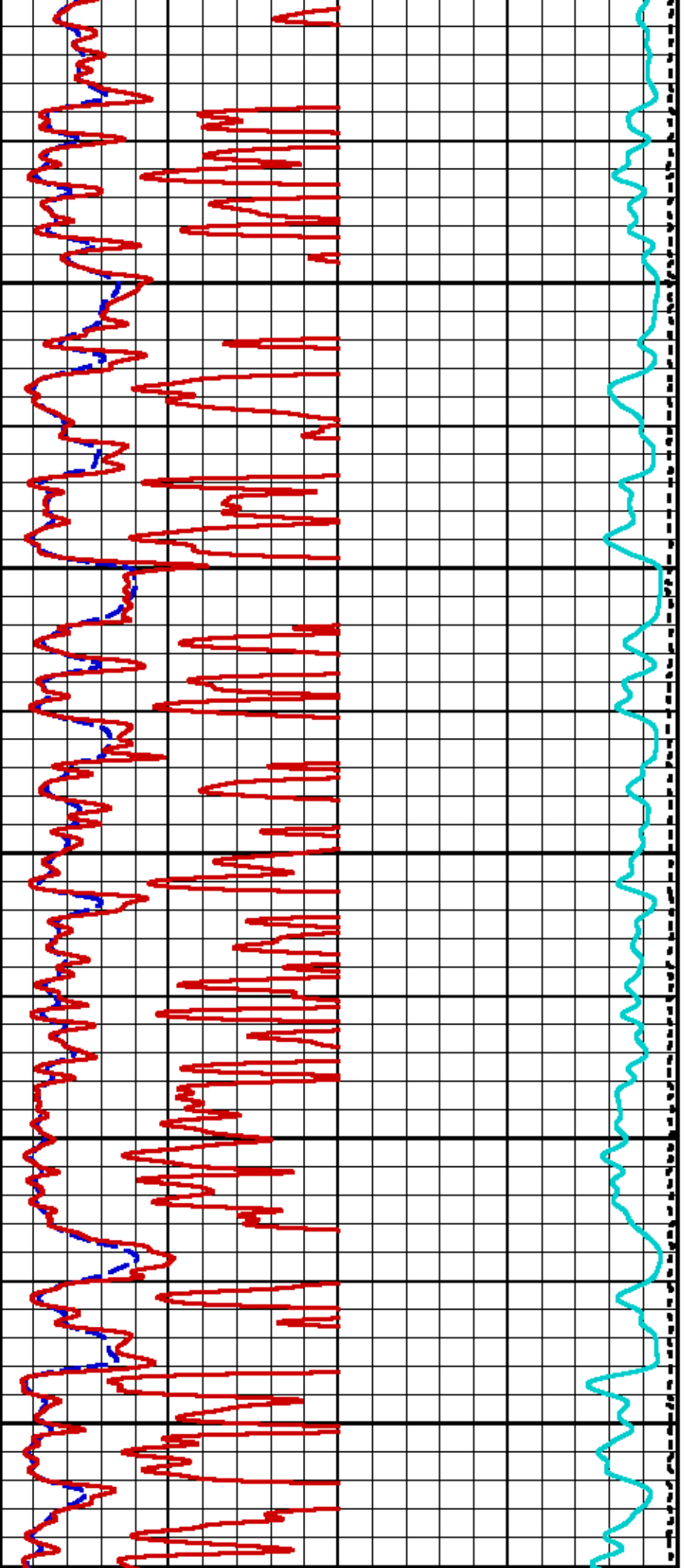
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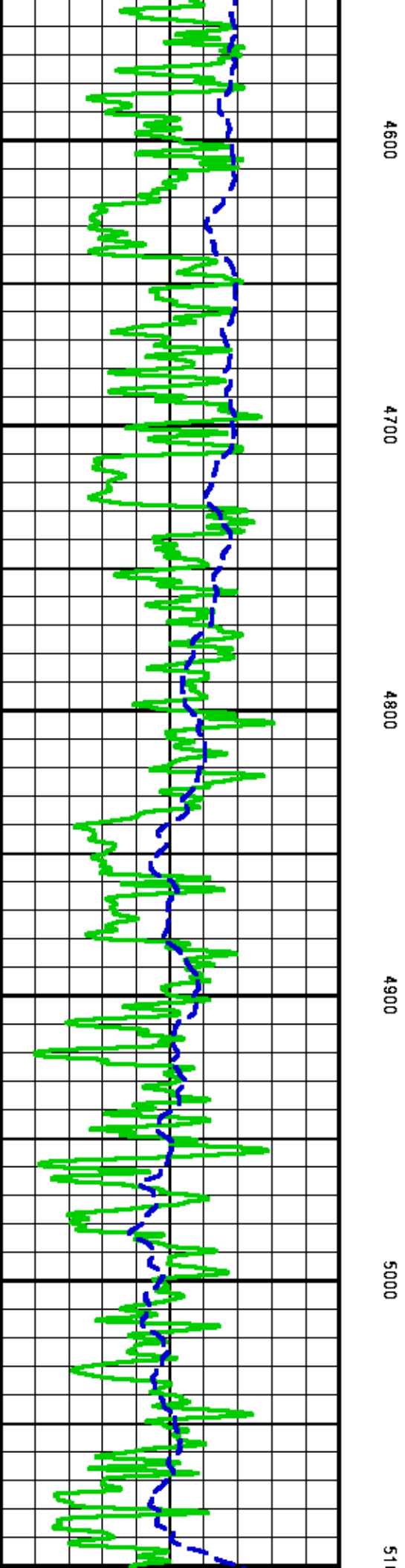
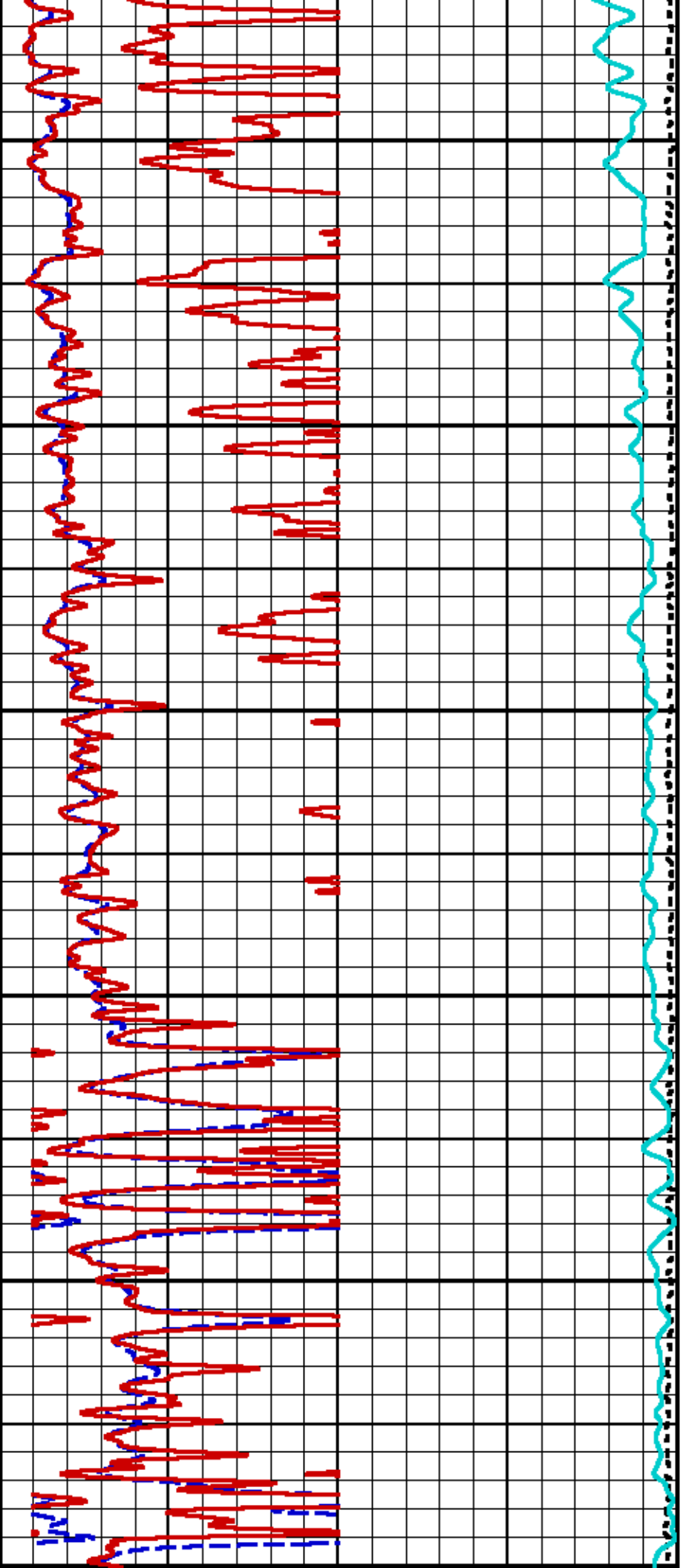
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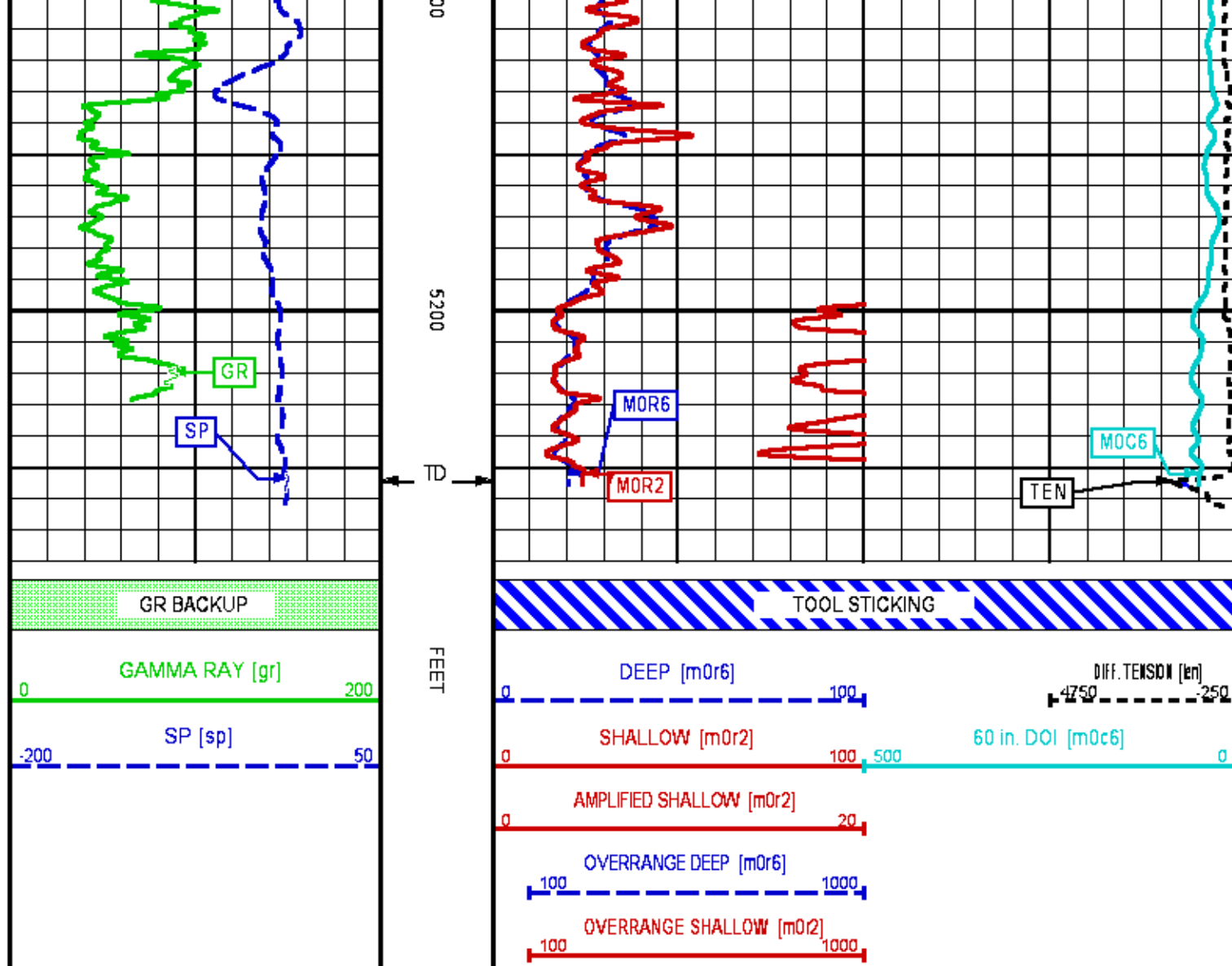
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MAIN LOG 5"/100FT SCALE

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

Updates: 1 Patches: 2

Plotted: Fri Sep 19 23:34:48 2014

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/OH090762/n970a03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 887.250 ft BOTTOM DEPTH: 5267.191 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER Q	medium {1}		TOP	BOTTOM
CALIPER	FILTER Q	medium {1}		"	"
TENSION	FILTER Q	medium {1}		"	"
CN MED RES	FILTER Q	medium {1}		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"

SP-SPDH	FILTER (hrd1st)	medium	"	"	
	FILTER (hrd2nd)	medium	"	"	
	FILTER (hrd2nd)	medium	"	"	
	FILTER (soft)	medium	"	"	
	FILTER ()	heavy (3)	"	"	
BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	8.750	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER	"	"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER	"	"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	in	"	"
	FIXED DIAMETER (mbh*)	8.750	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED	"	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	86.0	degF	"	"
	MUD SAMPLE RES	0.820	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	"	"
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	1600	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	13.500	in	"	"
ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

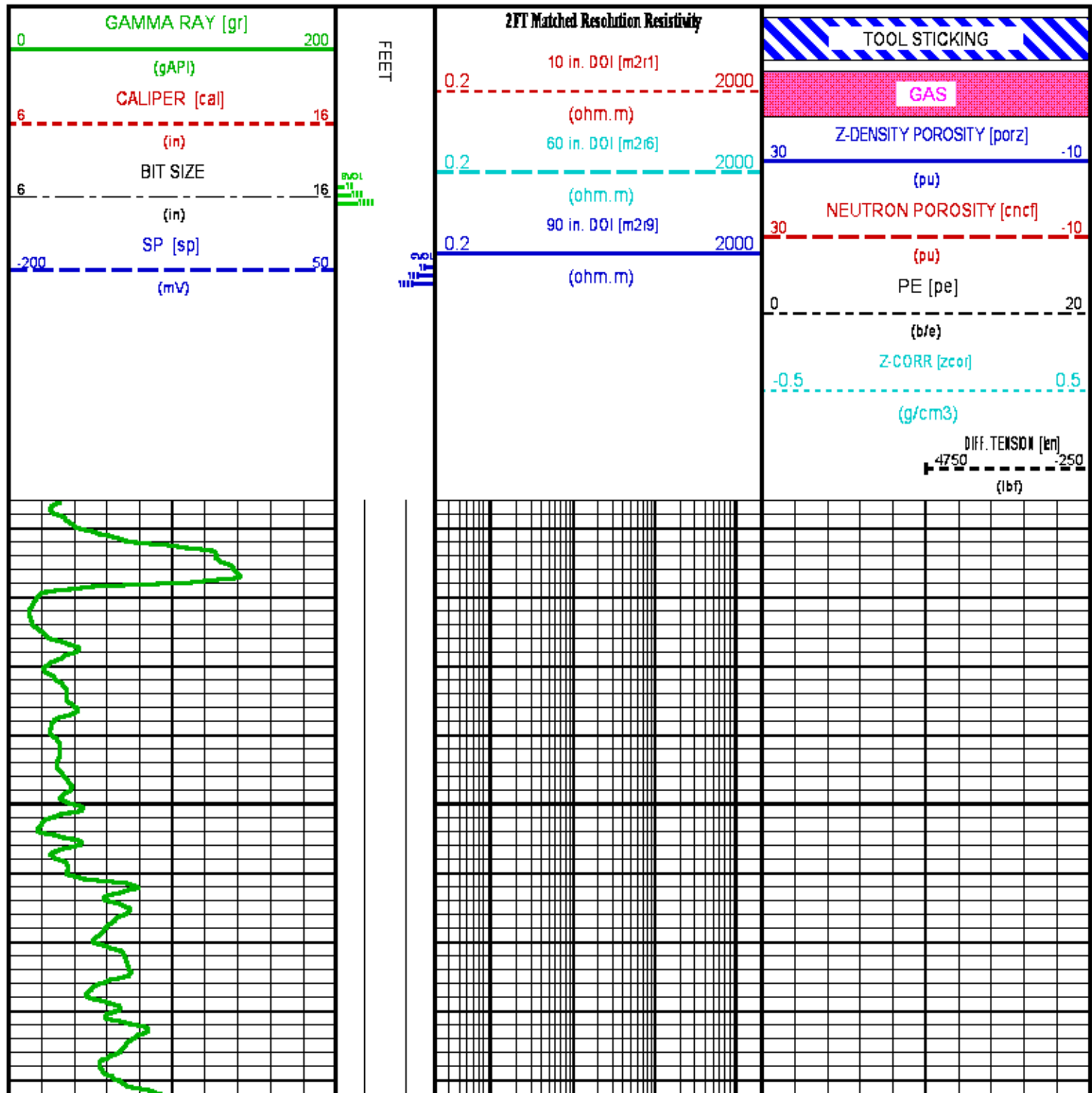
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 19 21:20:14 2014	BIT SIZE
F1:BVOL	Sep 19 21:20:14 2014	BOREHOLE VOLUME
F1:CAL	Sep 19 21:20:14 2014	CALIPER
F1:CNOF	Sep 19 21:20:14 2014	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Sep 19 21:20:14 2014	CEMENT VOLUME
F1:GR	Sep 19 21:20:14 2014	GAMMA RAY
F1:M2R1	Sep 19 21:20:14 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Sep 19 21:20:14 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Sep 19 21:20:14 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Sep 19 21:20:14 2014	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Sep 19 21:20:14 2014	POROSITY FOR SELECTABLE MATRIX
F1:SP	Sep 19 21:20:14 2014	SPONTANEOUS POTENTIAL
F1:TEN	Sep 19 21:20:14 2014	DIFFERENTIAL TENSION

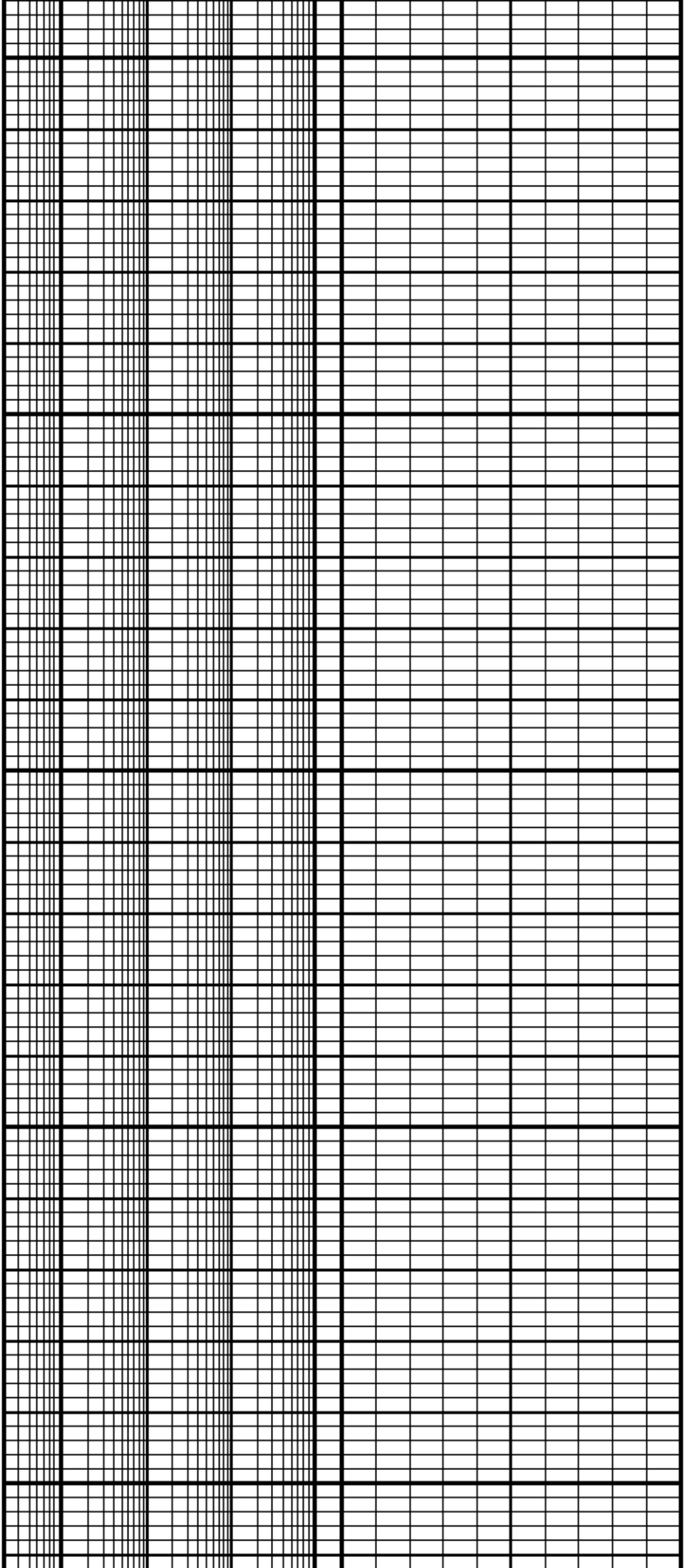
CURVE MEASURE POINT OFFSET

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:MAIN WPX_5IN.fvpdf [5"/100' Scale]
 Plot Interval : 6.5 - 5271 Feet

Data File 1 : F1 : HL6670:/dat1a/OH090762/MAIN.xtf
 Created On : Sep 19 21:20:14 2014
 Company : WPX ENERGY ROCK MTN LLC
 Well : FEDERAL SG 442-28
 Field : GRAND VALLEY
 File Interval : 6.5 - 5271 Feet
 OCT : n970a

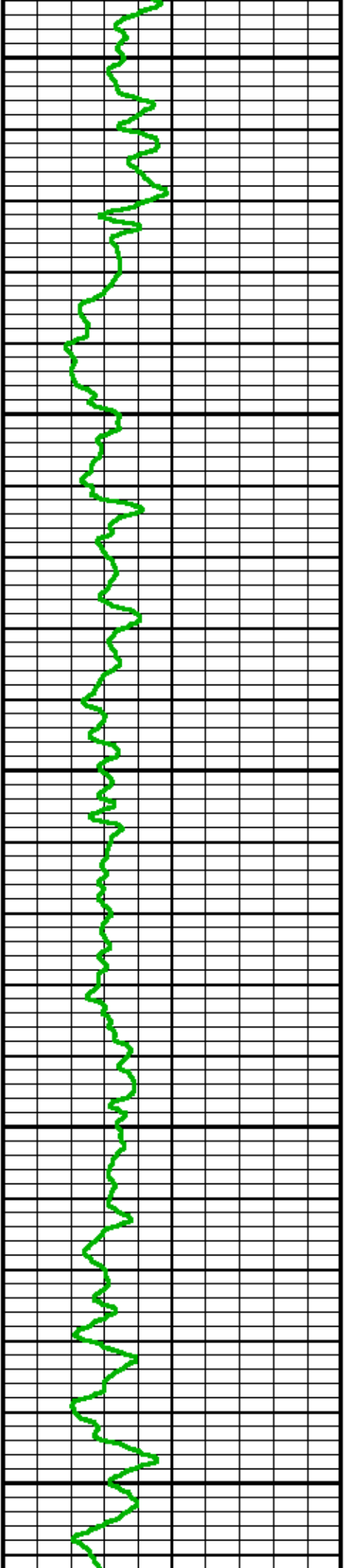




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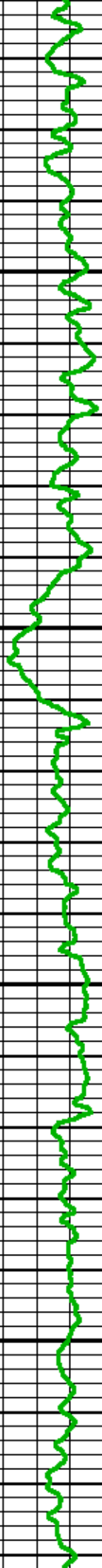
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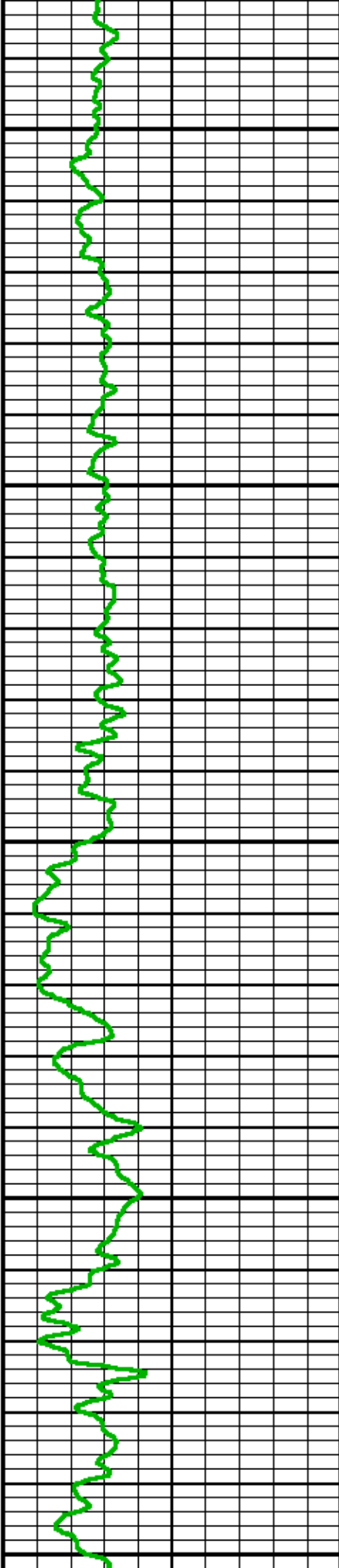
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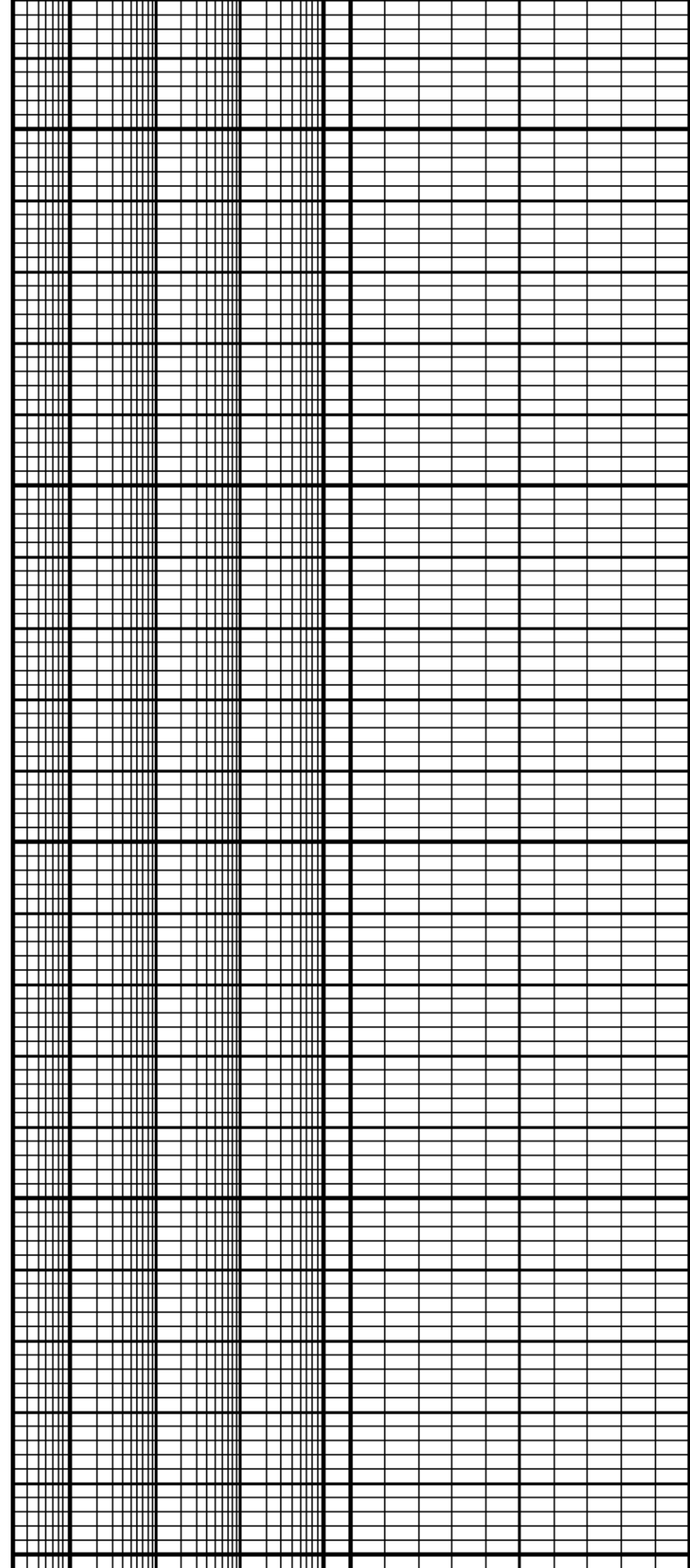
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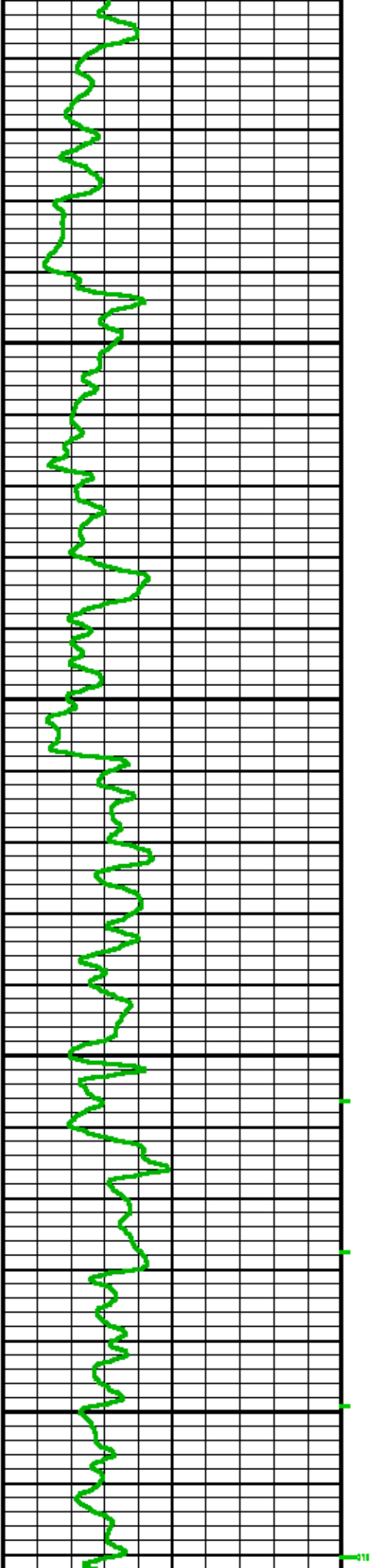




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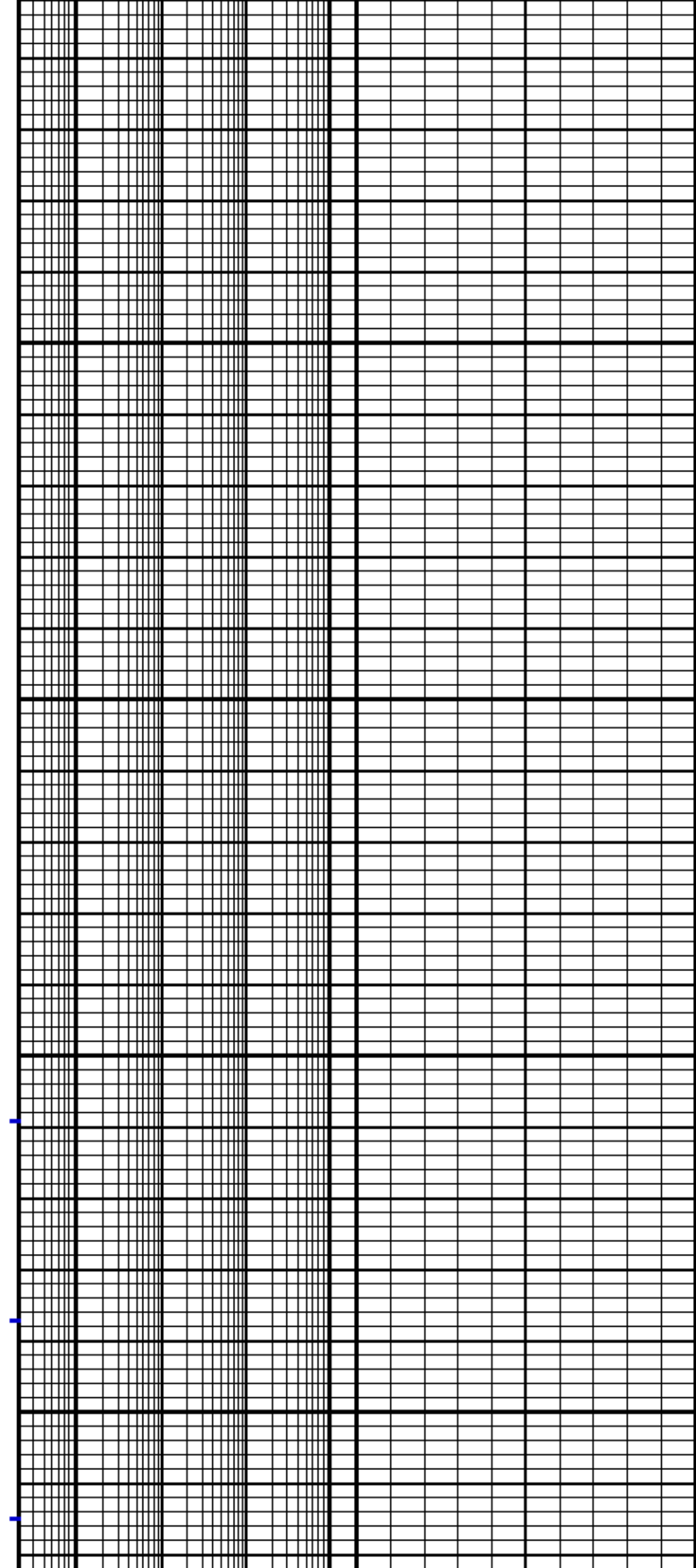
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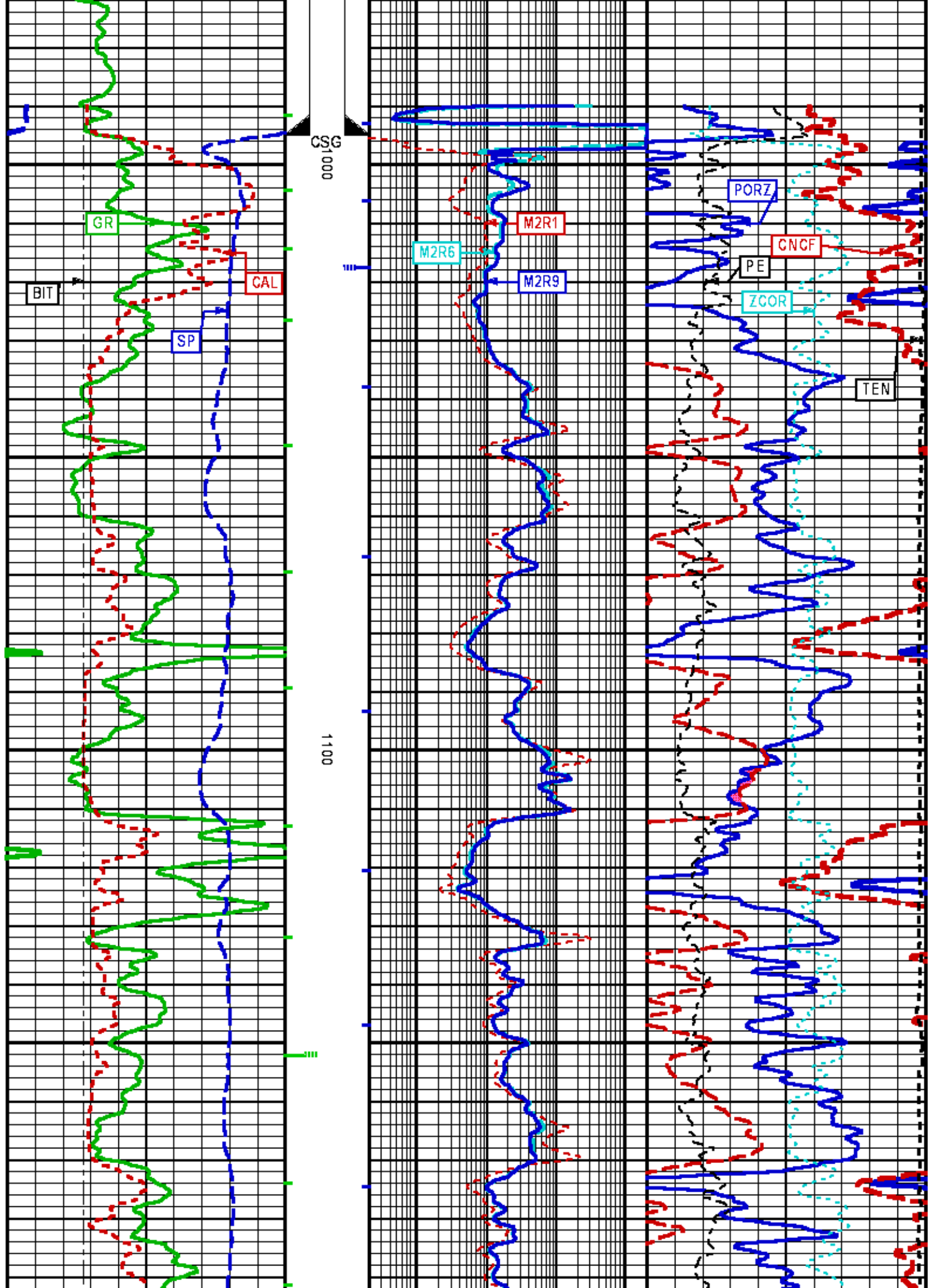


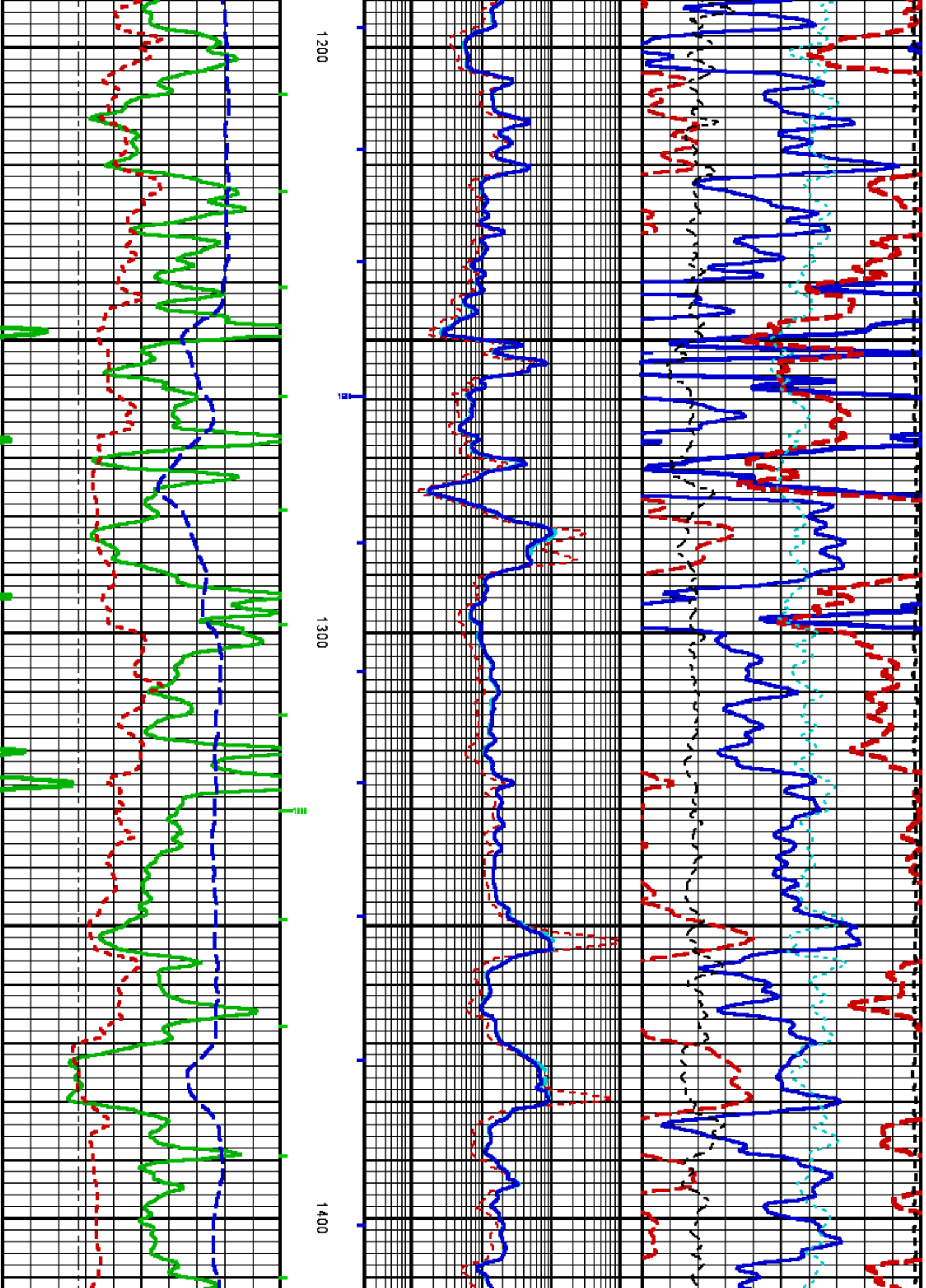


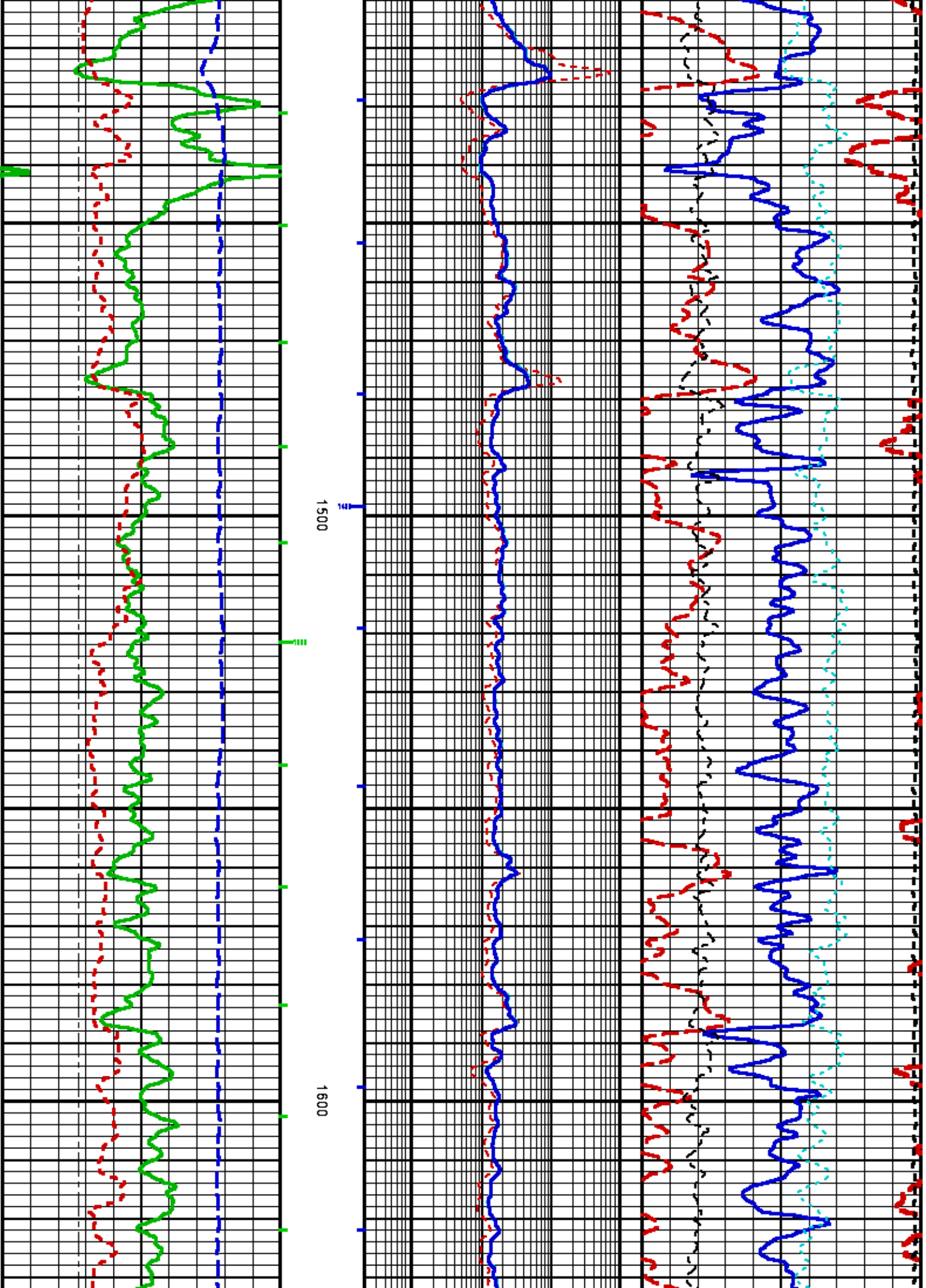
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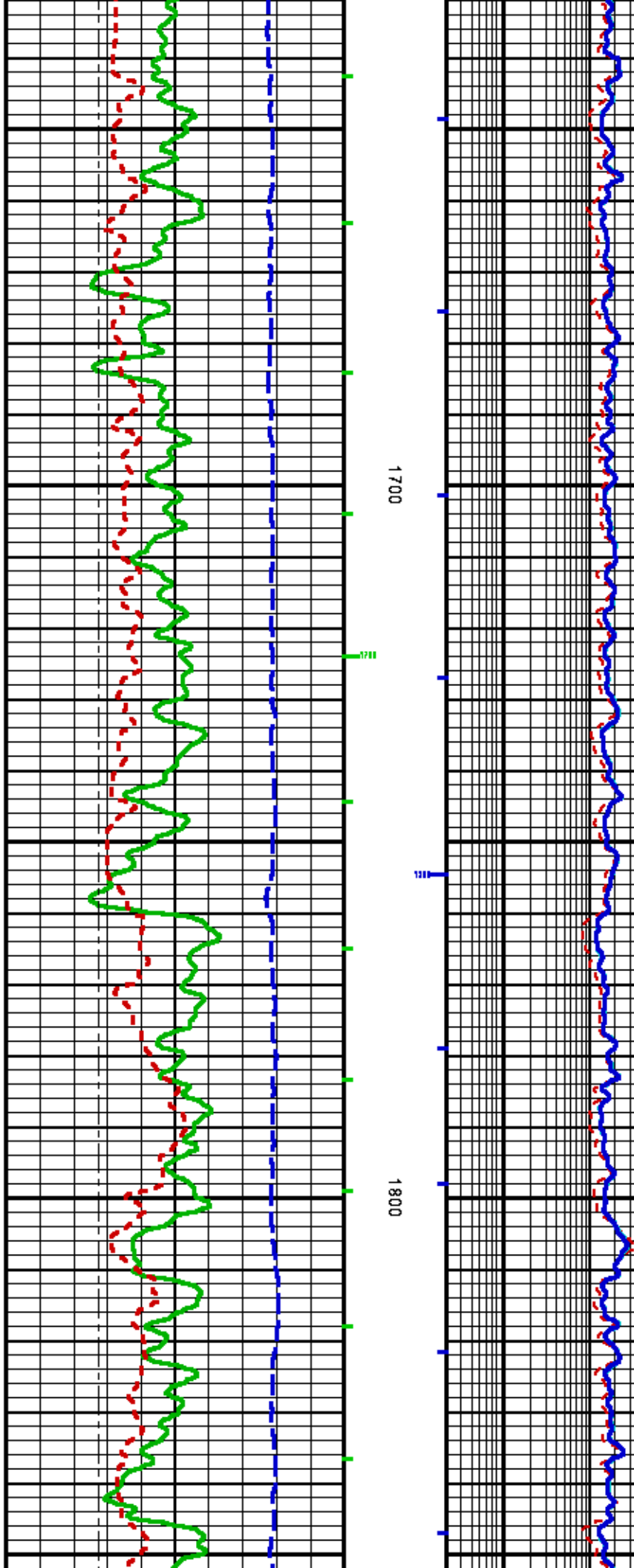
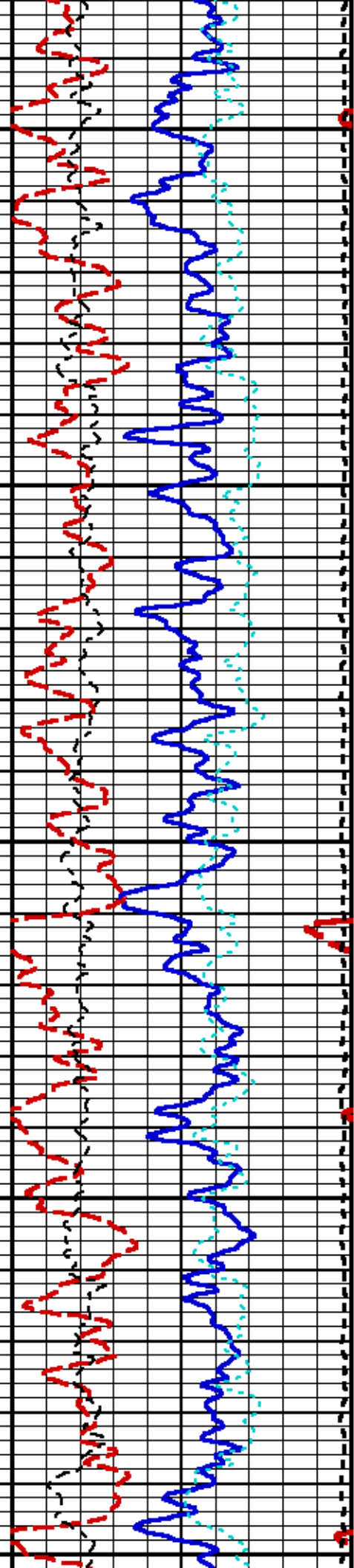
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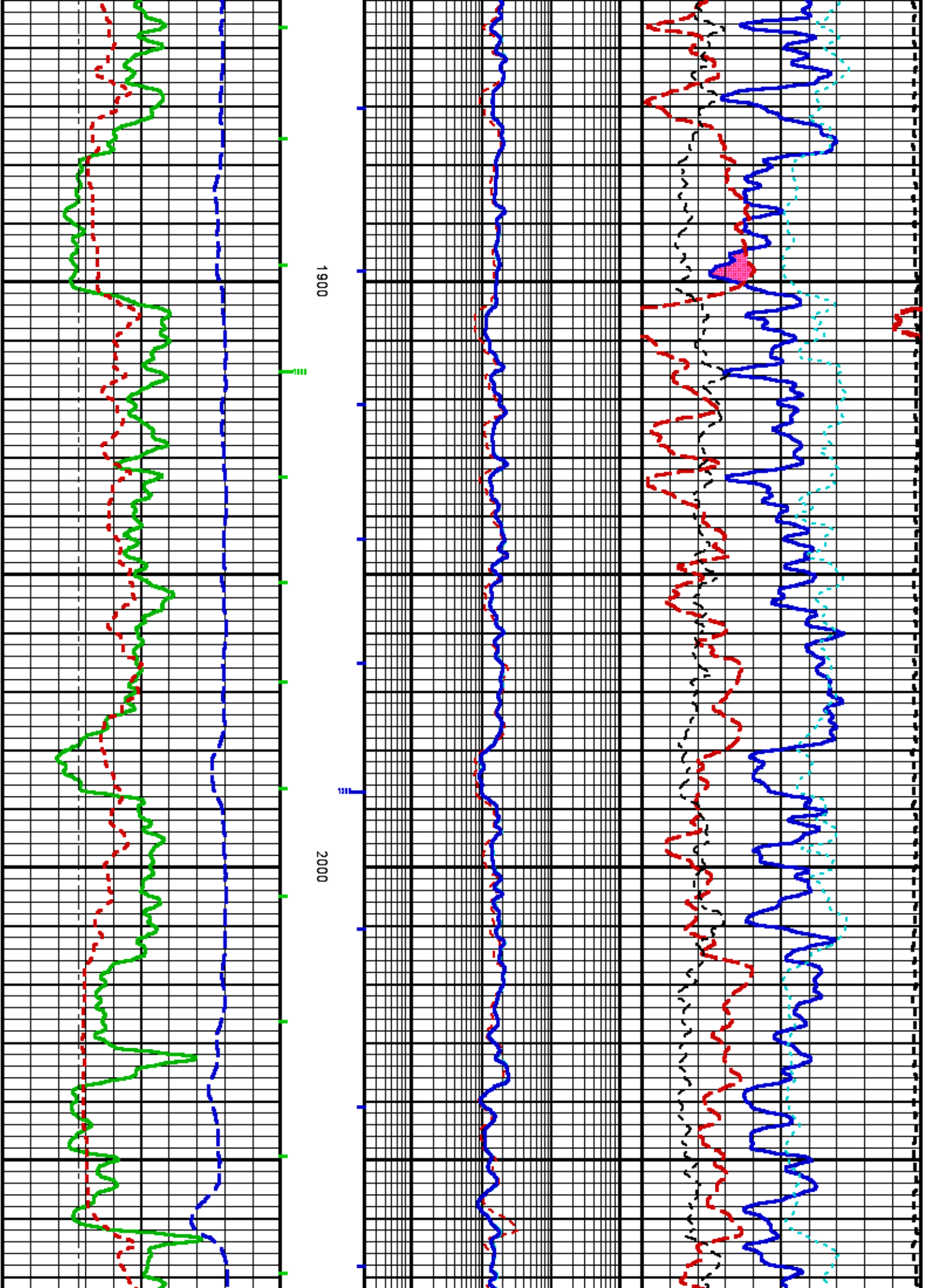


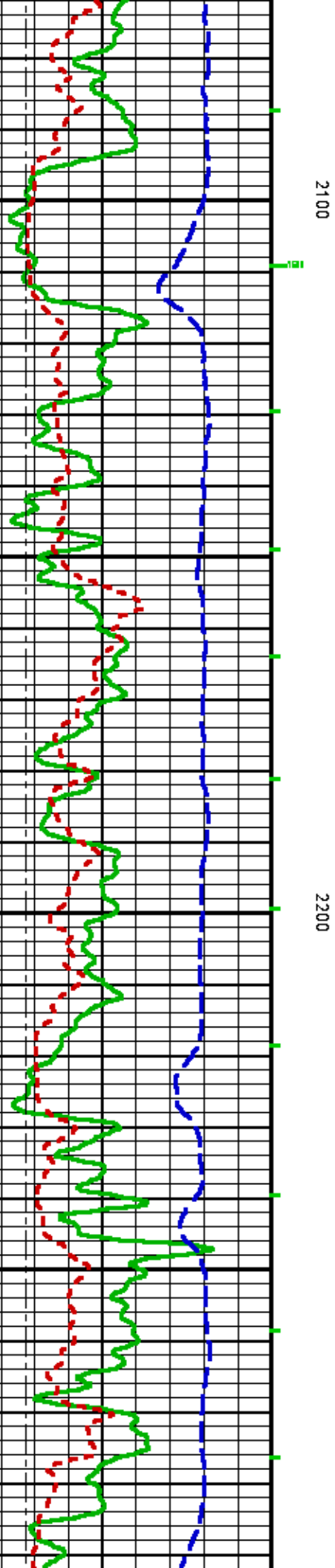
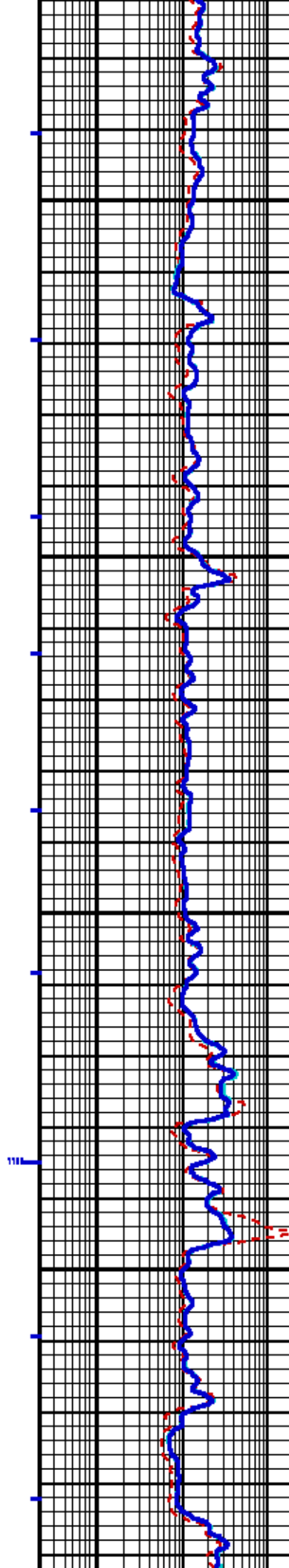
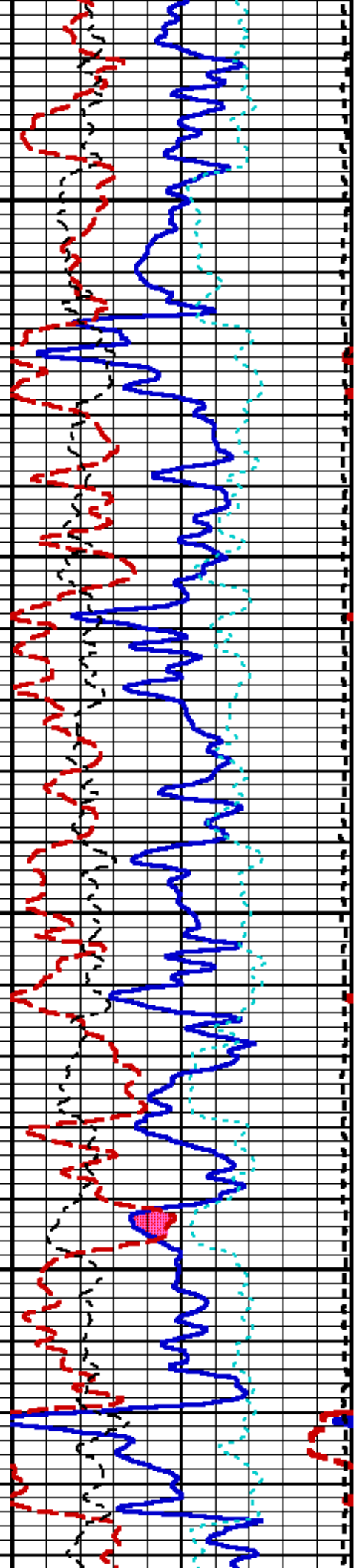


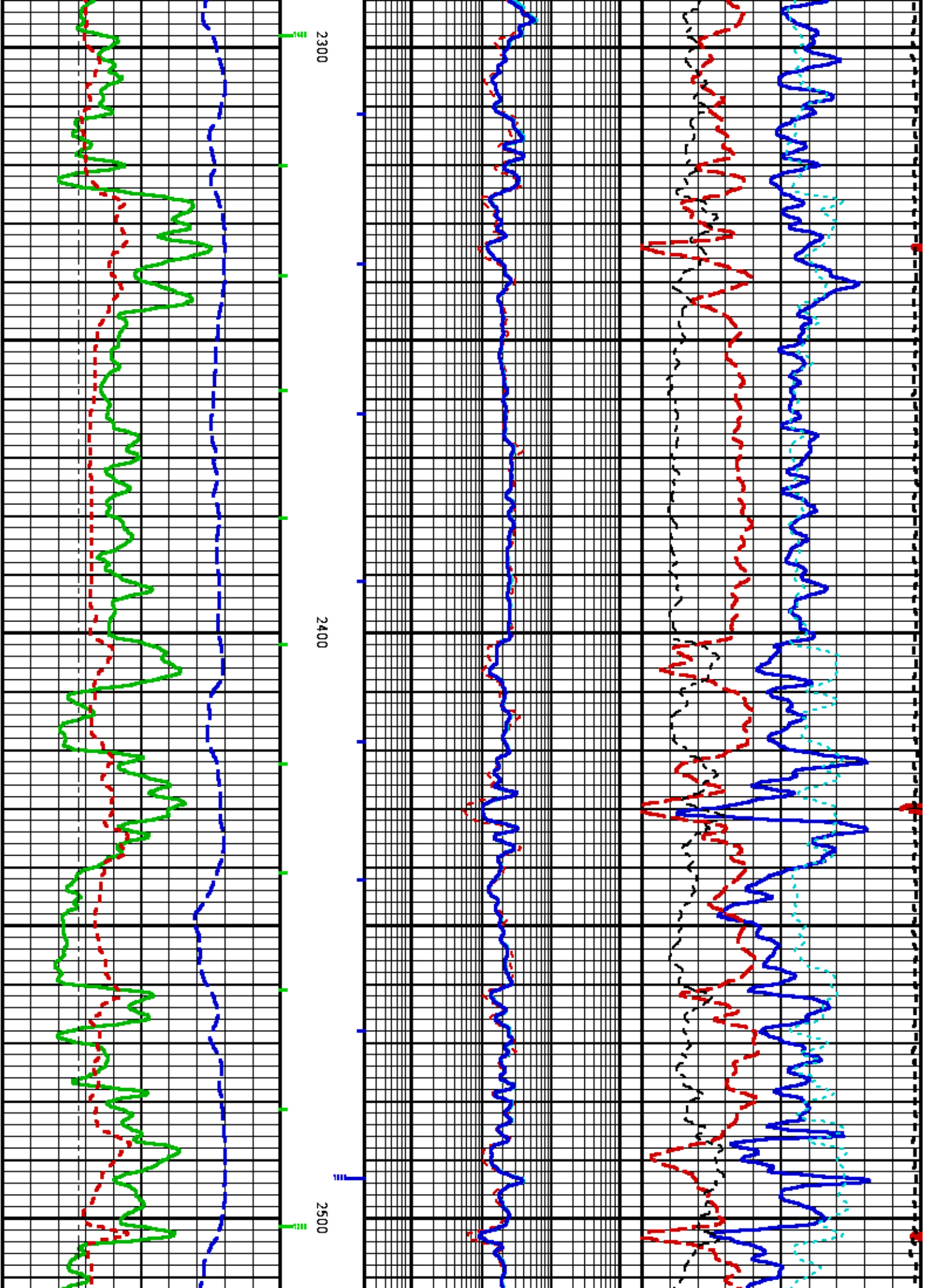


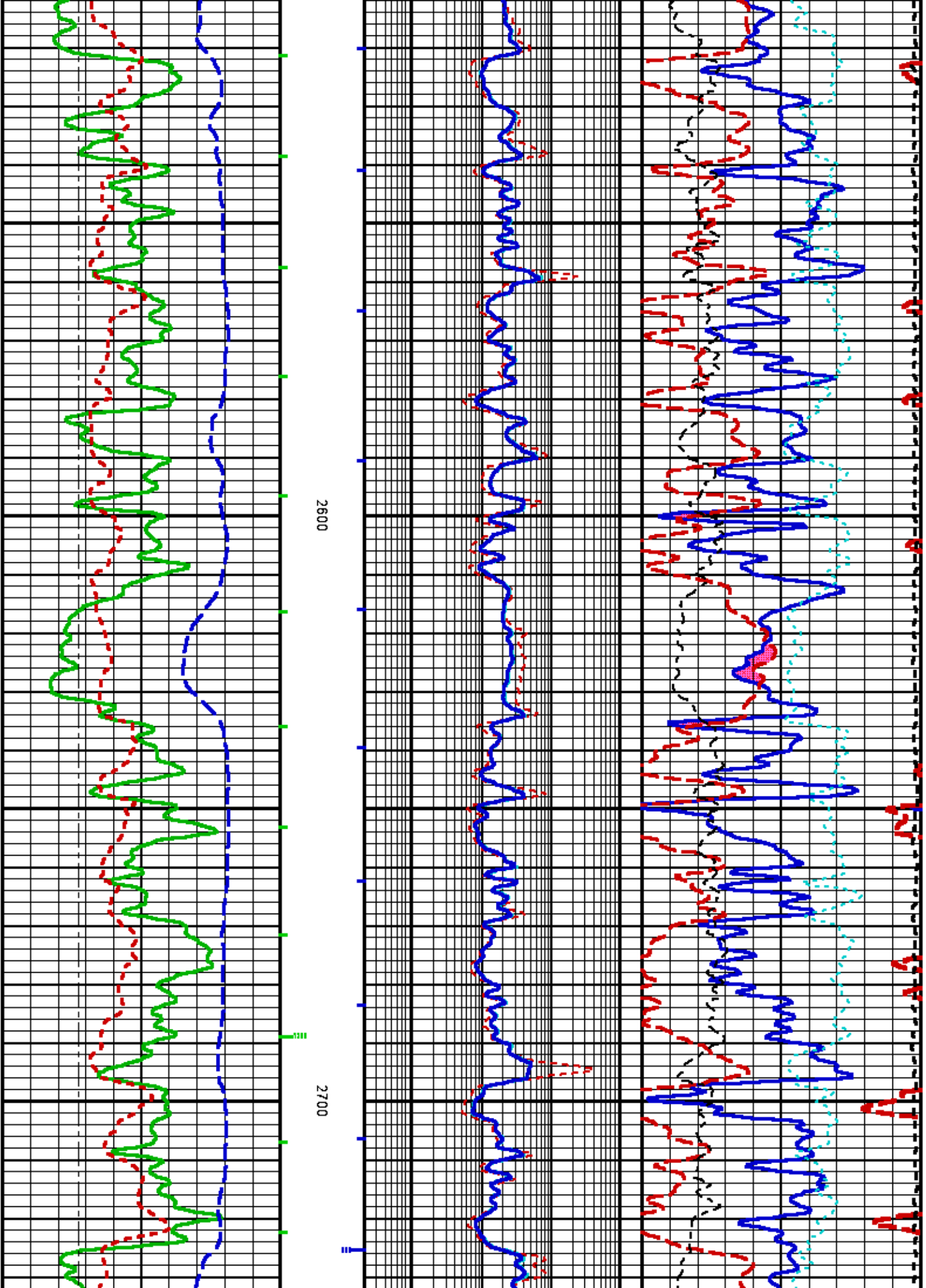


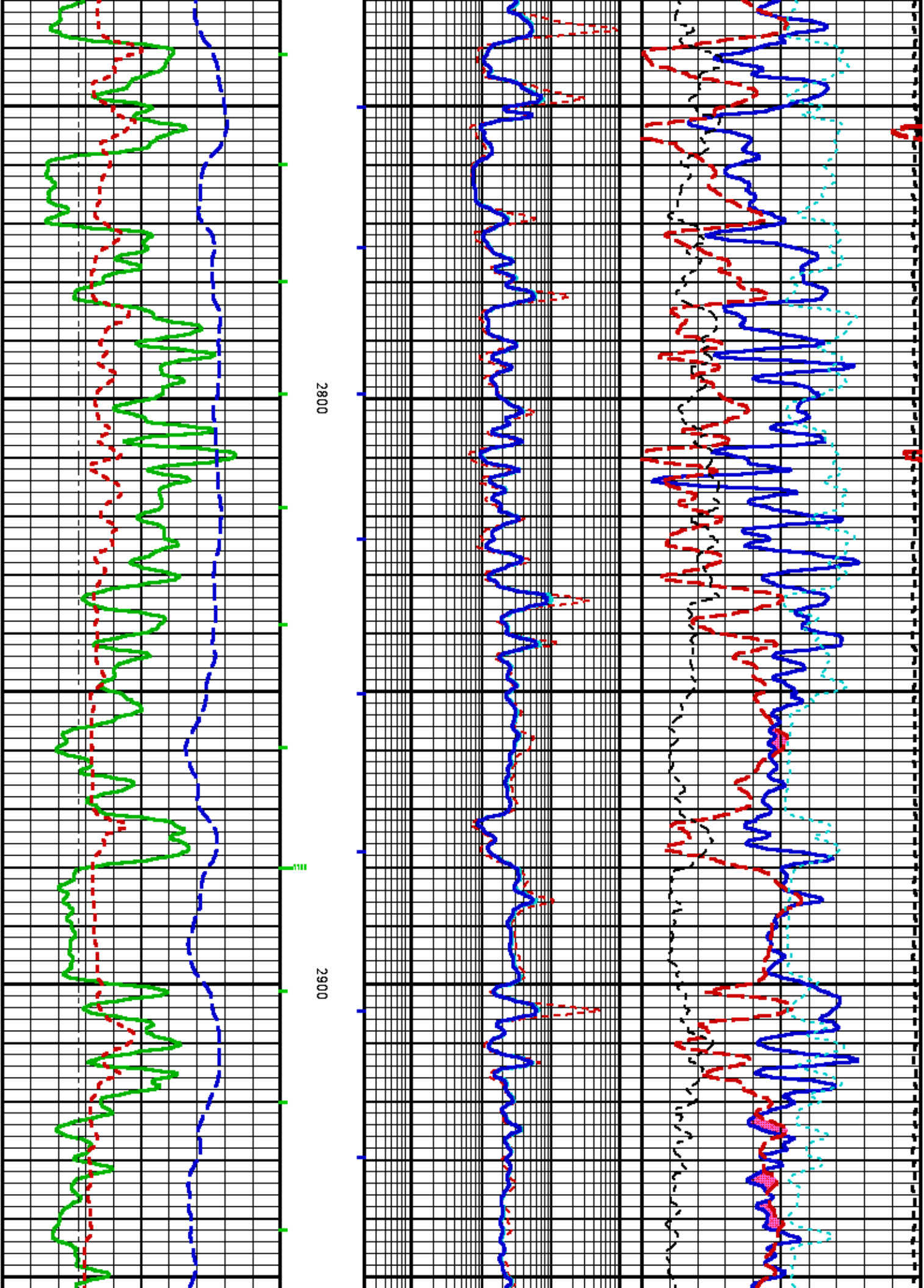


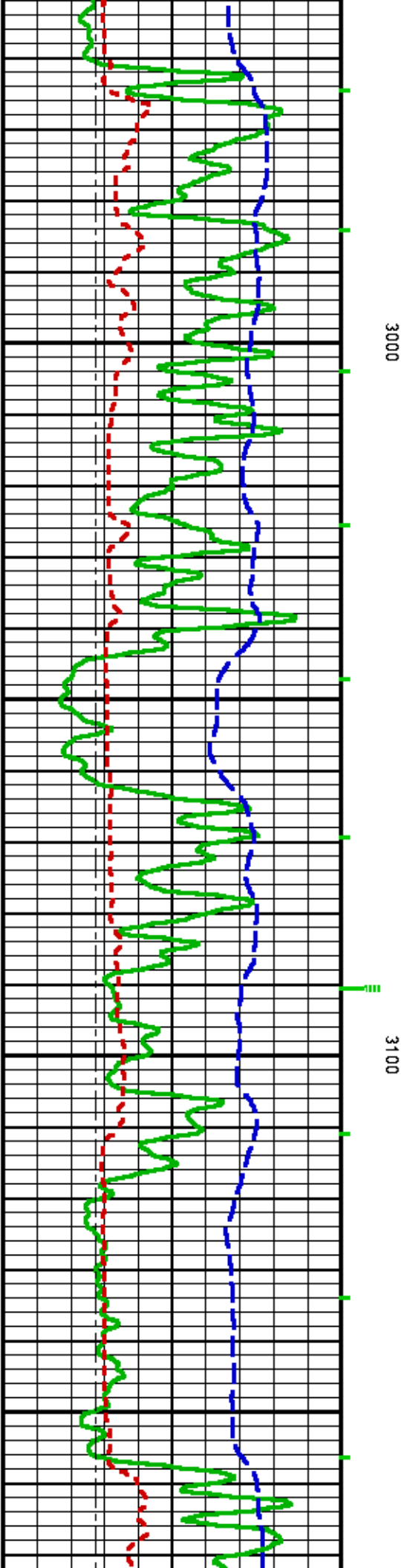
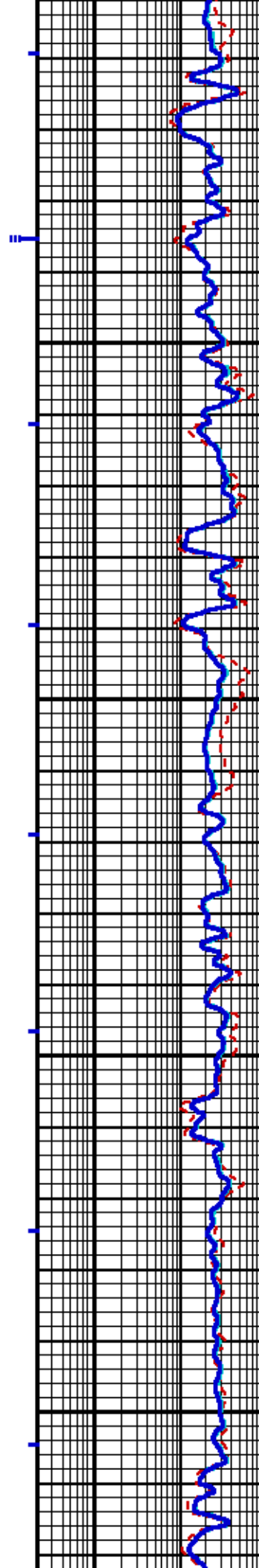
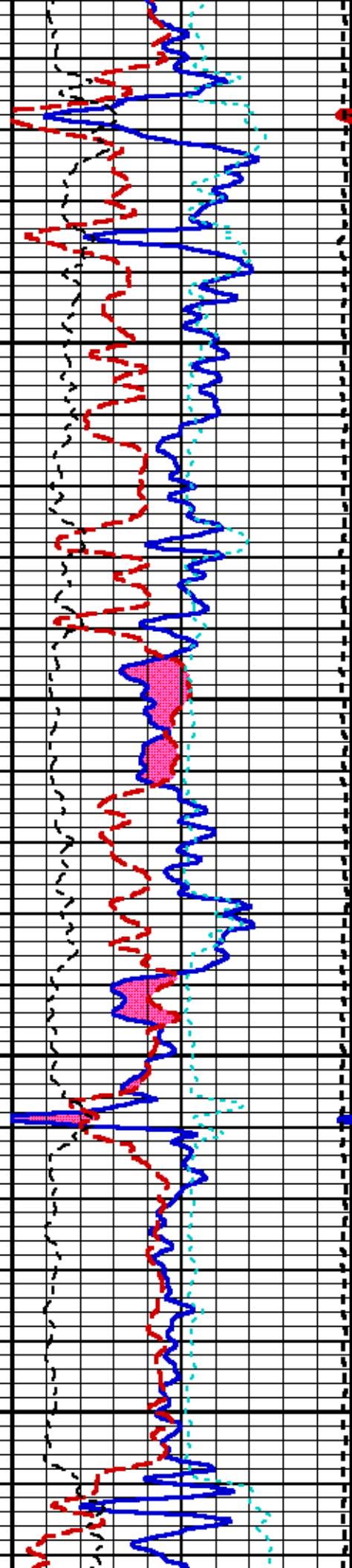


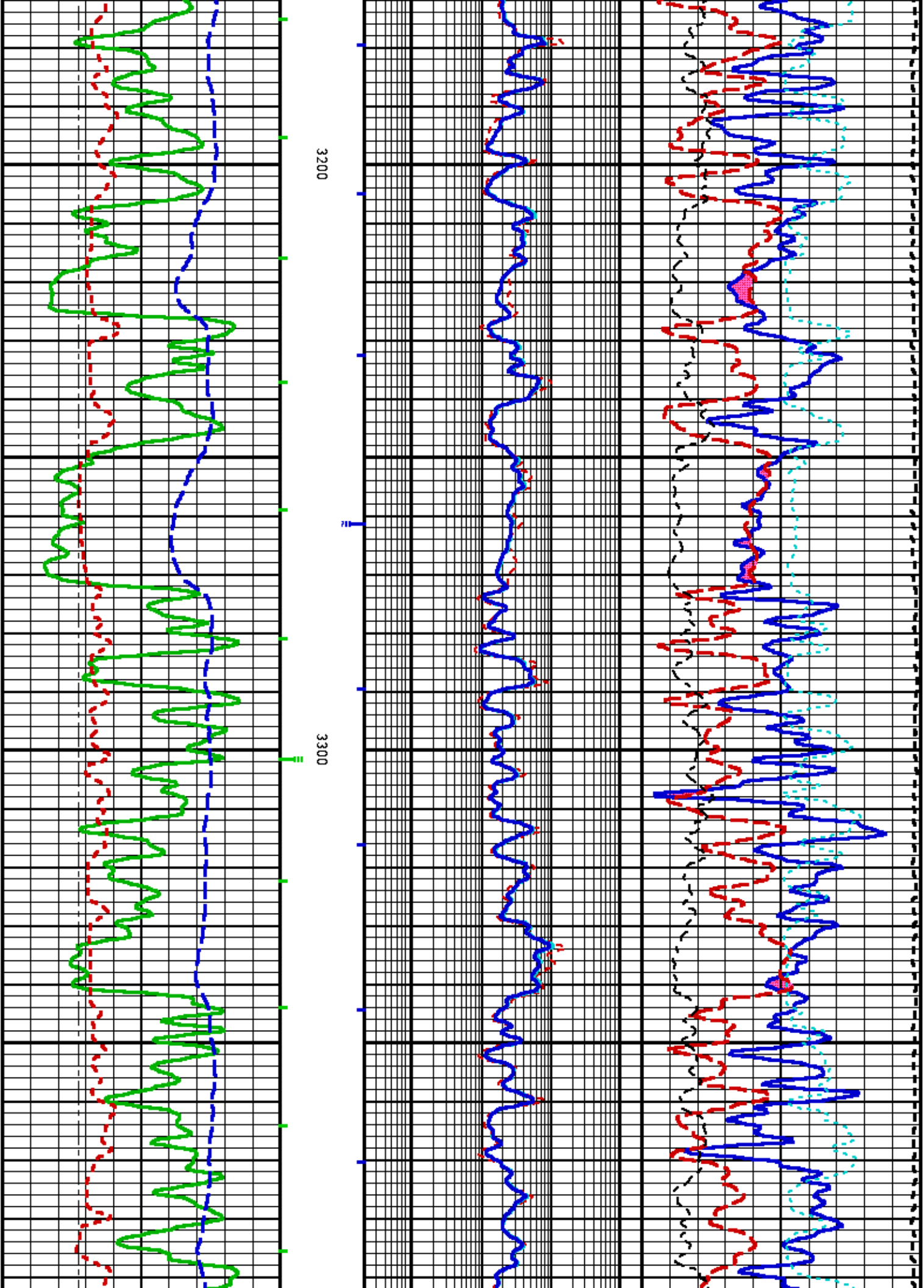


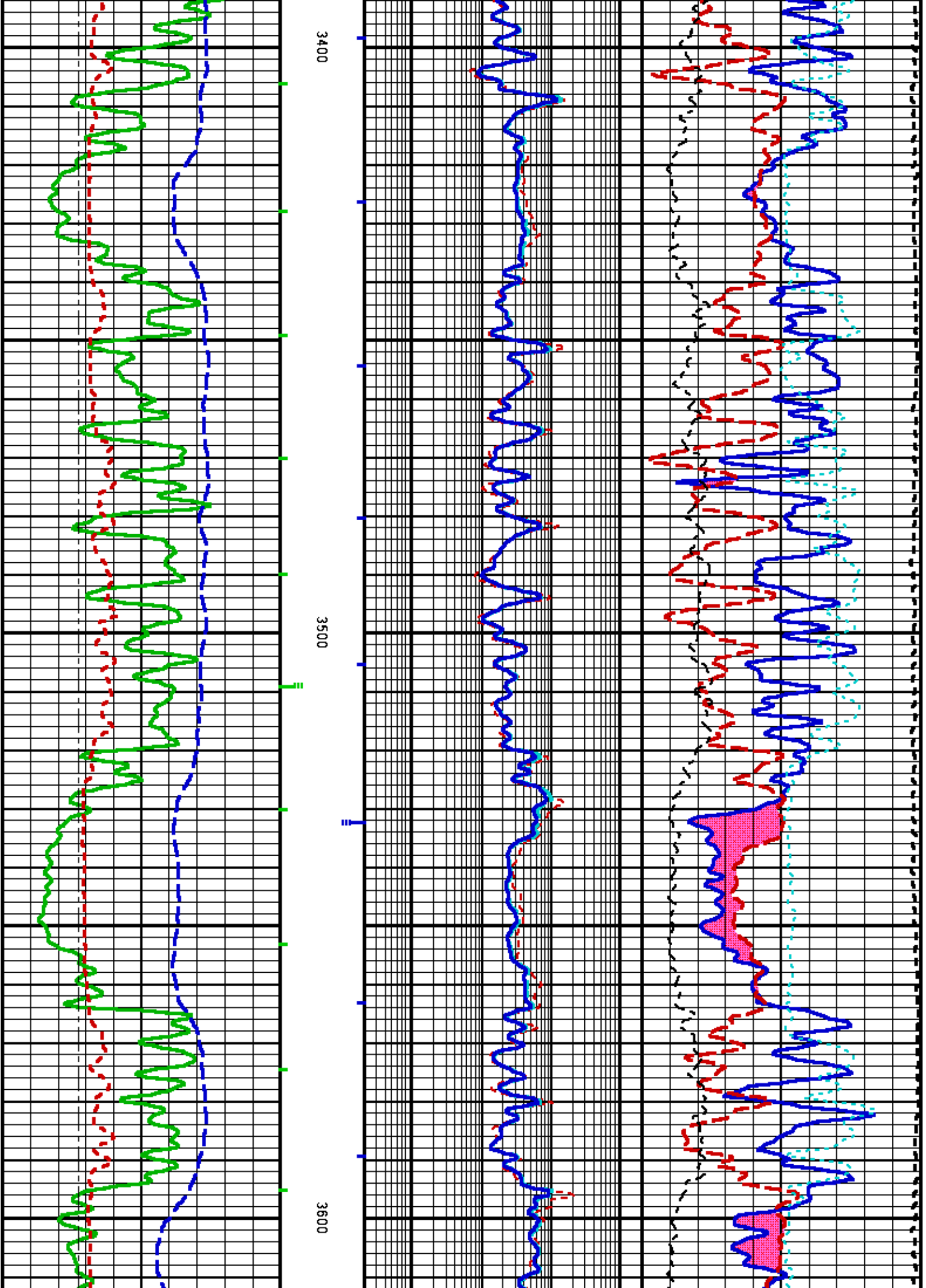


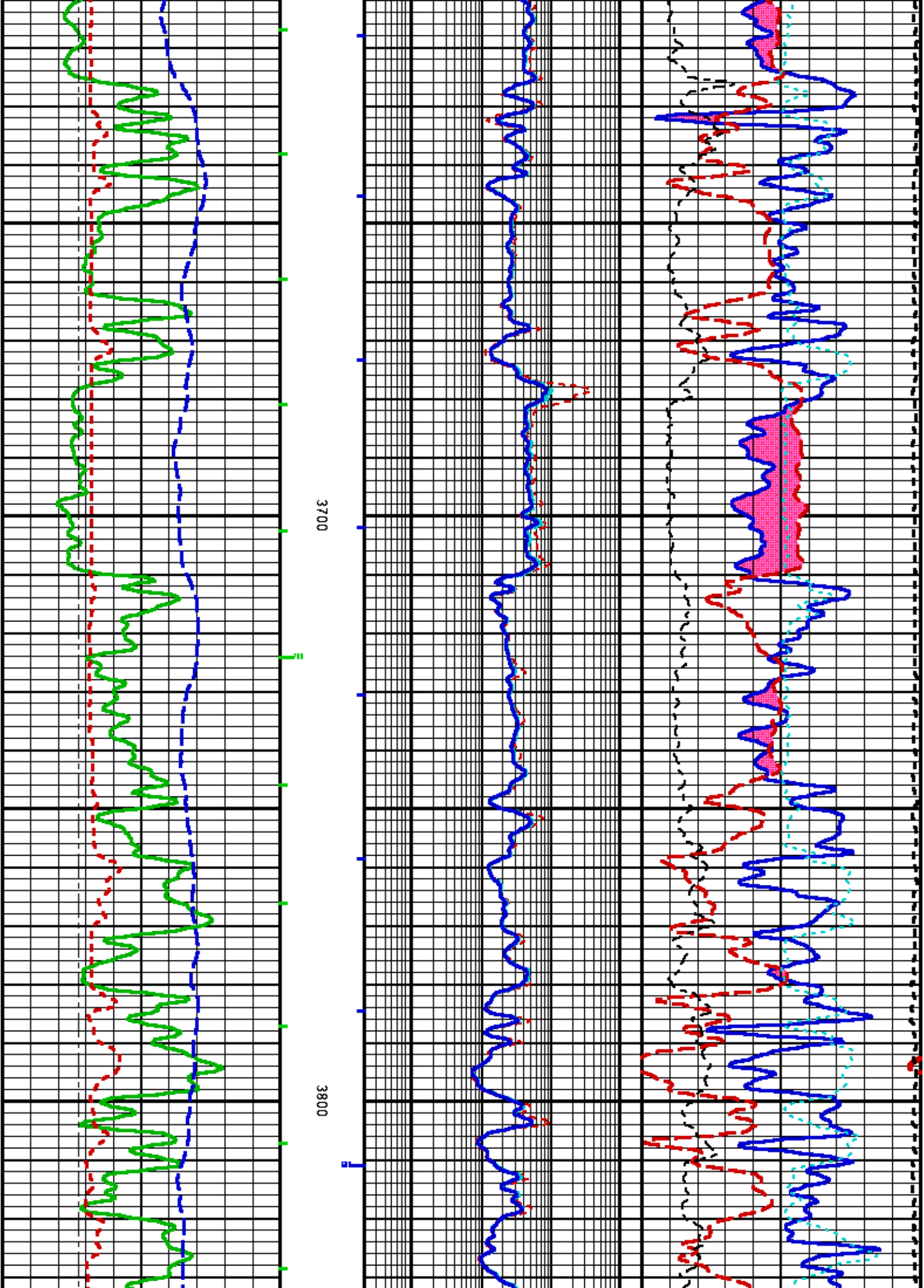


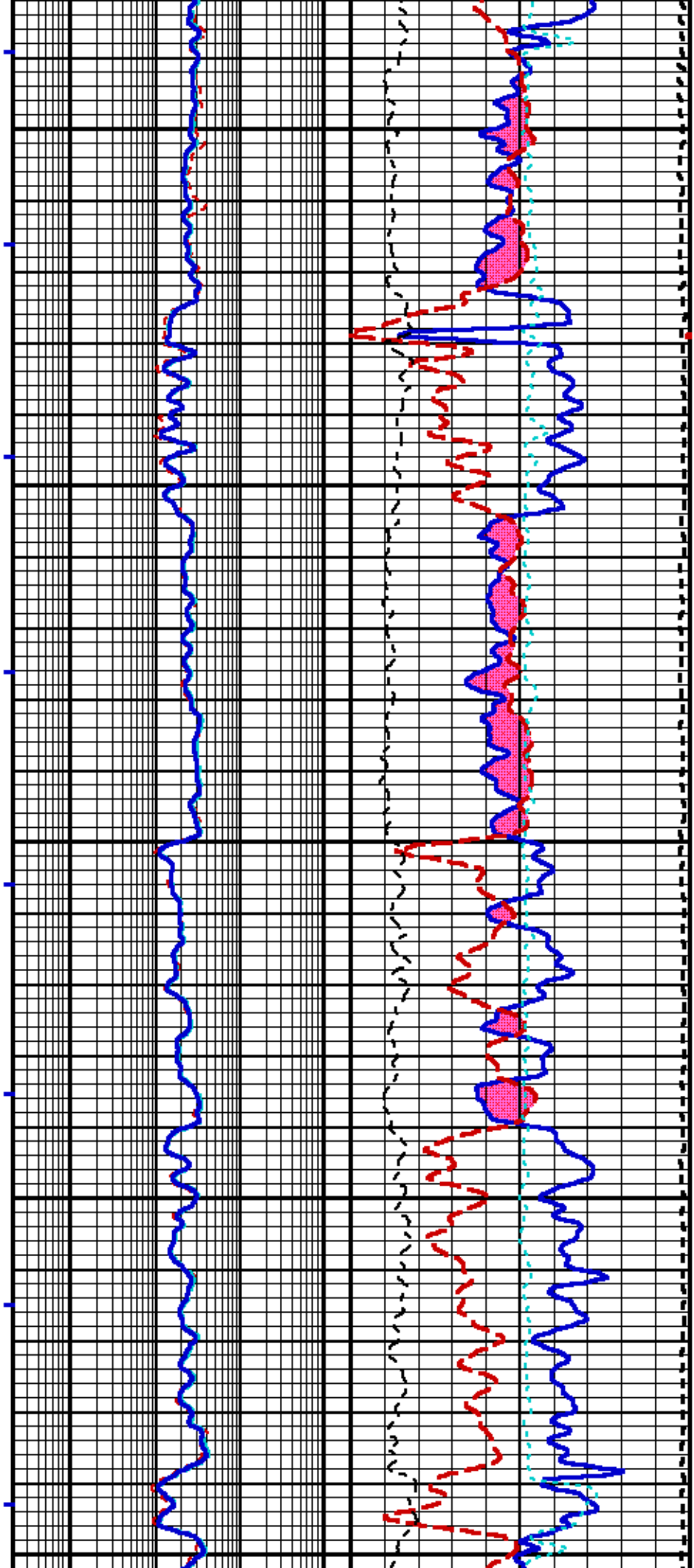






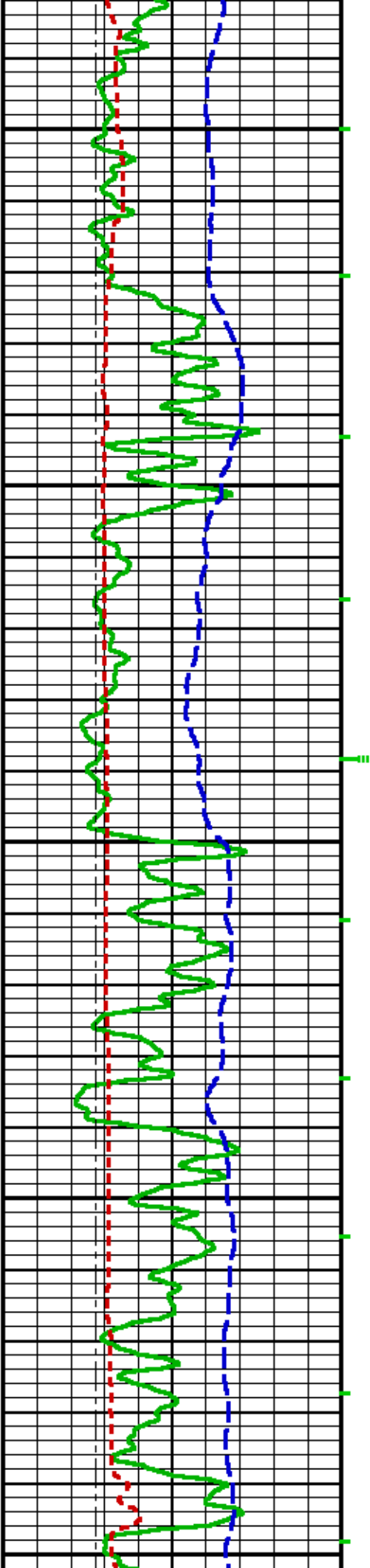


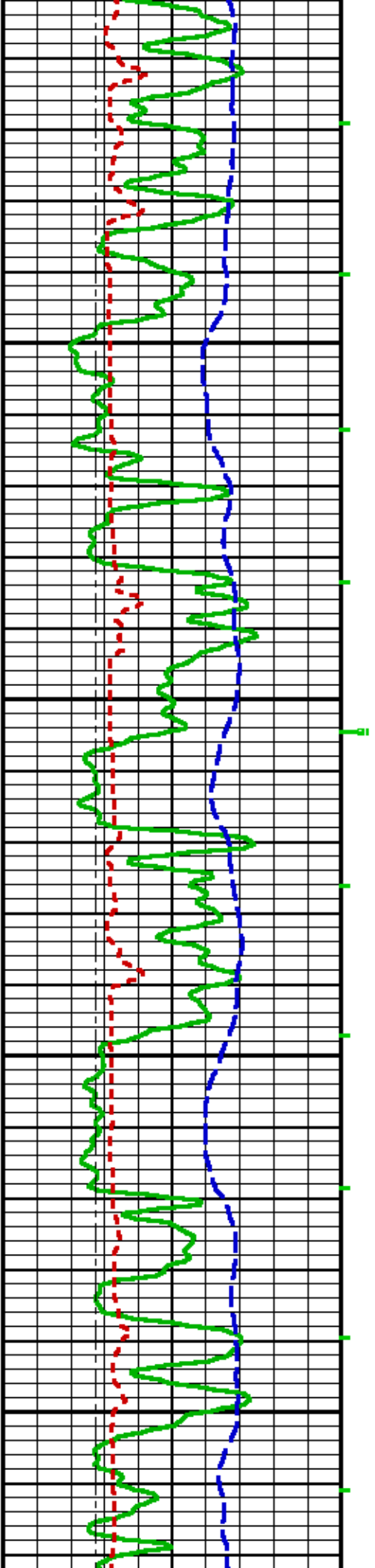
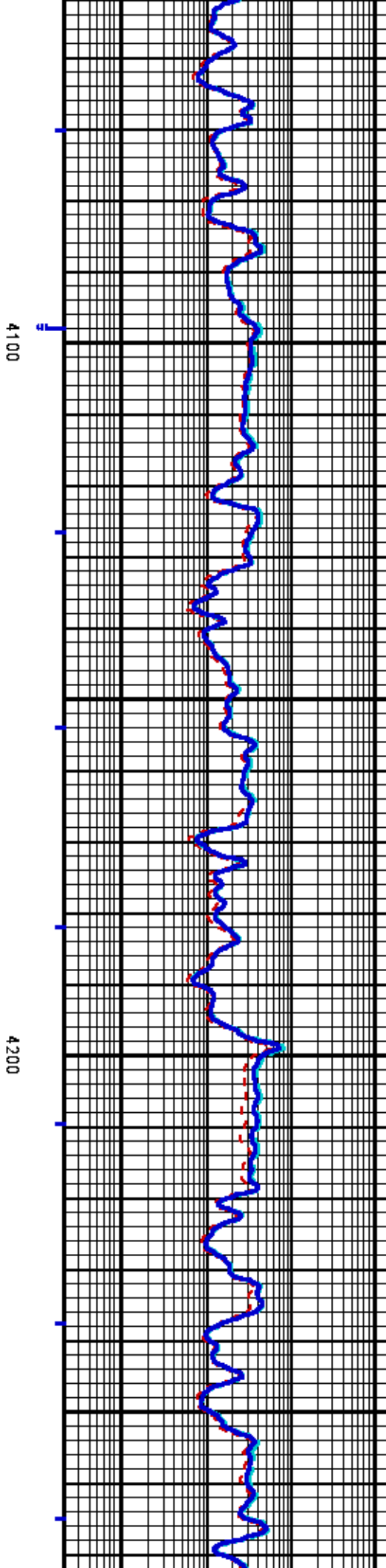
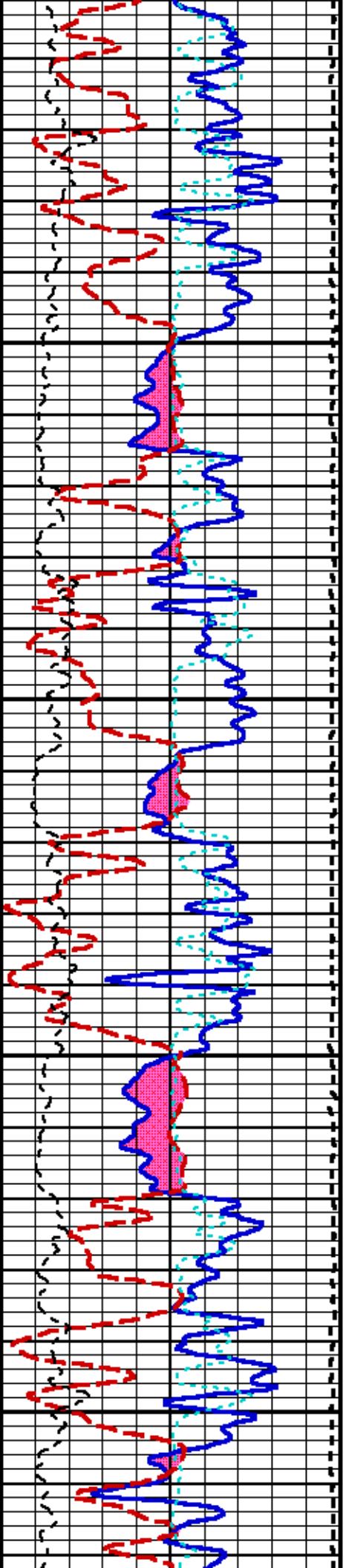


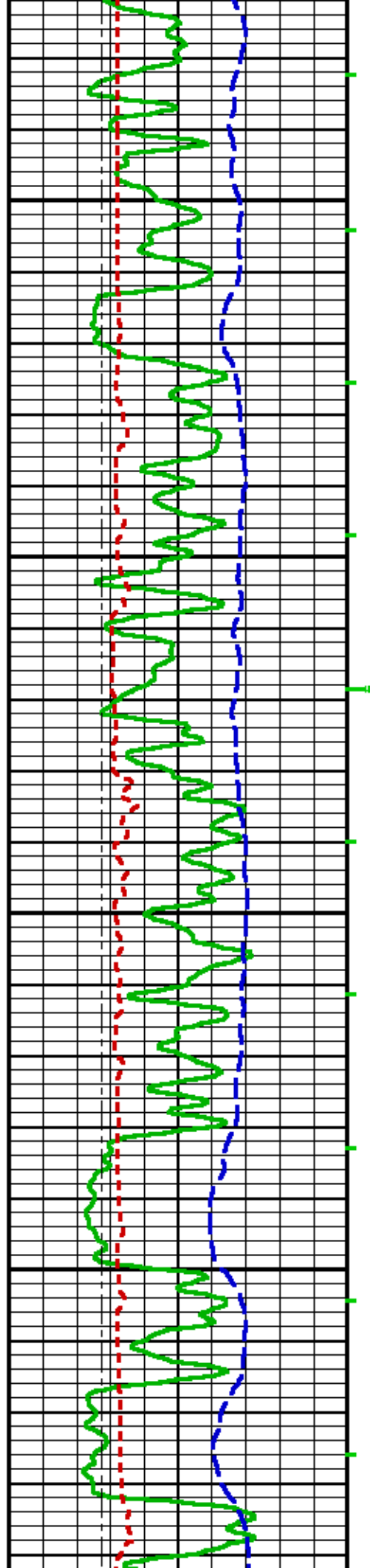
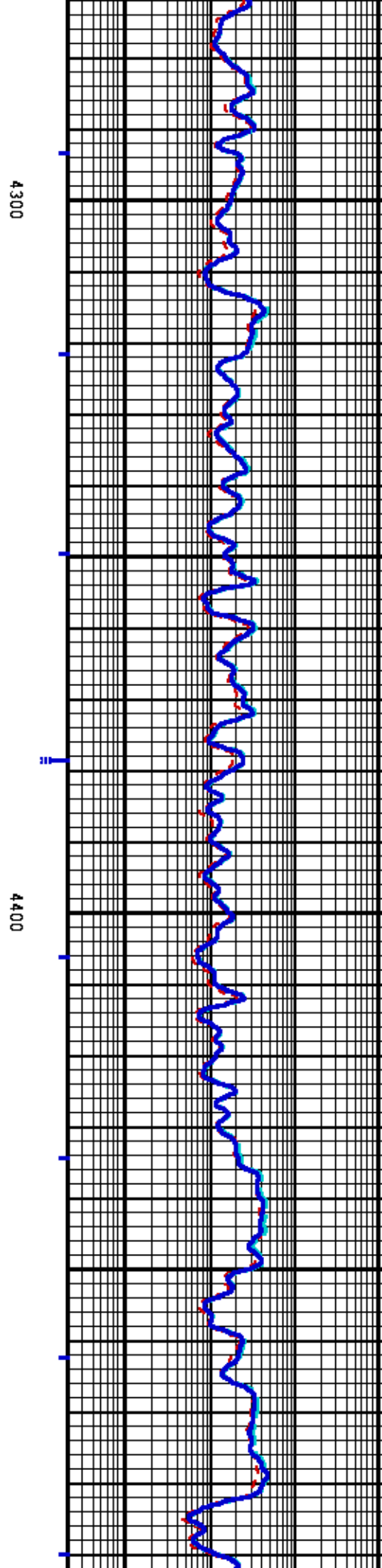
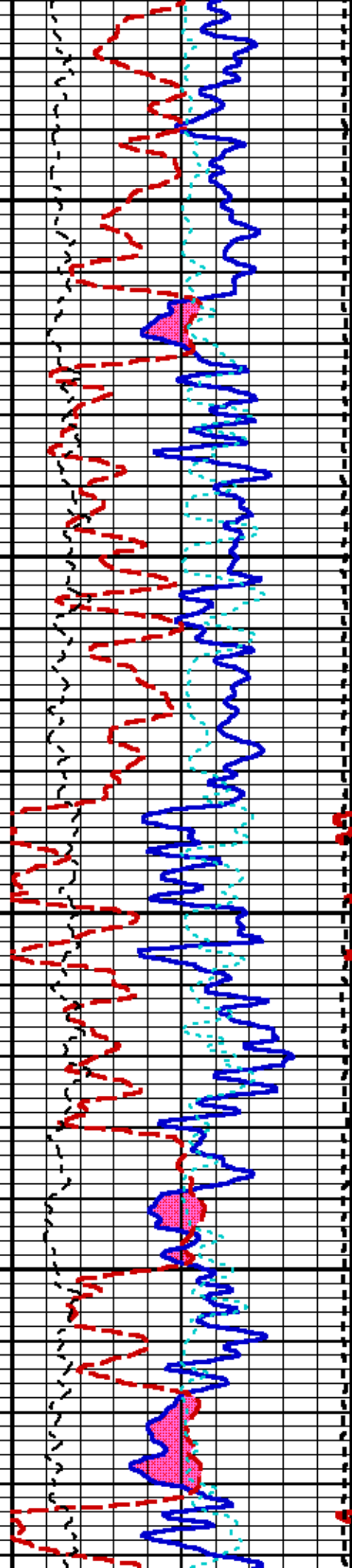


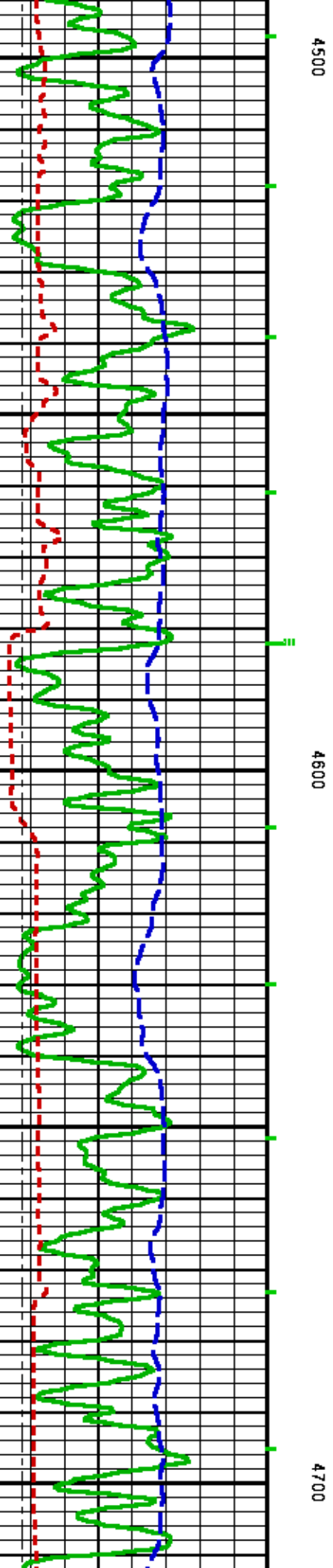
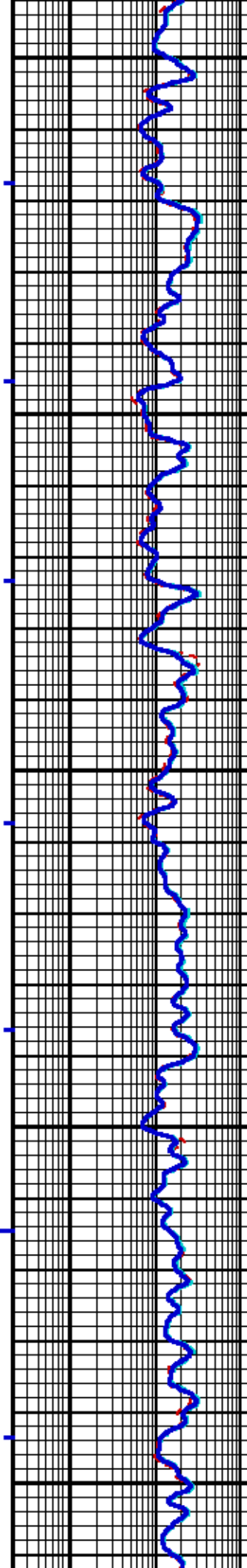
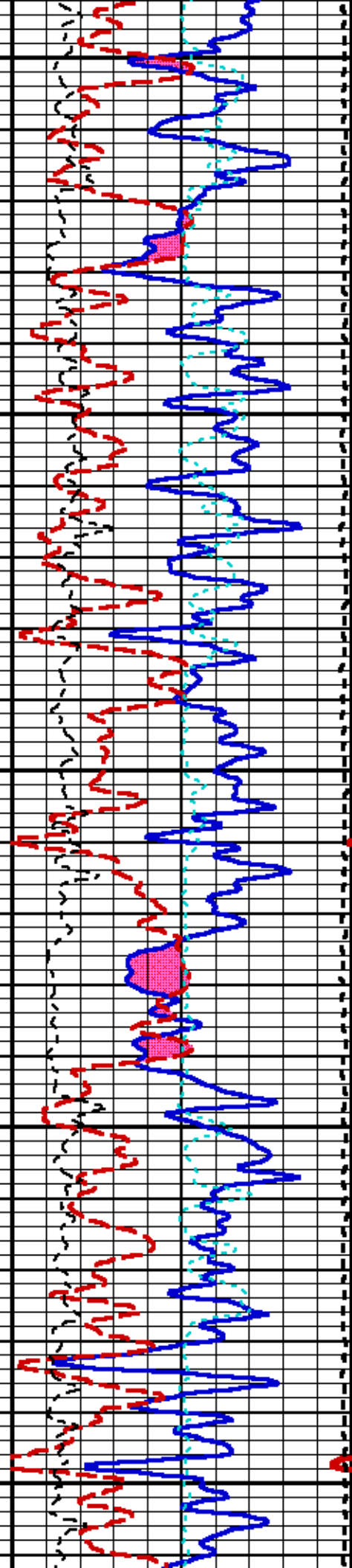
3900

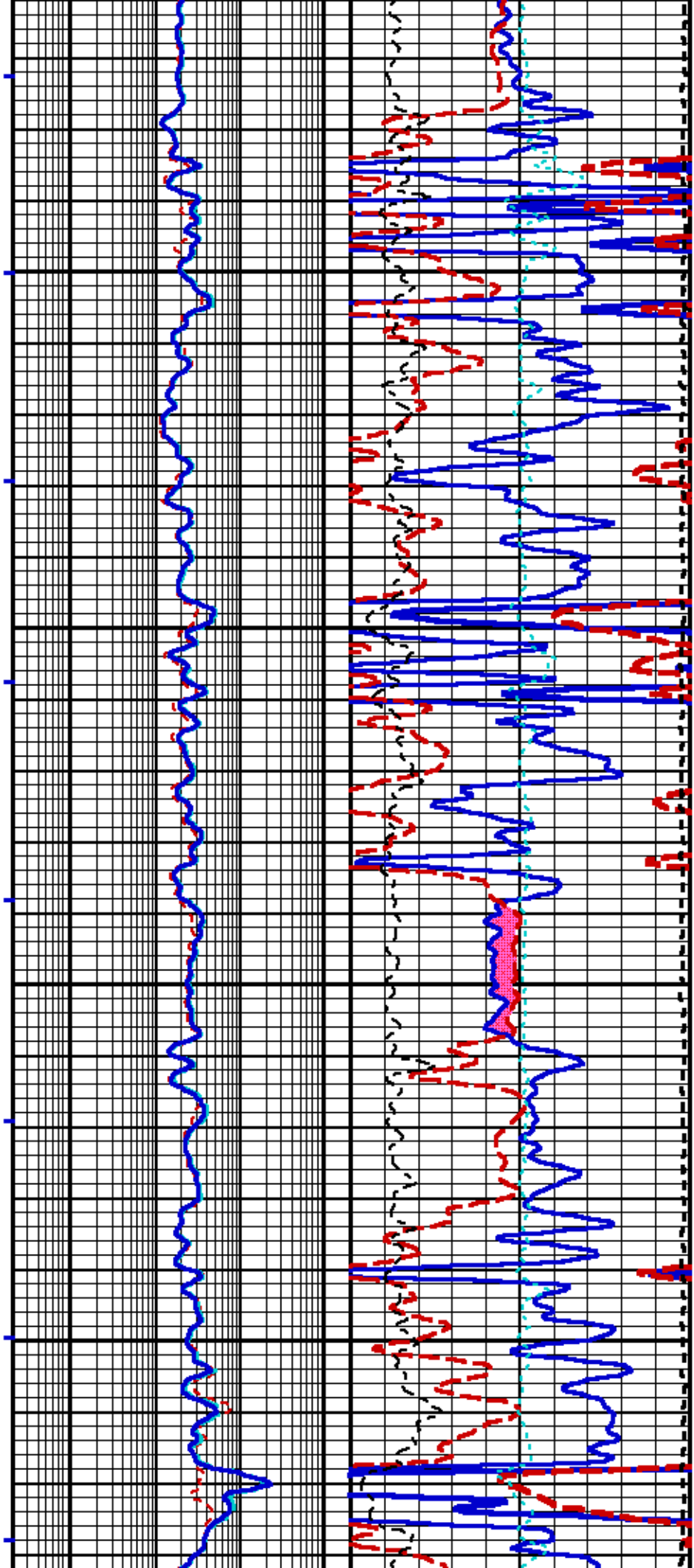
4000





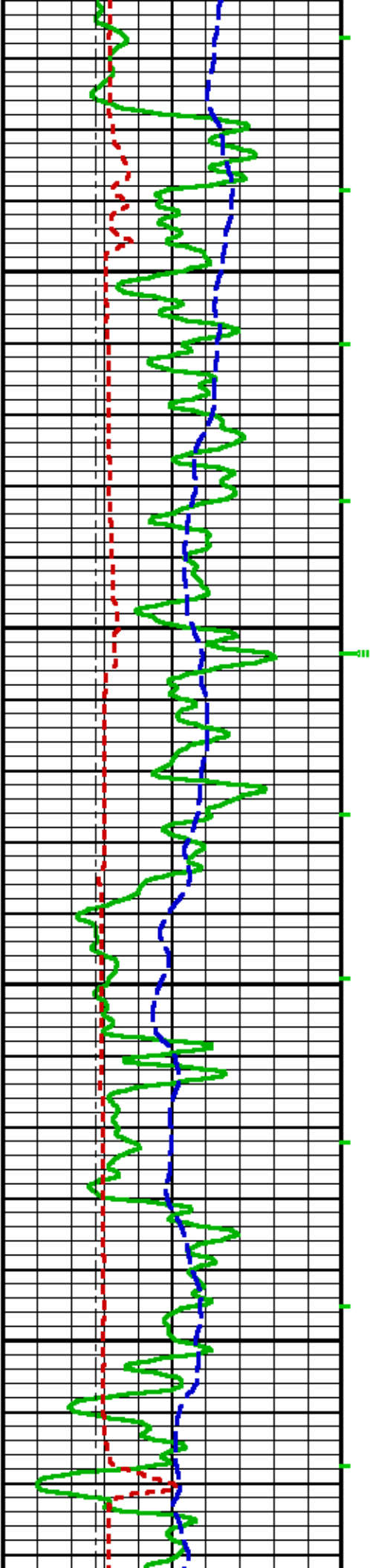


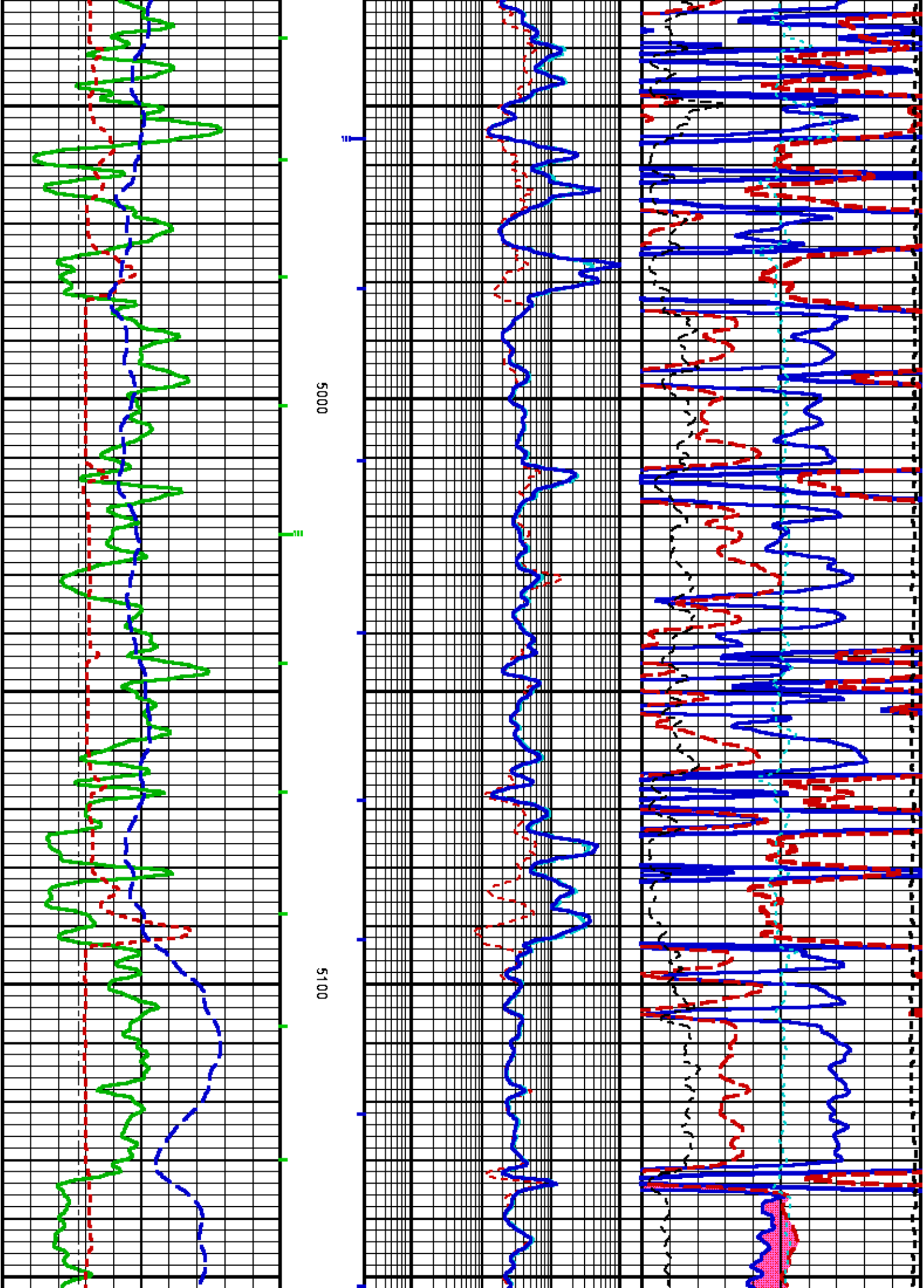


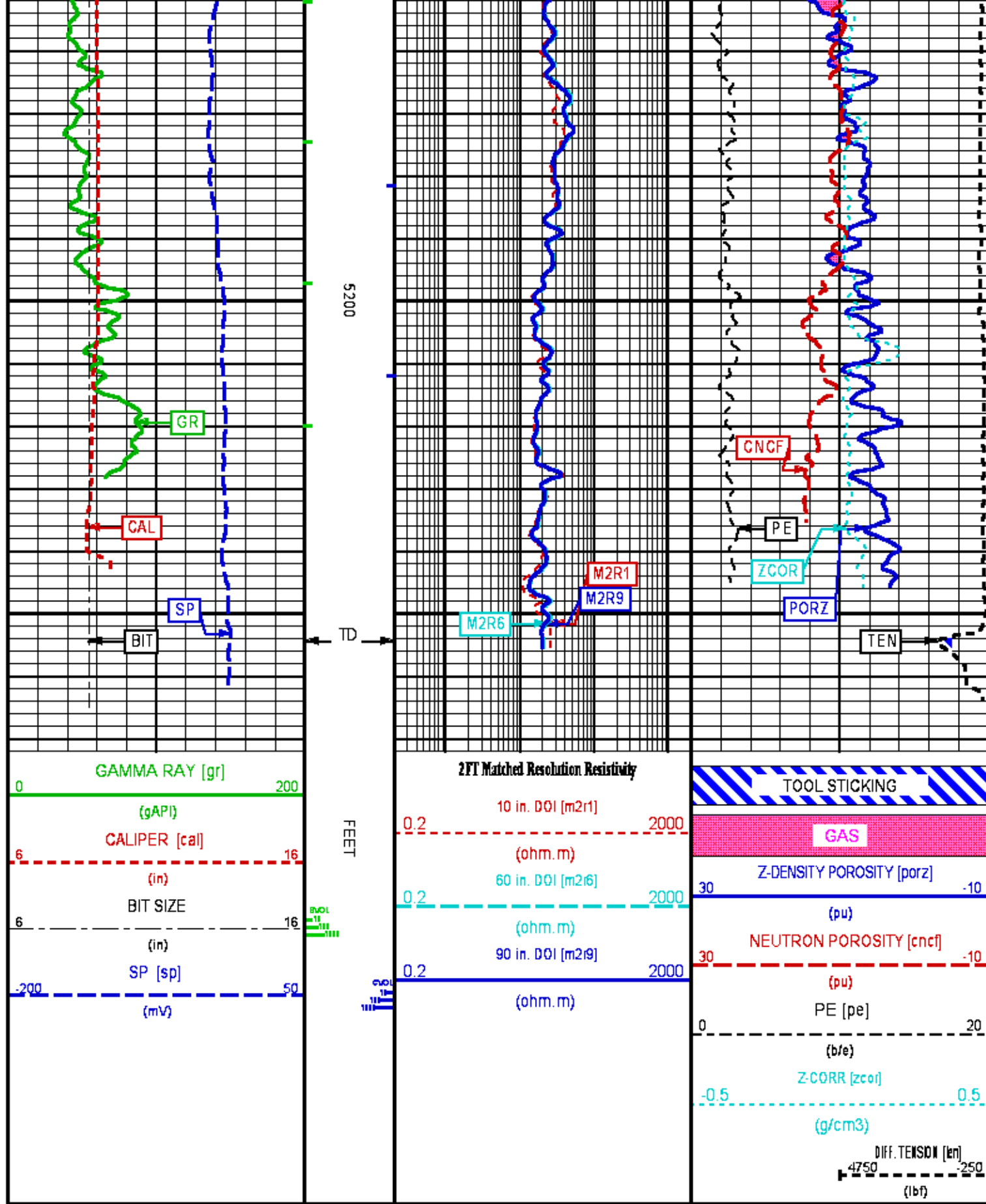


4800

4900







REPEAT LOG

Plotted: Fri Sep 19 21:27:14 2014

PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/OH090762/n970a02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 900.119 ft BOTTOM DEPTH: 1267.906 ft

SYMMETRIC FILTER

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

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	8.750	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	8.750	in	"	"
	FIXED DIAMETER (mbh*)	8.750	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	86.0	degF	"	"
	MUD SAMPLE RES	0.820	ohm.m	TOP	1091.000
		0.220	ohm.m	1091.000	BOTTOM
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	TOP	BOTTOM
	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	1600	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	13.500	in	"	"

ZDL PROCESSING

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

HDIL PROCESSING

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

CURVE DESCRIPTION REPORT

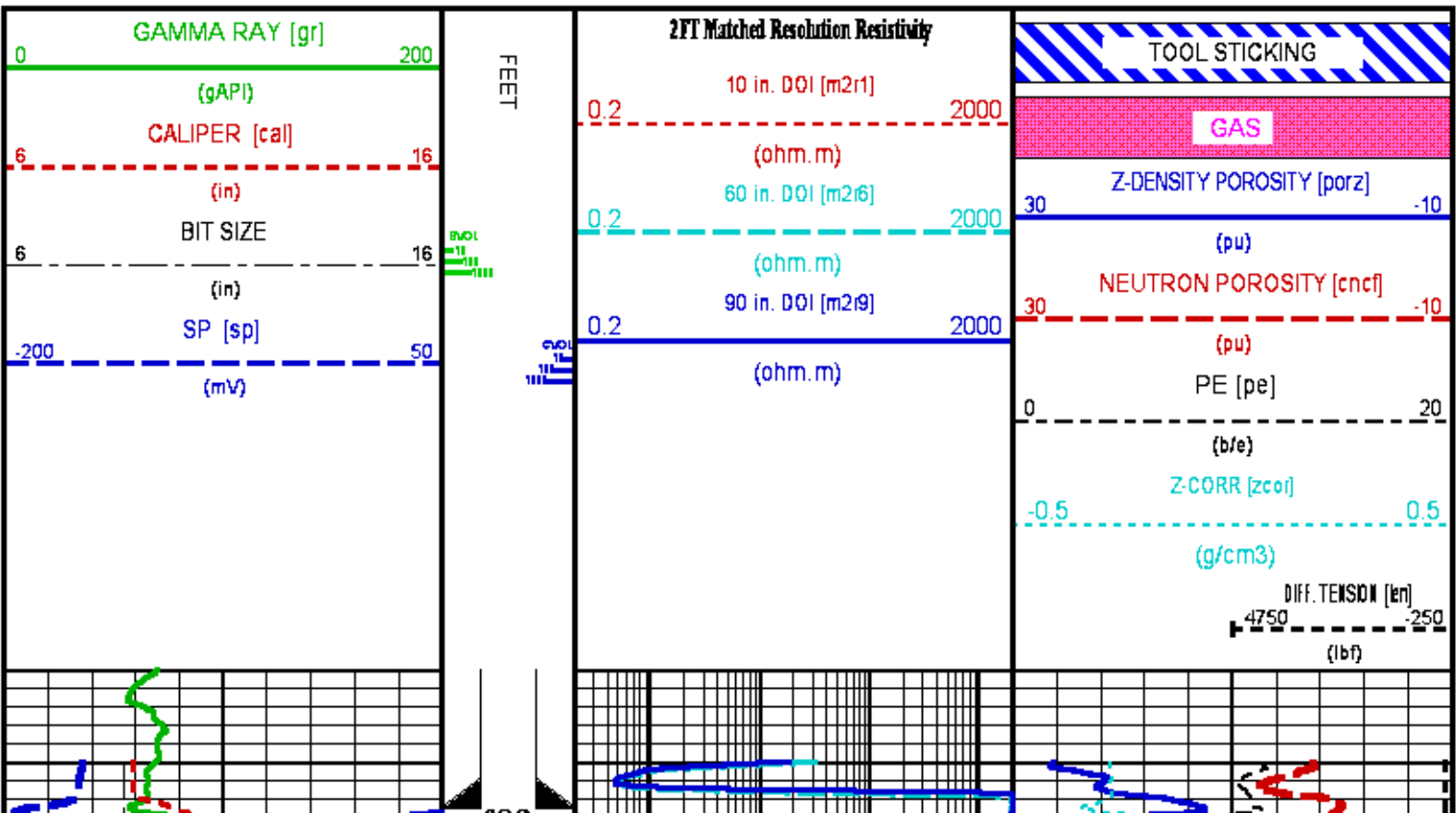
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Sep 19 20:48:43 2014	BIT SIZE
F1:BVOL	Sep 19 20:48:43 2014	BOREHOLE VOLUME
F1:CAL	Sep 19 20:48:43 2014	CALIPER
F1:CNCf	Sep 19 20:48:43 2014	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Sep 19 20:48:43 2014	CEMENT VOLUME
F1:GR	Sep 19 20:48:43 2014	GAMMA RAY
F1:M2R1	Sep 19 20:48:43 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Sep 19 20:48:43 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Sep 19 20:48:43 2014	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Sep 19 20:48:43 2014	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Sep 19 20:48:43 2014	POROSITY FOR SELECTABLE MATRIX
F1:SP	Sep 19 20:48:43 2014	SPONTANEOUS POTENTIAL
F1:TEN	Sep 19 20:48:43 2014	DIFFERENTIAL TENSION
F1:ZCOR	Sep 19 20:48:43 2014	DENSITY CORRECTION

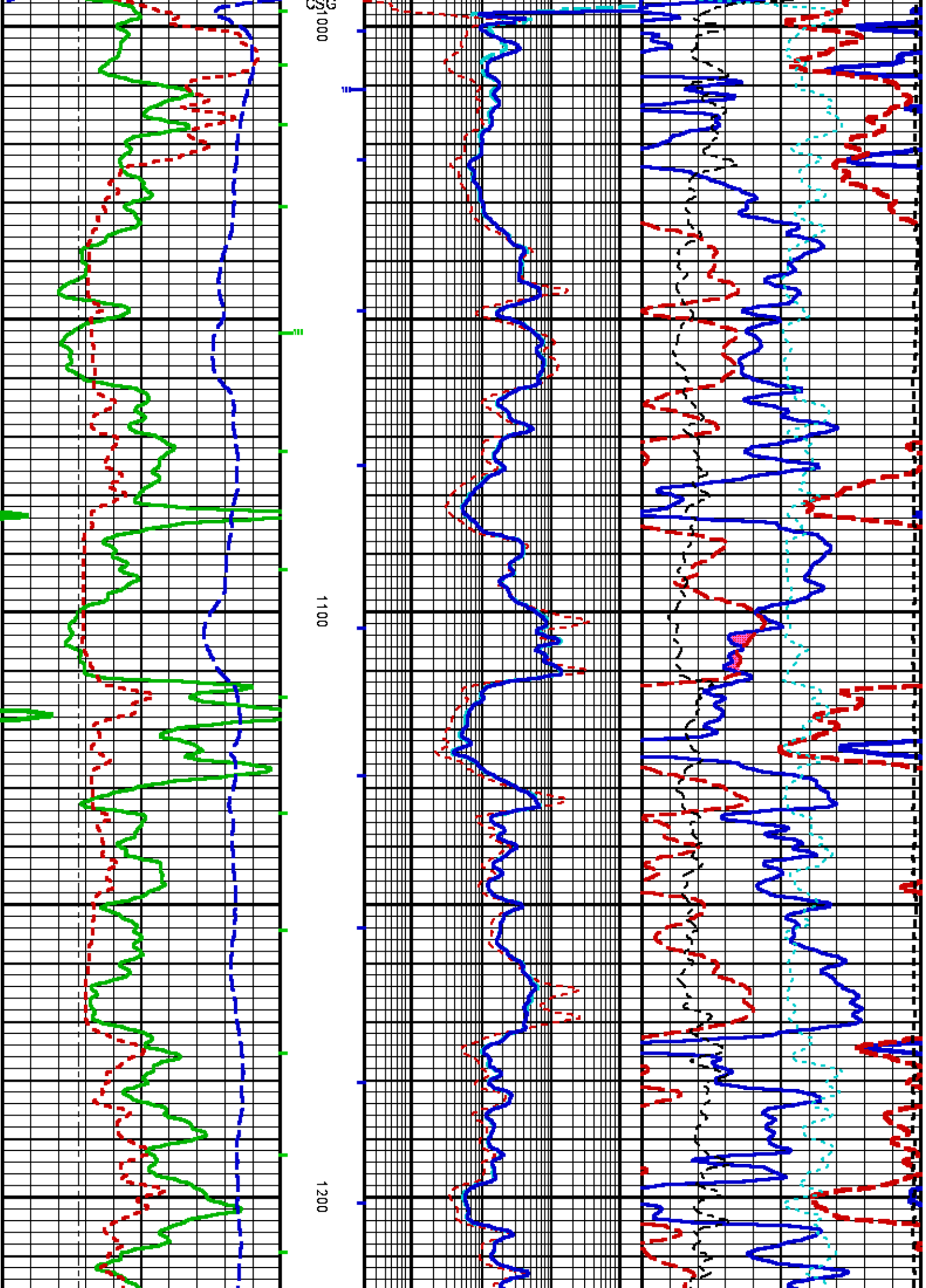
CURVE MEASURE POINT OFFSET

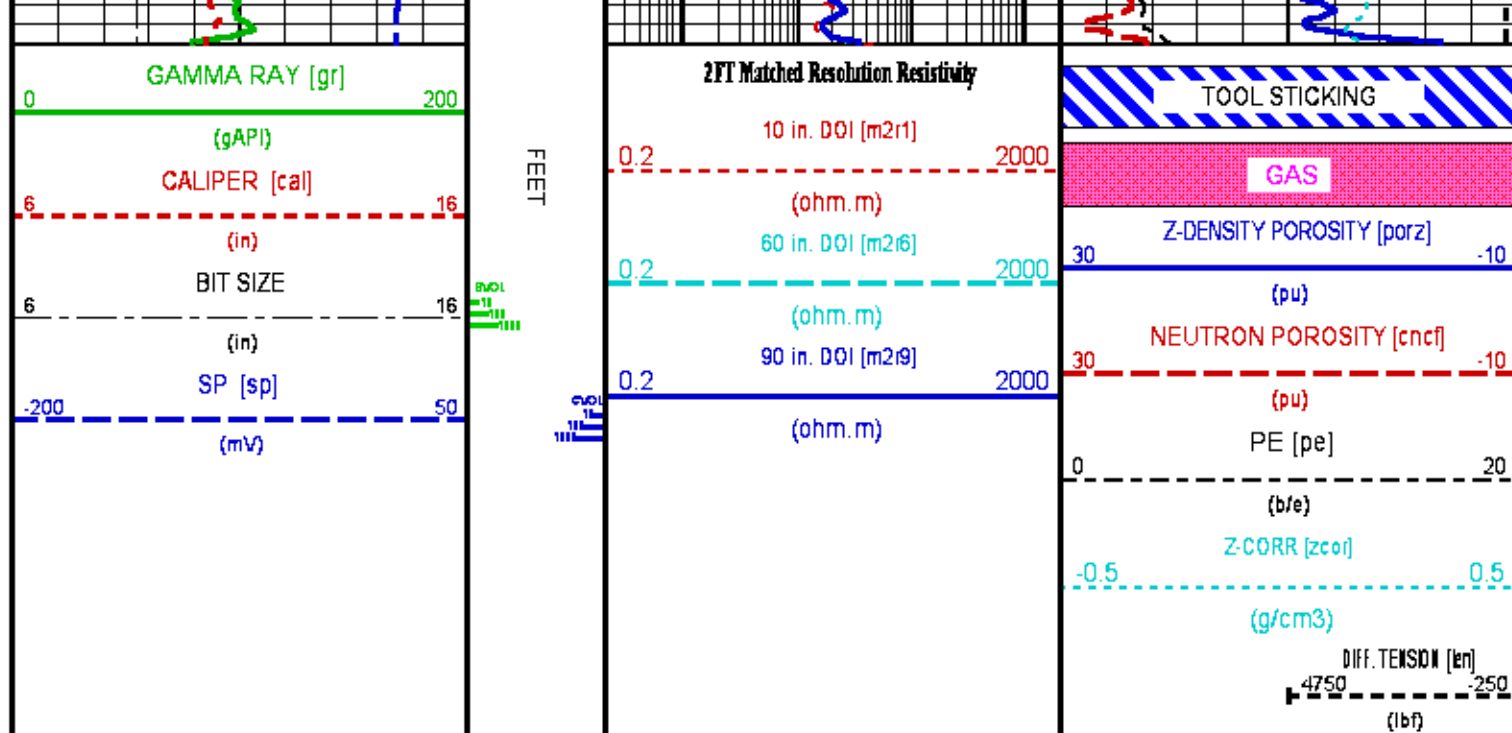
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	35.00	M2R9	2.75	SP	1.25
CAL	18.12	M2R1	2.75	PE	18.00	TEN	0.00
CNCf	27.38	M2R6	2.75	PORZ	18.00	ZCOR	18.00

Presentation : HL6670:REPEAT_WPX_5IN.fvpdf [5"/100' Scale]
Plot Interval : 980 - 1220 Feet

Data File 1 : F1 : HL6670:/dat1a/OH090762/REPEAT.xtf
Created On : Sep 19 20:48:43 2014
Company : WPX ENERGY ROCK MTN LLC
Well : FEDERAL SG 442-28
Field : GRAND VALLEY
File Interval : 0 - 1272.25 Feet
OCT : n970a







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/OH090762/FOCUS.tp1

TTMA PRIMARY CALIBRATION SUMMARY

TOOL #: 398DXA 1D120299

DATE/TIME PERFORMED: Wed Jul 31 10:29:42 2013

UNIT #: 388DTA HL667D

ACCEL #: 398DXA 1D120299

ACCEL CAL DATE: 14:43 05/21/2004

GAIN
Rm K Factors 0.1457D

OFFSET
(ohm.m) -0.01679

Rm Measurements	Sig Low (ohm)	Sig High (ohm)	Mult Factor	Add Factor	Engr Low (ohm)	Engr High (ohm)
	0.25	9.97	1.003059	0.000362	0.25	10.00
	0.20	0.30	8.00	12.00		

TTMA BEFORE LOG VERIFICATION SUMMARY

TOOL #: 398DXA 1D120299

DATE/TIME PERFORMED: Fri Sep 19 20:32:37 2014

DAYS SINCE CAL: 415

UNIT #: 388DTA HL667D

	CHT (lbf)	MUD TEMP (degF)	RES M Q (ohm)	ACCEL Q
CAL	18831	498.89	9.97	997.95
	18000	19630	481.36	926.76
	18000	19630	8.00	12.00
	990.00	1020.00		
ZERO	-23331	-436.02	0.249	997.943
	-24131	-32531	-443.20	-428.80
	0.200	0.300	8.000	1020.000

TTMA AFTER LOG VERIFICATION SUMMARY

TOOL #: 398DXA 1D120299

DATE/TIME PERFORMED: Fri Sep 19 22:44:36 2014

DAYS SINCE CAL: 415

UNIT #: 388DTA HL667D

CHT	MUD TEMP	RES M Q	ACCEL Q
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	(lbf)	(degF)	(ohm)	
CAL	18837	499.79	9.95	1001.06
	18000 19600	491.35 505.76	9.00 12.00	990.00 1020.00
ZERO	-23331	-436.02	0.249	996.654
	-24131 -22531	-443.20 -428.80	0.200 0.300	990.000 1020.000

GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10139870 DATE/TIME PERFORMED: Fri Aug 29 10:17:37 2014

Unit #: 3880TA HL6670 Jig Series: 4702NK DA-D41

Background	Calibrator ON	Jig Value (gAPI)	Mult	Background (gAPI)	Calibrator ON (gAPI)
210.68	843.08	150	0.237	49.97	199.97
			0.200 0.280		

GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870 DATE/TIME PERFORMED: Fri Sep 19 20:36:36 2014 DAYS SINCE CAL: 21

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

Counts	TEMP (degF)	HV (V)
976.67	94.73	1365.44
929.00 1027.00	536.00	1237.00 1512.00

GR AFTER LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870 DATE/TIME PERFORMED: Fri Sep 19 22:44:10 2014 DAYS SINCE CAL: 21

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

Counts	TEMP (degF)	HV (V)
976.67	127.72	1365.44
929.00 1027.00	536.00	1237.00 1512.00

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10137930 DATE/TIME PERFORMED: Tue Jul 1 11:37:32 2014

UNIT #: 3885TC 6685 CALIBRATOR #: 2437XB 112674 SOURCE #: 4718XA N-D897

SSN DT CPS	LSN DT CPS	SSN/LSN	MCF	CNRATIO	CN PU
4694.62	793.23	5.91832	0.96936	5.73700	25.241
			0.95000 1.05000		

CN BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10137930 DATE/TIME PERFORMED: Fri Sep 19 20:36:52 2014 DAYS SINCE CAL: 80

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	86.3	1358.6	4.612
		0.95000 1.05000	280.4	1250.0 1450.0	4.300 5.000

CN AFTER LOG VERIFICATION SUMMARY

TOOL #: 2436XA 10137930 DATE/TIME PERFORMED: Fri Sep 19 22:43:54 2014 DAYS SINCE CAL: 80

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

SSN	LSN	SSN/LSN	TEMP	HV	LV
-----	-----	---------	------	----	----

DT CPS	DT CPS		(degF)	(V)	(V)
991.07	993.09	0.99797	119.8	1364.4	4.612
		0.99000 1.09000	280.4	1260.0 1460.0	4.300 5.000

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2223XA 10123024

DATE/TIME PERFORMED: Mon Sep 8 12:47:58 2014

UNIT #: 3880TA HL667D

	SIZE (in)	VALUE	MULTIPLIER	ADD
SMALL RING (Arm)	7.000	1412.4		
LARGE RING (Arm)	11.000	2641.2	0.00326	2.40234
PAD CLOSED		1352.0	0.00250	-3.38000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10123024

DATE/TIME PERFORMED: Fri Sep 19 20:42:04 2014

DAYS SINCE CAL: 11

UNIT #: 3880TA HL667D

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	2036.0	0.00326	2.40234	9.0
PAD	1374.0	0.00250	-3.38000	0.1

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	9.001	9.0
		8.6 9.4

CAL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10123024

DATE/TIME PERFORMED: Fri Sep 19 22:39:10 2014

DAYS SINCE CAL: 11

UNIT #: 3880TA HL667D

	VALUE	MULTIPLIER	ADD	SIZE (in)
ARM	2164.0	0.00326	2.40234	9.4
PAD	1400.0	0.00250	-3.38000	0.1

	ACTUAL (in)	MEASURED (in)
DIAMETER (arm+pad)	9.001	9.0
		8.6 9.4

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2223XA 10123024

DATE/TIME PERFORMED: Mon Sep 8 12:29:18 2014

UNIT: 3880TA HL667D

CALB BLKS: 2225XA 094292F

CS SRC: 4705XA PP16068B

PAD TYPE: PADTYP 7.5" PAD

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)		
	227.4	222.2	1340.3	1354.8		
	230.0 230.0	230.0 230.0				
	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	31207.4	11456.8	0.742	1.679	0.000	1.900
			0.730 0.890			
	10300.0	1036.0		2.867	0.016	

AL 19399.8 1276.9 2.667 -0.076

AL + SHIM 25630.1 2206.5 2.558 0.098

MG + SHIM (HI PE) 15215.0 5470.7 0.292 8.550
0.290 0.360

RATIO AL + SHIM/AL 1.33 1.73
1.30 1.40 1.60 1.80

RATIO MG/AL 1.61 8.97
1.58 1.70 8.55 9.55

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10123024 DATE/TIME PERFORMED: Fri Sep 19 20:37:35 2014 DAYS SINCE CAL: 11

UNIT #: 3880TA HL667D

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1 3332.1 3352.1	225.3 220.0 230.0	1443.9 1250.0 1550.0
SS	22355.0 22344.8 22364.8	223.3 220.0 230.0	1317.6 1250.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0 4.8 5.2	100.8 90.0 120.0	

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10123024 DATE/TIME PERFORMED: Fri Sep 19 22:43:40 2014 DAYS SINCE CAL: 11

UNIT #: 3880TA HL667D

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1 3332.1 3352.1	224.2 220.0 230.0	1446.0 1250.0 1550.0
SS	22354.8 22344.8 22364.8	224.8 220.0 230.0	1321.3 1250.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0 4.8 5.2	103.5 90.0 120.0	

HDIL PRIMARY CALIBRATION SUMMARY

TOOL #: 1530XA 10118612 DATE/TIME PERFORMED: Tue Jan 7 13:59:50 2014

UNIT #: 3880TA HL667D GRCOND ID & DATE: 11D 101801

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	0.0011 -0.2000 0.2000	0.0008 -0.1000 0.1000	-0.0007 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0002 -0.1000 0.1000	0.0009 -0.1000 0.1000	0.0002 -0.1000 0.1000
Coil 0 Q	0.0004 -0.5000 0.5000	-0.0001 -0.2000 0.2000	-0.0003 -0.1000 0.1000	0.0002 -0.1000 0.1000	0.0002 -0.1000 0.1000	-0.0000 -0.1000 0.1000	0.0001 -0.1000 0.1000	-0.0006 -0.1000 0.1000
Coil 1 R	0.0082 -0.2000 0.2000	0.0019 -0.1000 0.1000	-0.0010 -0.1000 0.1000	0.0013 -0.1000 0.1000	-0.0016 -0.1000 0.1000	0.0011 -0.1000 0.1000	-0.0007 -0.1000 0.1000	0.0006 -0.1000 0.1000
Coil 1 Q	0.0032 -0.5000 0.5000	-0.0019 -0.2000 0.2000	0.0007 -0.1000 0.1000	0.0020 -0.1000 0.1000	-0.0006 -0.1000 0.1000	0.0004 -0.1000 0.1000	-0.0002 -0.1000 0.1000	0.0006 -0.1000 0.1000
Coil 2 R	0.0036 -0.2000 0.2000	-0.0014 -0.1000 0.1000	0.0009 -0.1000 0.1000	-0.0004 -0.1000 0.1000	0.0006 -0.1000 0.1000	0.0005 -0.1000 0.1000	-0.0008 -0.1000 0.1000	-0.0023 -0.1000 0.1000
Coil 2 Q	-0.0006 -0.5000 0.5000	0.0020 -0.2000 0.2000	0.0017 -0.1000 0.1000	0.0012 -0.1000 0.1000	0.0002 -0.1000 0.1000	-0.0029 -0.1000 0.1000	-0.0011 -0.1000 0.1000	-0.0014 -0.1000 0.1000
Coil 3 R	0.0267 -0.3000 0.3000	-0.0072 -0.1000 0.1000	0.0035 -0.1000 0.1000	0.0022 -0.1000 0.1000	0.0019 -0.1000 0.1000	0.0003 -0.1000 0.1000	-0.0004 -0.1000 0.1000	0.0038 -0.1000 0.1000
Coil 3 Q	0.0107 -0.5000 0.5000	-0.0026 -0.2000 0.2000	0.0015 -0.1000 0.1000	-0.0009 -0.1000 0.1000	0.0001 -0.1000 0.1000	0.0026 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0020 -0.1000 0.1000
Coil 4 R	0.0672 -0.5000 0.5000	-0.0023 -0.2000 0.2000	-0.0060 -0.2000 0.2000	0.0036 -0.2000 0.2000	-0.0064 -0.2000 0.2000	-0.0030 -0.2000 0.2000	0.0016 -0.2000 0.2000	-0.0012 -0.2000 0.2000
Coil 4 Q	0.0182 -1.0000 1.0000	-0.0158 -0.4000 0.4000	-0.0009 -0.2000 0.2000	-0.0024 -0.2000 0.2000	0.0023 -0.2000 0.2000	0.0017 -0.2000 0.2000	0.0060 -0.2000 0.2000	-0.0105 -0.2000 0.2000

Coil 5 R	0.1609 -1.2000 1.2000	0.0008 -0.4000 0.4000	-0.0374 -0.4000 0.4000	0.0079 -0.4000 0.4000	0.0037 -0.4000 0.4000	-0.0040 -0.4000 0.4000	0.0039 -0.4000 0.4000	-0.0089 -0.4000 0.4000
Coil 5 Q	0.0881 -1.5000 1.5000	-0.0472 -0.8000 0.8000	-0.0025 -0.4000 0.4000	-0.0083 -0.4000 0.4000	0.0025 -0.4000 0.4000	-0.0156 -0.4000 0.4000	0.0062 -0.4000 0.4000	-0.0095 -0.4000 0.4000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil D M	181.55 136.00 186.00	180.12 134.00 184.00	157.25 131.00 181.00	152.96 126.00 176.00	147.31 122.00 170.00	140.33 118.00 161.00	132.13 112.00 150.00	122.75 105.00 139.00
Coil D P	7.692 6.000 9.000	25.312 21.000 30.000	42.497 35.000 50.000	59.645 49.000 71.000	76.792 63.000 91.000	93.942 77.000 109.000	111.112 92.000 130.000	128.223 105.000 151.000
Coil 1 M	281.61 239.00 329.00	279.28 235.00 325.00	274.54 230.00 320.00	267.48 225.00 312.00	258.14 218.00 302.00	246.57 209.00 299.00	232.86 195.00 296.00	217.14 184.00 244.00
Coil 1 P	7.582 6.000 9.000	25.040 21.000 30.000	42.056 35.000 51.000	59.044 49.000 71.000	76.043 63.000 92.000	93.075 78.000 112.000	110.151 93.000 130.000	127.218 107.000 151.000
Coil 2 M	568.98 479.00 659.00	564.17 474.00 654.00	554.44 463.00 643.00	539.80 450.00 632.00	520.50 432.00 632.00	496.50 412.00 572.00	468.12 390.00 540.00	435.51 359.00 499.00
Coil 2 P	7.769 6.000 9.000	25.508 21.000 31.000	42.830 35.000 51.000	60.121 49.000 71.000	77.437 63.000 92.000	94.775 76.000 115.000	112.170 92.000 135.000	129.548 105.000 155.000
Coil 3 M	921.55 772.00 1050.00	913.14 764.00 1050.00	896.22 752.00 1030.00	871.27 729.00 1010.00	838.32 700.00 970.00	797.74 665.00 925.00	749.97 629.00 869.00	695.43 599.00 799.00
Coil 3 P	7.878 6.000 10.000	25.828 21.000 30.000	43.358 35.000 51.000	60.833 49.000 72.000	78.288 63.000 93.000	95.758 76.000 114.000	113.213 90.000 135.000	130.598 104.000 156.000
Coil 4 M	1447.2 1210.0 1700.0	1433.8 1205.0 1690.0	1406.9 1180.0 1650.0	1366.8 1140.0 1590.0	1314.3 1120.0 1530.0	1249.3 1070.0 1490.0	1173.7 1000.0 1390.0	1088.7 942.0 1240.0
Coil 4 P	7.843 6.000 10.000	25.758 21.000 31.000	43.249 35.000 52.000	60.684 49.000 73.000	78.112 63.000 93.000	95.552 77.000 114.000	112.960 91.000 135.000	130.298 105.000 155.000
Coil 5 M	2940.6 2450.0 3450.0	2919.1 2420.0 3400.0	2873.2 2410.0 3320.0	2804.6 2350.0 3200.0	2711.8 2280.0 3080.0	2596.3 2150.0 2990.0	2459.1 2020.0 2760.0	2301.3 1870.0 2570.0
Coil 5 P	7.588 6.000 10.000	25.060 20.000 31.000	42.133 35.000 52.000	59.180 49.000 73.000	76.279 63.000 94.000	93.467 79.000 113.000	110.713 93.000 134.000	127.975 105.000 155.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil D R	-1078 -3200 940	-604 -1400 -30	-481 -530 -150	-419 -760 -160	-378 -660 -130	-347 -600 -120	-322 -550 -110	-302 -520 -82
Coil D Q	402 -15000 11000	-174 -5900 3900	-222 -3700 2100	-244 -2700 1400	-260 -3200 1000	-273 -1800 790	-285 -1600 620	-295 -1500 480
Coil 1 R	-162 -750 480	-154 -360 89	-139 -260 9	-129 -230 -10	-119 -200 -25	-111 -180 -35	-105 -160 -46	-99 -150 -49
Coil 1 Q	411 -3300 3300	85 -1100 960	26 -630 530	-2 -470 360	-17 -380 290	-28 -320 190	-35 -250 150	-40 -260 120
Coil 2 R	6.2 -85.0 76.0	-30.3 -64.0 -0.4	-34.2 -57.0 -12.0	-34.0 -51.0 -16.0	-31.7 -46.0 -17.0	-29.5 -42.0 -16.0	-27.5 -39.0 -15.0	-26.2 -37.0 -13.0
Coil 2 Q	379.1 -1500.0 1900.0	130.3 -500.0 610.0	75.8 -250.0 390.0	51.6 -220.0 320.0	38.3 -160.0 190.0	30.4 -140.0 160.0	26.0 -110.0 130.0	23.4 -99.0 120.0
Coil 3 R	1.9 -23.0 21.0	-7.4 -22.0 1.6	-9.0 -21.0 -1.3	-9.0 -20.0 -1.8	-8.8 -19.0 -2.0	-8.2 -19.0 -1.3	-7.9 -19.0 -0.8	-7.9 -19.0 -0.0
Coil 3 Q	103.0 -540.0 530.0	39.1 -180.0 180.0	26.3 -100.0 110.0	21.9 -71.0 81.0	20.3 -51.0 66.0	20.2 -37.0 58.0	20.9 -29.0 53.0	21.9 -21.0 51.0
Coil 4 R	-0.70 -18.00 13.00	-1.42 -12.00 2.70	-1.59 -11.00 1.90	-1.56 -9.80 0.52	-2.43 -8.90 0.96	-1.59 -10.00 1.50	-1.79 -11.00 2.30	-2.05 -11.00 2.60
Coil 4 Q	5.07 -250.00 260.00	3.70 -79.00 99.00	4.36 -43.00 64.00	5.61 -27.00 51.00	8.03 -18.00 46.00	8.73 -11.00 42.00	9.49 -5.50 42.00	11.43 -1.00 42.00
Coil 5 R	1.19 -55.00 51.00	0.37 -8.40 3.60	-0.06 -6.90 1.10	0.06 -6.90 1.20	-2.12 -9.30 2.90	-0.45 -14.00 6.30	-0.46 -19.00 9.60	-0.72 -24.00 13.00
Coil 5 Q	-0.39 -88.00 69.00	1.71 -25.00 27.00	3.02 -14.00 22.00	4.27 -7.00 22.00	1.68 -2.50 24.00	6.59 1.10 25.00	7.89 4.10 29.00	9.12 7.10 32.00

MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil D M	0.976 0.850 1.100	0.980 0.850 1.100	0.981 0.870 1.100	0.981 0.880 1.100	0.981 0.880 1.100	0.980 0.880 1.100	0.980 0.880 1.100	0.978 0.880 1.100
Coil D P	-0.096 -1.500 1.500	-0.096 -1.500 1.500	-0.020 -1.500 1.500	0.030 -1.500 1.500	0.078 -1.500 1.500	0.069 -1.500 1.500	0.113 -1.500 1.500	0.109 -1.500 1.500
Coil 1 M	0.970 0.850 1.100	0.973 0.860 1.100	0.974 0.870 1.100	0.975 0.880 1.100	0.974 0.880 1.100	0.973 0.880 1.100	0.973 0.880 1.100	0.972 0.880 1.100
Coil 1 P	-0.085 -1.500 1.500	-0.095 -1.500 1.500	-0.012 -1.500 1.500	0.043 -1.500 1.500	0.095 -1.500 1.500	0.098 -1.500 1.500	0.115 -1.500 1.500	0.127 -1.500 1.500
Coil 2 M	0.987 0.850 1.100	0.987 0.850 1.100	0.987 0.880 1.100	0.987 0.890 1.100	0.986 0.890 1.100	0.985 0.890 1.100	0.984 0.890 1.100	0.984 0.890 1.100
Coil 2 P	0.033 -1.500 1.500	0.049 -1.500 1.500	0.097 -1.500 1.500	0.124 -1.500 1.500	0.150 -1.500 1.500	0.154 -1.500 1.500	0.172 -1.500 1.500	0.170 -1.500 1.500
Coil 3 M	0.995 0.900 1.100	0.995 0.900 1.100	0.995 0.900 1.100	0.994 0.900 1.100	0.993 0.900 1.100	0.993 0.900 1.100	0.991 0.900 1.100	0.989 0.900 1.100
Coil 3 P	0.046 -1.500 1.500	0.080 -1.500 1.500	0.140 -1.500 1.500	0.194 -1.500 1.500	0.226 -1.500 1.500	0.270 -1.500 1.500	0.314 -1.500 1.500	0.300 -1.500 1.500
Coil 4 M	0.998 0.900 1.100	0.999 0.900 1.100	0.999 0.900 1.100	0.999 0.900 1.100	1.000 0.900 1.100	0.999 0.900 1.100	1.000 0.900 1.100	1.001 0.900 1.100
Coil 4 P	0.087 0.900 1.100	0.100 0.900 1.100	0.178 0.900 1.100	0.247 0.900 1.100	0.313 0.900 1.100	0.408 0.900 1.100	0.481 0.900 1.100	0.553 0.900 1.100

Coil 5 M

-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500
1.002	1.002	1.003	1.004	1.006	1.007	1.010	1.013						
0.900	1.100	0.900	1.100	0.900	1.100	0.900	1.100	0.900	1.100	0.900	1.100	0.900	1.100
-0.239	0.068	0.253	0.386	0.534	0.734	0.857	0.990						
-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500	-1.500	1.500

Coil 5 P

PARMS

TCID 0

TCID 1

Cal Temp

T Factor

(degF)

IDs

2.563

0.840

60.0

1.00

HDIL BEFORE LOG VERIFICATION SUMMARY

TOOL #:

1530XA 10118612

DATE/TIME PERFORMED:

Fri Sep 19 20:38:45 2014

DAYS SINCE CAL:

255

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

0.001	0.000	-0.001	0.001	0.000	0.001	0.000	0.000
-0.200	0.200	-0.100	0.100	-0.100	0.100	-0.100	0.100

Coil 0 Q

0.002	-0.000	-0.000	0.000	0.000	0.001	-0.001	0.000
-0.500	0.500	-0.200	0.200	-0.100	0.100	-0.100	0.100

Coil 1 R

0.006	0.002	0.000	0.001	-0.001	-0.001	0.000	0.001
-0.200	0.200	-0.100	0.100	-0.100	0.100	-0.100	0.100

Coil 1 Q

0.005	-0.002	0.000	-0.000	-0.000	0.000	-0.000	0.001
-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100

Coil 2 R

0.004		0.000		-0.000		-0.000		-0.002		-0.002		0.000		-0.001	
-0.200	0.200	-0.100	0.100	-0.100	0.100	-0.100	0.100	-0.100	0.100	-0.100	0.100	-0.100	0.100	-0.100	0.100

Coil 2 Q

-0.005	-0.000	0.002	0.001	0.002	-0.001	0.001	-0.001
-0.500	0.500	-0.200	0.200	-0.100	0.100	-0.100	0.100

Coil 3 R

0.023	-0.005	0.000	0.001	-0.001	0.001	0.002	0.001
-0.300 0.300	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100

Coil 3 Q

0.005	0.001	0.001	0.001	0.001	-0.000	-0.000	-0.003
-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100

Coil 4 R

0.057	-0.003	-0.002	0.002	0.003	-0.002	-0.002	-0.003
-0.500	0.500	-0.200	0.200	-0.200	0.200	-0.200	0.200

Coil 4 Q

0.006	-0.011	0.009	0.005	-0.004	0.005	-0.003	-0.002
-1.000 1.000	-0.400 0.400	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200

Coil 5 R

0.149	0.001	-0.004	0.008	0.009	0.001	-0.001	0.009
-1.200	1.200	-0.400	0.400	-0.400	0.400	-0.400	0.400

Coil 5 Q

0.035	-0.036	0.001	-0.018	-0.005	-0.004	0.009	-0.001
-1.500	1.500	-0.800	0.800	-0.400	0.400	-0.400	0.400

ELEC. GAINS

10 KHz

30 KHz

50 KHz

70 KHz

90 KHz

110 KHz

130 KHz

150 KHz

Coil 0 M

161.20	159.76	156.90	152.62	146.97	140.02	131.77	122.45		
135.00	185.00	134.00	184.00	131.00	181.00	126.00	176.00	122.00	170.00

Coil 0 P

7.567	25.316	42.554	59.740	76.926	94.117	111.315	128.474		
-1.000	12.000	19.000	30.000	35.000	50.000	49.000	71.000	63.000	91.000

Coil 1 M

281.25	278.90	274.17	267.10	257.76	246.24	232.49	216.76		
297.00	327.00	235.00	325.00	230.00	320.00	225.00	312.00	218.00	302.00

Coil 1 P

7.475	25.049	42.117	59.139	76.177	93.250	110.354	127.452		
-1.000	12.000	19.000	30.000	35.000	51.000	48.000	71.000	63.000	92.000

Coil 2 M

567.30	562.45	552.73	538.16	518.93	495.07	466.67	434.03		
479.00	659.00	474.00	654.00	463.00	643.00	450.00	632.00	432.00	612.00

Coil 2 P

7.619	25.495	42.868	60.194	77.543	94.926	112.346	129.765		
-1.000	12.000	19.000	31.000	35.000	51.000	48.000	71.000	63.000	92.000

Coil 3 M

921.00	912.61	895.81	870.77	837.79	797.29	749.48	695.01		
772.00	1050.00	764.00	1050.00	752.00	1030.00	739.00	1010.00	700.00	970.00

Coil 3 P

7.732	25.819	43.391	60.903	78.409	95.903	113.384	130.816		
-2.000	13.000	19.000	31.000	35.000	52.000	48.000	72.000	63.000	93.000

Coil 4 M

1448.8	1435.3	1408.4	1368.1	1315.4	1250.7	1174.5	1089.8		
1210.0	1700.0	1205.0	1690.0	1180.0	1680.0	1140.0	1590.0	1120.0	1580.0

Coil 4 P

7.697	25.749	43.284	60.756	78.224	95.687	113.117	130.482		
-2.000	13.000	19.000	31.000	35.000	52.000	48.000	72.000	63.000	93.000

Coil 5 M

2935.4	2913.6	2867.7	2798.9	2706.2	2591.0	2452.8	2295.5		
2450.0	3450.0	2420.0	3400.0	2410.0	3320.0	2350.0	3200.0	2150.0	2950.0

Coil 5 P

7.471	25.057	42.171	59.252	76.406	93.615	110.891	128.166		
-2.000	13.000	19.000	31.000	35.000	52.000	48.000	72.000	63.000	93.000

HDIL AFTER LOG VERIFICATION SUMMARY

TOOL #:

1530XA 10118612

DATE/TIME PERFORMED:

Fri Sep 19 22:43:22 2014

DAYS SINCE CAL:

255

UNIT #:

3880TA HL6670

ZERO DATA(mv)		10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil D R	0.002	-0.000	0.001	0.000	-0.001	0.000	0.001	-0.001	
	-0.079	0.081	-0.080	0.080	-0.081	0.081	-0.080	0.080	-0.080
Coil D Q	0.001	-0.001	0.000	0.000	0.000	0.001	-0.000	-0.000	
	-0.038	0.042	-0.120	0.120	-0.030	0.030	-0.030	0.030	-0.029
Coil 1 R	0.005	0.000	-0.001	0.001	0.002	0.001	-0.001	0.000	
	-0.074	0.066	-0.048	0.062	-0.030	0.030	-0.031	0.029	-0.029
Coil 1 Q	0.005	-0.001	-0.001	0.000	-0.001	-0.001	-0.001	0.001	
	-0.395	0.405	-0.102	0.098	-0.030	0.030	-0.030	0.030	-0.029
Coil 2 R	-0.001	0.002	-0.001	0.001	0.001	-0.001	-0.002	0.003	
	-0.066	0.074	-0.030	0.030	-0.030	0.030	-0.032	0.028	-0.031
Coil 2 Q	-0.005	0.002	-0.000	-0.000	0.001	-0.001	0.001	-0.003	
	-0.365	0.345	-0.100	0.100	-0.028	0.031	-0.028	0.029	-0.031
Coil 3 R	0.018	-0.002	-0.001	0.003	0.003	0.001	0.004	0.002	
	-0.017	0.063	-0.045	0.036	-0.040	0.040	-0.039	0.041	-0.039
Coil 3 Q	0.002	0.005	-0.005	0.001	0.004	0.000	-0.000	-0.001	
	-0.195	0.205	-0.079	0.081	-0.038	0.041	-0.040	0.040	-0.043
Coil 4 R	0.051	-0.002	-0.000	0.001	-0.005	-0.007	0.001	-0.000	
	-0.003	0.117	-0.063	0.067	-0.062	0.068	-0.067	0.063	-0.062
Coil 4 Q	0.002	-0.009	0.005	-0.004	-0.007	-0.002	-0.000	-0.004	
	-0.284	0.306	-0.111	0.089	-0.051	0.068	-0.055	0.065	-0.063
Coil 5 R	0.125	-0.003	0.021	0.005	-0.004	0.008	0.001	-0.006	
	0.029	0.269	-0.119	0.121	-0.124	0.116	-0.119	0.119	-0.111
Coil 5 Q	0.021	-0.021	0.007	-0.002	-0.004	0.010	-0.000	-0.004	
	-0.565	0.635	-0.285	0.214	-0.119	0.121	-0.138	0.102	-0.125

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil D M	160.98	159.55	156.88	152.38	146.70	139.75	131.49	122.14
	157.97	164.42	155.57	162.96	153.76	160.03	149.57	155.67
Coil D P	7.191	25.234	42.559	59.798	77.039	94.258	111.495	128.663
	4.567	10.567	22.316	28.316	39.554	45.554	56.740	62.740
Coil 1 M	281.24	278.89	274.15	267.03	257.67	246.00	232.29	216.54
	275.62	286.87	273.32	284.48	269.68	279.65	261.76	272.45
Coil 1 P	7.114	24.973	42.124	59.197	76.286	93.367	110.512	127.647
	4.475	10.475	22.049	28.049	39.117	45.117	56.139	62.139
Coil 2 M	566.36	561.55	551.83	537.18	517.84	494.05	465.54	432.88
	555.95	578.65	551.21	573.70	541.67	563.78	527.40	548.93
Coil 2 P	7.218	25.405	42.866	60.250	77.641	95.065	112.515	129.963
	4.619	10.619	22.495	28.495	39.688	45.688	57.194	63.194
Coil 3 M	920.53	912.12	895.21	870.17	836.94	796.33	748.47	694.10
	902.58	939.42	884.36	930.86	877.89	913.72	853.36	898.19
Coil 3 P	7.342	25.732	43.390	60.950	78.506	96.021	113.543	130.989
	4.732	10.732	22.819	28.819	40.391	46.391	57.503	63.503
Coil 4 M	1449.6	1436.1	1409.0	1368.6	1315.5	1250.3	1173.9	1088.7
	1419.8	1477.8	1405.6	1464.0	1380.2	1436.5	1340.7	1395.5
Coil 4 P	7.313	25.661	43.279	60.802	78.317	95.808	113.278	130.657
	4.687	10.687	22.749	28.749	40.284	46.284	57.755	63.755
Coil 5 M	2930.0	2908.1	2862.4	2793.2	2700.2	2585.3	2446.5	2288.3
	2876.7	2994.1	2856.3	2971.9	2810.3	2925.0	2742.9	2854.9
Coil 5 P	7.106	24.973	42.160	59.313	76.485	93.737	111.045	128.336
	4.471	10.471	22.057	28.057	39.171	45.171	56.252	62.252

INSTRUMENT CONFIGURATION

Source File: /data1a/OHD90762/focus--tdg

FOCUS CABLEHEAD

Diameter : 3.13"
Length : 3.12'
Weight : 15 lbs
Series : CABL31B
Mnemonic : CBLH

FOCUS SWIVEL

Diameter : 3.13"
Length : 3.58'
Weight : 50 lbs
Series : 3950XA
Mnemonic : SWVL

52.34'



FOCUS TEN/TEMP/MUD RES/ACCEL

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

FOCUS TELEMETRY (POWER SECTION)

Diameter : 3.13"
Length : 3.71'
Weight : 48 lbs
Series : 351BFB
Mnemonic : TMGR

FOCUS EB/EG TELEMETRY GAMMA RAY

Diameter : 3.13"
Length : 5.83'
Weight : 63 lbs
Series : 351BEG
Mnemonic : GR
Measure Point: 4.24': GR MP

FOCUS COMPENSATED NEUTRON

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

FOCUS Z-DENSILOG

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

FOCUS KNUCKLE JOINT

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

FOCUS KNUCKLE JOINT

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

FOCUS HIGH DEFINITION INDUCTION TOOL

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

GR MP — 36.97'

LSN MP — 29.83'

SSN MP — 29.38'

CR1 MP — 22.67'

LSD / CR2 MP — 30.02'

SSD MP — 19.63'

COIL 5 MP — 9.17'

COIL 4 MP — 7.67'

Measure Point: 3.67': COIL 0 MP
Measure Point: 1.14': SP MP

COIL 3 MP 6.17'
COIL 2 MP 5.67'
COIL 1 MP 5.17'
COIL 0 MP 4.67'

SP MP 3.14'

FOCUS PINEAPPLE / CABBAGE

HOLE FINDER

Diameter : 3.63"
Length : 1.50'
Weight : 7 lbs
Series : HFND1B

TOTAL LENGTH: 53.34'
TOTAL WEIGHT: 701 lbs
MAX DIAMETER: 0'6.13"



0.00'



COMPANY WPX ENERGY ROCK MTN LLC
WELL FEDERAL SG 442-28
FIELD GRAND VALLEY
COUNTY GARFIELD STATE CO

FILE NO:
US090762
API NO:
05045219570000

LOCATION:
SHL: 2262' FSL 473' FEL
BHL: 2192' FNL 150' FEL

ELEVATIONS:
KB 5143 FT
DF
GL 5119 FT

RIG: H&P 318
PAD: SG 43-28
S28 T7S R96W



SEC 28

TWP 7S

RGE 96W

DATE

19-Sep-2014