



FILE NO: CH136066	COMPANY <b>LARAMIE ENERGY LLC</b>
API NO: 05077103900000	WELL <b>NICHOLS 0994-24-10E</b>
	FIELD <b>VEGA</b>
	COUNTY <b>MESA</b> STATE <b>COLORADO</b>

Ver. 4.10	LOCATION: SHL: 2257' FNL & 2797' FWL BHL: 2281' FNL & 1454' FEL SEC <u>24</u> TWP <u>9 S</u> RGE <u>94 W</u>	OTHER SERVICES RAL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KB	ELEVATION 24 FT ABOVE P.D. 7212 FT	ELEVATIONS: KB 7236 FT DF GL 7212 FT
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DATE	27-Jun-2018	
RUN	2	2
SERVICE ORDER	US136066	
DEPTH DRILLER	8250 FT	
DEPTH LOGGER	8130 FT	
BOTTOM LOGGED INTERVAL	8130 FT	
TOP LOGGED INTERVAL	2165 FT	
TIME STARTED	08:30	
TIME FINISHED	14:30	
OPERATOR RIG TIME	6 HRS	
TYPE OF FLUID IN HOLE	WATER	
FLUID DENSITY	NA	
FLUID SALINITY	NA	
FLUID LEVEL	53 FT	
LOGGED CEMENT TOP	2890 FT	
WELLHEAD PRESSURE	0 PSI	
MAXIMUM HOLE DEVIATION	NA	
NOMINAL LOGGING SPEED	95 FMIN	
MAX. RECORDED TEMP.	240 DEGF	
REFERENCE LOG	BAKER HUGHES RAL	
REFERENCE LOG DATE	26-Jun-2018	
EQUIP. NO.	ML-4291	GRAND JCT.
RECORDED BY	M. BAUKA	
WITNESSED BY	NA	

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.

### REMARKS

RUN 2 TRIP 2: \*2 OPERATIONS IN WELLBORE\*

\*\*OPERATION 2: RPM/GR/CCL RUN IN PNC-3D\*\*

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5794' - 5814'

SJ: 6690' - 6710'

### EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	2	PCM	8250EA	11908682	FREE
2	2	TEL/CCL	8248ED	10460262	FREE
2	2	GR	2812LA	10384613	FREE
2	2	RPM	8281EA	10294755	FREE
2	2	RPM	8283PA	10066691	FREE
2	2	RPM	8281FA	10066992	FREE
2	2	TEMP	8255XA	166341	FREE

# RPM MAIN PASS G-SAND

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Patches: 4

Plotted: Wed Jun 27 15:43:54 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_NICHOLS\_0994\_24\_10E/p354h04.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 2158.206 ft BOTTOM DEPTH: 2836.614 ft

### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ( )	medium (1)		TOP	BOTTOM

### RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.87	in	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"

## CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-25.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-22.75	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation : SysA:/dat1a/LARAMIE\_NICHOLS\_0994\_24\_10E/0994\_24\_10E\_RPM\_MAIN\_GS.fvpdf [5"/100' Scale]  
 Plot Interval : 2160 - 2830 Feet

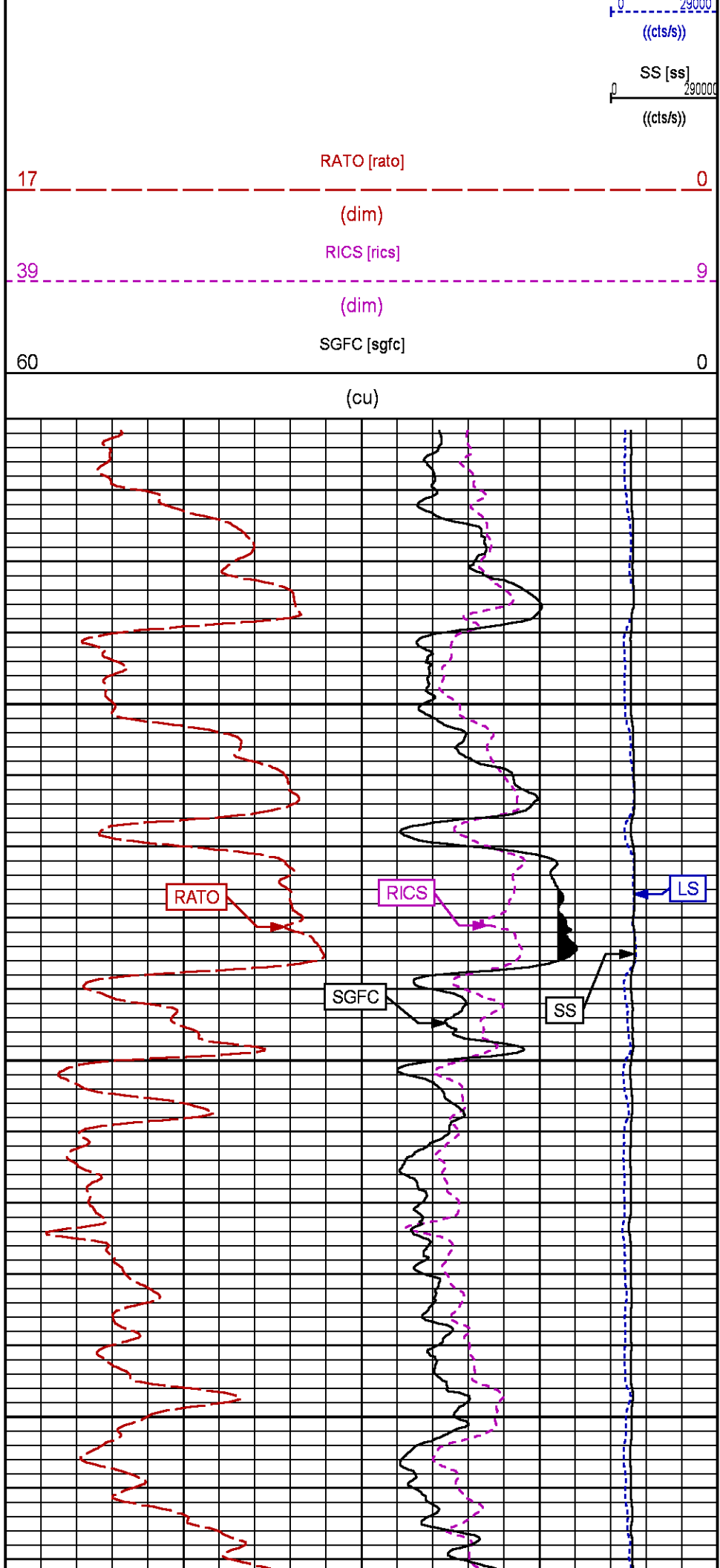
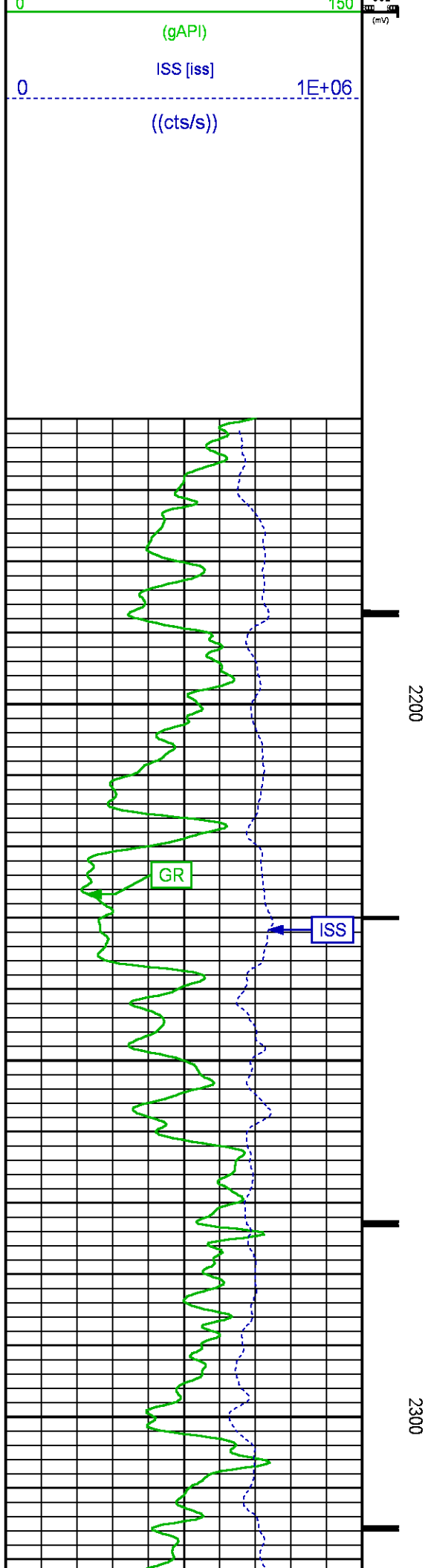
Data File 1 : F1 : SysA:/dat1a/LARAMIE\_NICHOLS\_0994\_24\_10E/0994\_24\_10E\_RPM\_MAIN\_GS.xtf  
 Created On : N/A  
 Company : LARAMIE ENERGY LLC  
 Well : NICHOLS 0994-24-10E  
 Field : VEGA  
 File Interval : 2136 - 2837 Feet  
 OCT : p354h

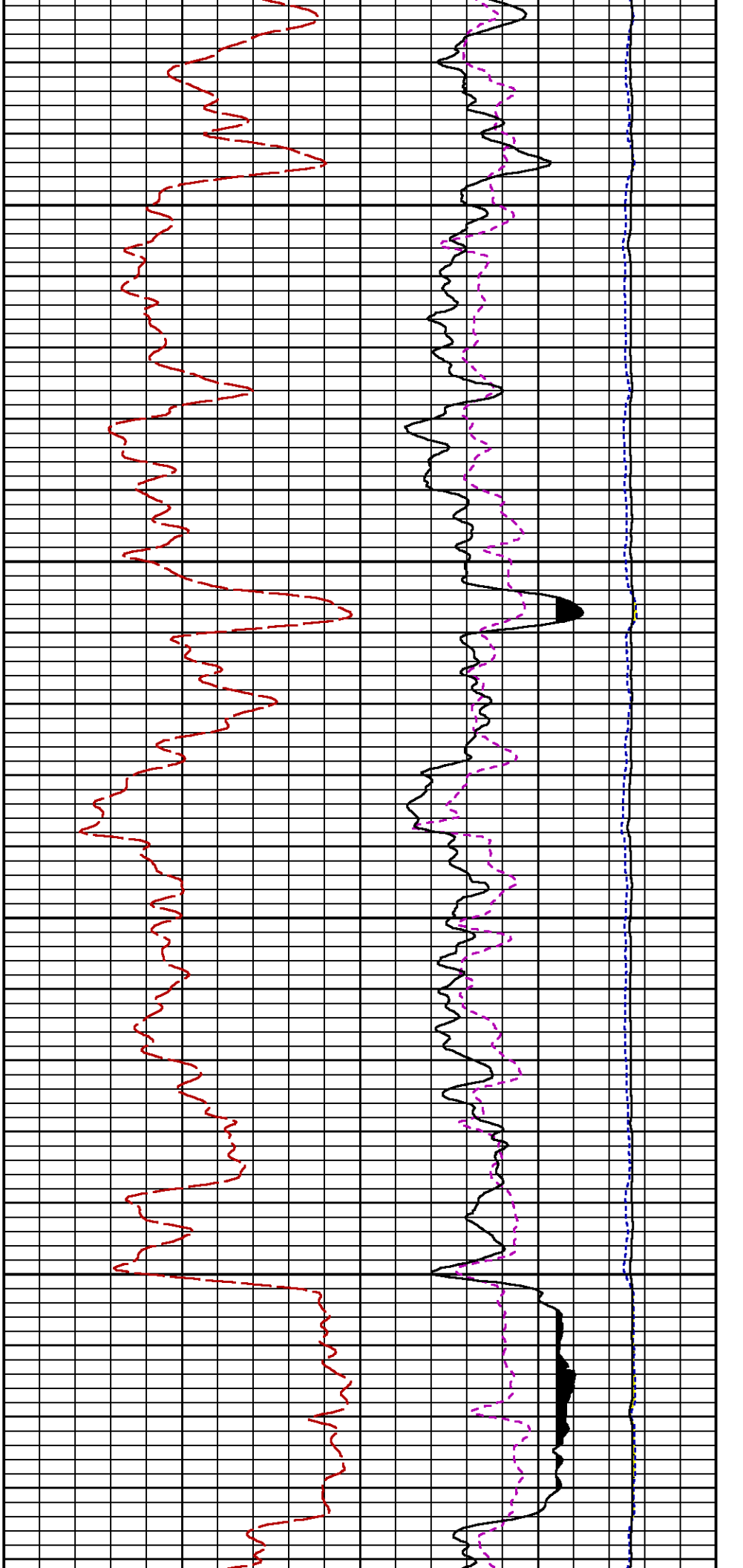
GR BACKUP

GAMMA RAY [gr]

FEET

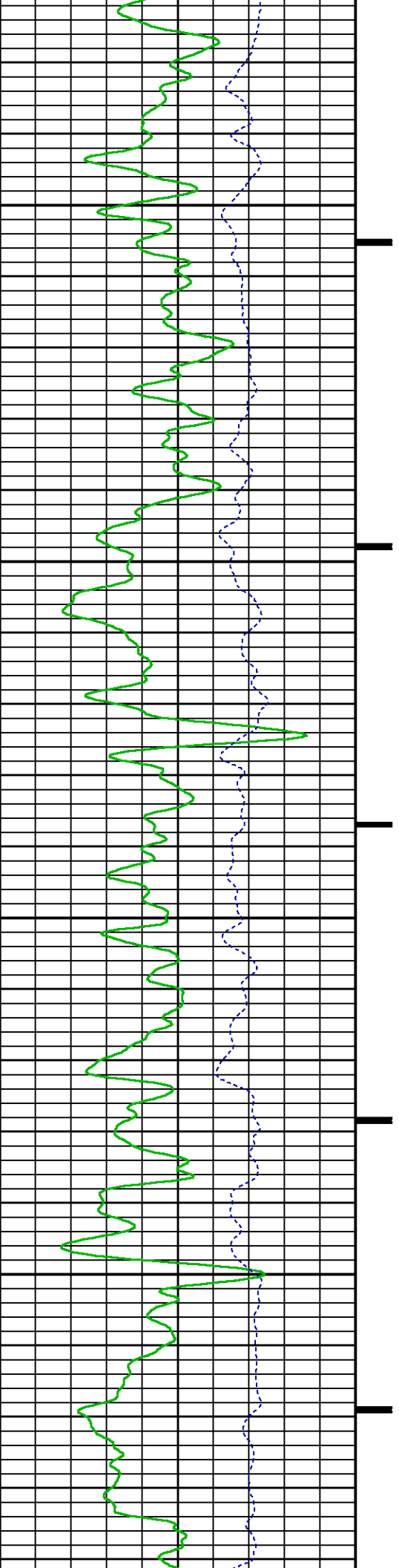
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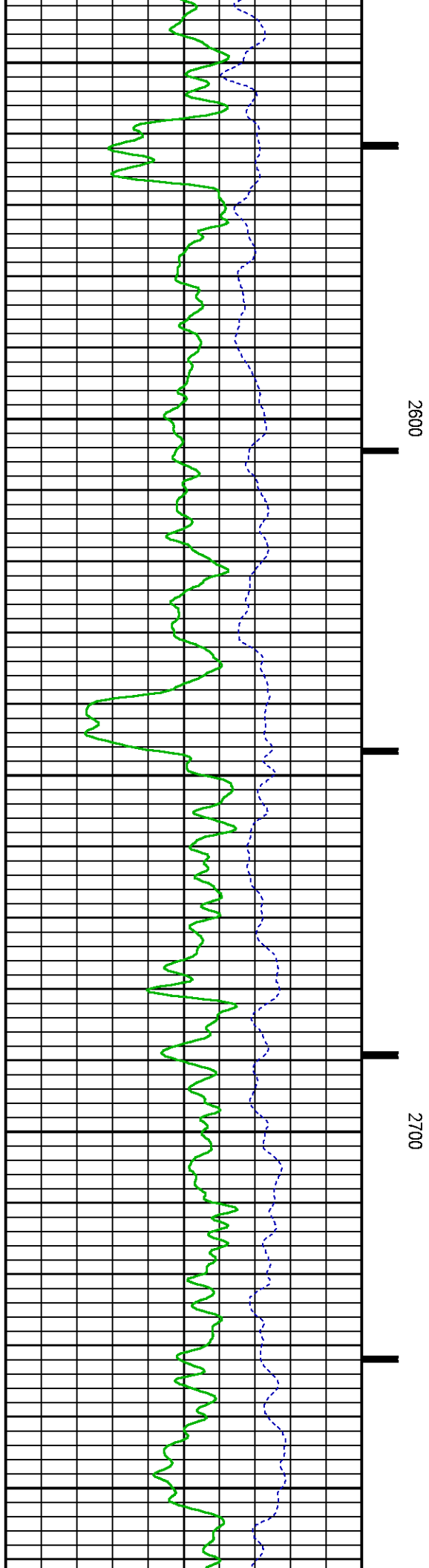
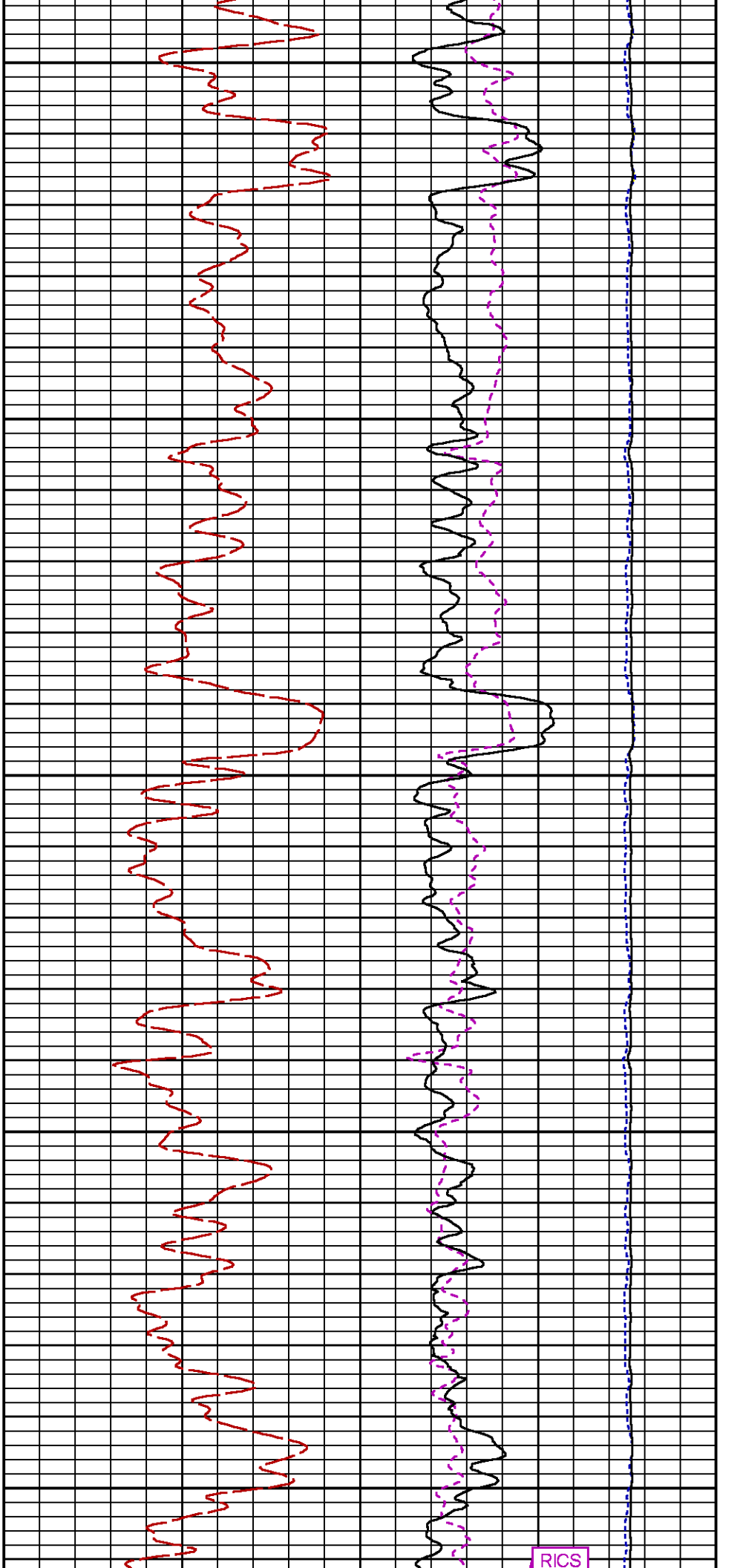


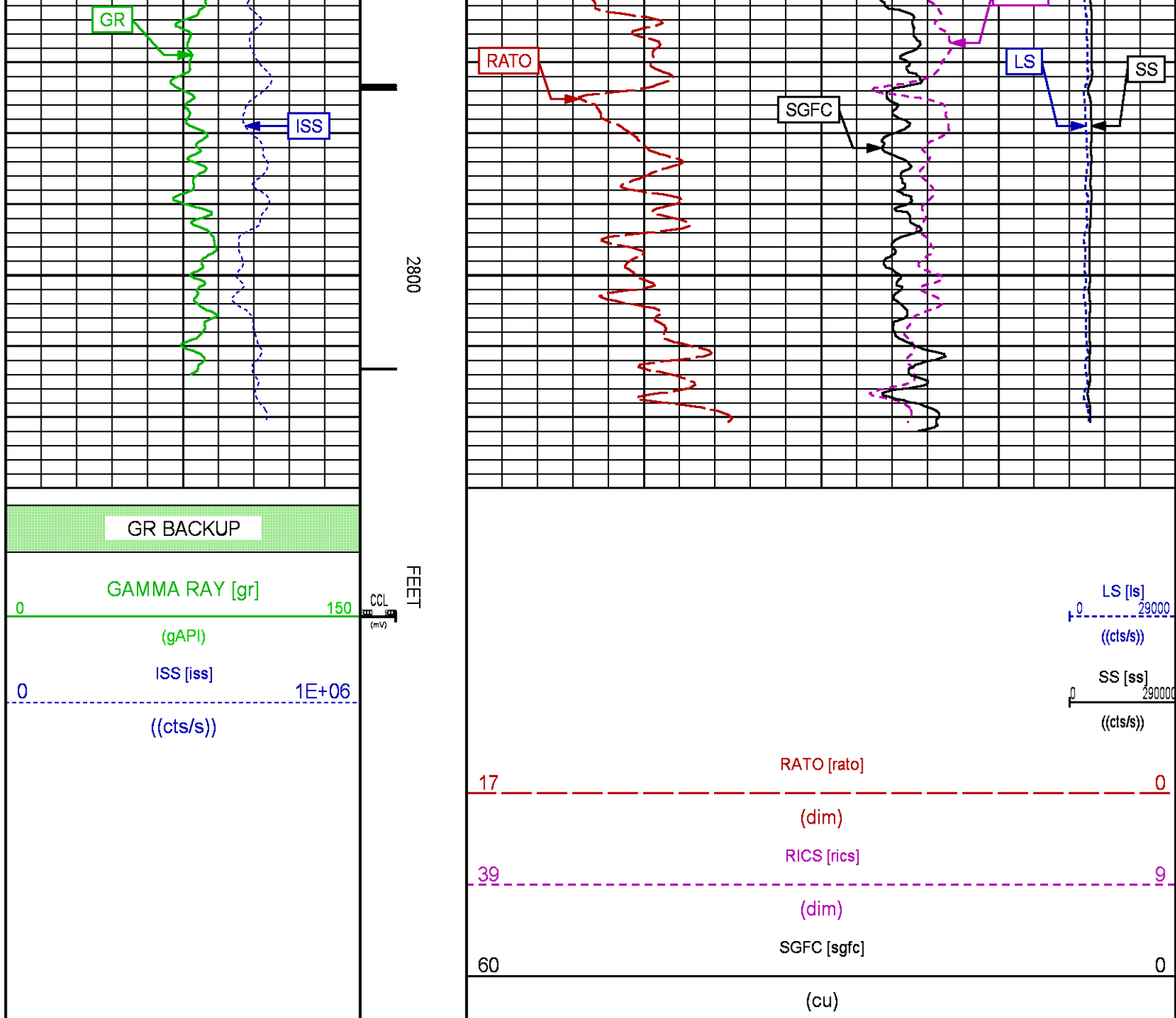


2400

2500







## RPM MAIN PASS WILLIAMS FORK

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

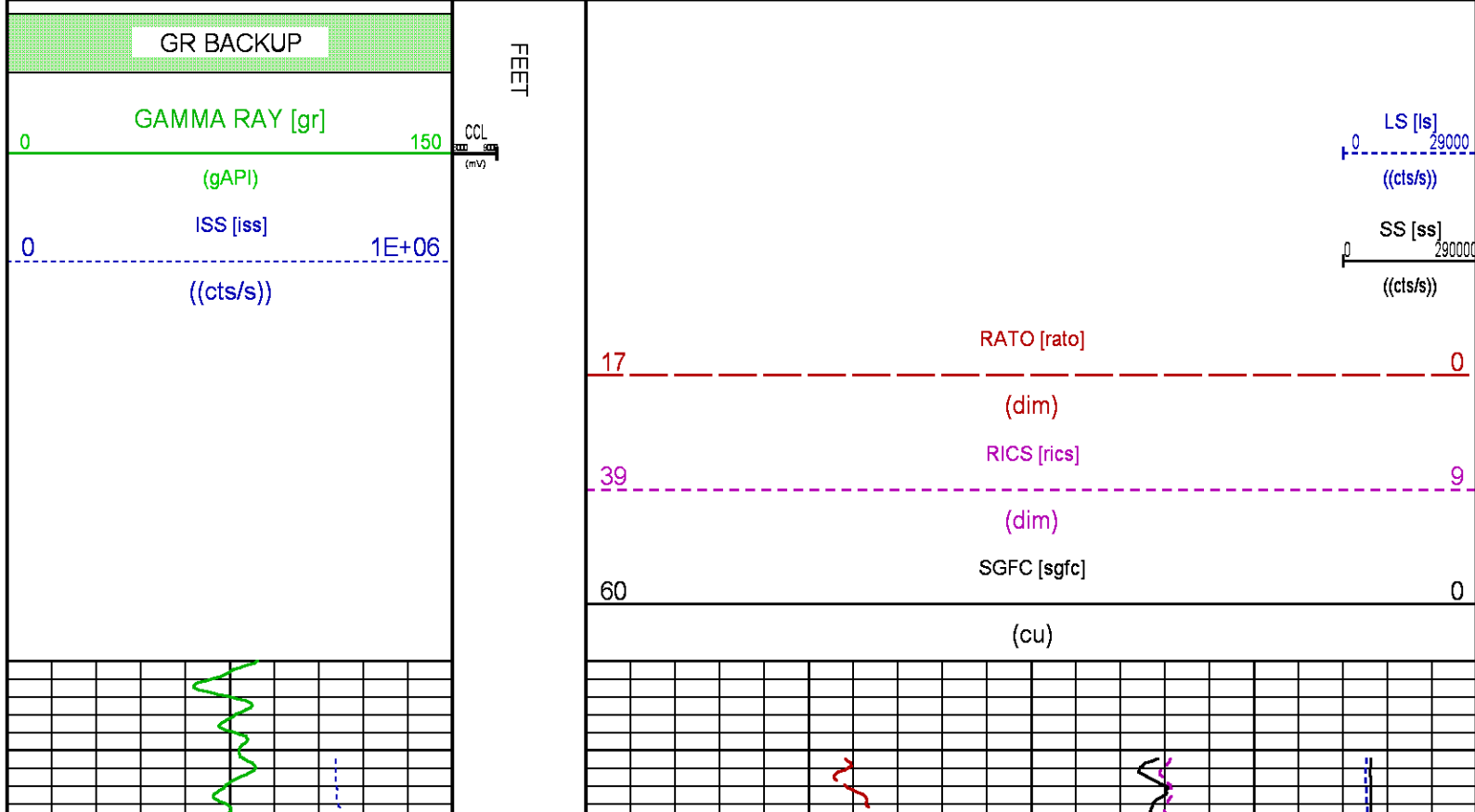
Patches: 4

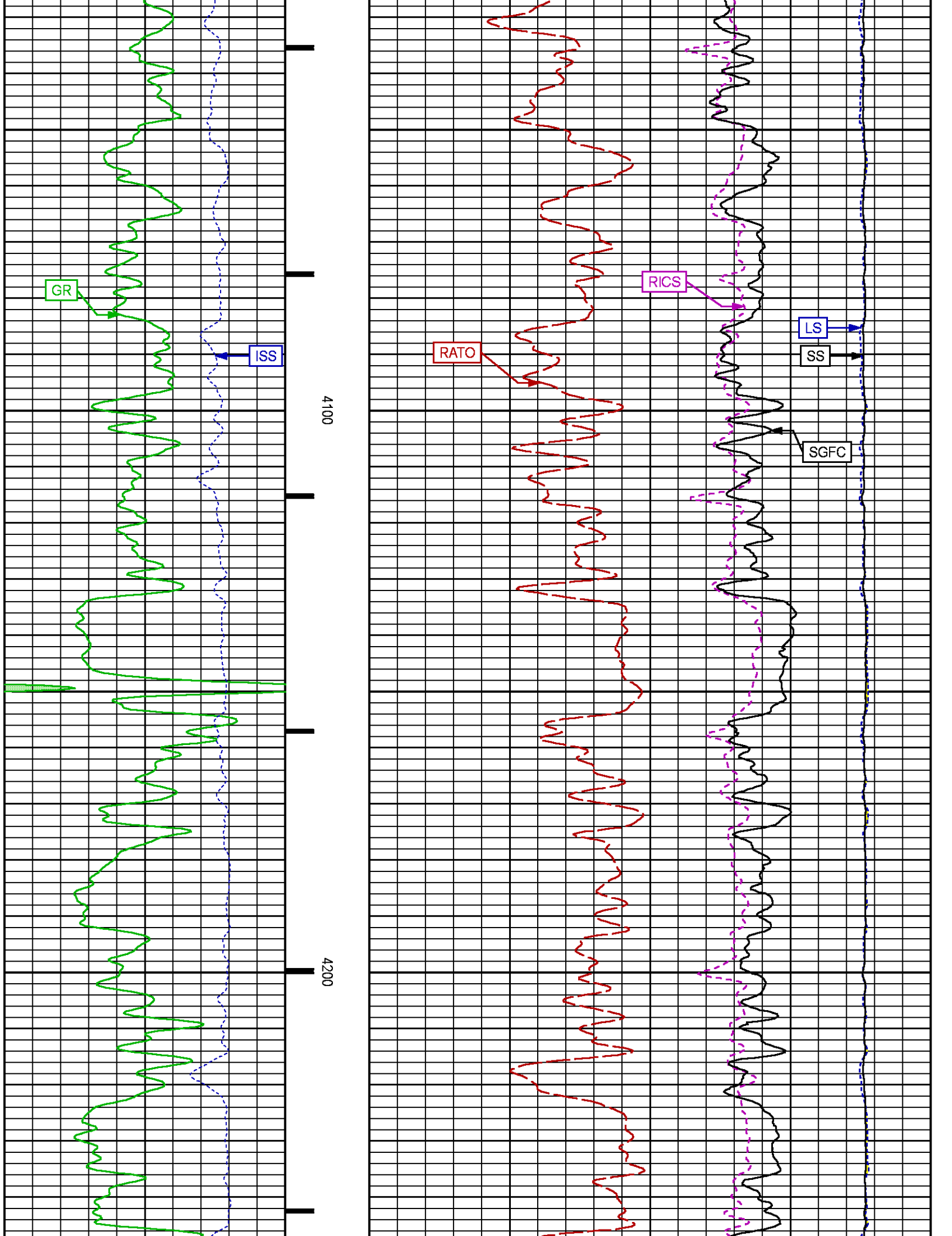
Plotted: Wed Jun 27 15:35:37 2018

### PARAMETER AND FILTER SUMMARY REPORT

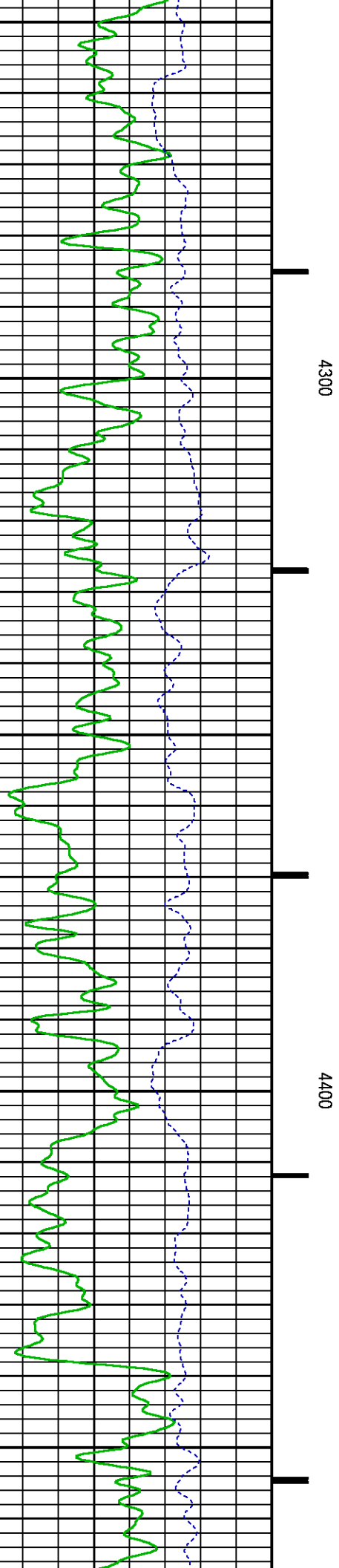
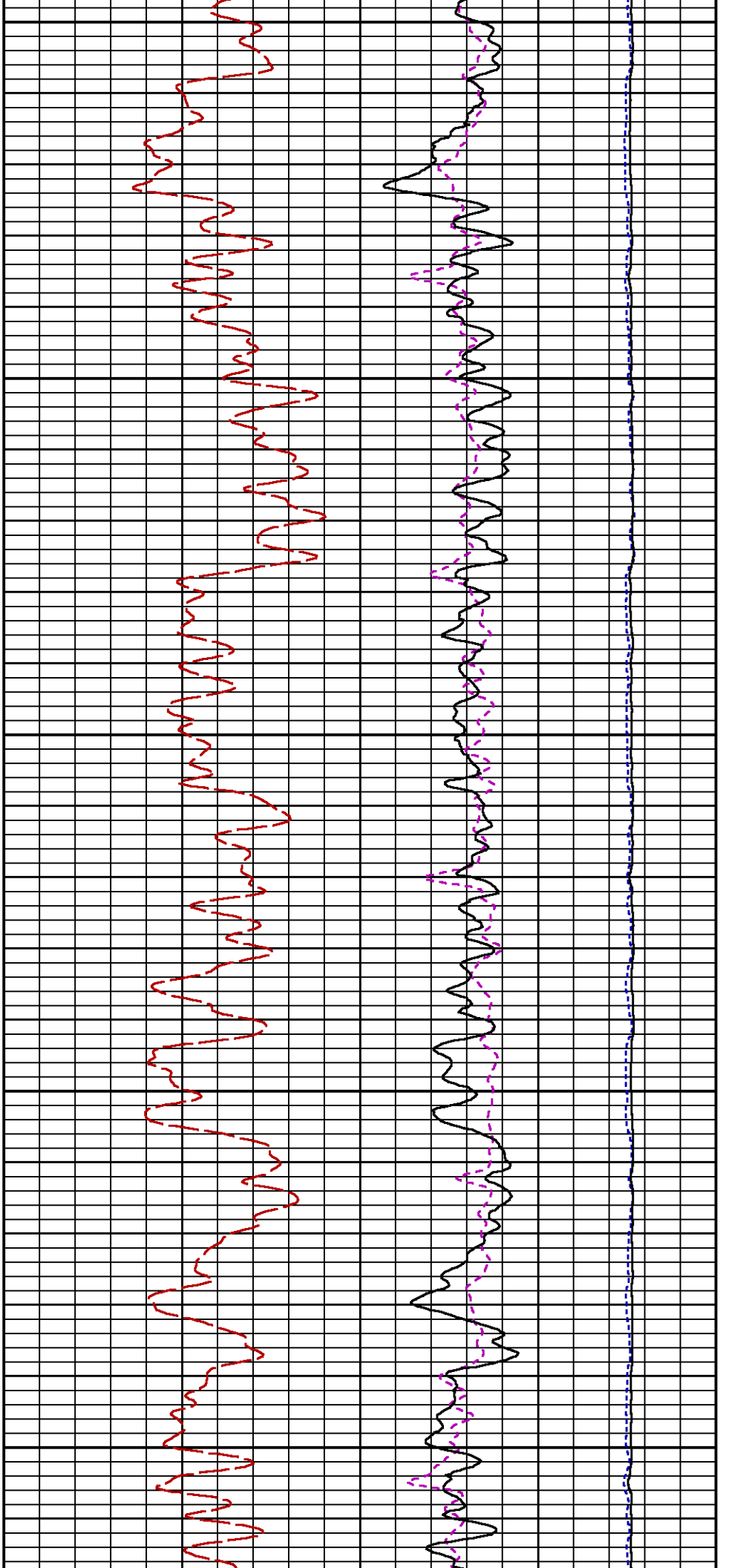
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LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4017.429 ft BOTTOM DEPTH: 4599.766 ft

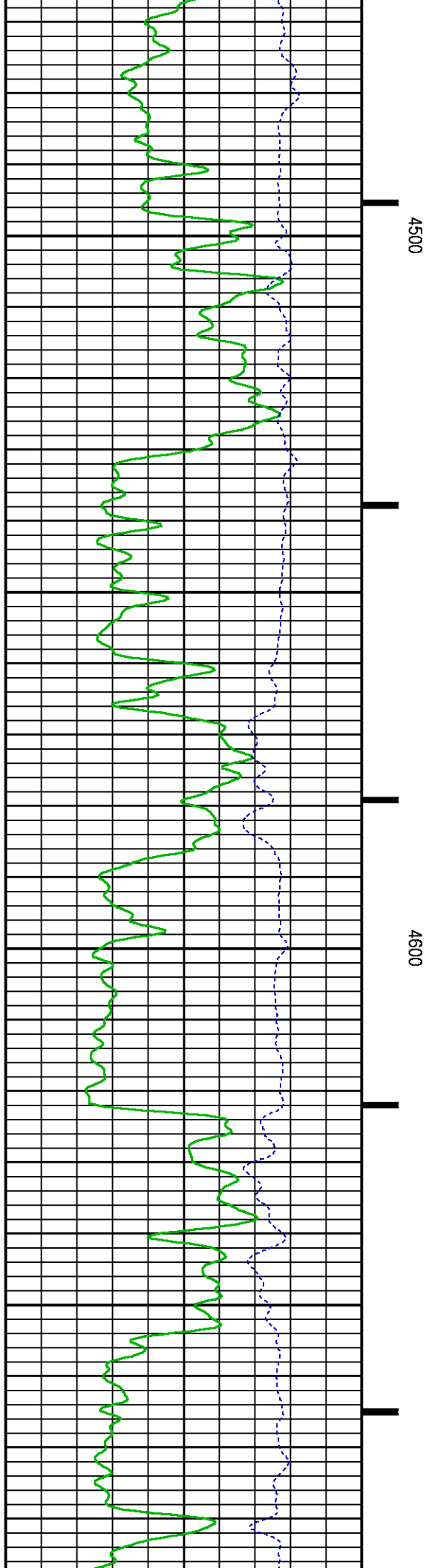
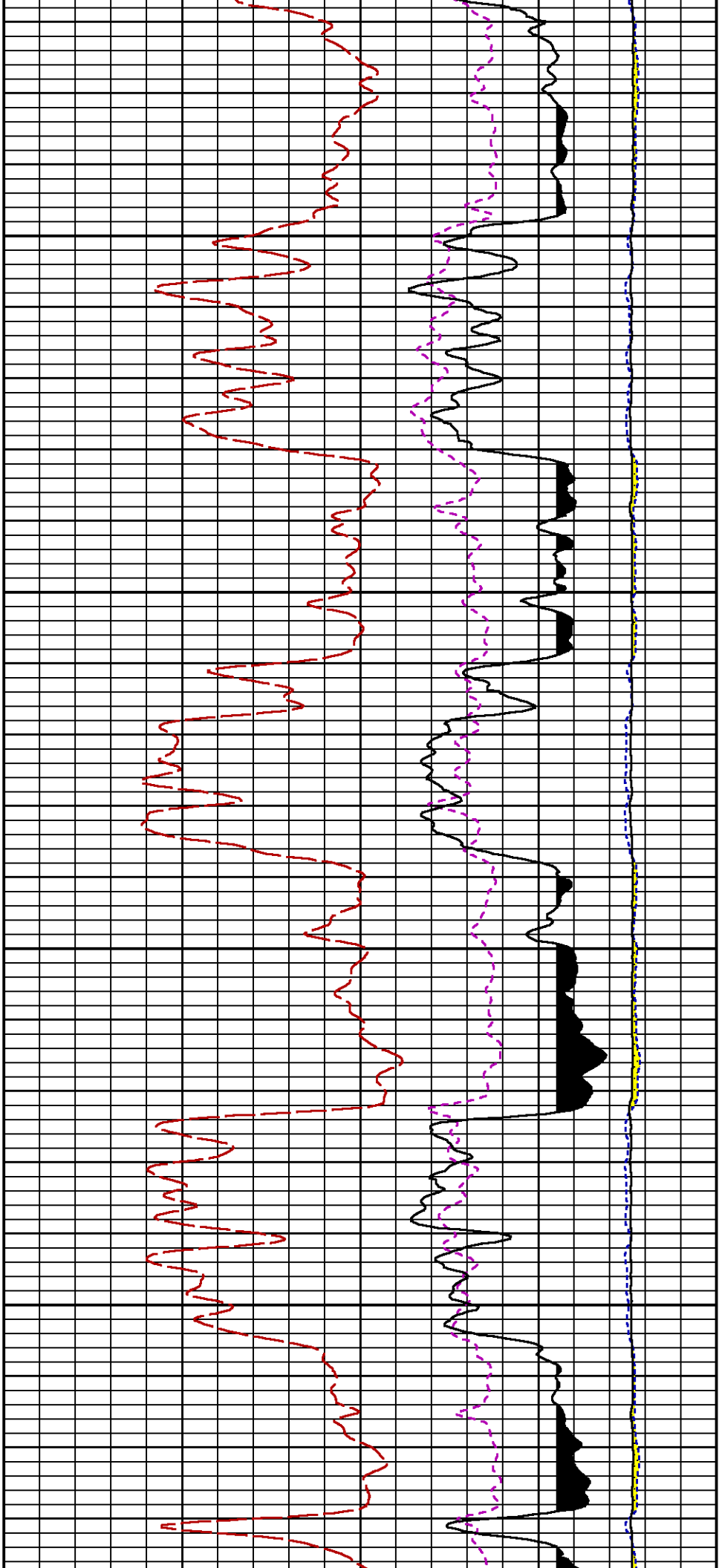
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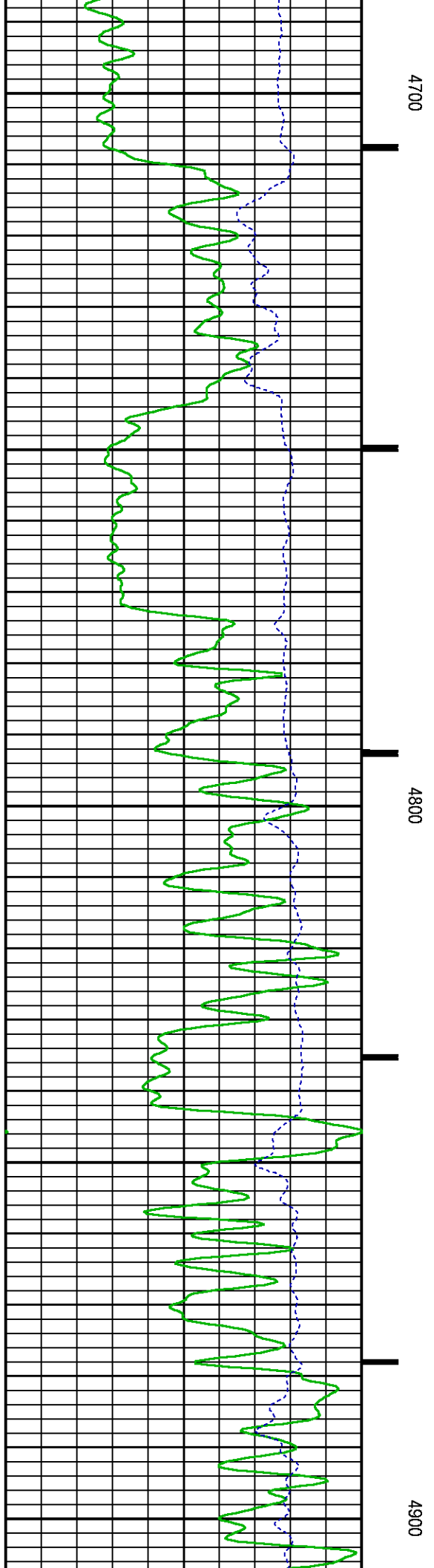
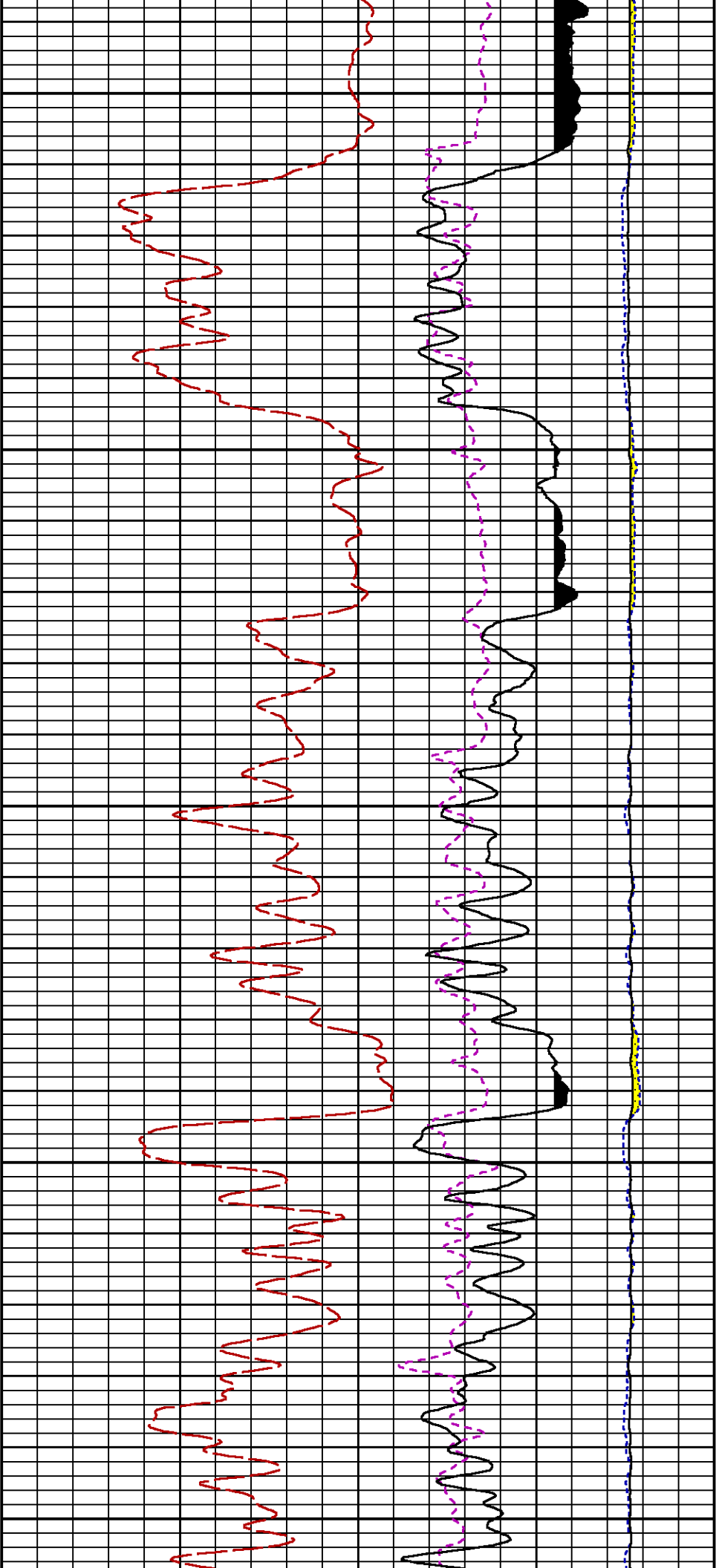


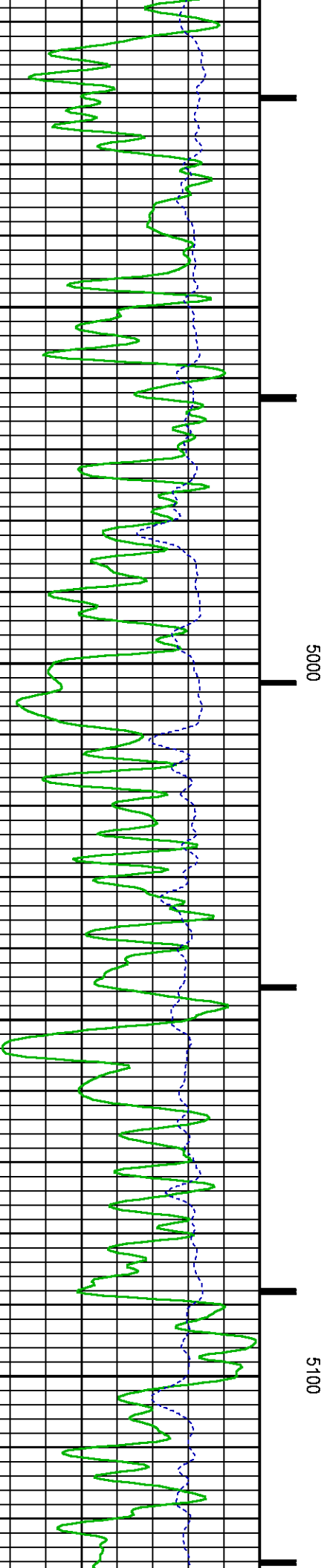
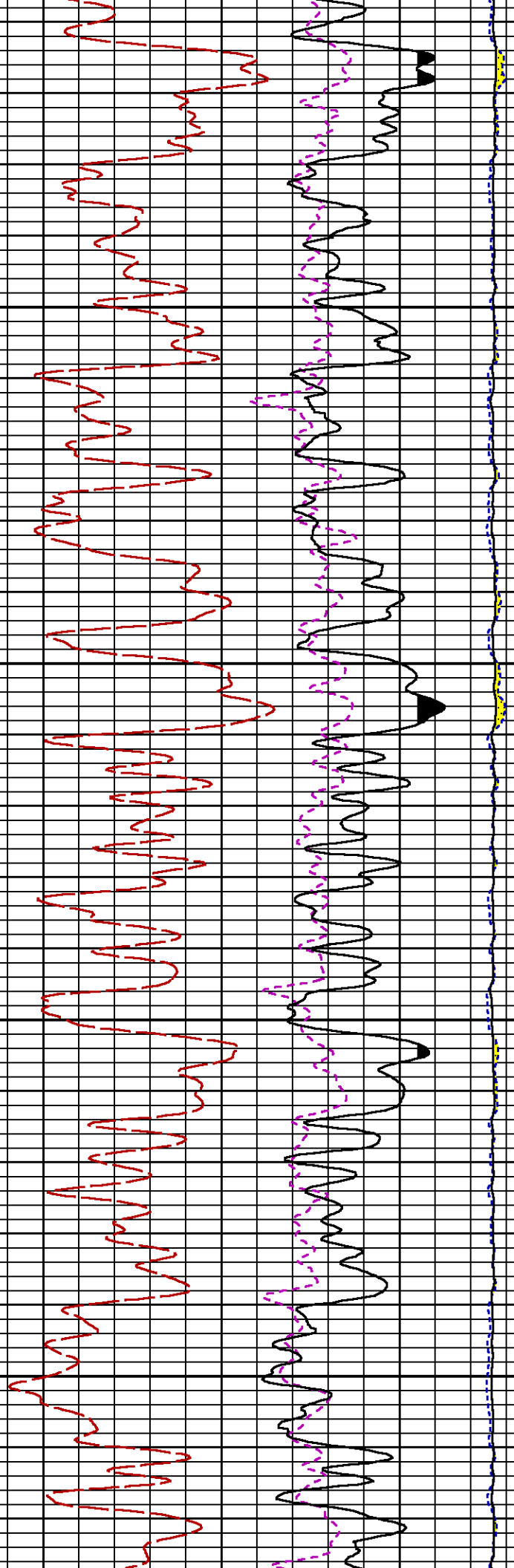


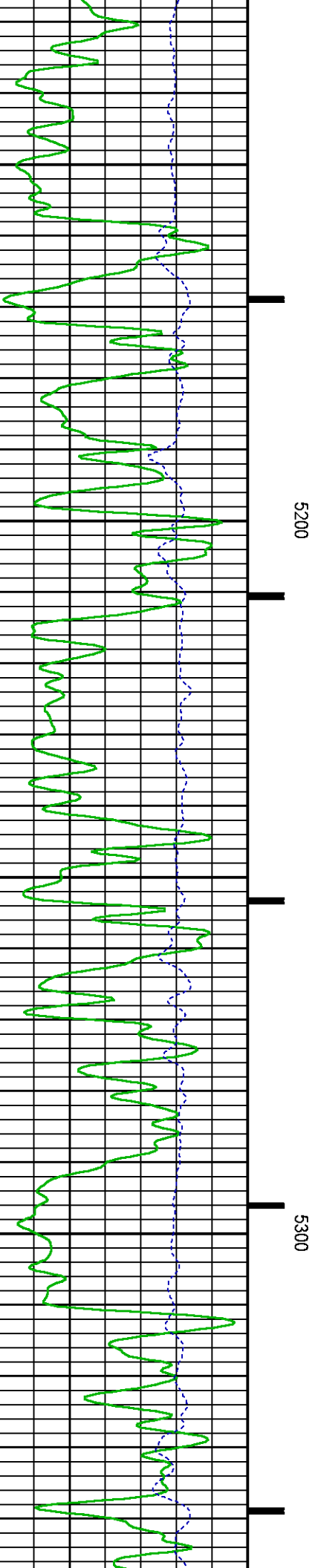
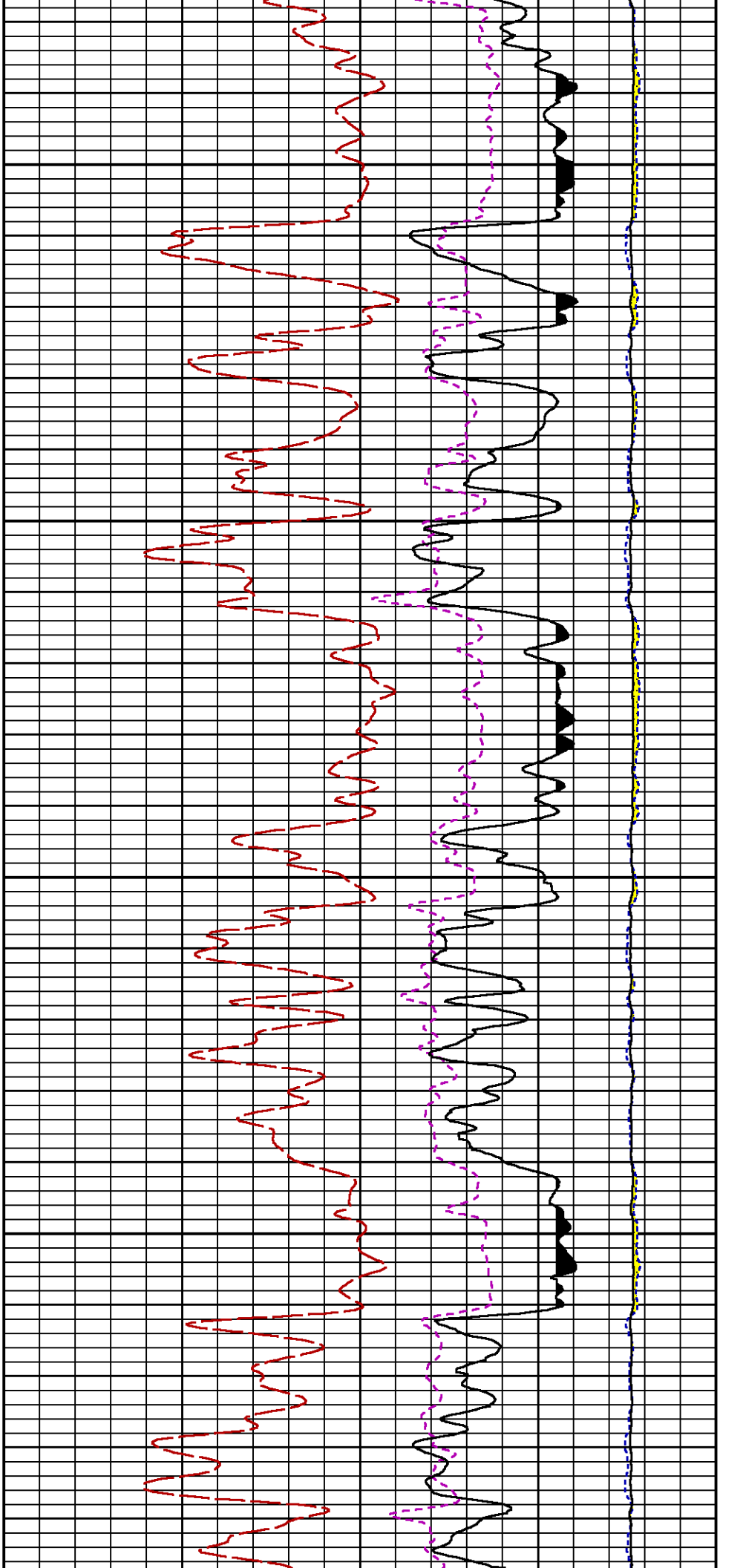


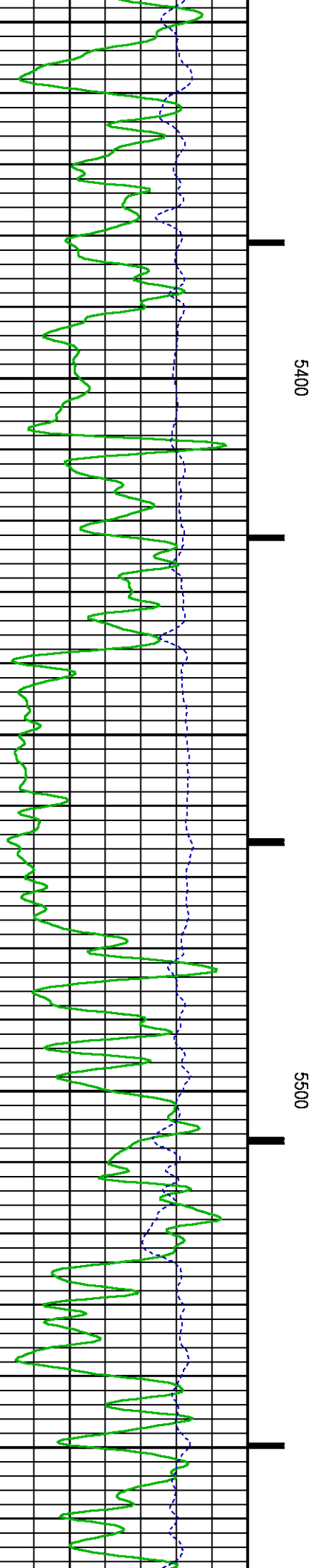
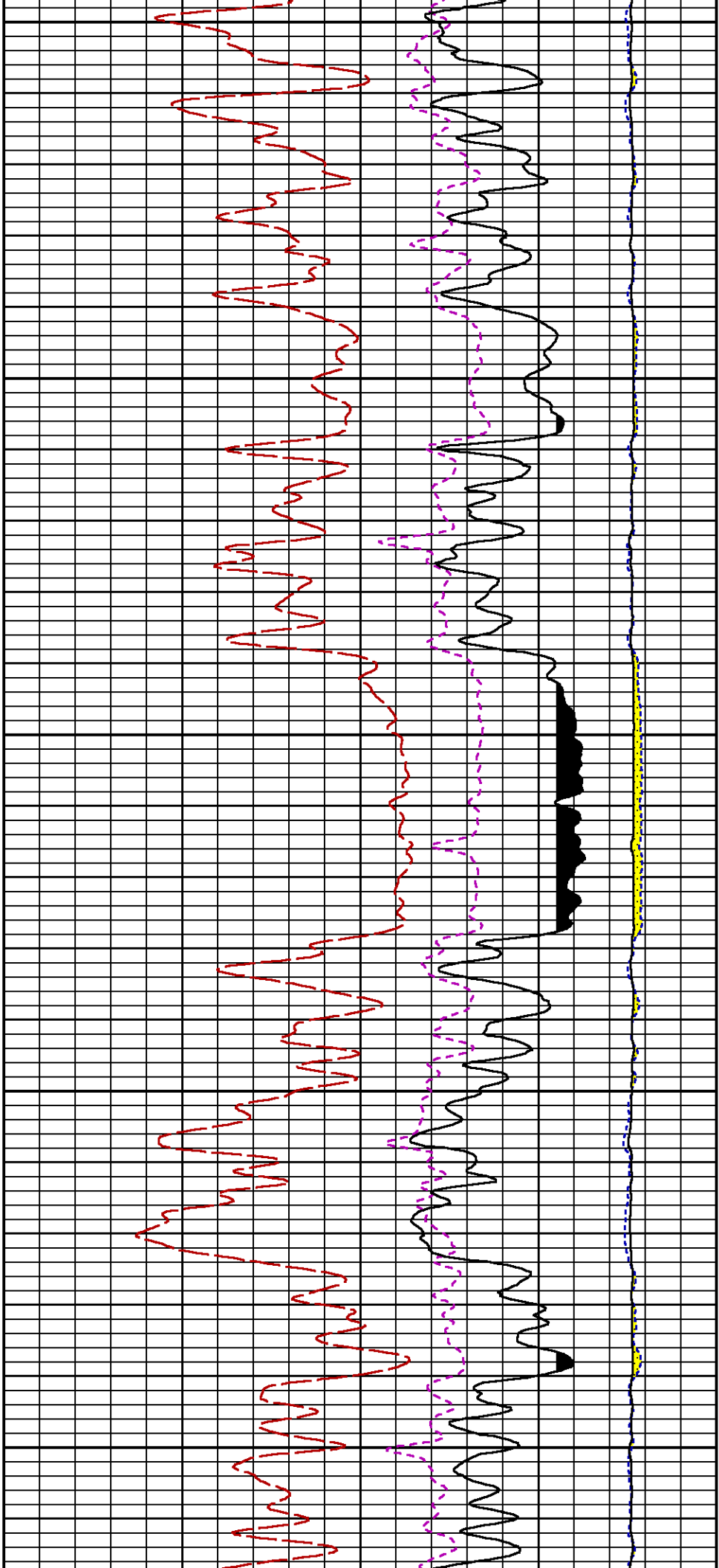


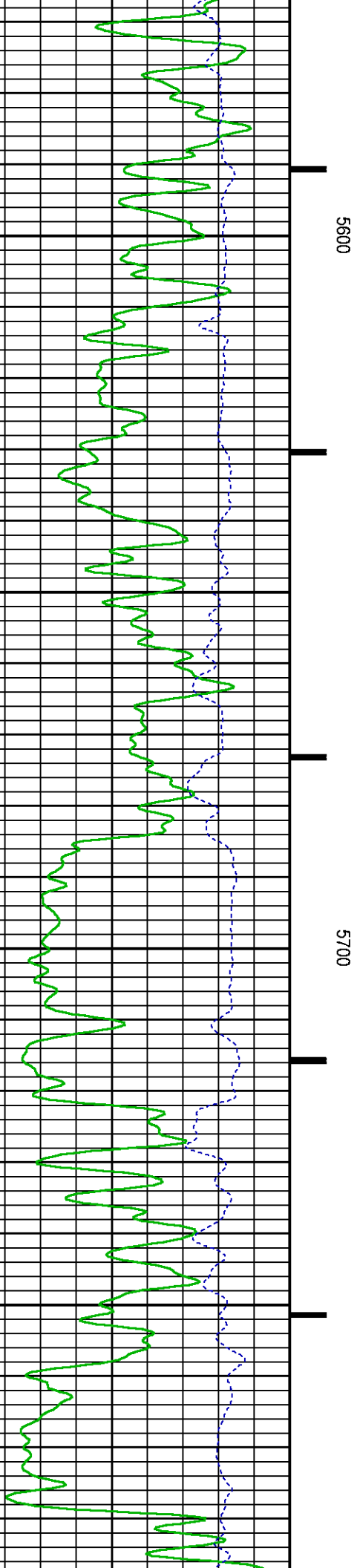
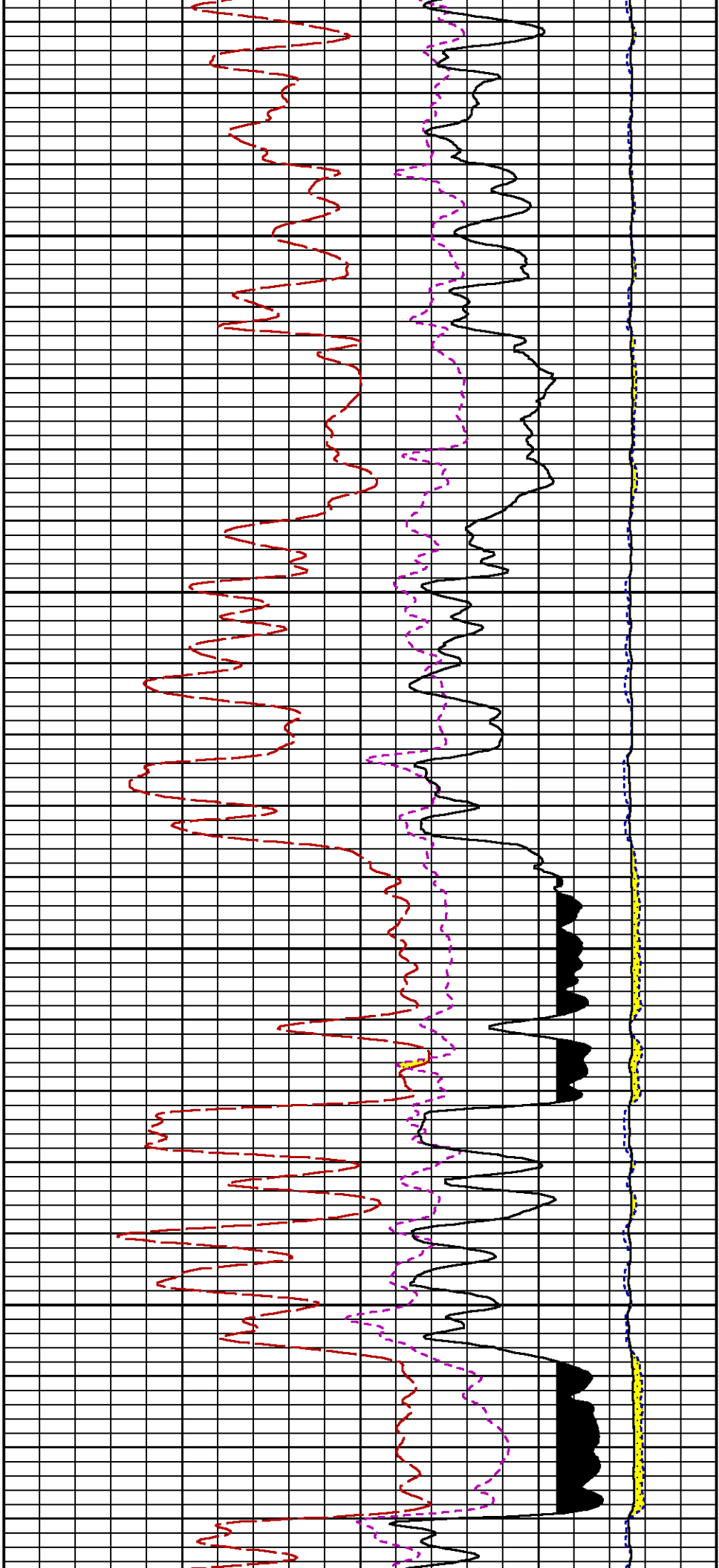


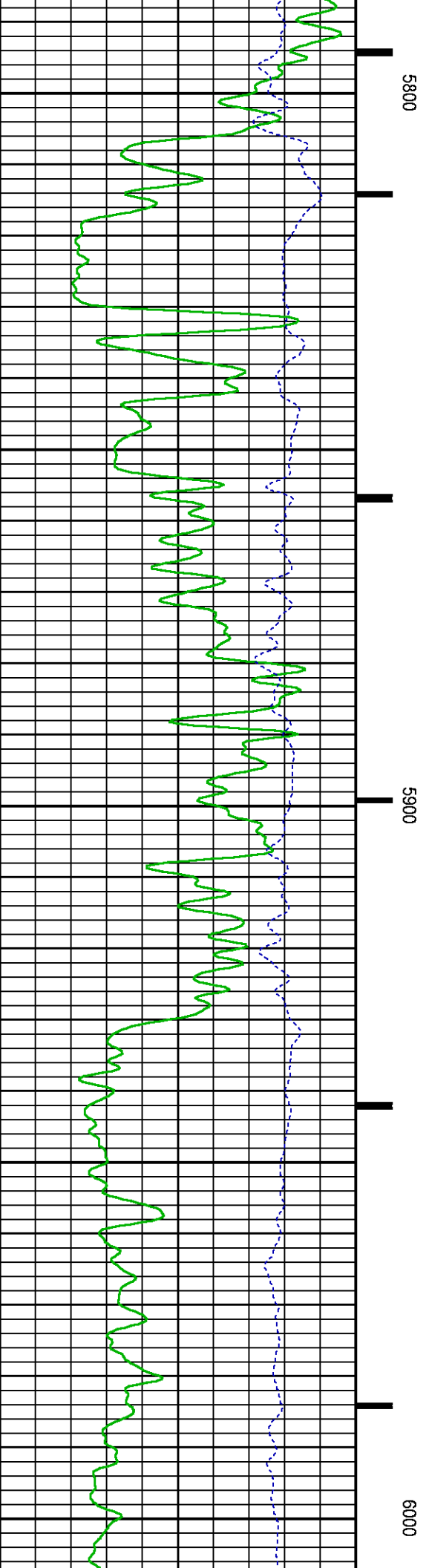
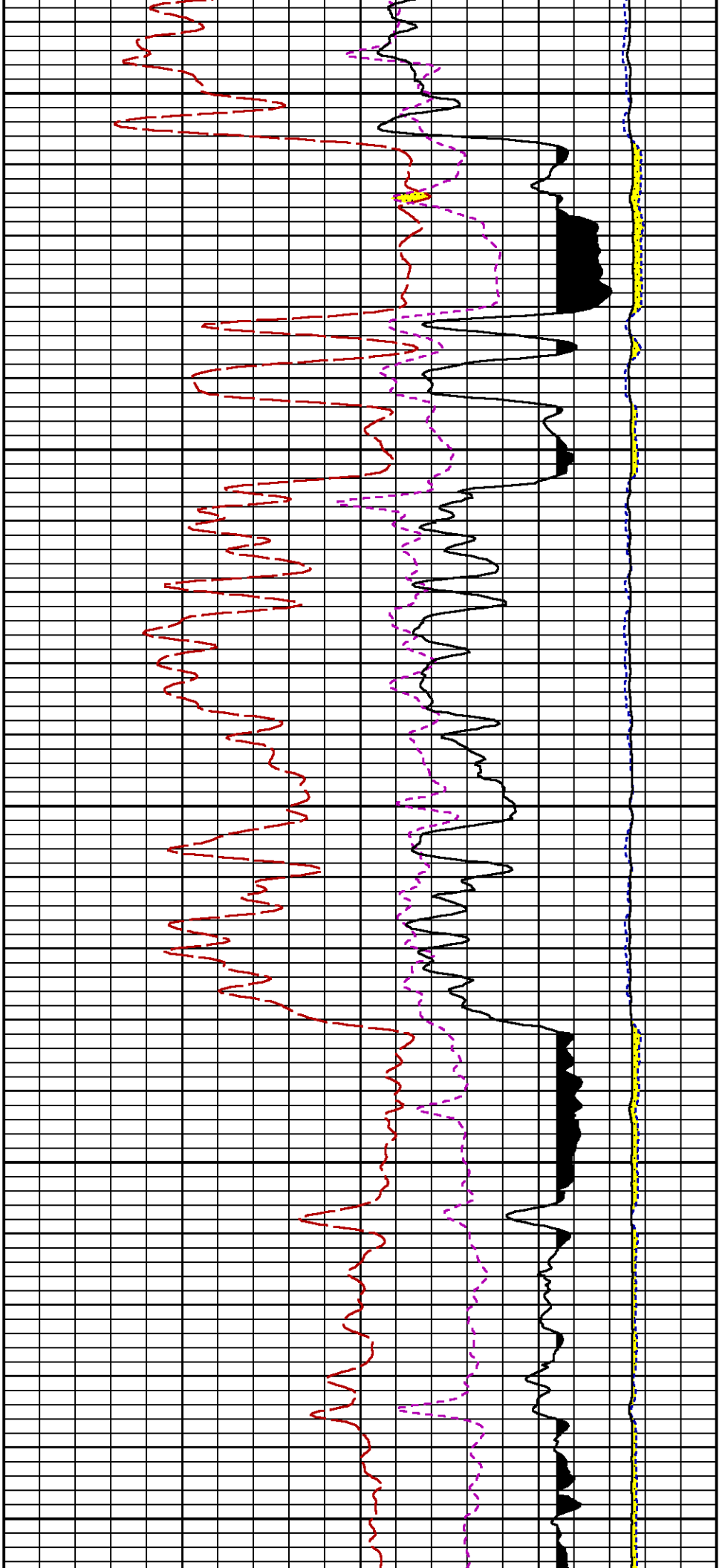




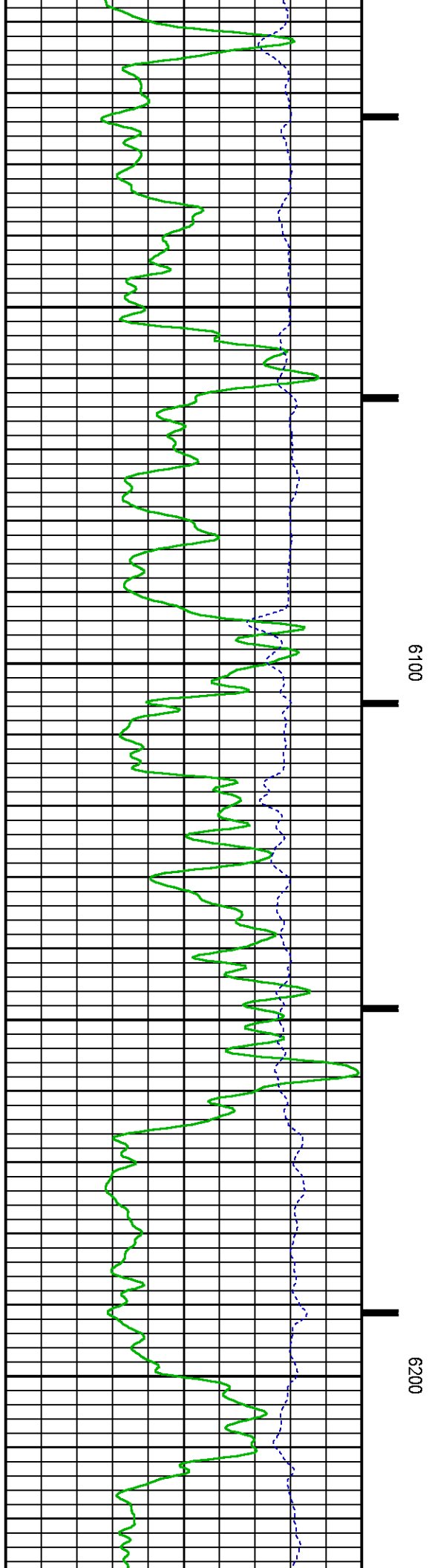
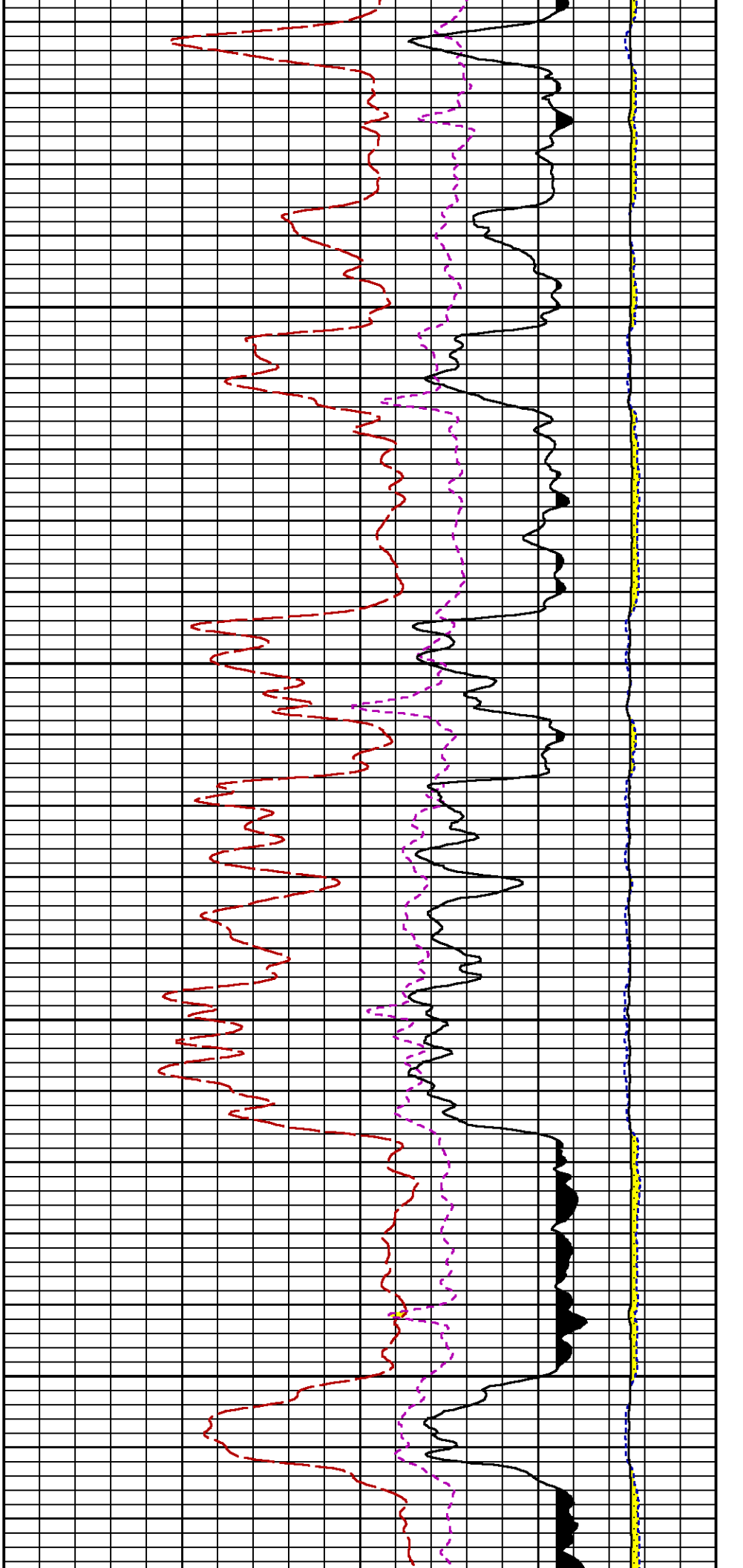


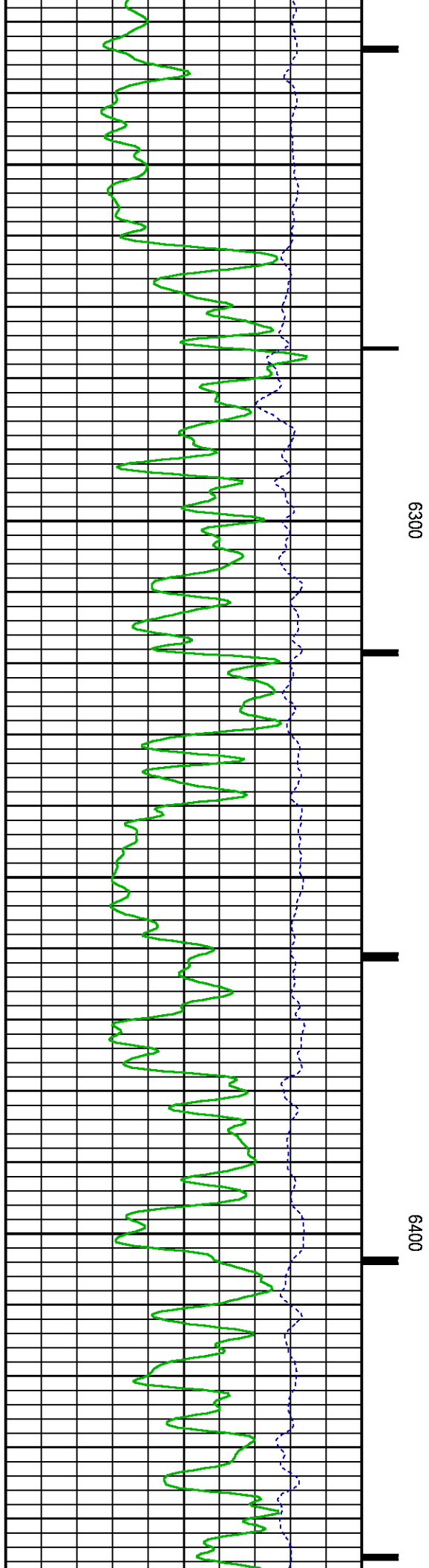
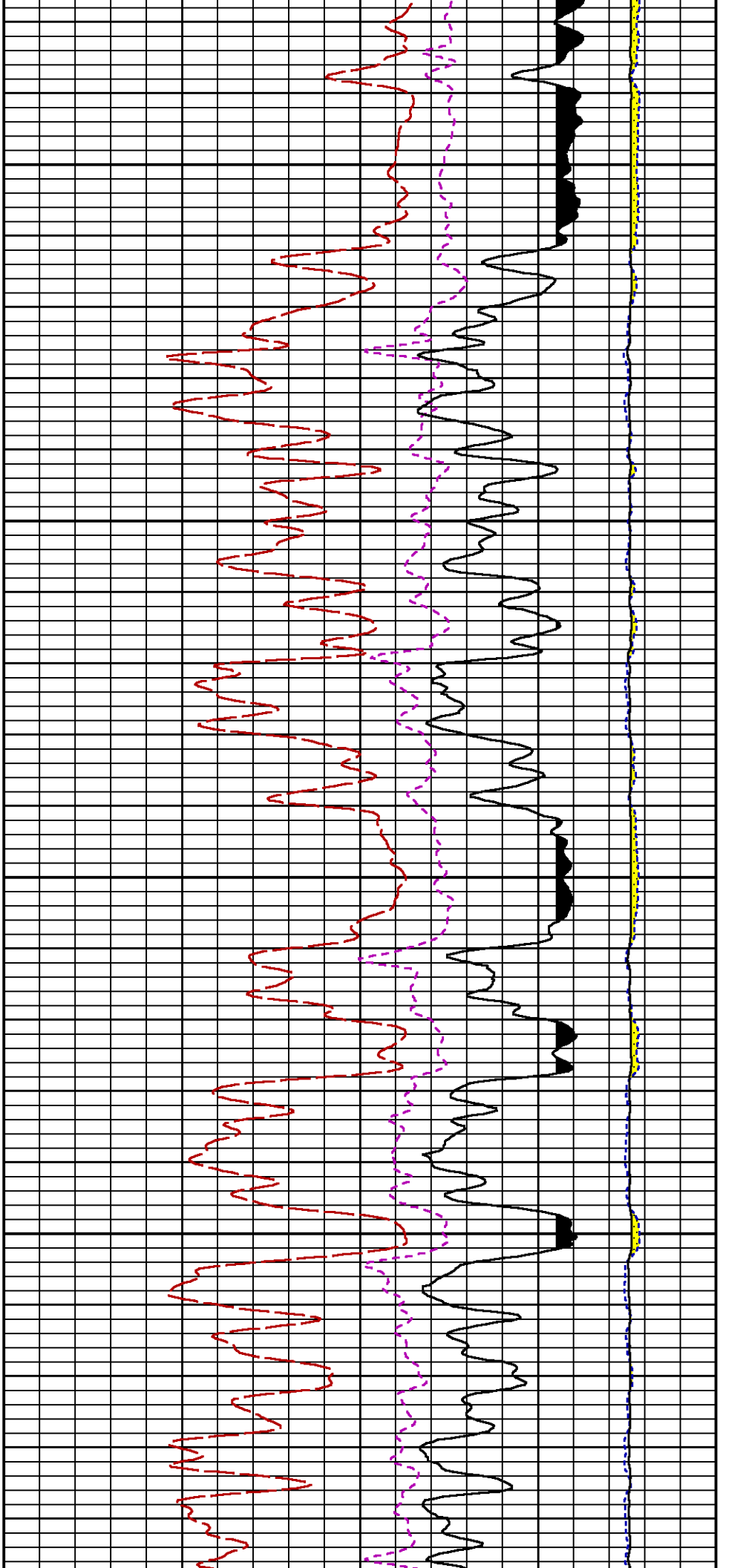


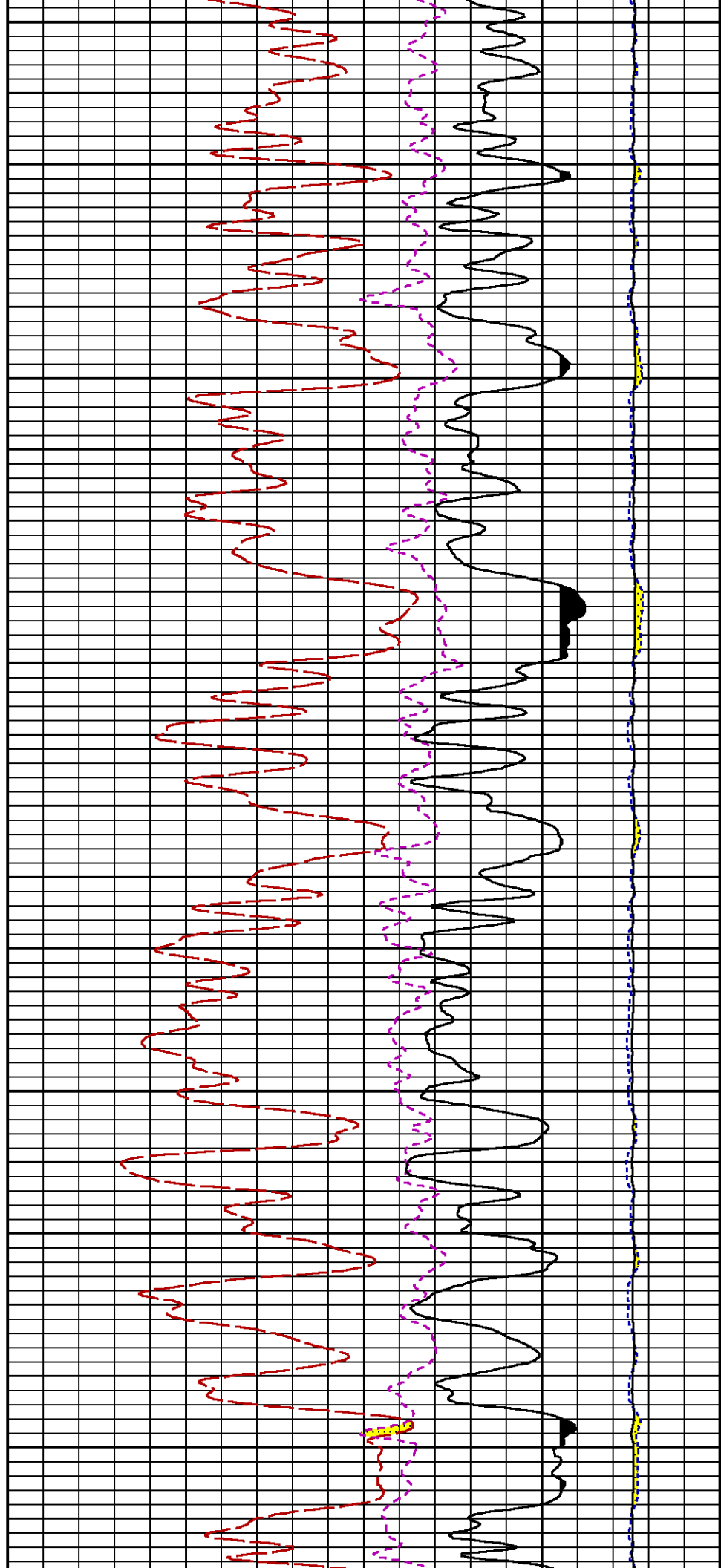
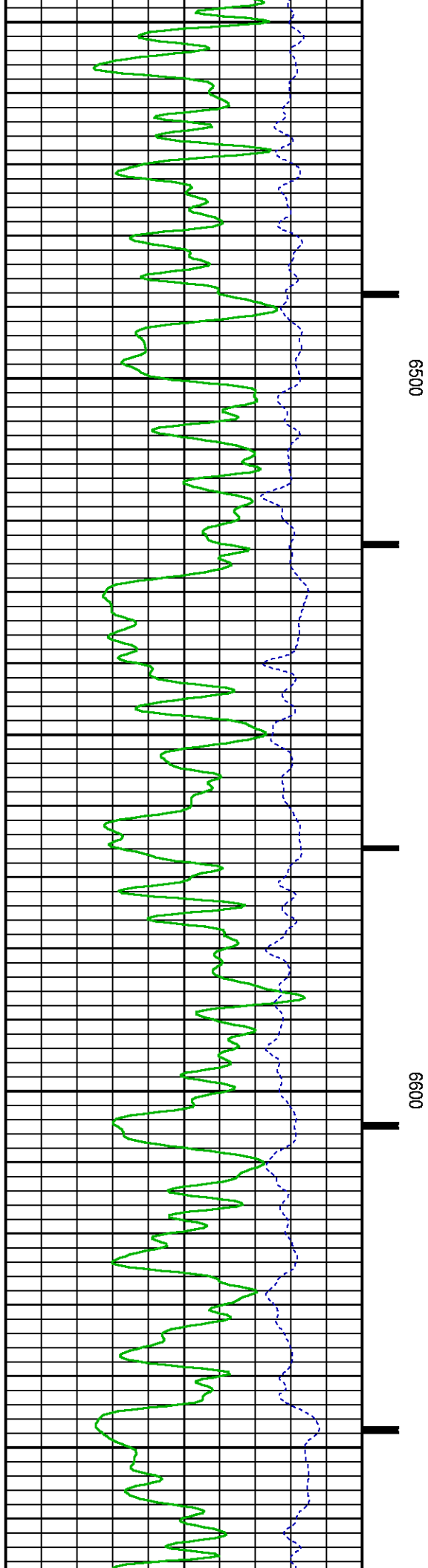


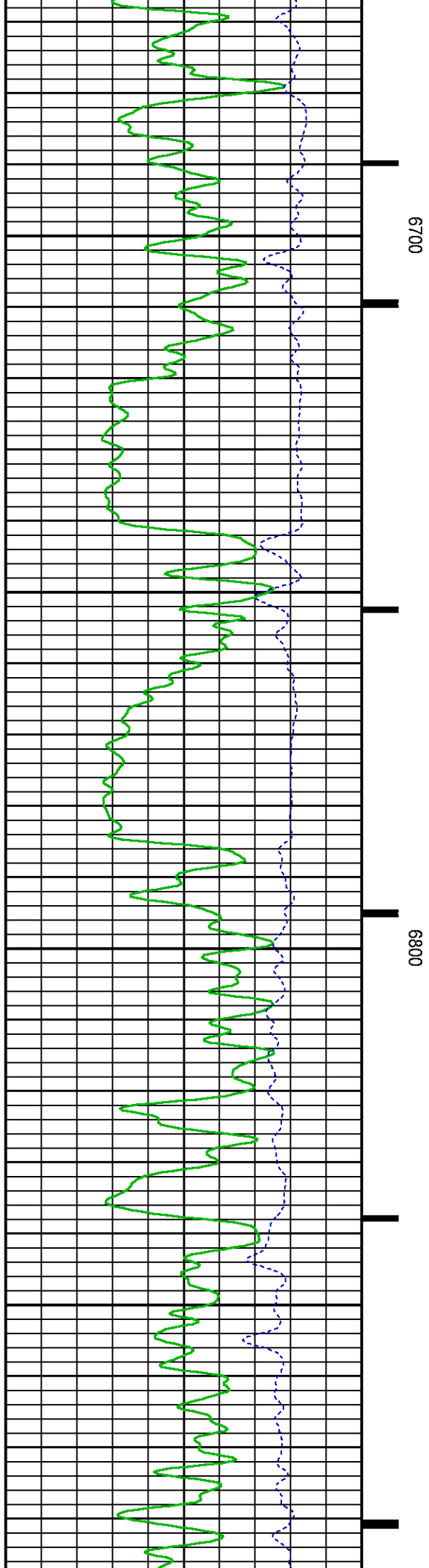
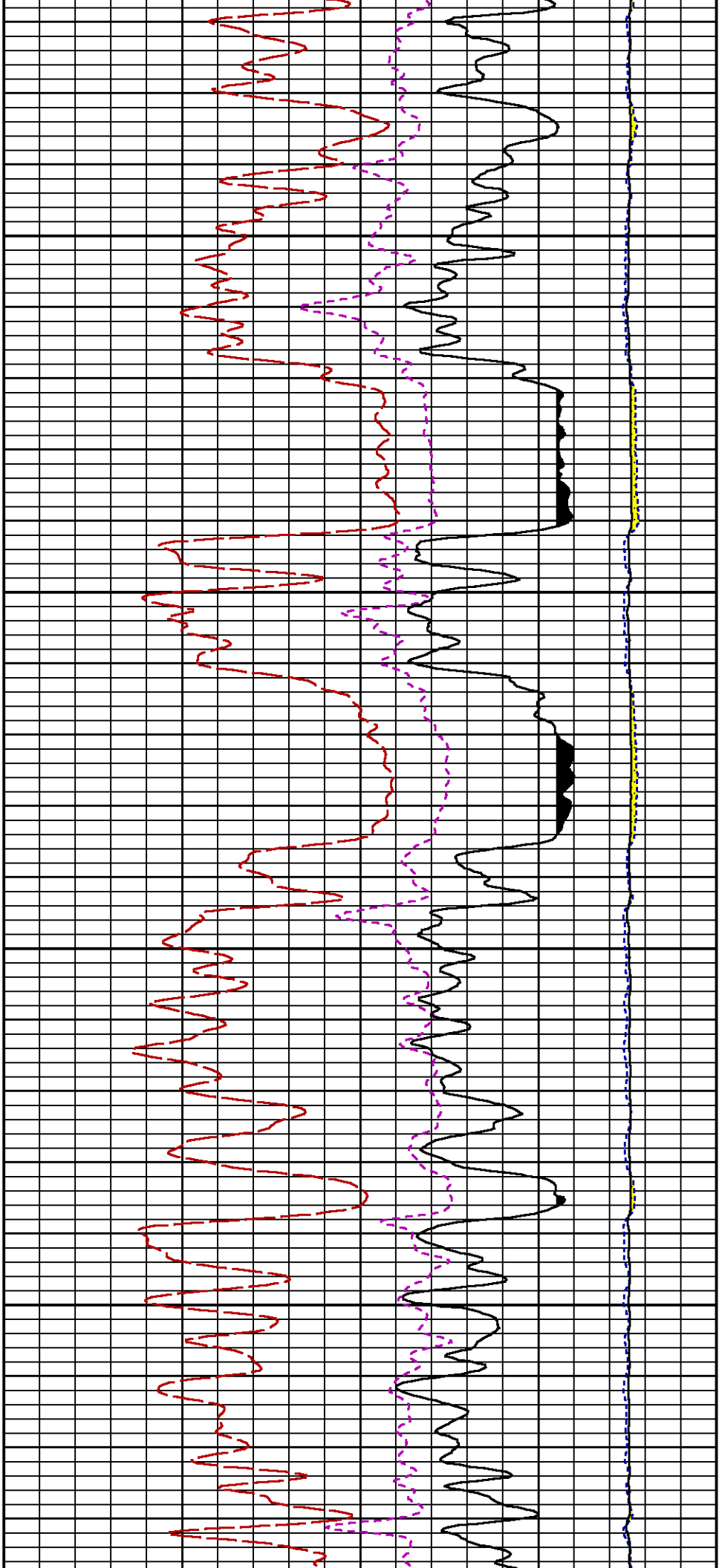


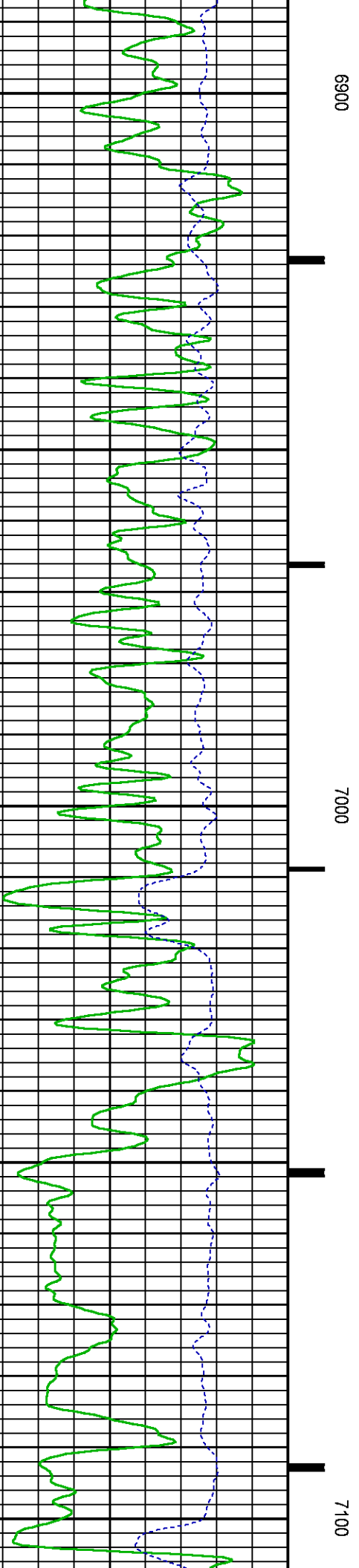
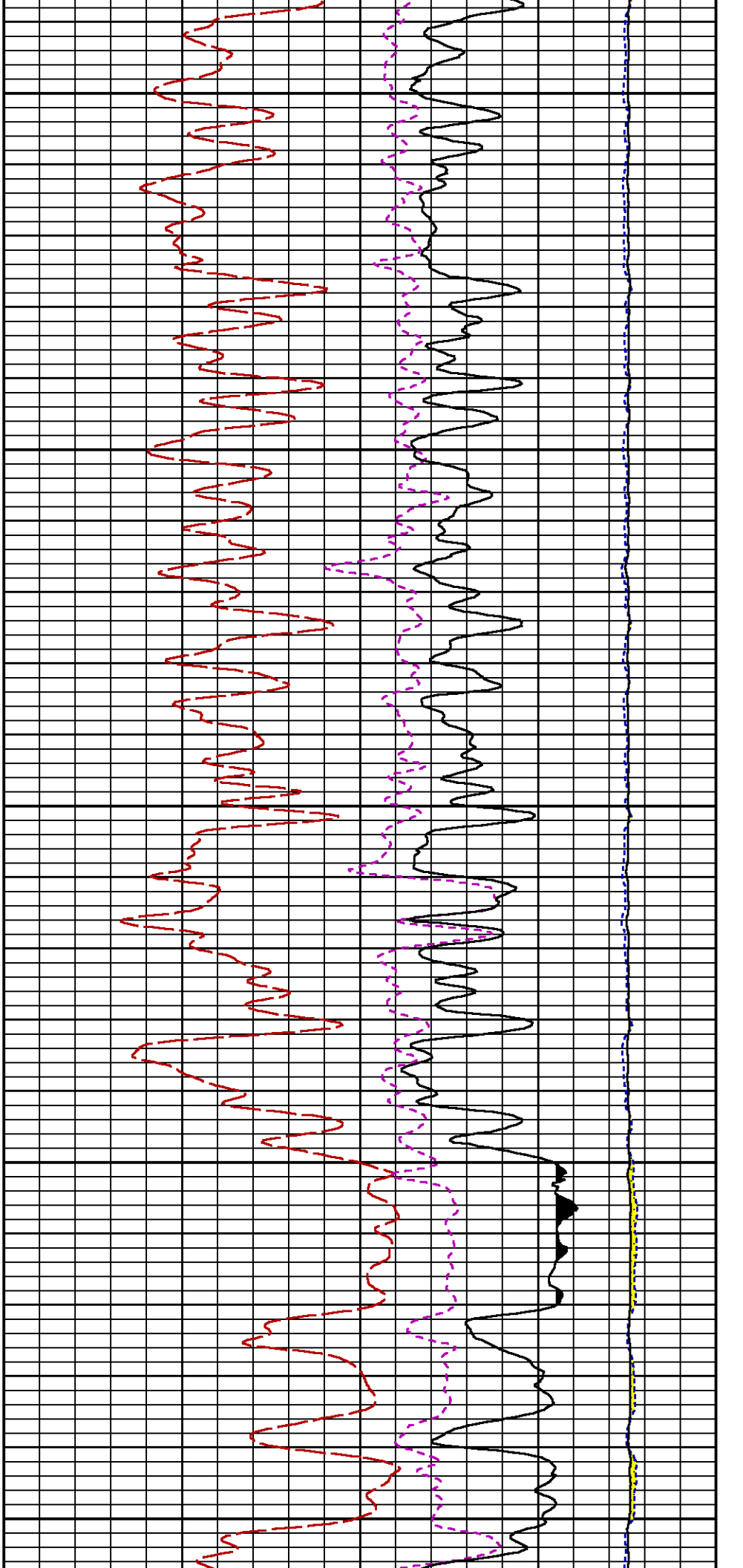


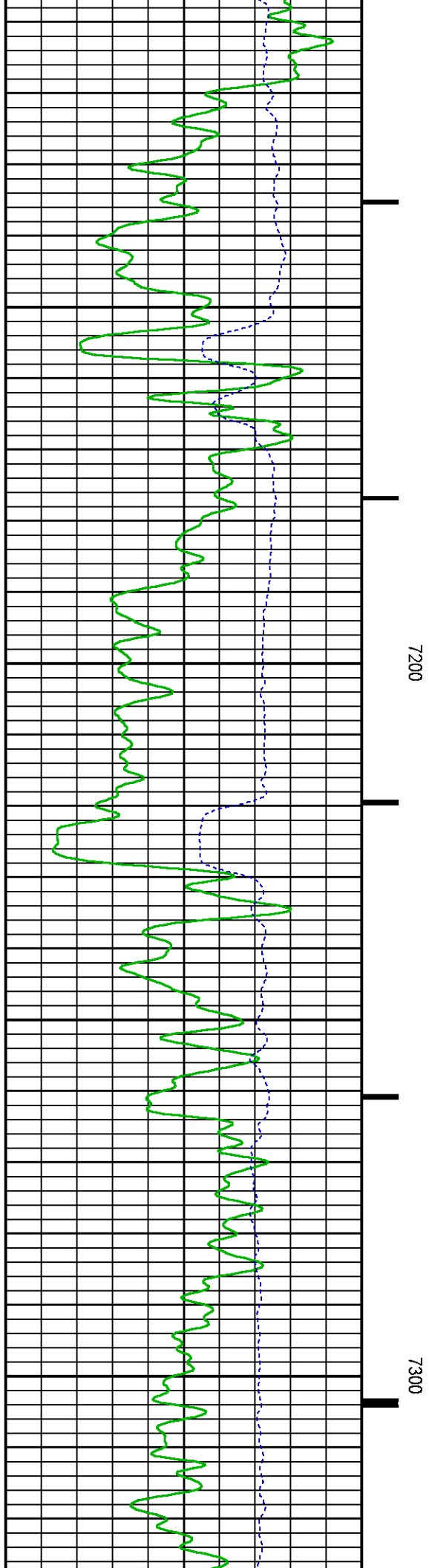
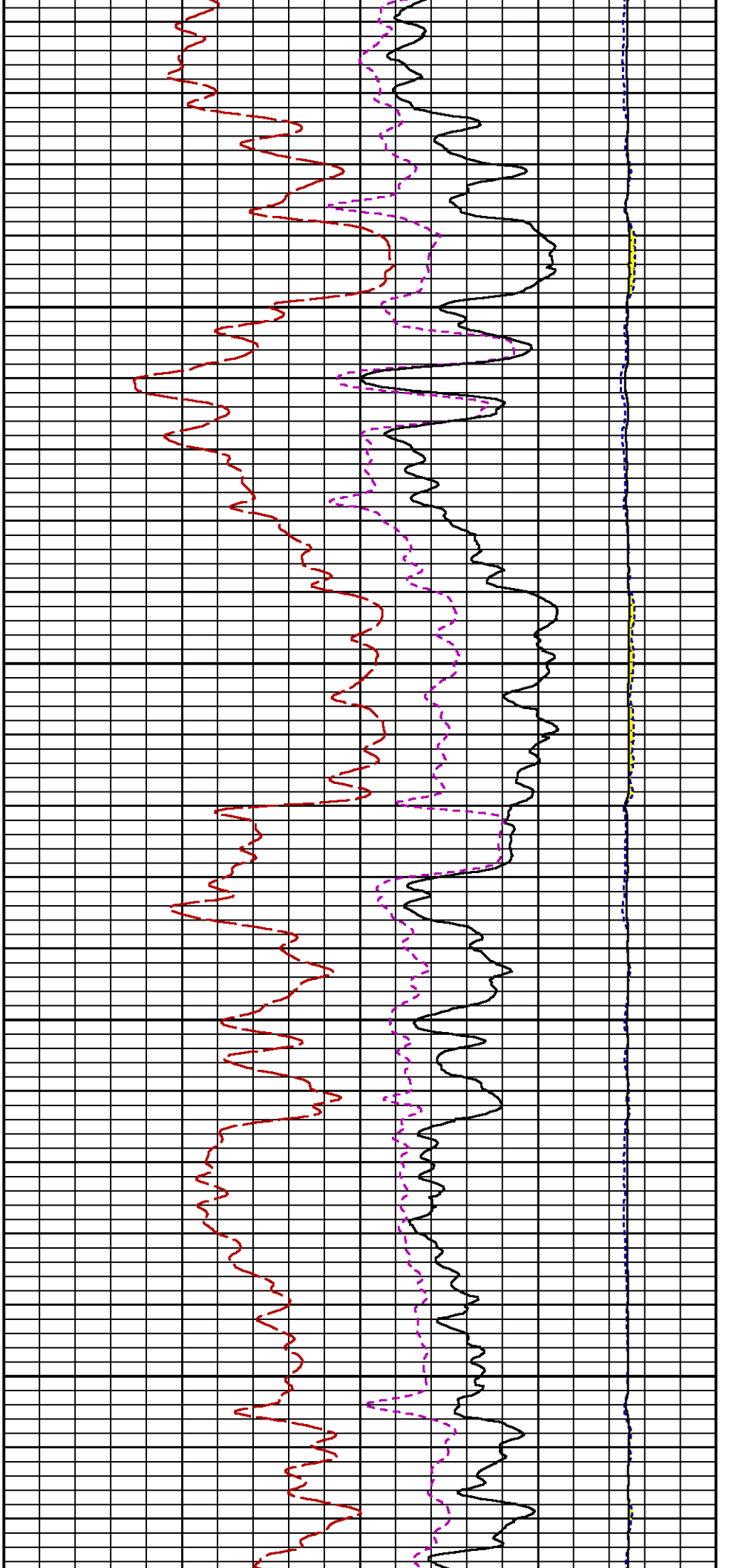


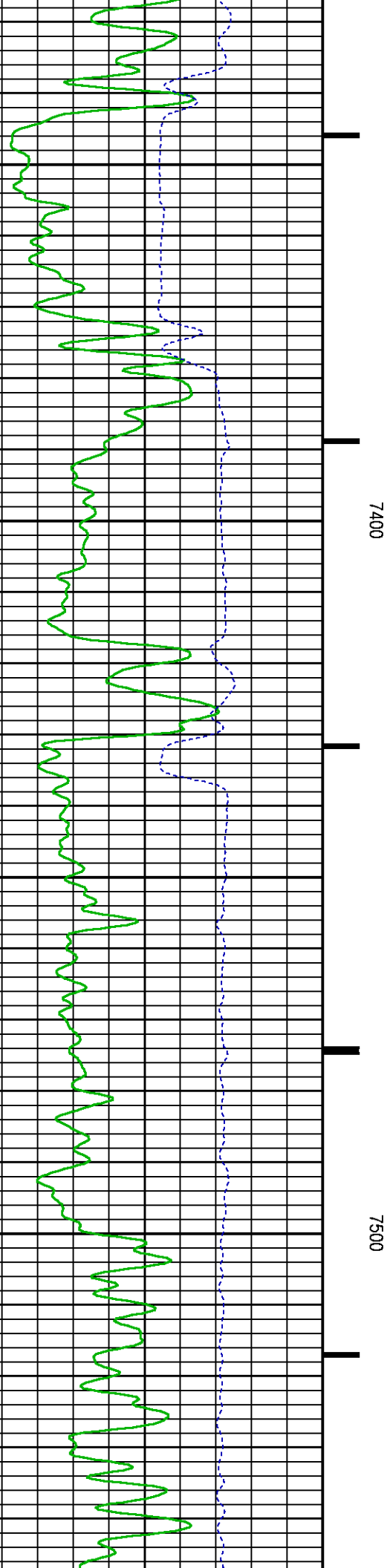
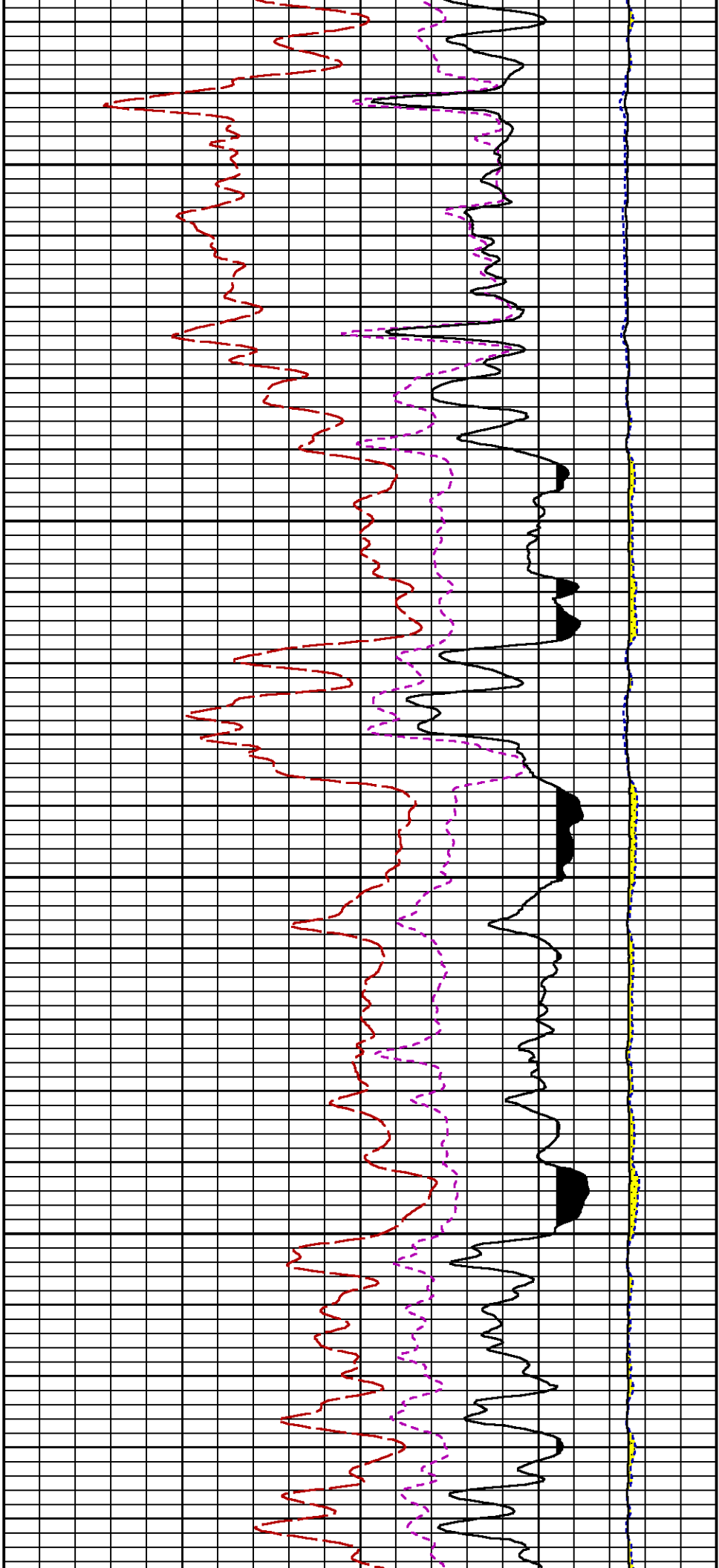


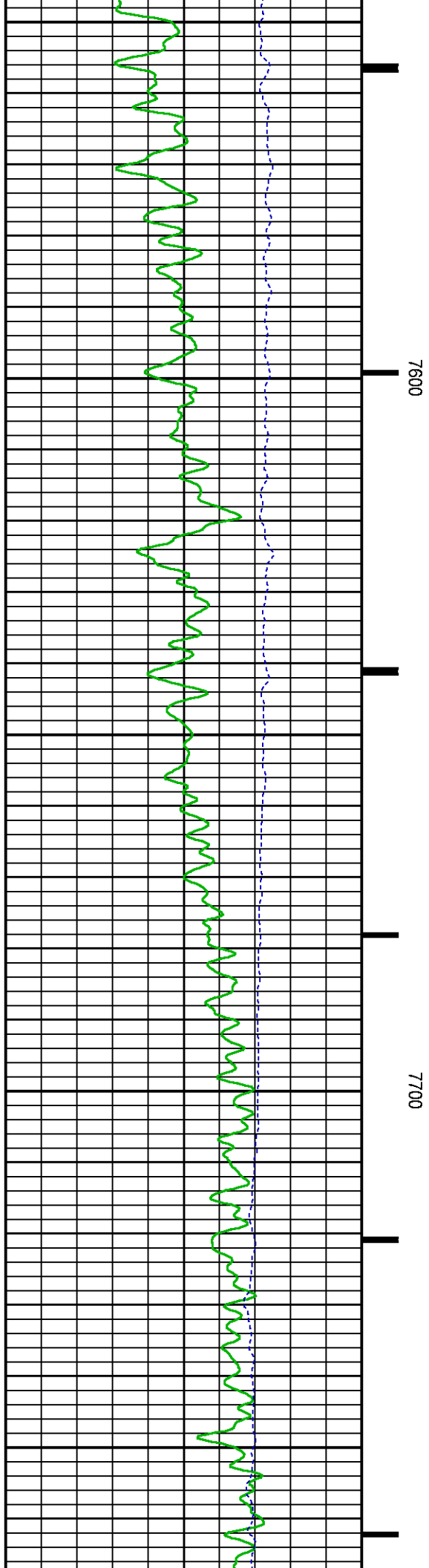
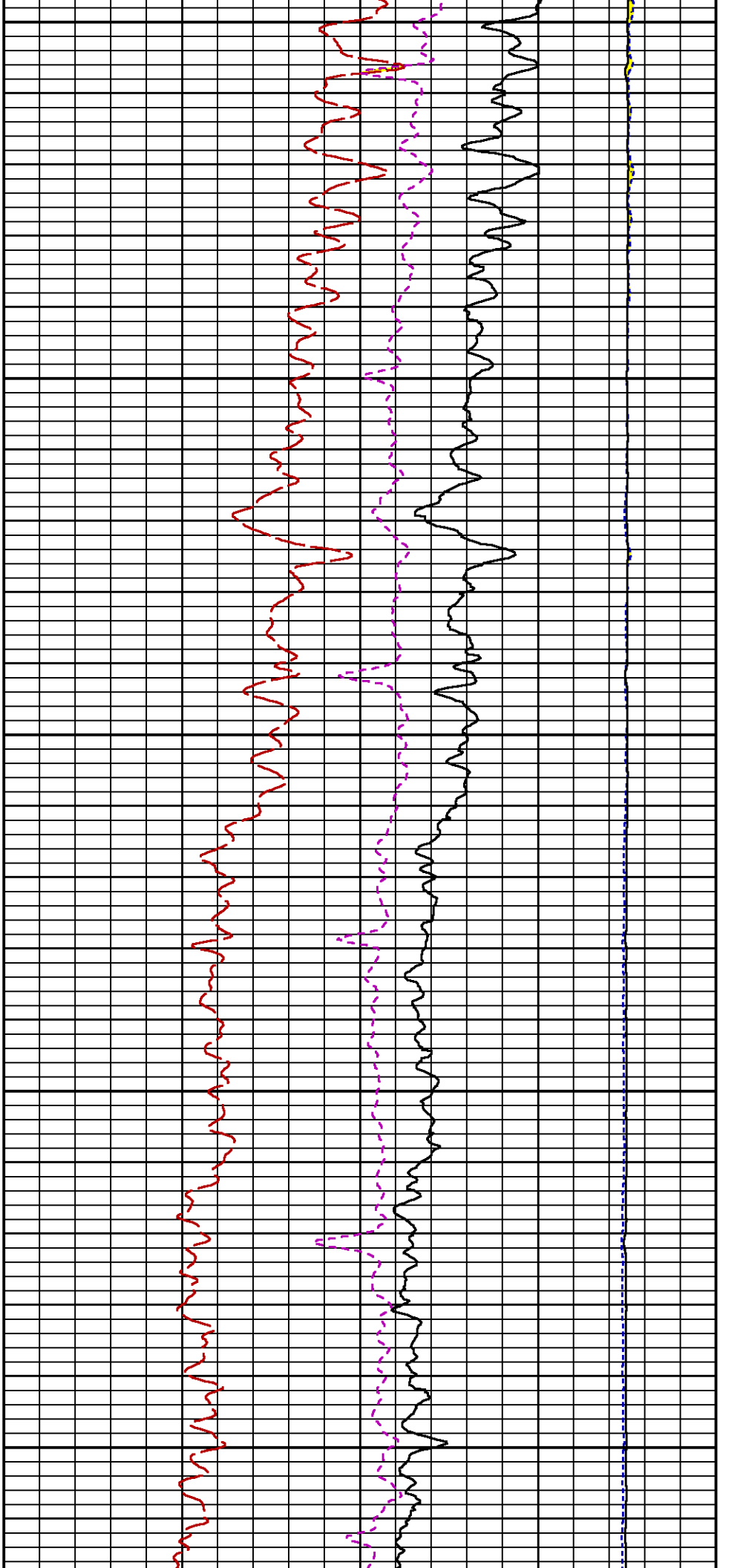




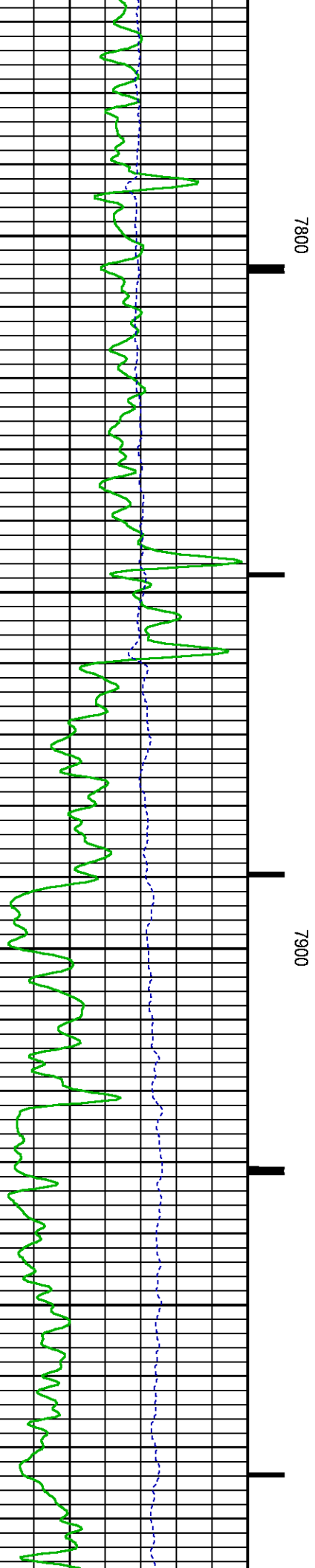
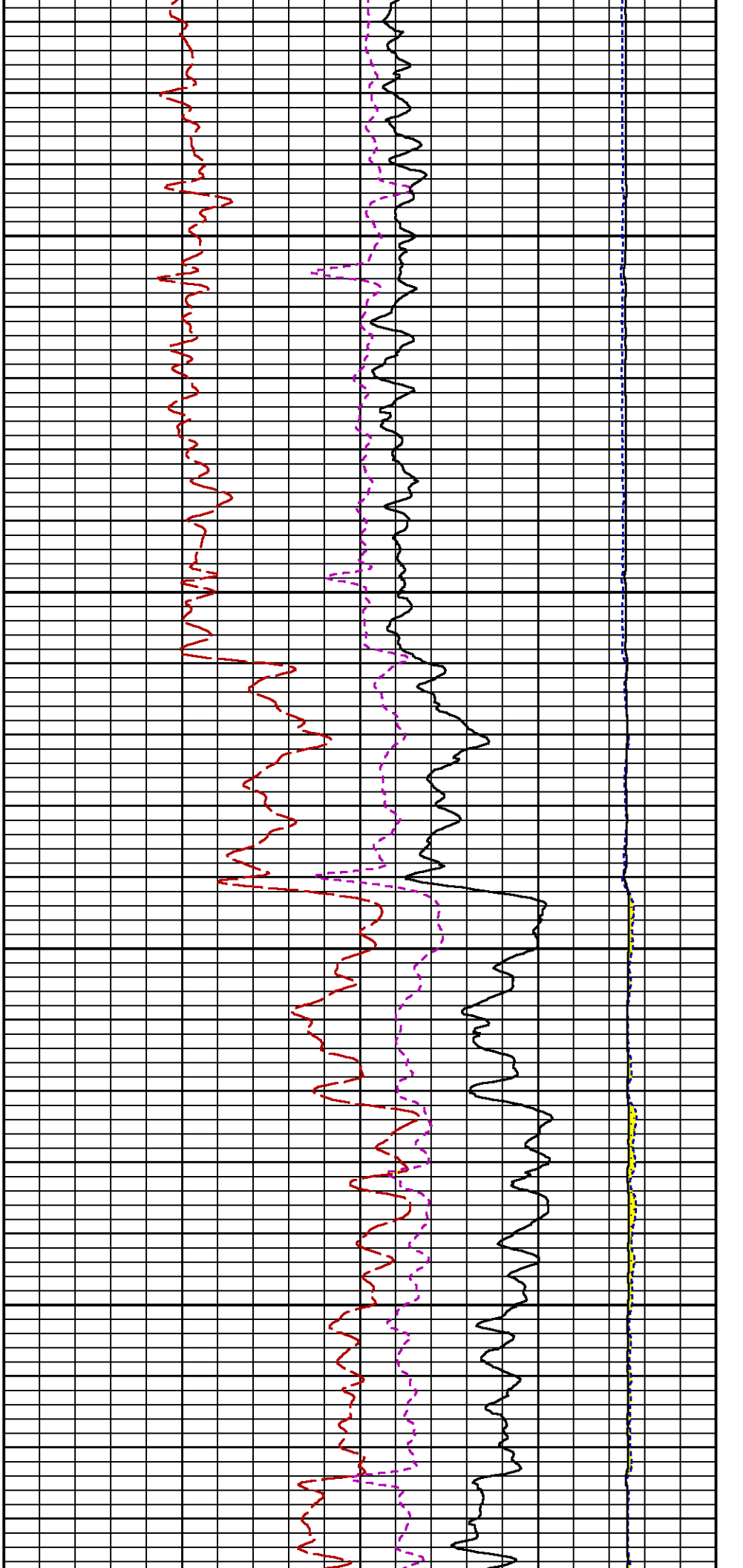


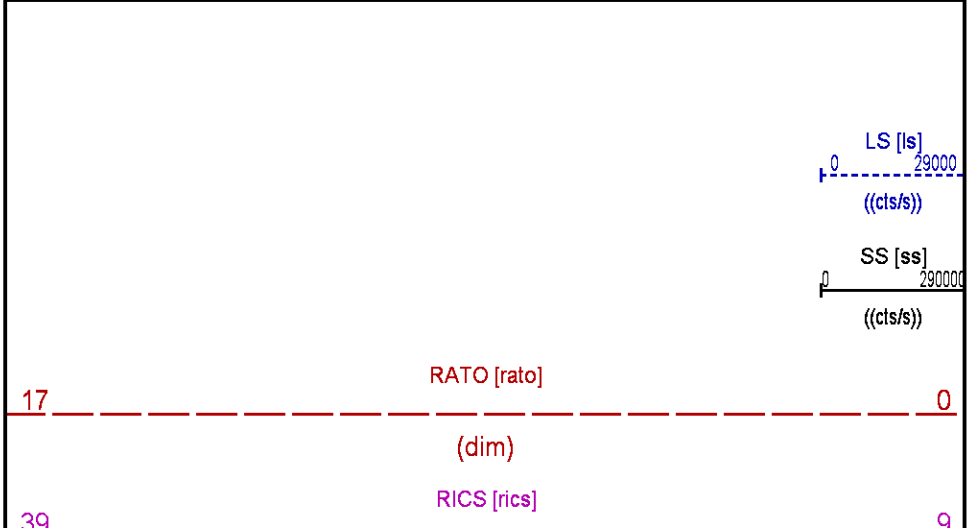
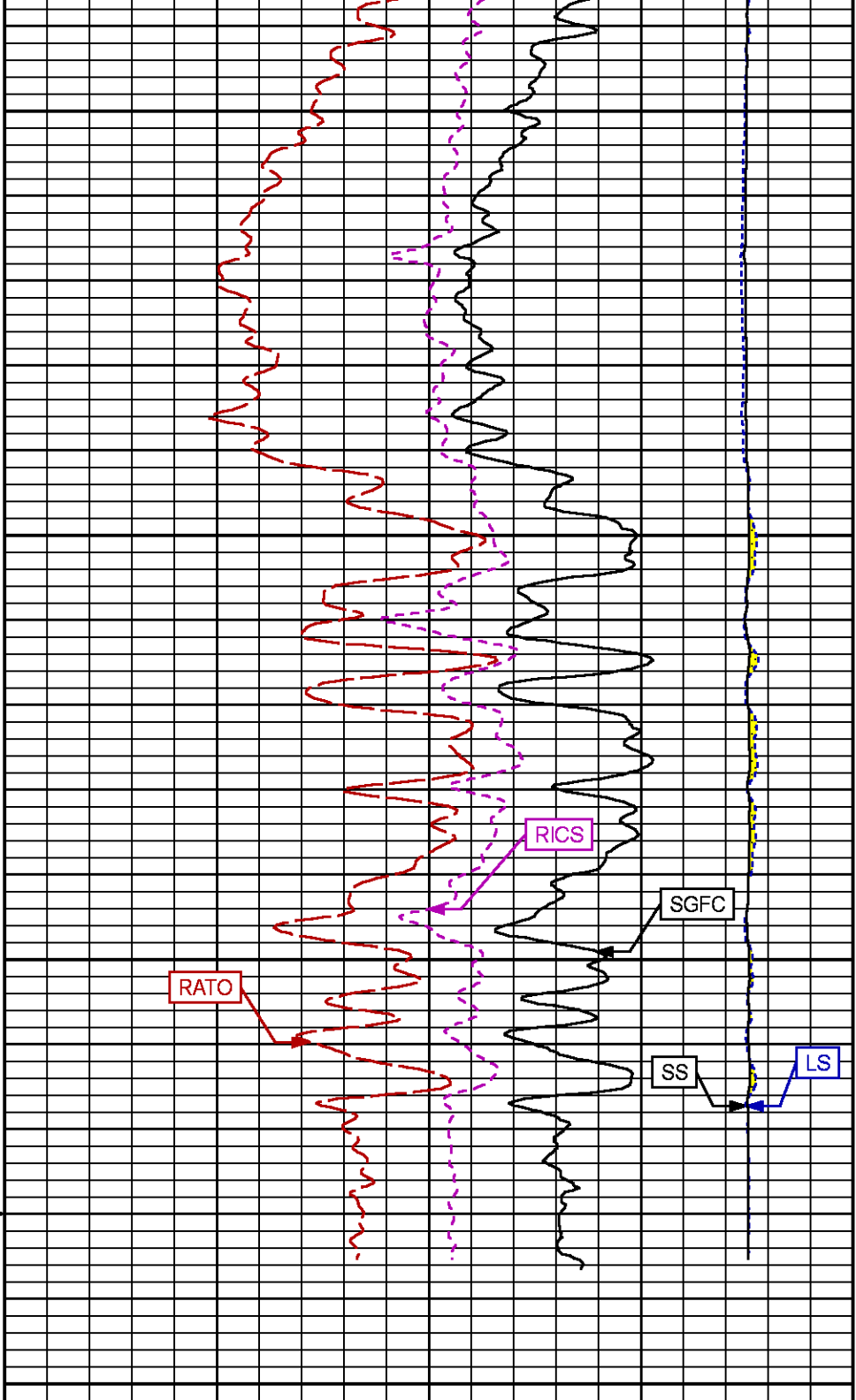
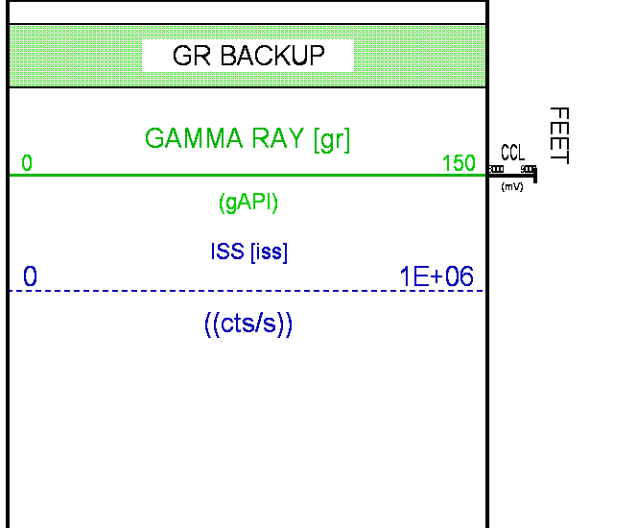
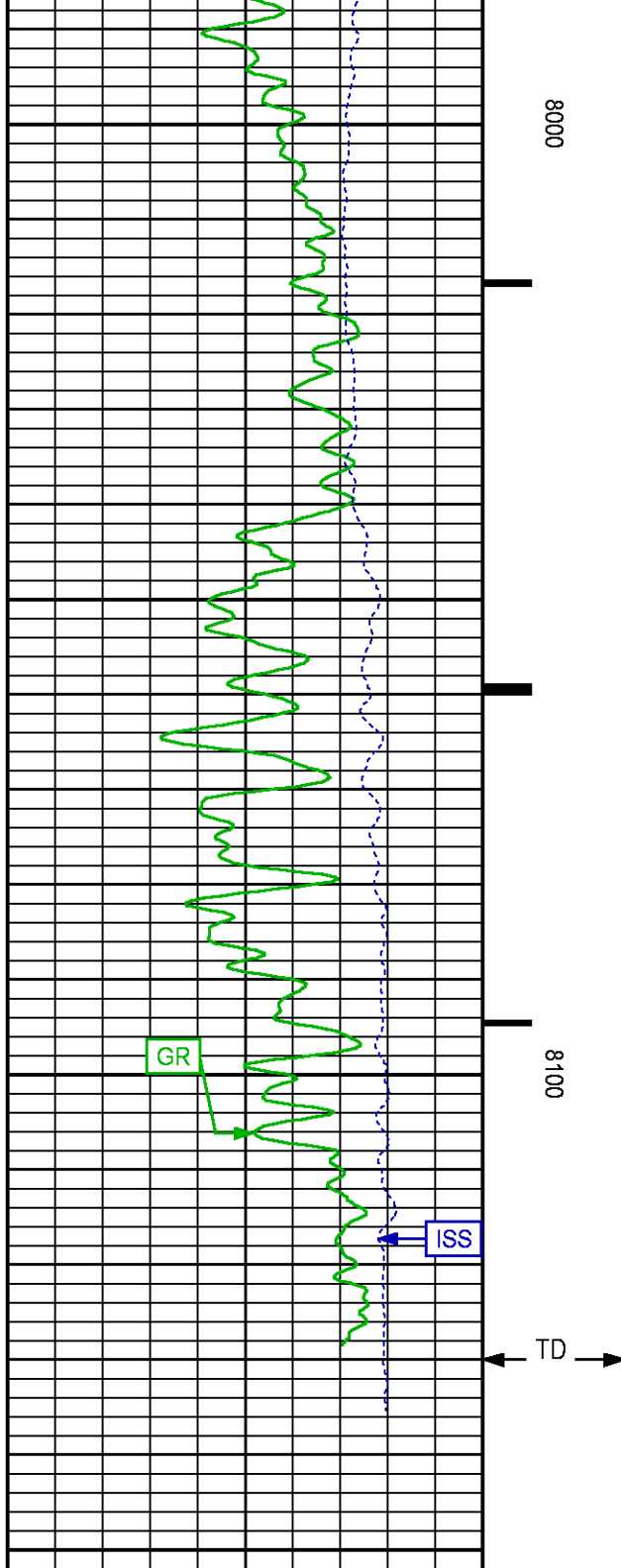












		60	(dim)	0
			SGFC [sgfc]	
			(cu)	

REPEAT PASS

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Patches: 4

Plotted: Wed Jun 27 10:37:18 2018

PARAMETER AND FILTER SUMMARY REPORT
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FILE:	/dat1a/LARAMIE_NICHOLS_0994_24_10E/p354h01.prm		
LOGGING MODE:	DEPTH	DIRECTION:	UP
TOP DEPTH:	4520.750 ft	BOTTOM DEPTH:	4793.827 ft

SYMMETRIC FILTER				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP      BOTTOM

RPM PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP      BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"      "
	BOREHOLE SIZE	7.87	in	"      "
	LARGEST CASING OD	4.50	in	"      "
	MATRIX	SANDSTONE		"      "

CURVE DESCRIPTION REPORT
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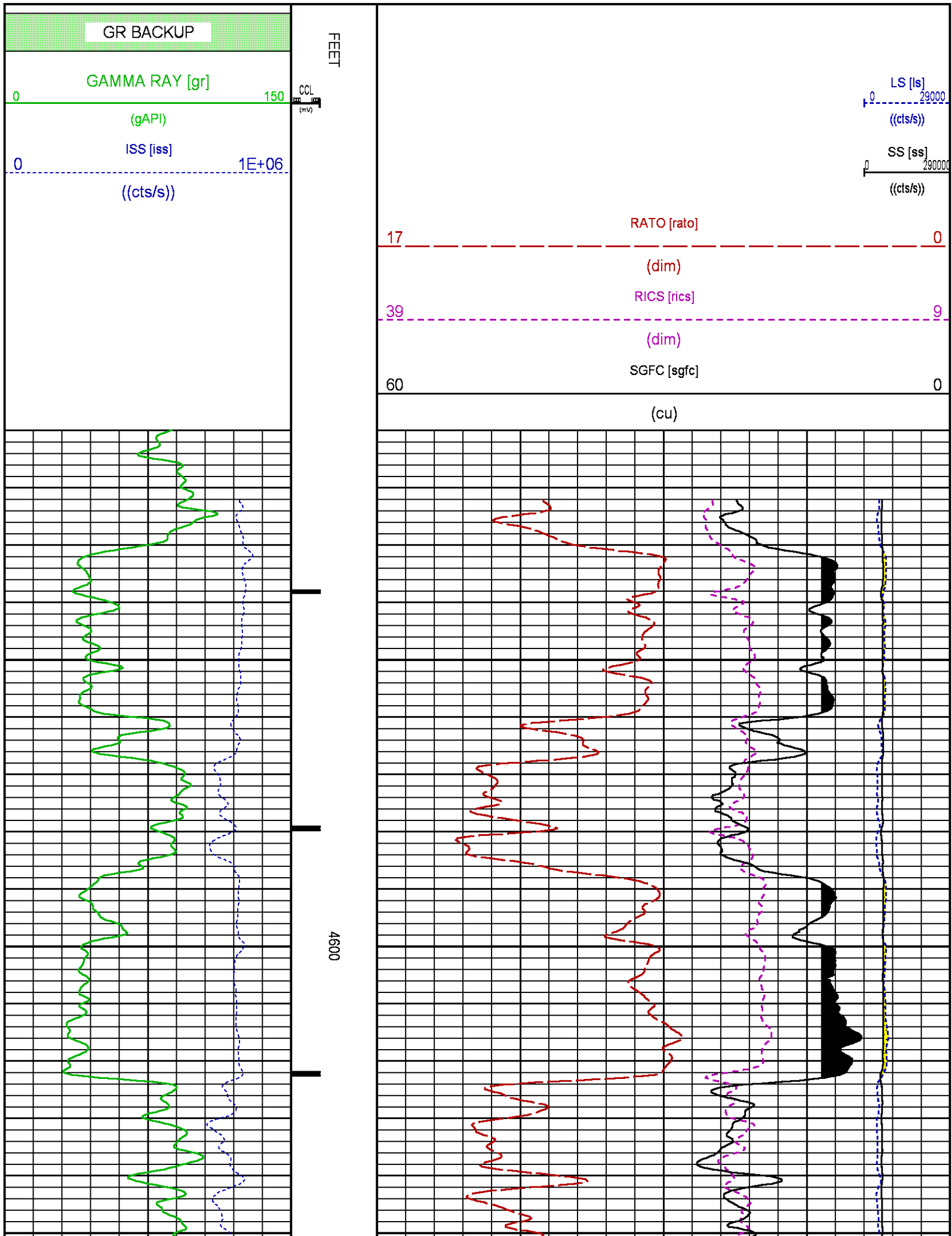
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

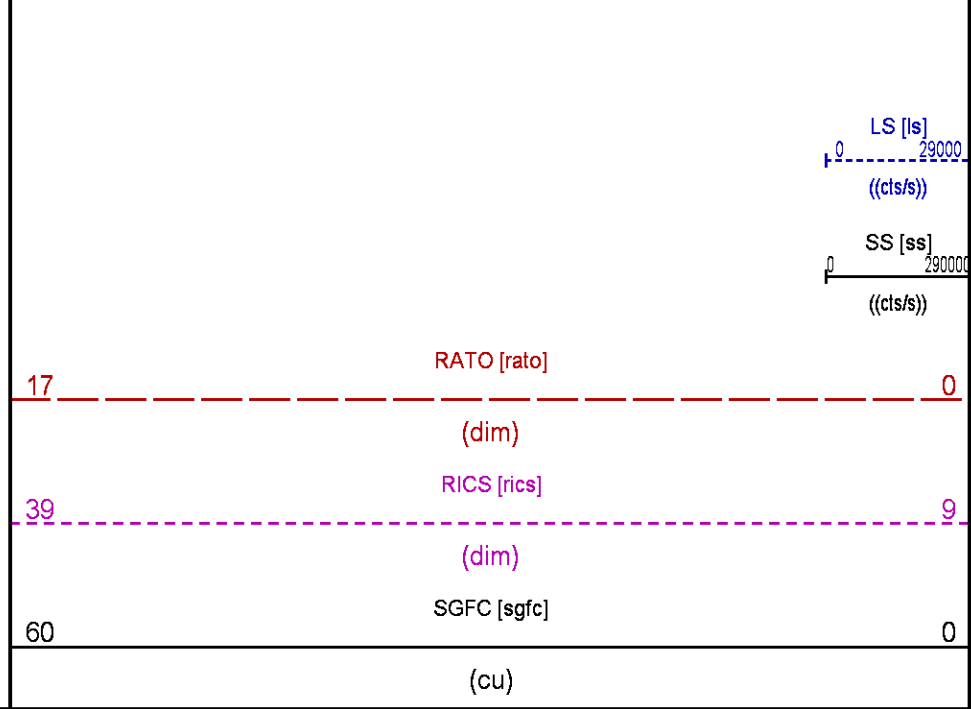
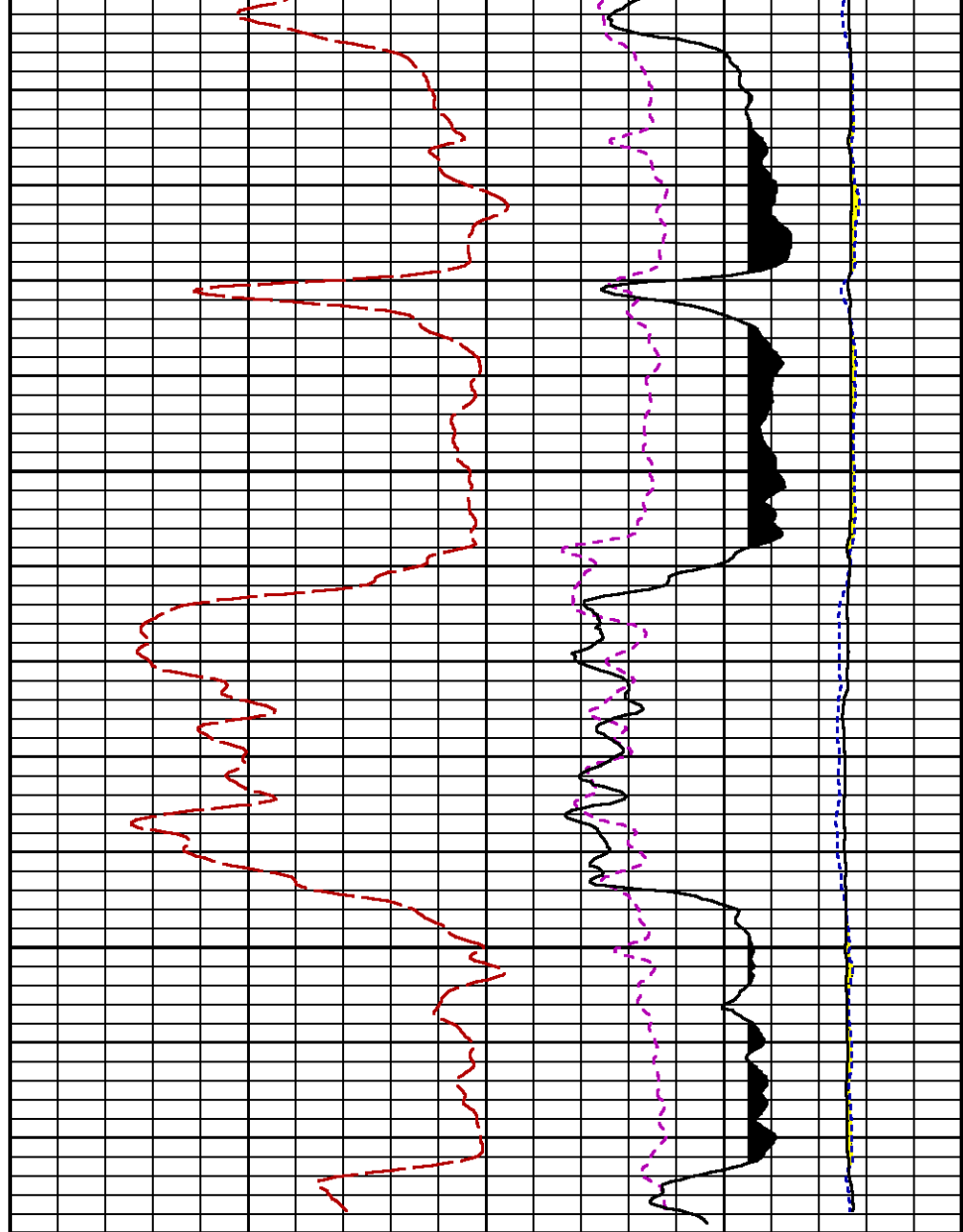
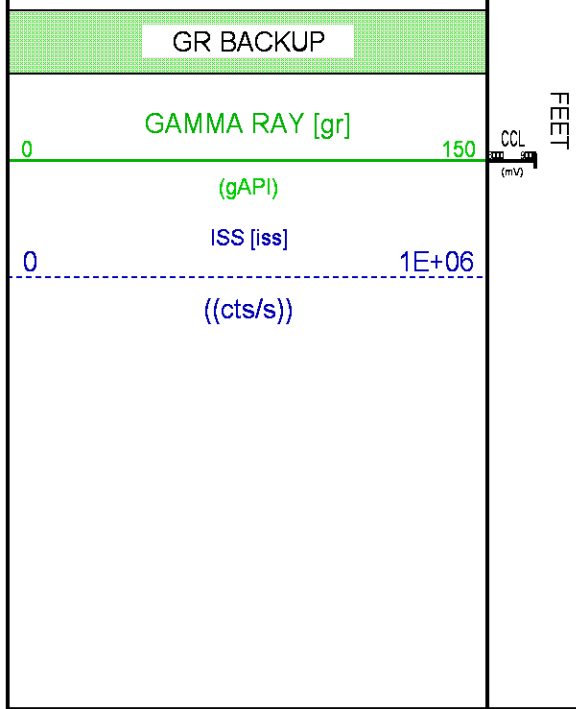
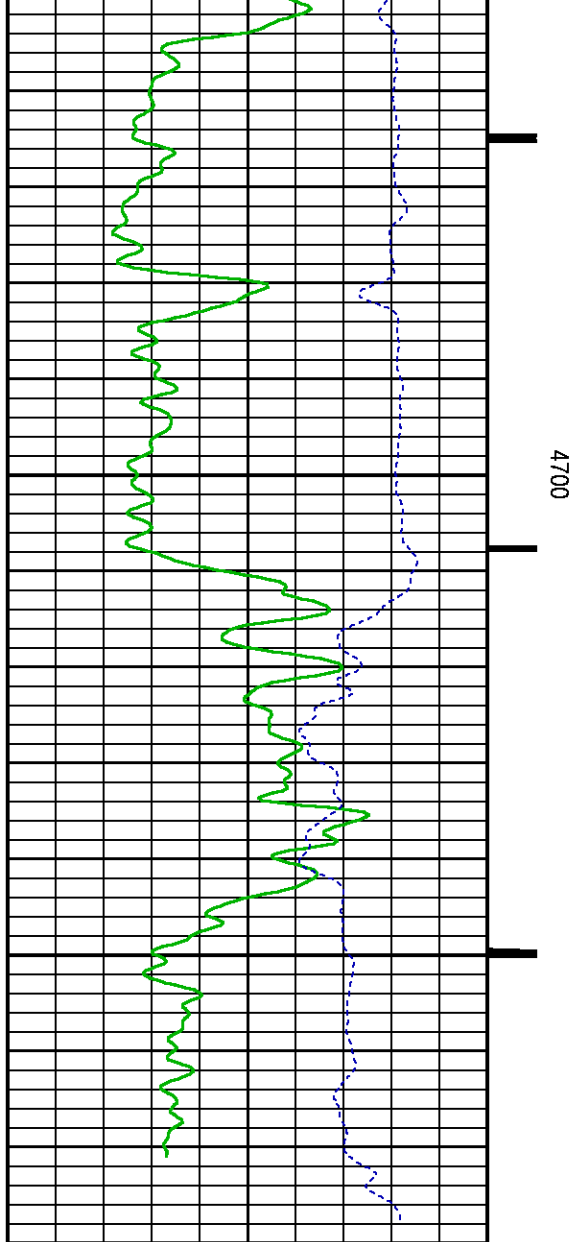
CURVE MEASURE POINT OFFSET
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CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-25.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-22.75	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation	: SysA:/dat1a/LARAMIE_NICHOLS_0994_24_10E/0994_24_10E_RPM_REPEAT.fvpdf [5"/100" Scale]
Plot Interval	: 4510 - 4793.75 Feet

Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994_24_10E/0994_24_10E_RPM_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: NICHOLS 0994-24-10E
Field	: VEGA
File Interval	: 4496.5 - 4794 Feet
QCT	: p354h





# CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE\_NICHOLS\_0994\_24\_10E/p354h.tp1

## GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10384613

DATE/TIME PERFORMED: Fri May 11 07:48:58 2018

UNIT #: 3885TD SHAFT1

CALB JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	63.60	272.31	208.7	1.006	63.99	273.99	210

## GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10384613

DATE/TIME PERFORMED: Fri May 11 07:52:37 2018

UNIT #: 3885TD SHAFT1

VERI JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	61.64	278.96	1.006	62.03	280.68	218.65
						200.00 220.00

## GR BEFORE LOG VERIFICATION SUMMARY

NOT DONE

## GR AFTER LOG VERIFICATION SUMMARY

NOT DONE

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10066991

DATE/TIME PERFORMED: Mon May 7 15:09:32 2018

UNIT: 5753XD 111111

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10430258

HOURS: 8281AA 88

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	794247	124	2139	2383	2237	120	8.0	1.0374
Interpolated	1300000	145	2128	2374	2232			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794247	6835	1065	142	25.87	0.15	24.10	0.32
					25.35 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	794247	178007	27088	88699	31638	8729	53712	13968
Fit Quality %		0.926	0.946	0.726	0.765	0.956	0.682	0.966

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	794247	1.43	4.46	29.33	14.79	10.16	3.63	3.85
		1.42 1.45	3.55 5.52	22.20 32.70	10.99 16.34	10.06 11.10	3.57 3.95	3.76 4.22
Fit Quality %		0.119	0.323	0.318	0.028	0.337	0.297	0.353
Reduced	1412538	1.43	4.47	29.36	14.77	10.20	3.64	3.86
		1.42 1.45	4.33 5.52	27.60 32.70	13.70 16.34	10.06 11.10	3.57 3.95	3.76 4.22

# INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE\_NICHOLS\_0994\_24\_10E/p354h~GR\_SONDEX-tdg

## A3 CABLEHEAD

Diameter : 1.37"

## PCM POWER SUPPLY

Diameter : 1.70"  
Length : 3.86'  
Weight : 18 lbs  
Series : 8250EA  
Mnemonic : PCM

## TELEMETRY / CCL

Diameter : 1.70"  
Length : 4.46'  
Weight : 20 lbs  
Series : 8248EA  
Mnemonic : PCM  
Measure Point: 1.00': CCL MP

## GAMMA RAY, 1 11/16"

Diameter : 1.69"  
Length : 2.17'  
Weight : 10 lbs  
Series : 2812LA  
Mnemonic : GR  
Measure Point: 0.62': GR MP

## RPM ELECTRONICS

Diameter : 1.70"  
Length : 4.48'  
Weight : 16 lbs  
Series : 8281EA  
Mnemonic : RPM

## RPM C DETECTOR SECTION

Diameter : 1.70"  
Length : 9.40'  
Weight : 41 lbs  
Series : 8283PA  
Mnemonic : RPM  
Measure Point: 5.45': XLS MP  
Measure Point: 5.04': LS MP  
Measure Point: 4.79': SS MP

33.24'

CCL MP 25.19'

GR MP 22.64'

XLS MP 13.58'

LS MP 13.16'

SS MP 12.91'

RPM SOURCE SECTION

Diameter : 1.70"  
Length : 4.70'  
Weight : 18 lbs  
Series : 8281FA  
Mnemonic : RPM

TEMPERATURE / PRESSURE

Diameter : 1.70"  
Length : 3.30'  
Weight : 13 lbs  
Series : 8255XA  
Mnemonic : SRPL  
Measure Point: 1.52': TEMP MP

TEMP MP 1.65'  
PRES MP

BULL PLUG 1 11/16

TOTAL LENGTH: 33.24'  
TOTAL WEIGHT: 140 lbs  
MAX DIAMETER: 0'1.70"

0.00'

**BAKER  
HUGHES**  
a GE company



**ECLIPS**

**COMPANY**

LARAMIE ENERGY LLC

**WELL**

NICHOLS 0994-24-10E

**FIELD**

VEGA

**COUNTY**

MESA

**STATE**

COLORADO

**FILE NO:**

CH136066

**API NO:**

05077103900000

**LOCATION:**

SHL: 2257' FNL & 2797' FWL

BHL: 2281' FNL & 1454' FEL

**ELEVATIONS:**

KB 7236 FT

DF

GL 7212 FT

SEC 24

TWP 9 S

RGE 94 W

**DATE**

27-Jun-2018