



FILE NO: CH132067	COMPANY <b>LARAMIE ENERGY LLC</b>
API NO: 05077104800000	WELL <b>BRUTON 30-15W</b>
	FIELD <b>VEGA</b>
	COUNTY <b>MESA</b> STATE <b>COLORADO</b>

Ver. 4.10	LOCATION: SHL: 2619' FNL & 1878' FEL BHL: 1658' FSL & 1309' FWL SEC <b>30</b> TWP <b>9S</b> RGE <b>93W</b>	OTHER SERVICES RAL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL ELEVATION <b>7643 FT</b>	KB ELEVATIONS: <b>7673 FT</b>
	KB <b>30 FT</b>	DF <b>ABOVE P.D.</b>
	KB	GL <b>7643 FT</b>

DATE	RUN	TRIP	
06-Feb-2018	1	1	
SERVICE ORDER	US132067		
DEPTH DRILLER	8123 FT		
DEPTH LOGGER	8066 FT		
BOTTOM LOGGED INTERVAL	8066 FT		
TOP LOGGED INTERVAL	2601 FT		
TIME STARTED	12:00		
TIME FINISHED	18:00		
OPERATOR RIG TIME	6 HOURS		
TYPE OF FLUID IN HOLE	WATER		
FLUID DENSITY	NA		
FLUID SALINITY	NA		
FLUID LEVEL	57 FT		
LOGGED CEMENT TOP	1040 FT		
WELLHEAD PRESSURE	0 PSI		
MAXIMUM HOLE DEVIATION	NA		
NOMINAL LOGGING SPEED	10 FMIN		
MAX. RECORDED TEMP.	237 DEGF		
REFERENCE LOG	BAKER HUGHES RAL		
REFERENCE LOG DATE	06-Feb-2018		
EQUIP. NO.	LOCATION		
RECORDED BY	T. NEWELL	GRAND JCT.	
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 1 TRIP 1: \*2 OPERATIONS IN WELLBORE\*

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

SJ: 6133' - 6155'  
SJ: 7234' - 7256'

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11175584	FREE
1	1	TEL/CCL	8248ED	10193585	FREE
1	1	GR	8262 XA	10317216	FREE
1	1	RPM	8281EA	10179238	FREE
1	1	RPM	8283PA	10190200	FREE
1	1	RPM	8281FA	10318654	FREE
1	1	TEMP	8255 XA	11774568	FREE

# RPM MAIN PASS G-SAND

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

Patches: 2

Plotted: Tue Feb 6 18:20:22 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_30-15W/p353h03.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 2583.961 ft BOTTOM DEPTH: 3219.314 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	7.88	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

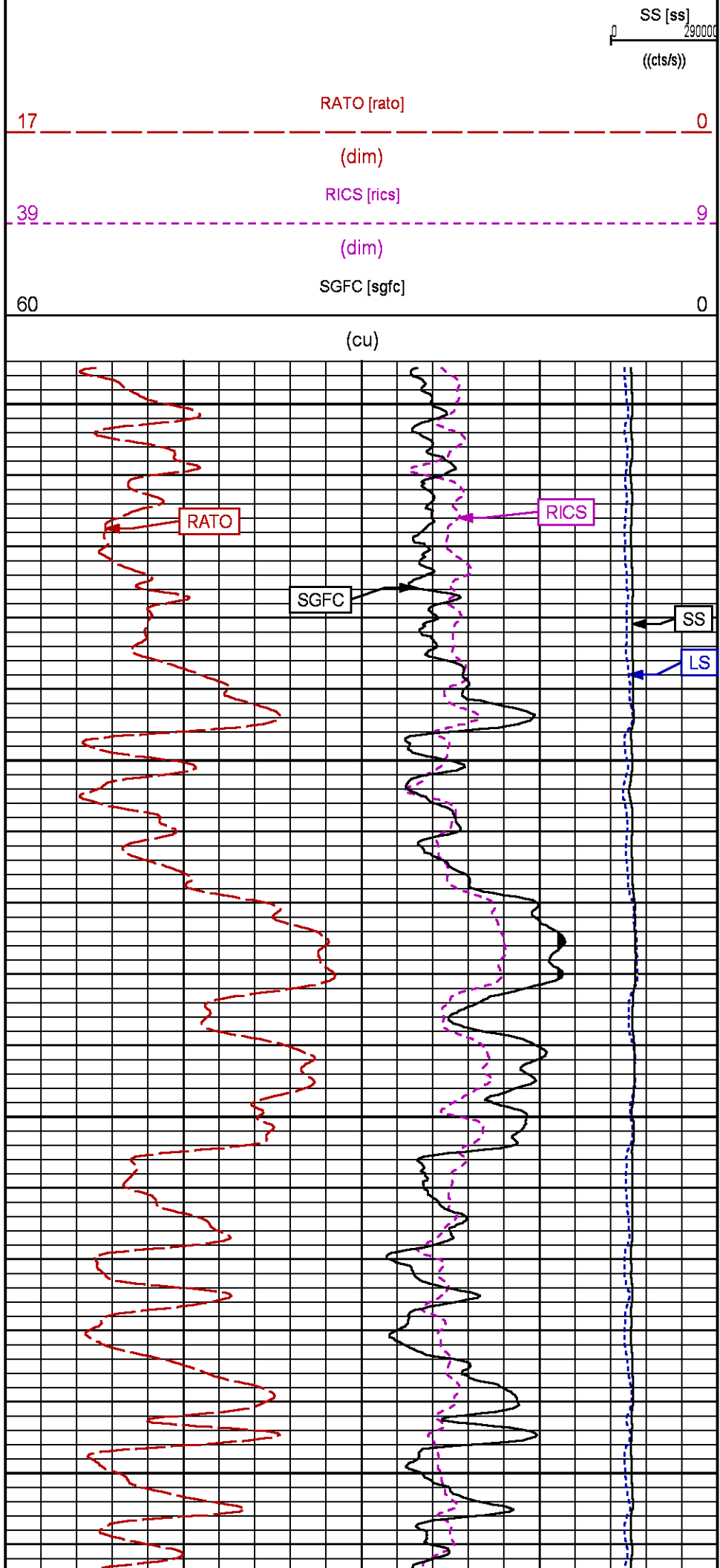
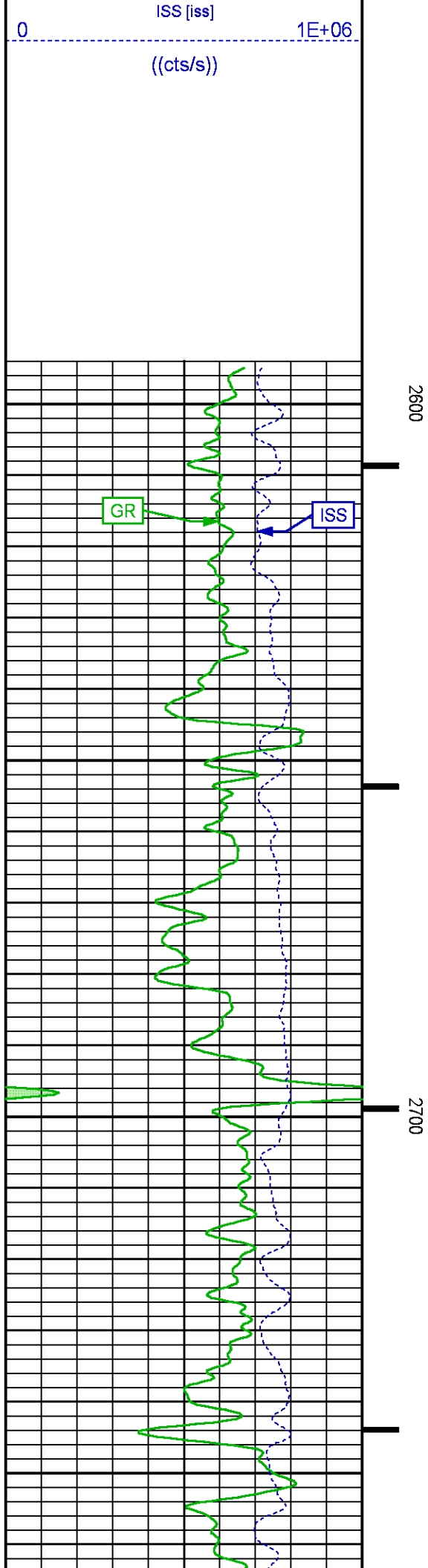
## CURVE MEASURE POINT OFFSET

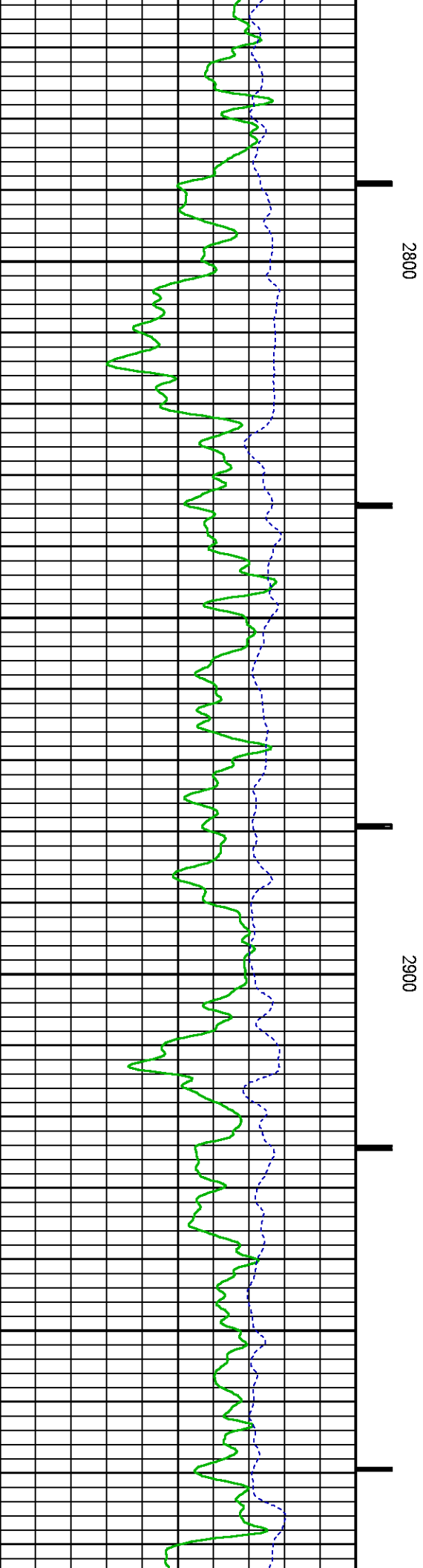
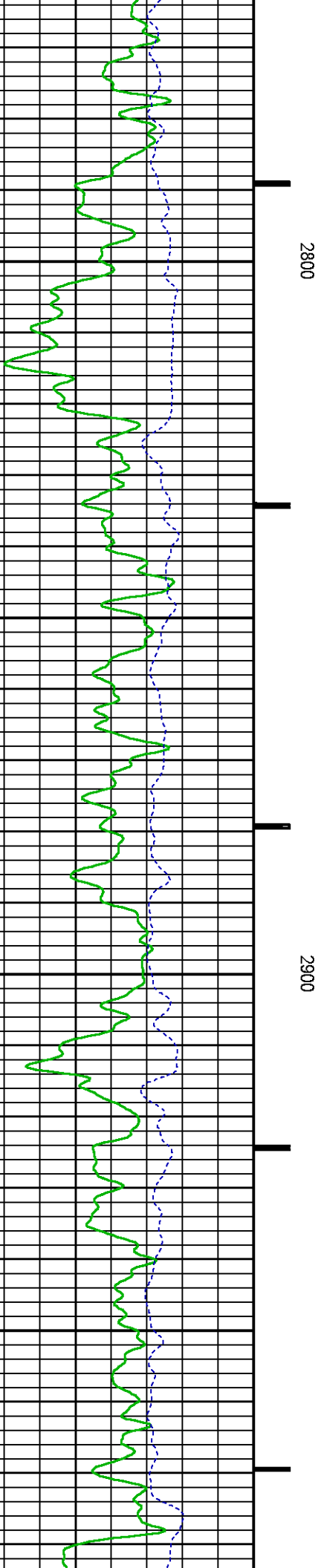
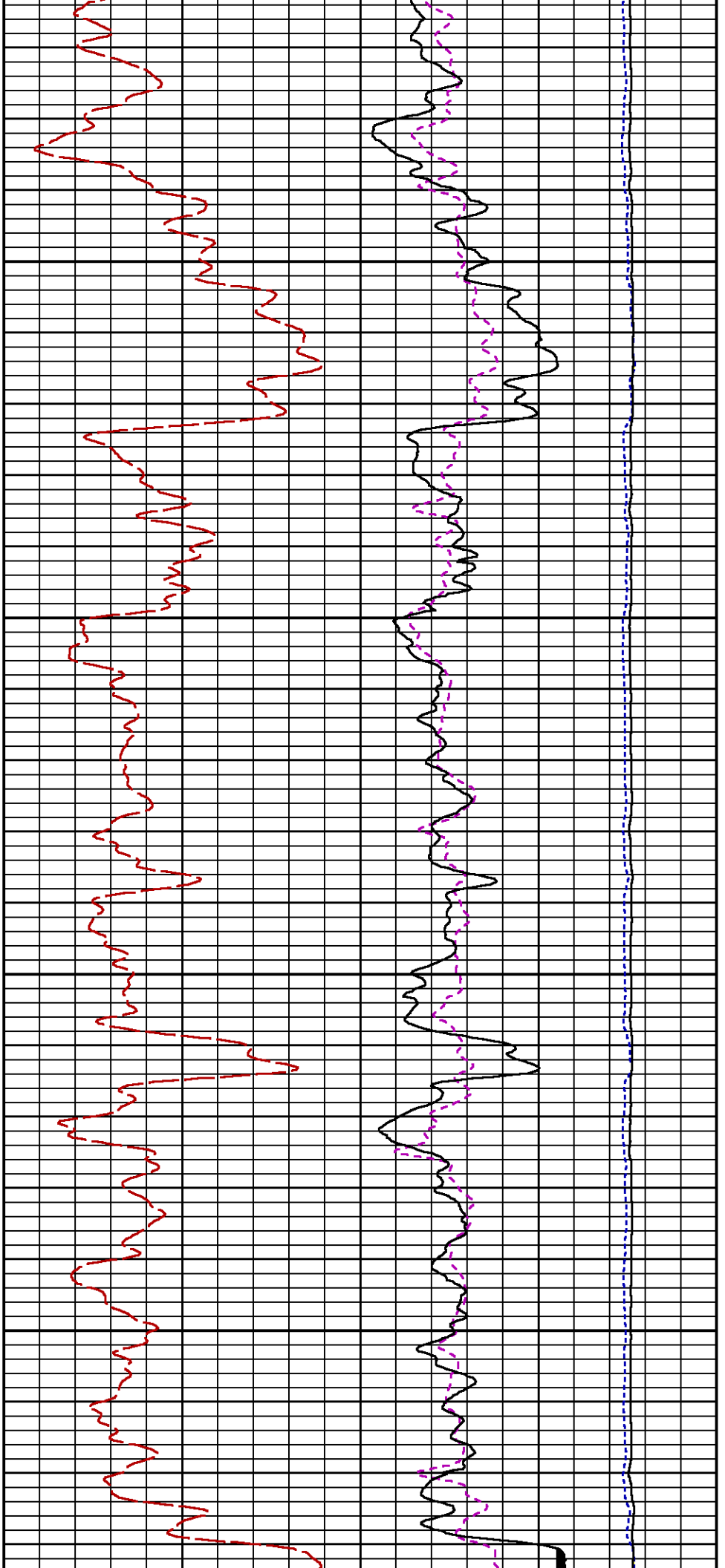
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

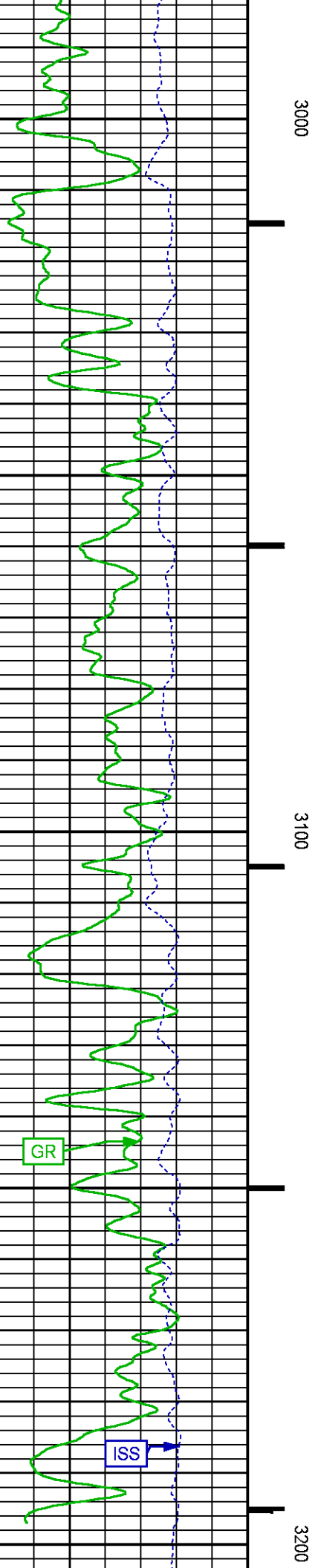
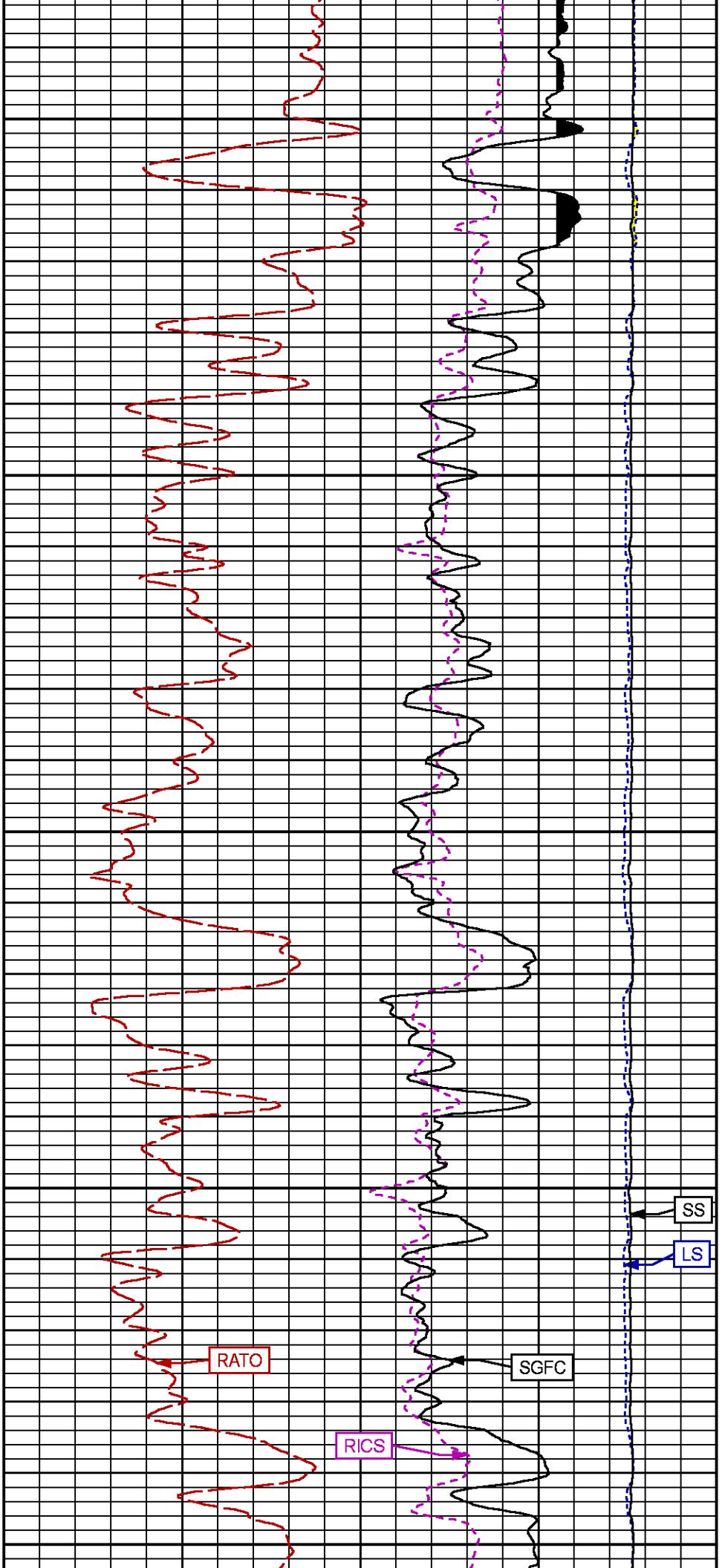
Presentation : SysA:/dat1a/LARAMIE\_BRUTON\_30-15W/30-15W\_RPM\_GS.fvpdf [5"/100' Scale]  
 Plot Interval : 2595 - 3205 Feet

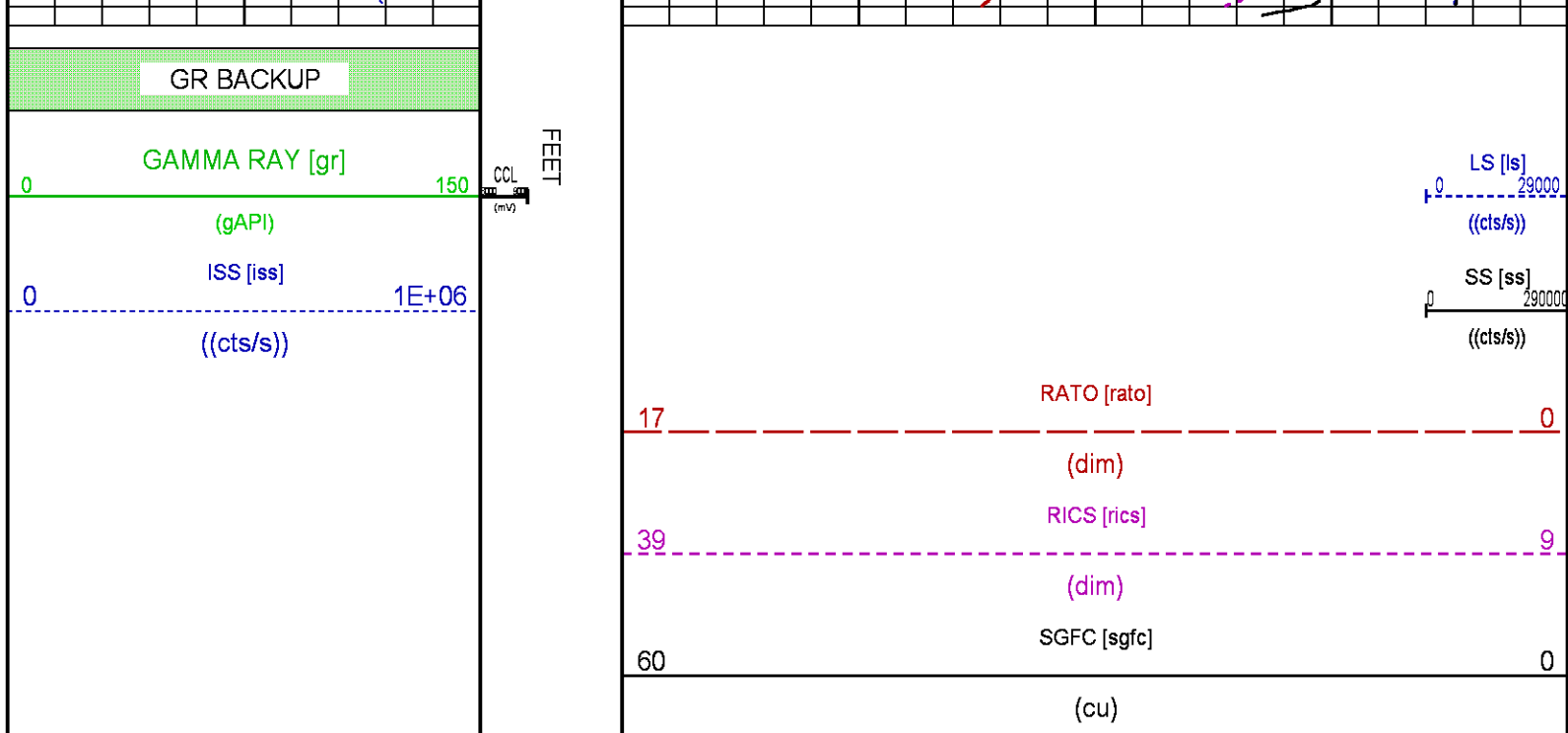
Data File 1 : F1 : SysA:/dat1a/LARAMIE\_BRUTON\_30-15W/30-15W\_RPM\_GS.xtf  
 Created On : N/A  
 Company : LARAMIE ENERGY LLC  
 Well : BRUTON 30-15W  
 Field : VEGA  
 File Interval : 2563.5 - 3221.5 Feet  
 OCT : p353h











## RPM MAIN PASS WILLIAMS FORK

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

Patches: 2

Plotted: Tue Feb 6 17:45:44 2018

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_30-15W/p353h02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4754.000 ft BOTTOM DEPTH: 8073.086 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	7.88	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)

CURVE MEASURE POINT OFFSET

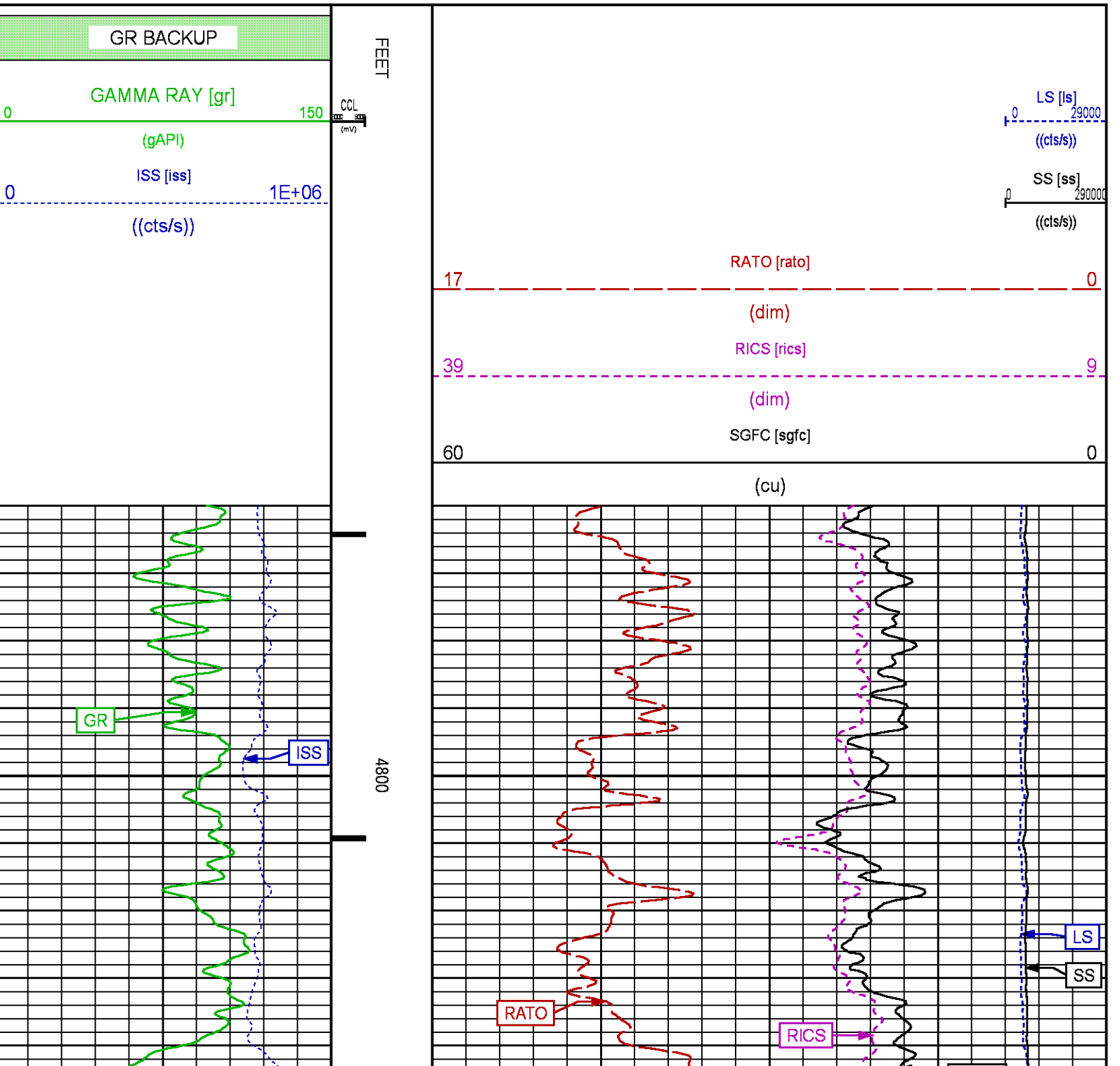
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation  
Plot Interval

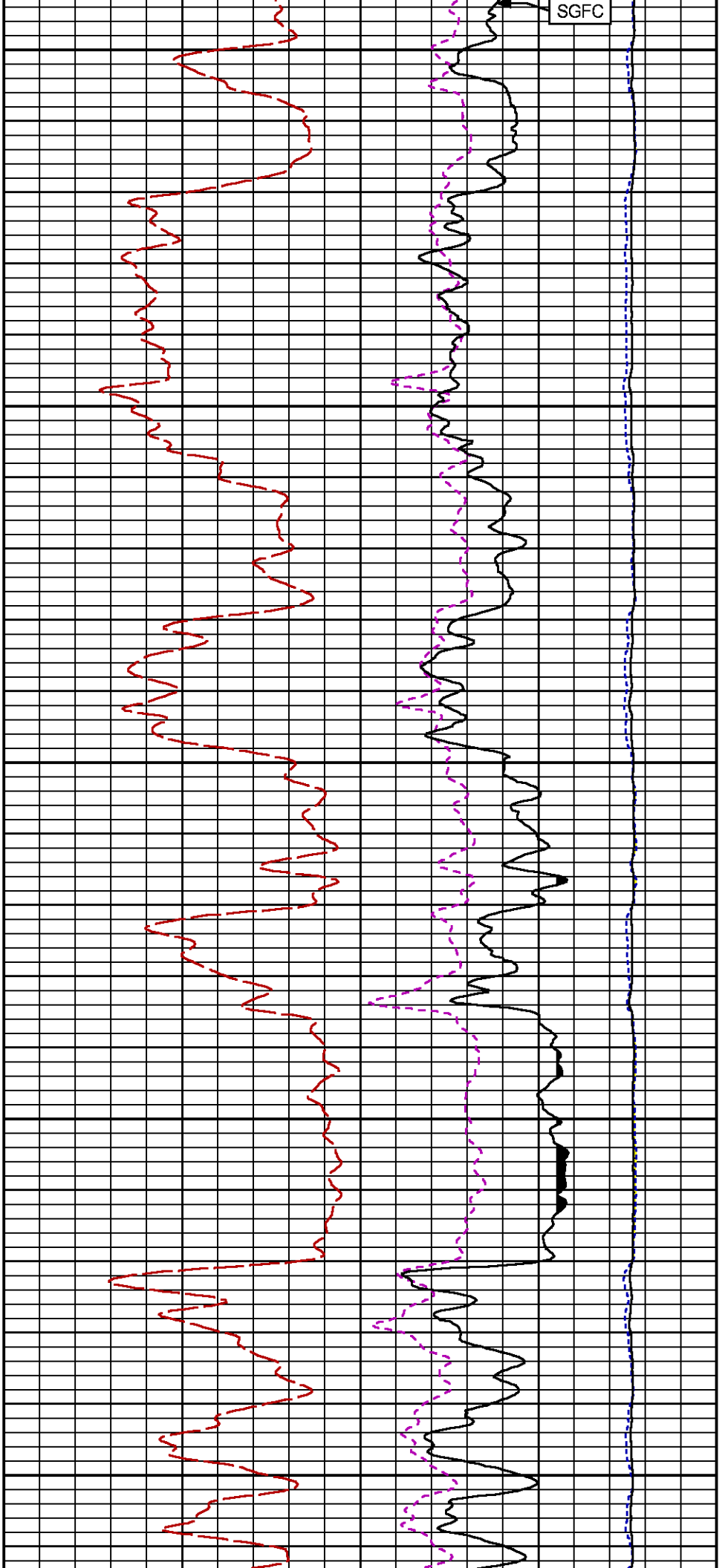
: SysA:/dat1a/LARAMIE\_BRUTON\_30-15W/30-15W\_RPM\_WF.fvpdf [5"/100' Scale]  
: 4760 - 8080 Feet

Data File 1  
Created On  
Company  
Well  
Field  
File Interval  
OCT

: F1 : SysA:/dat1a/LARAMIE\_BRUTON\_30-15W/30-15W\_RPM\_WF.xtf  
: N/A  
: LARAMIE ENERGY LLC  
: BRUTON 30-15W  
: VEGA  
: 4732.75 - 8077.25 Feet  
: p353h

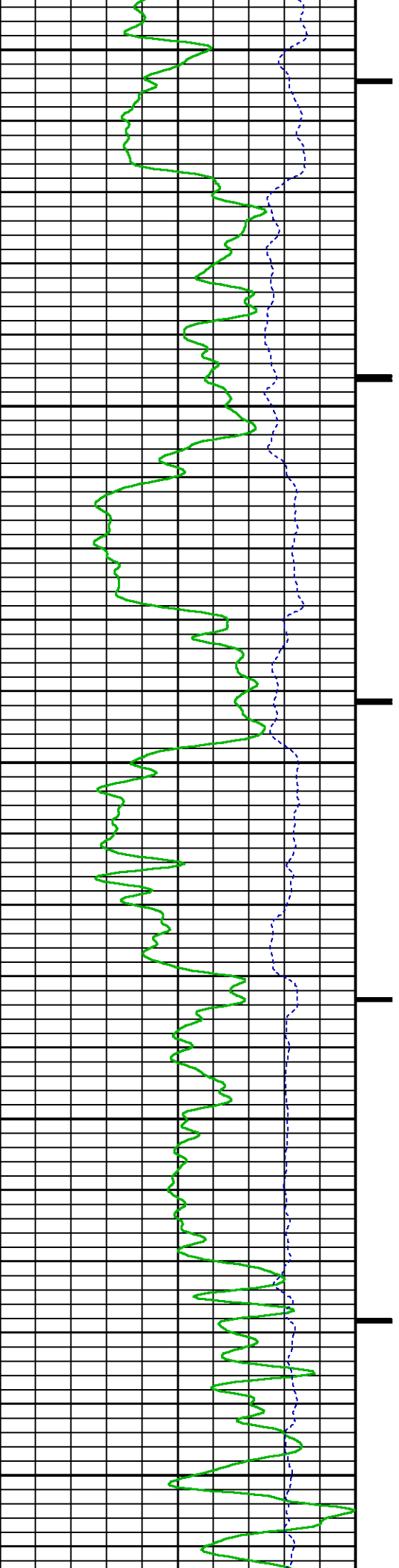


SGFC

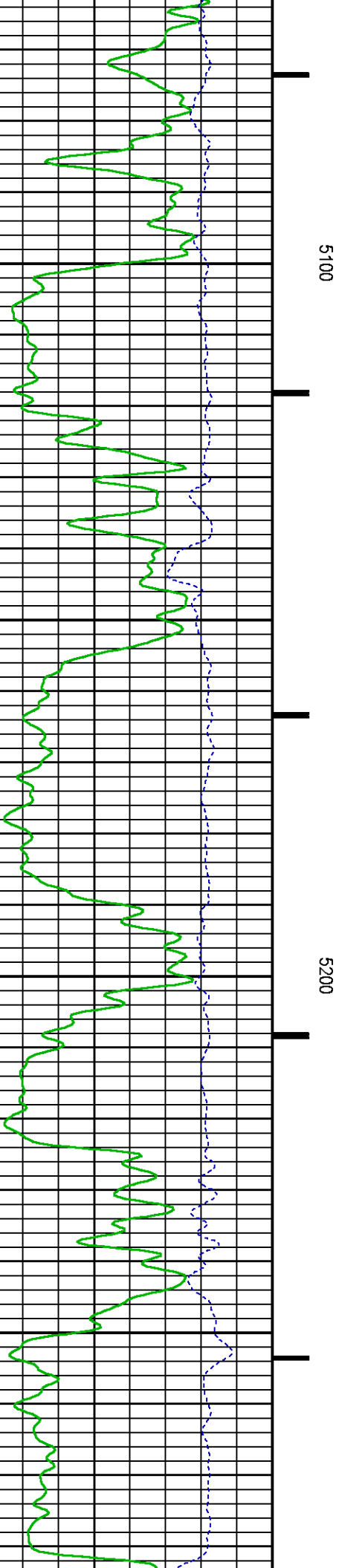
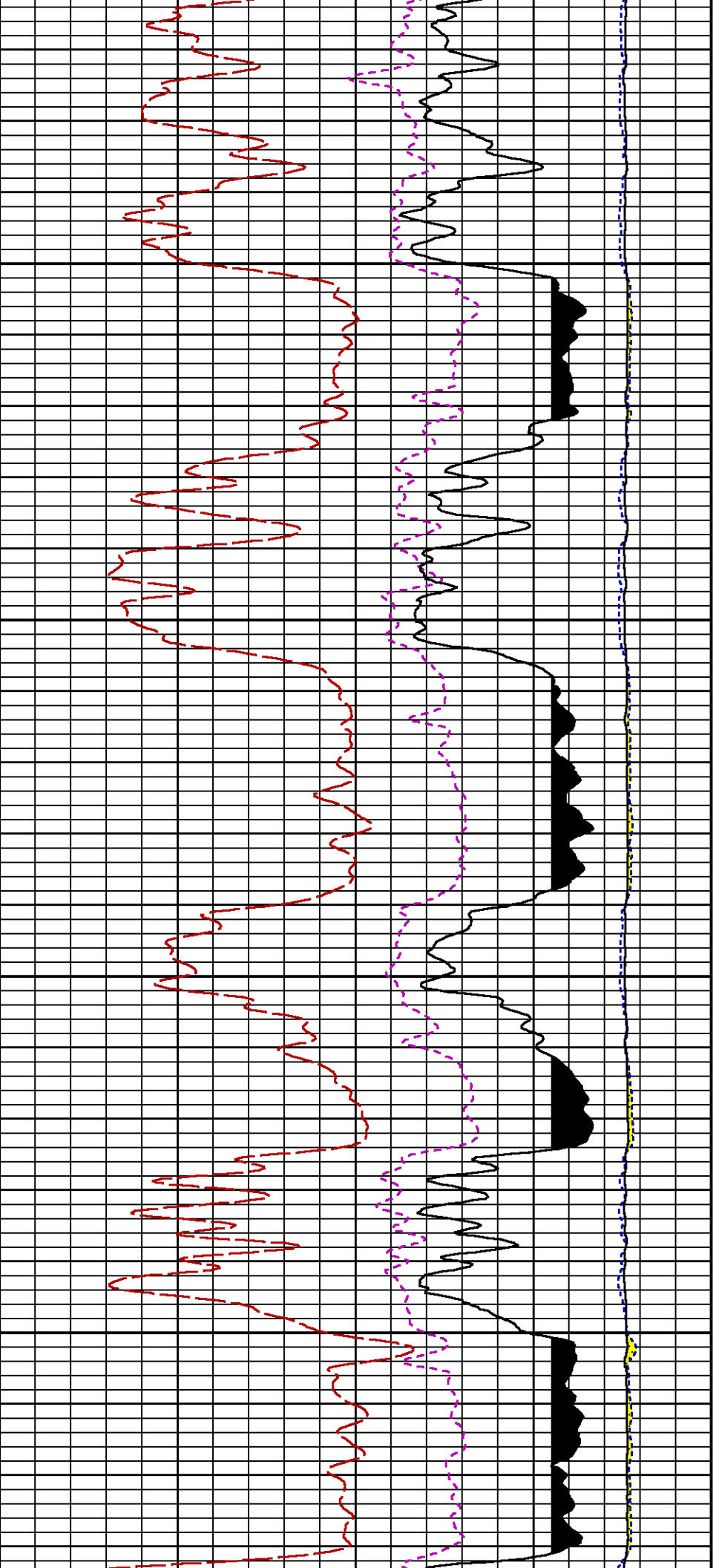


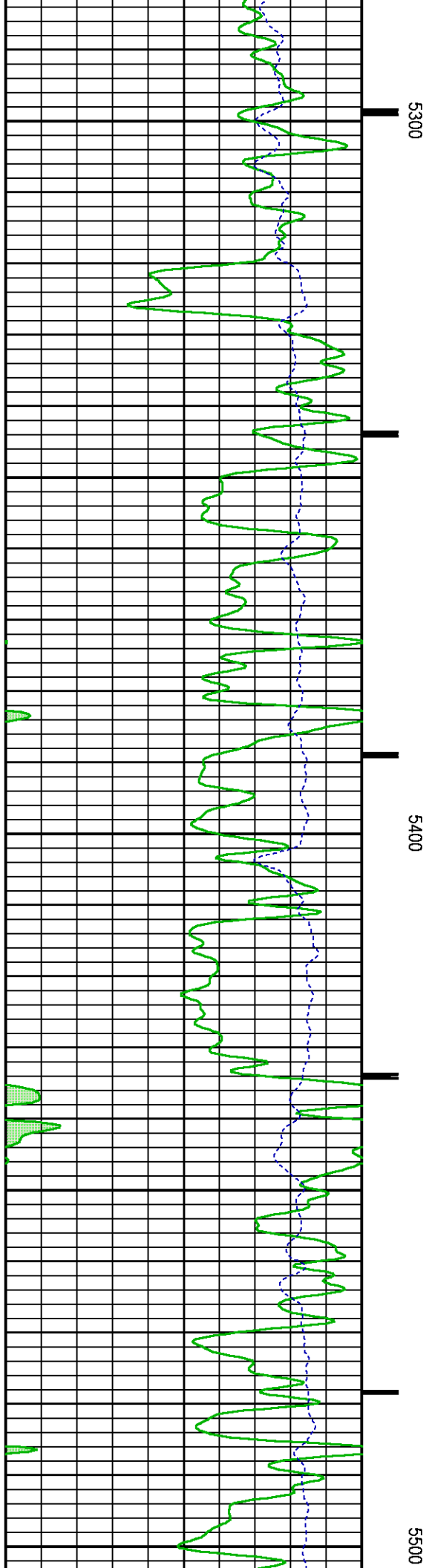
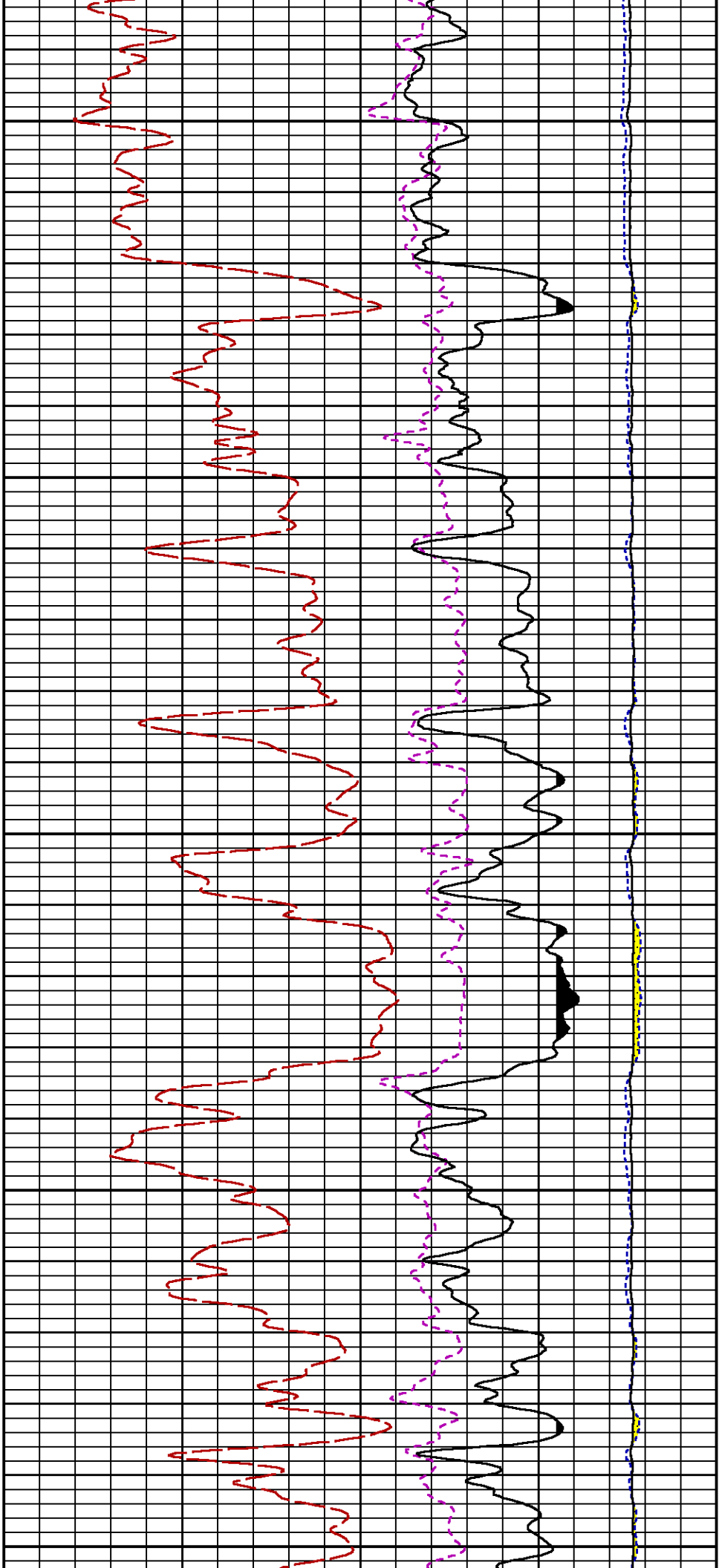
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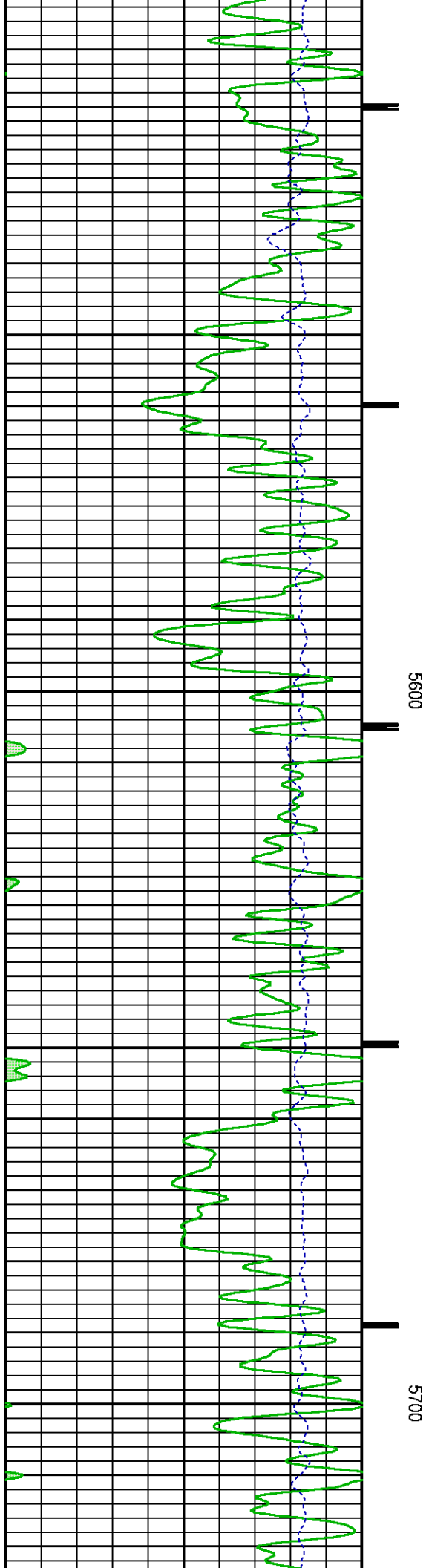
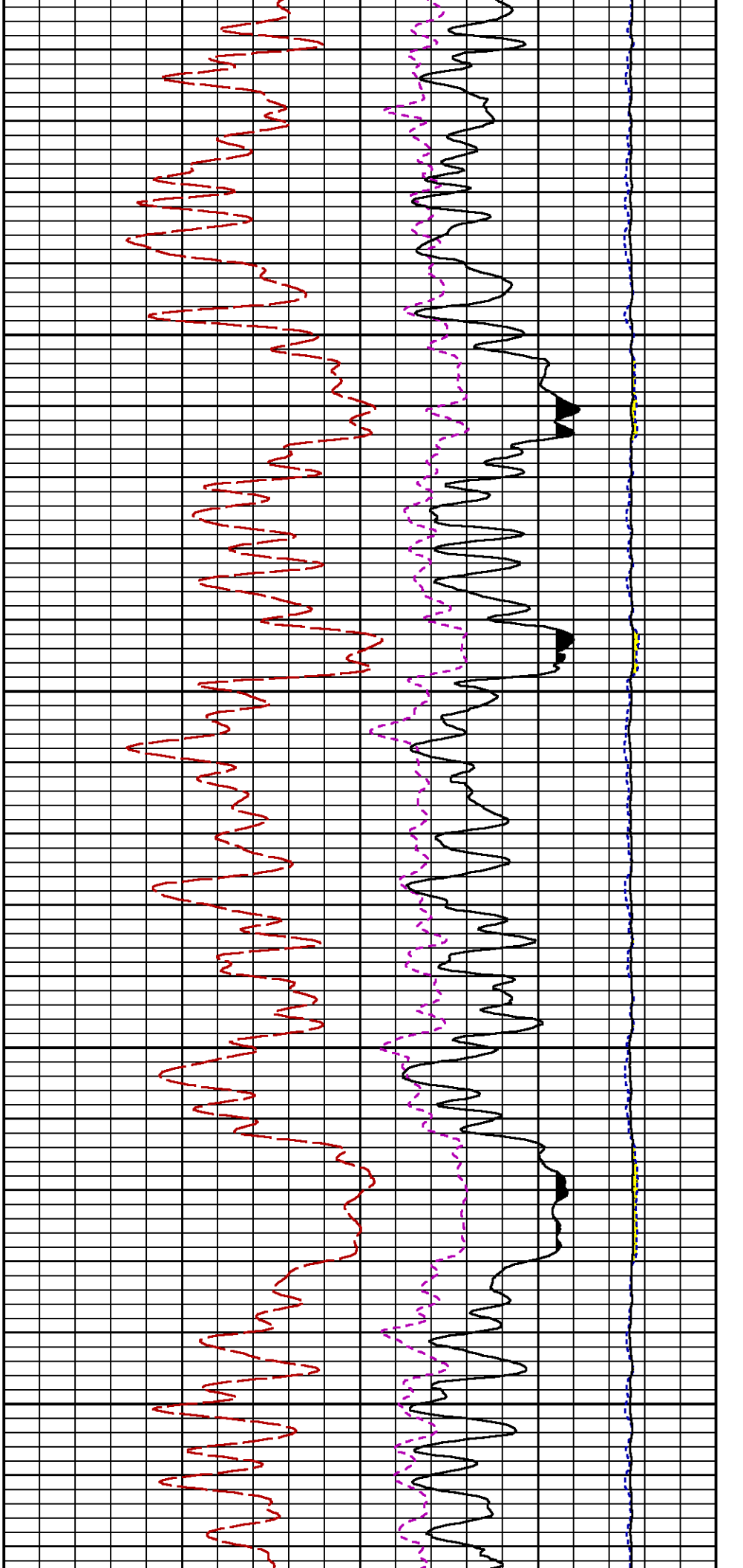
5000

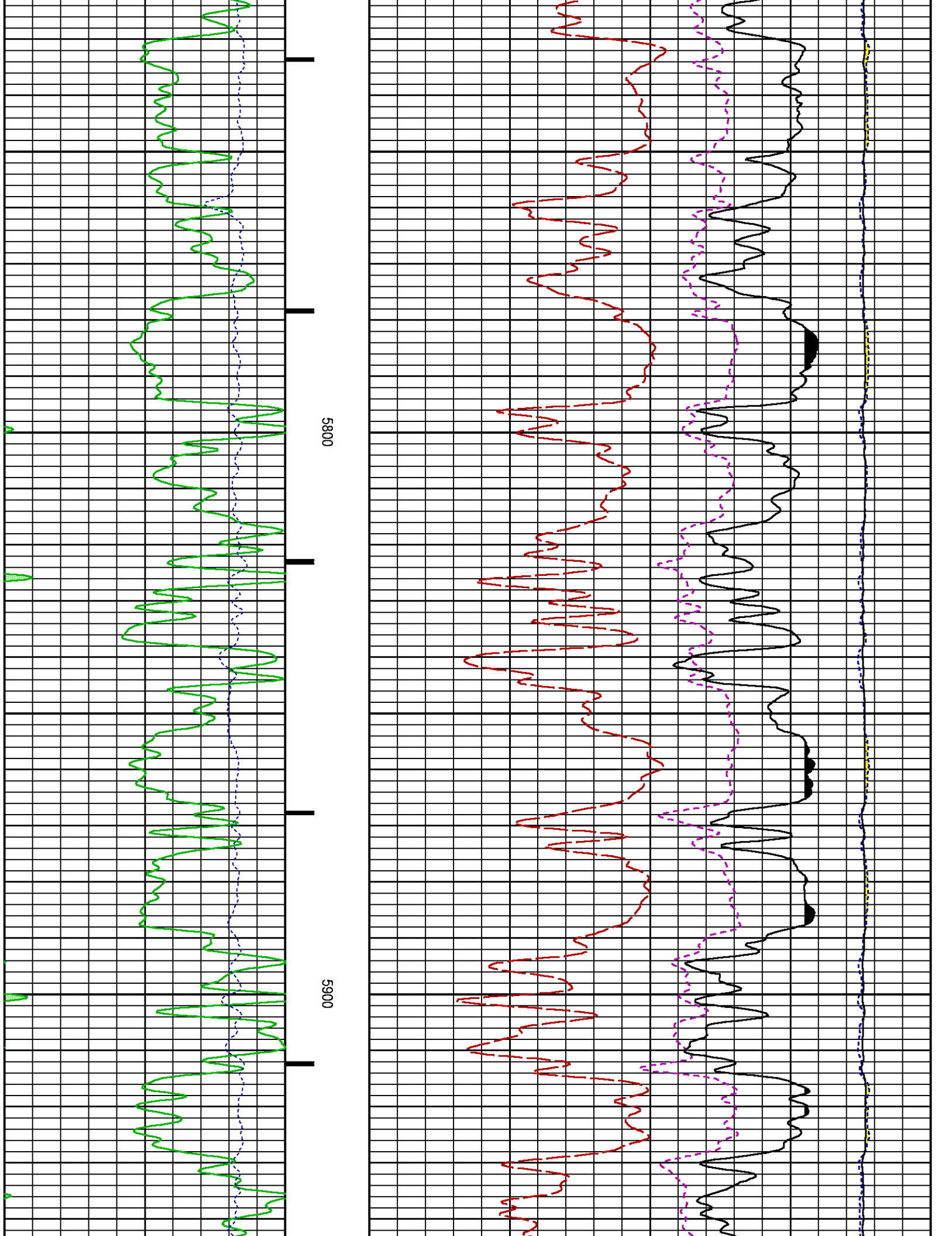


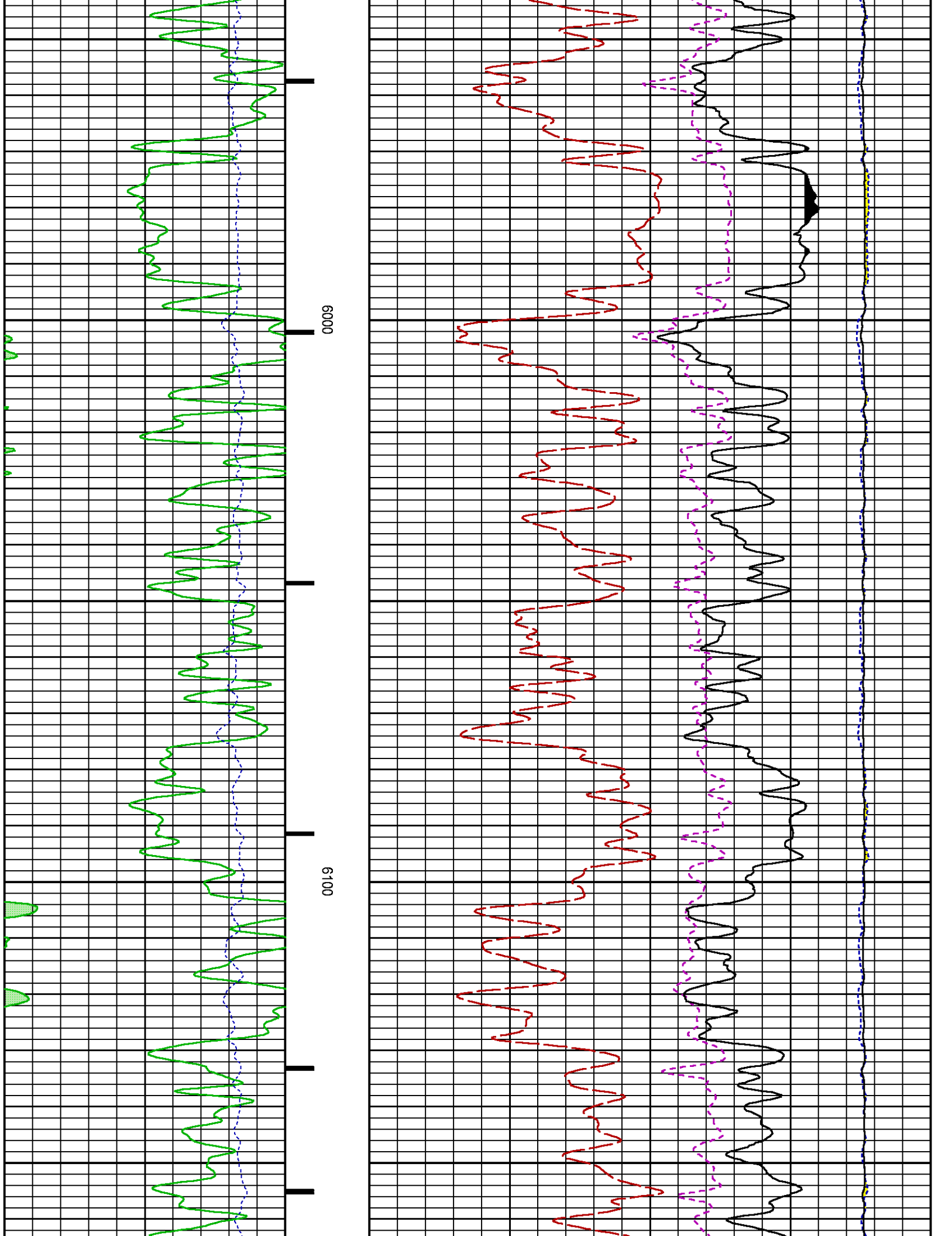


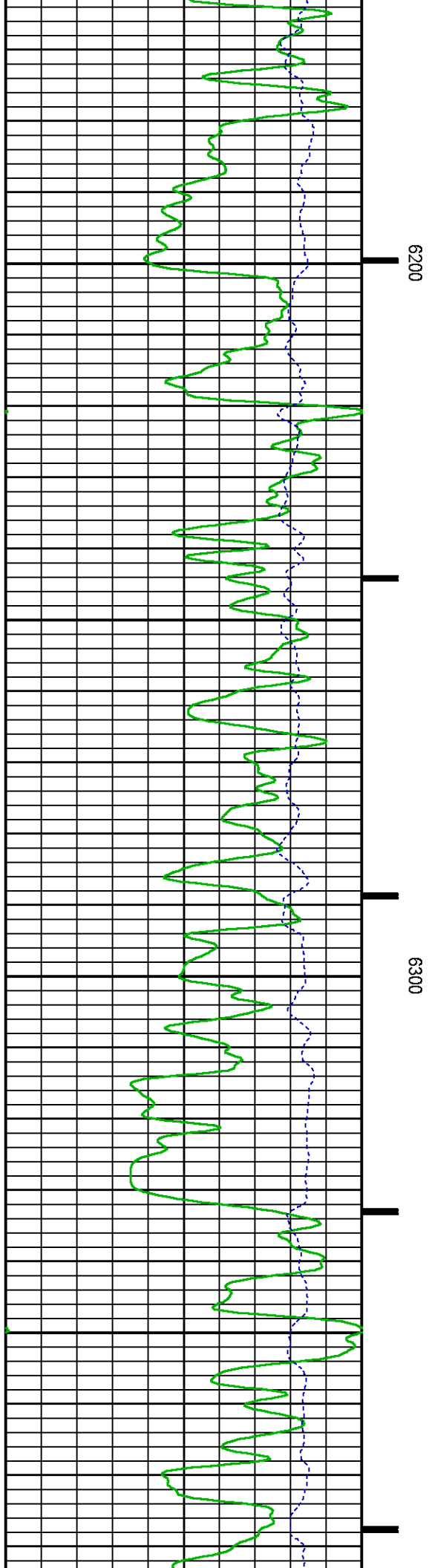
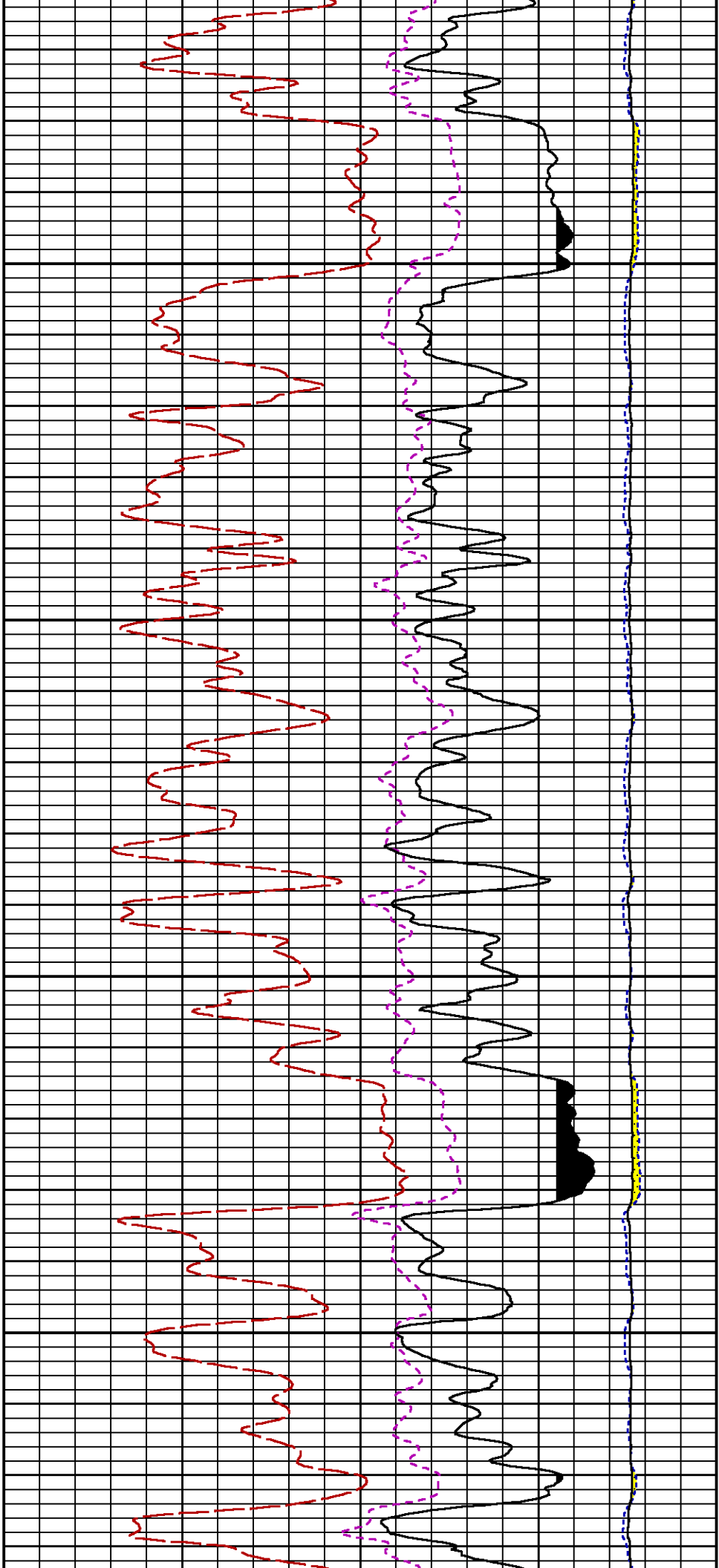


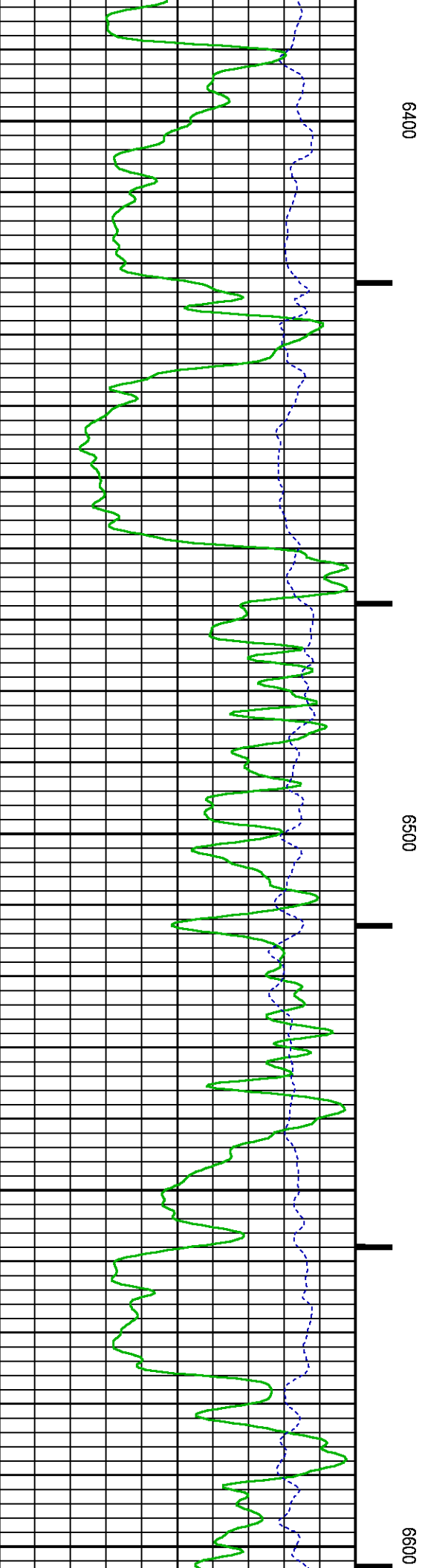
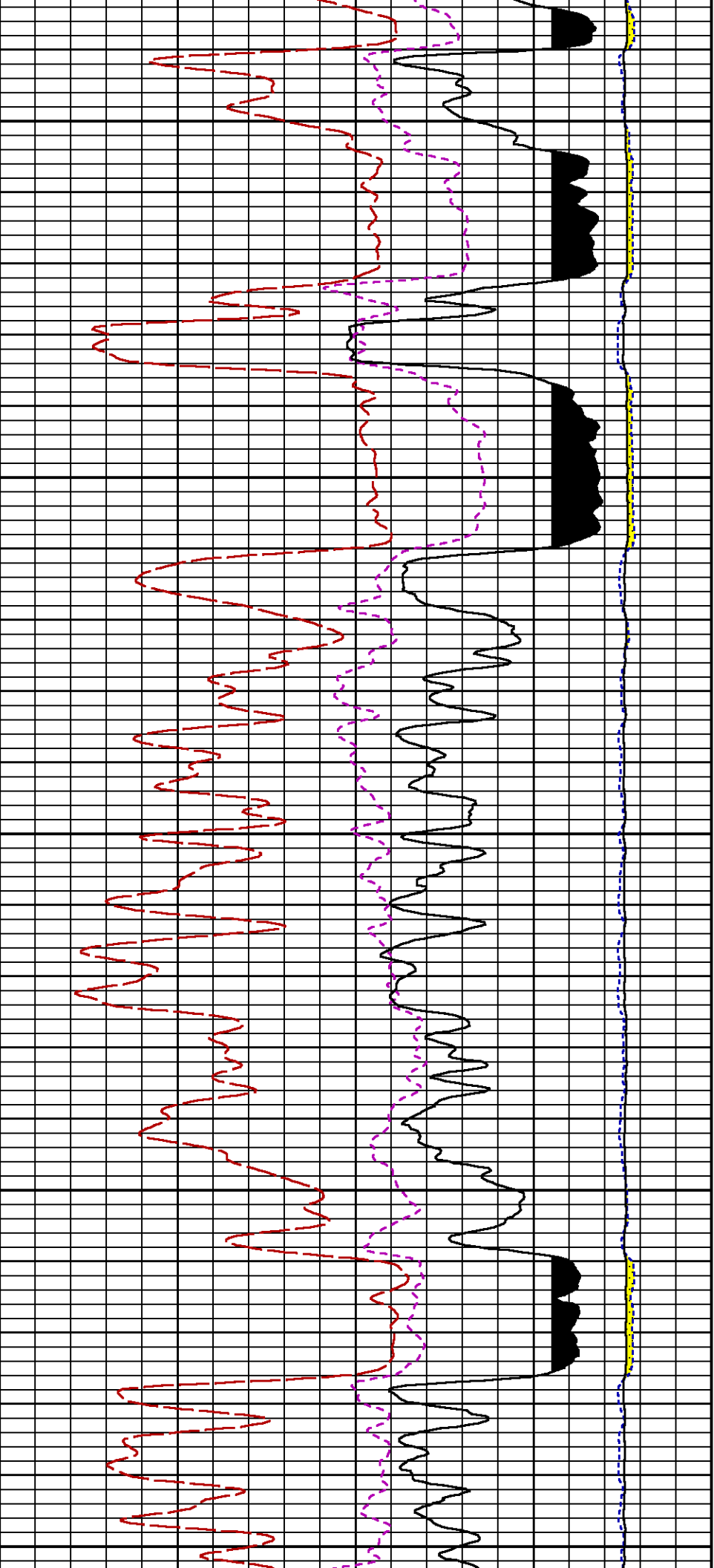


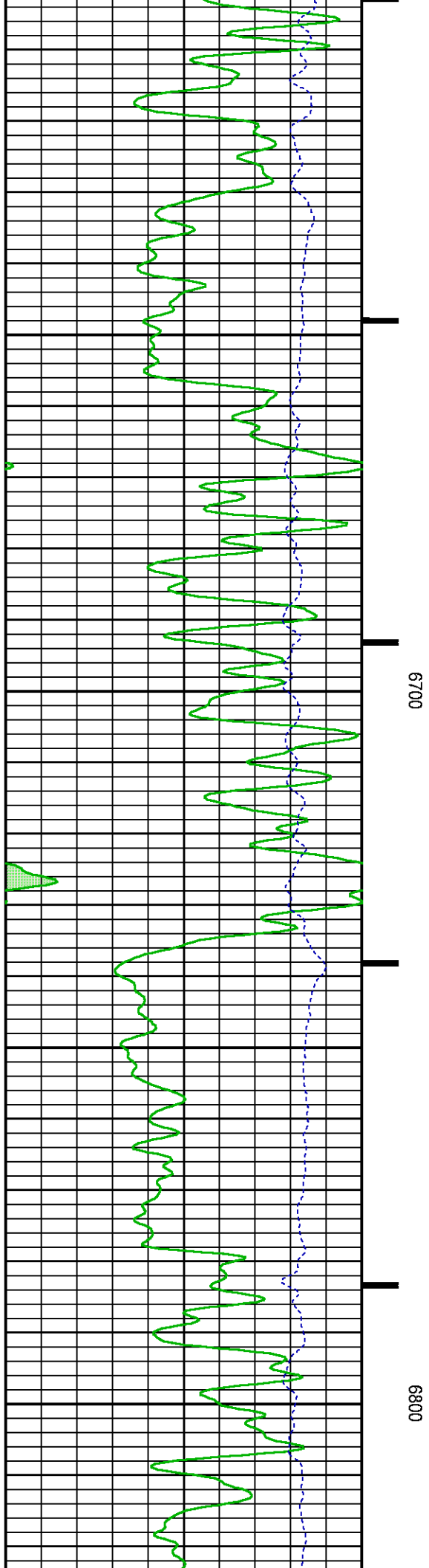
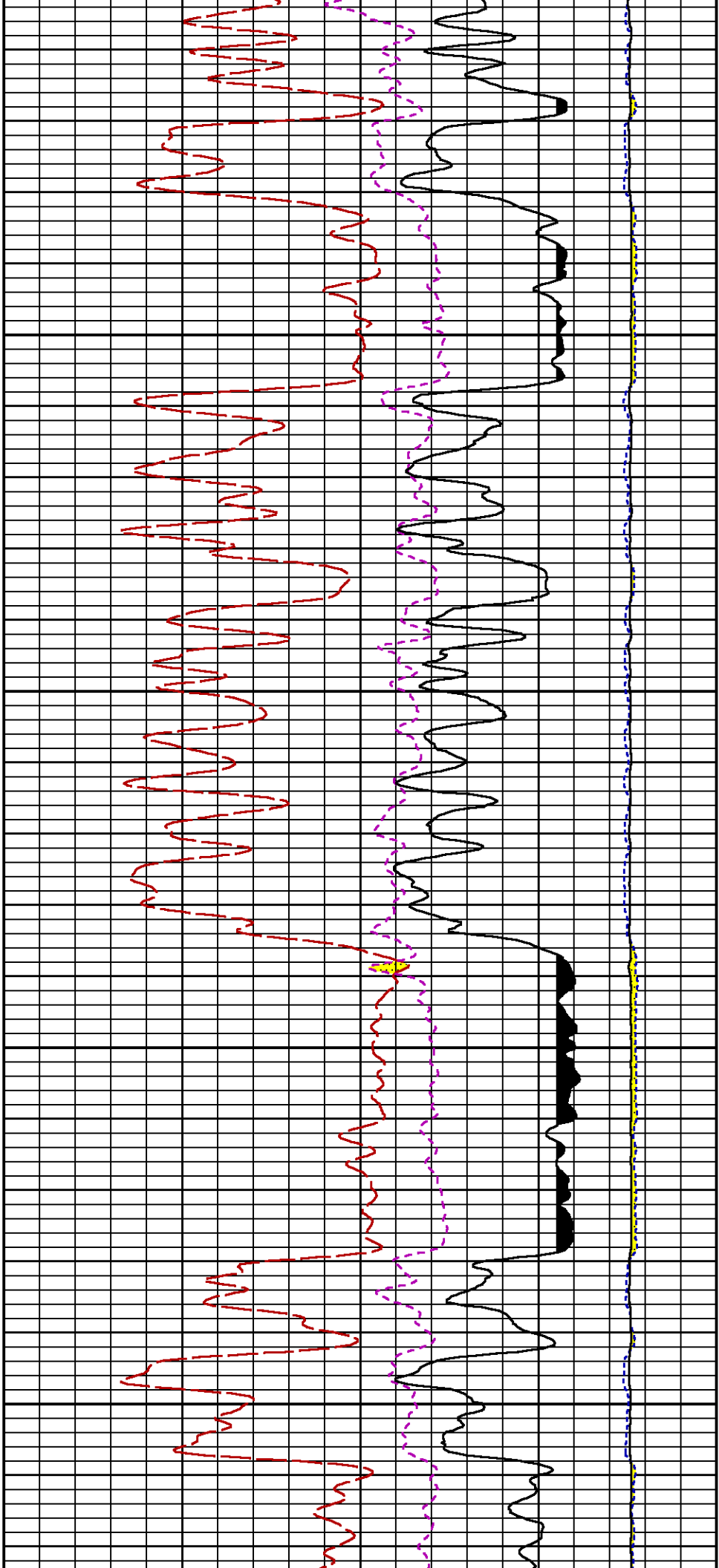




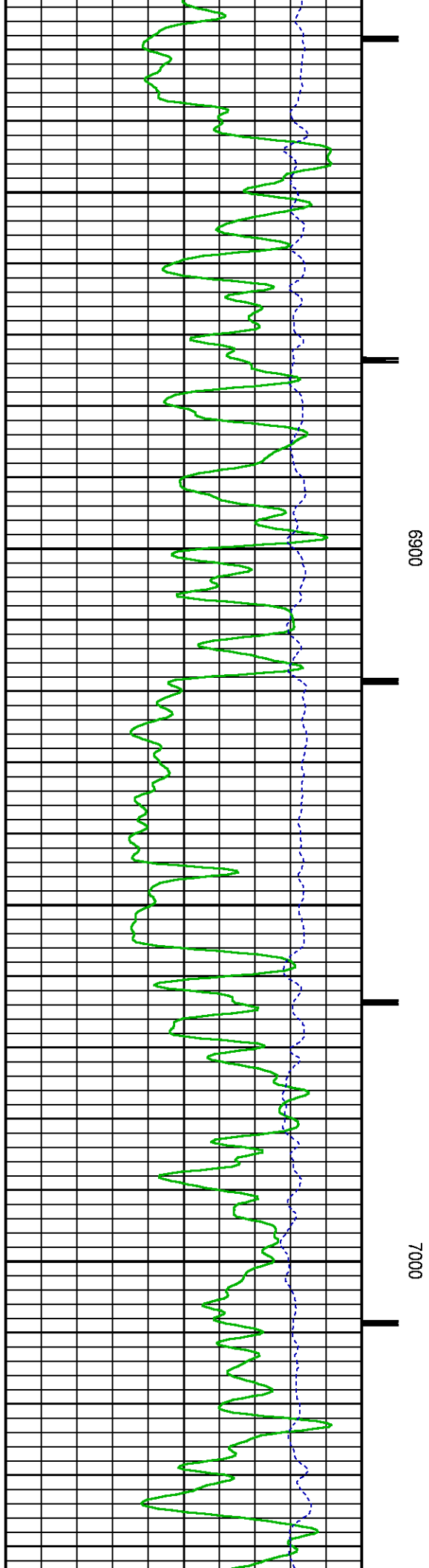
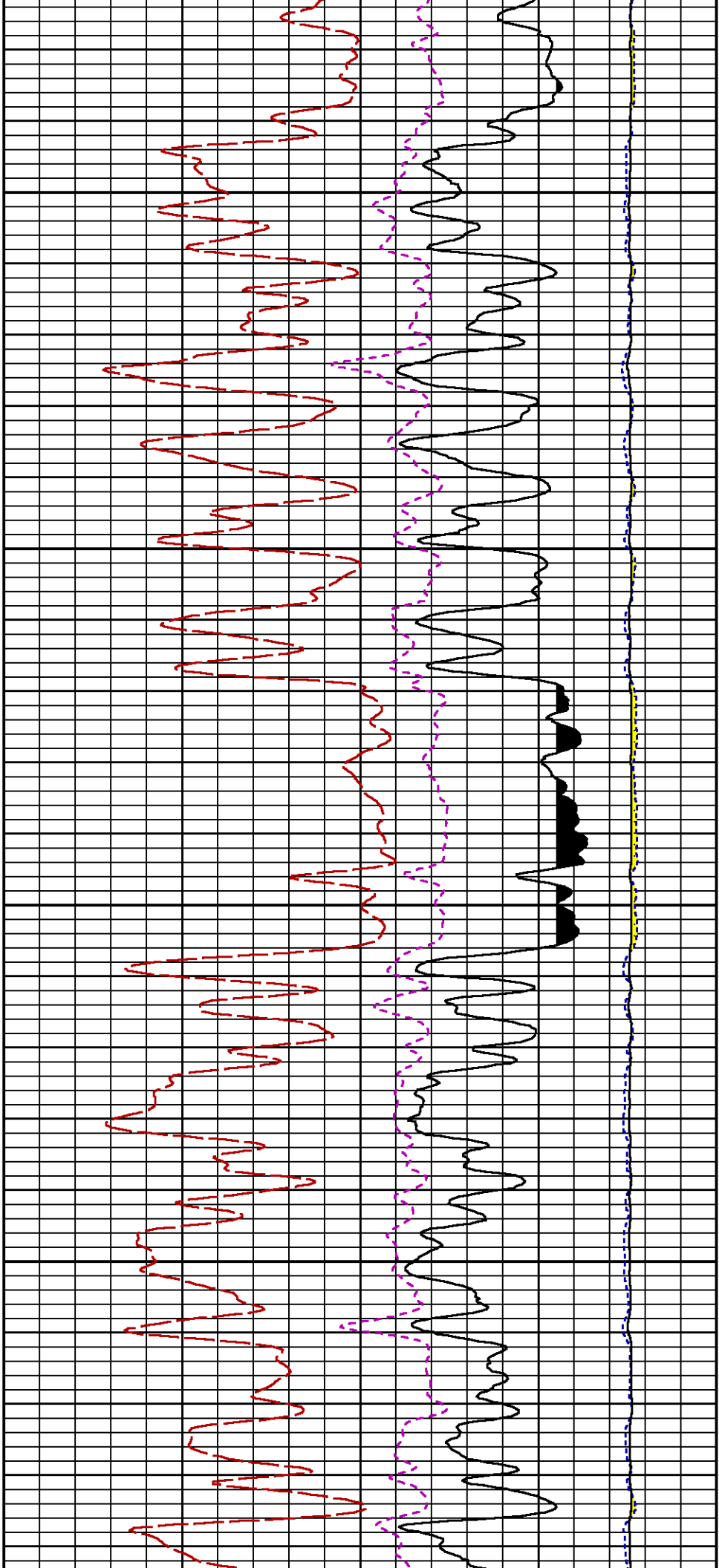


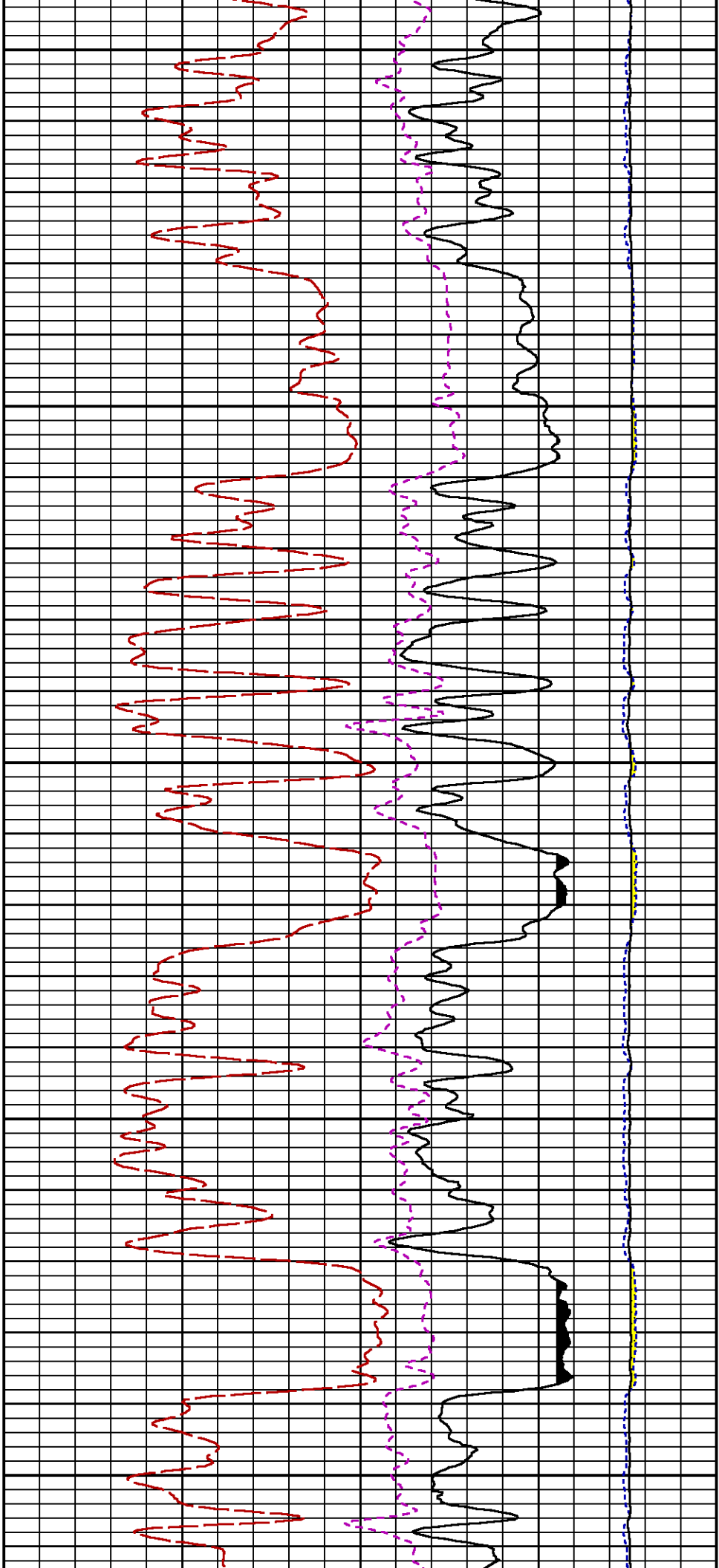






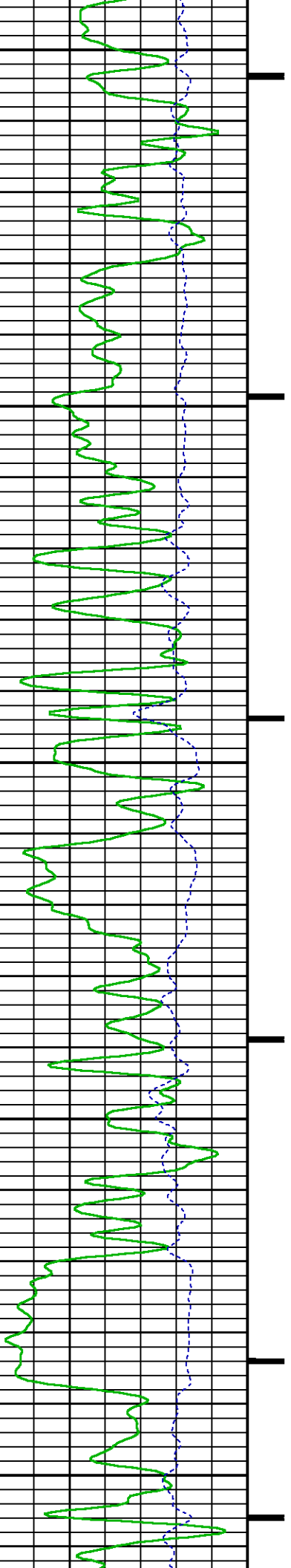


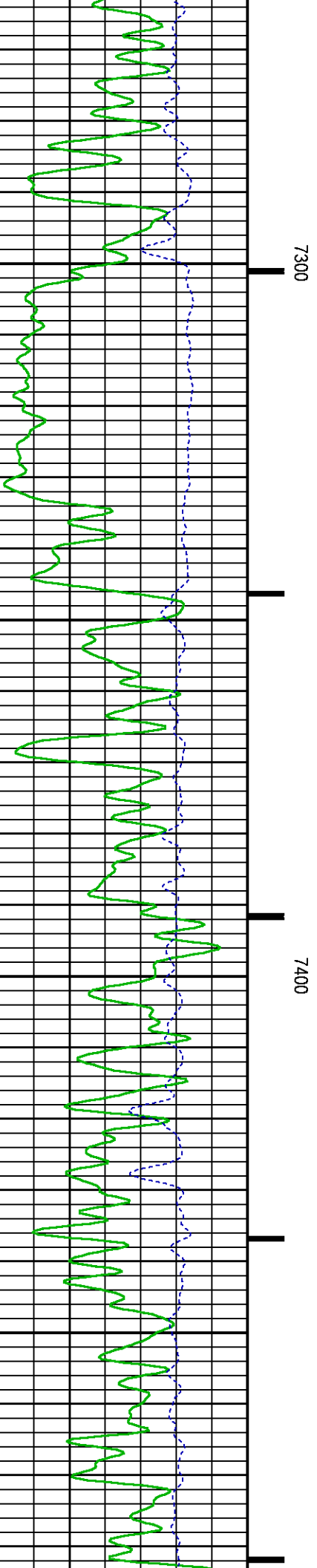
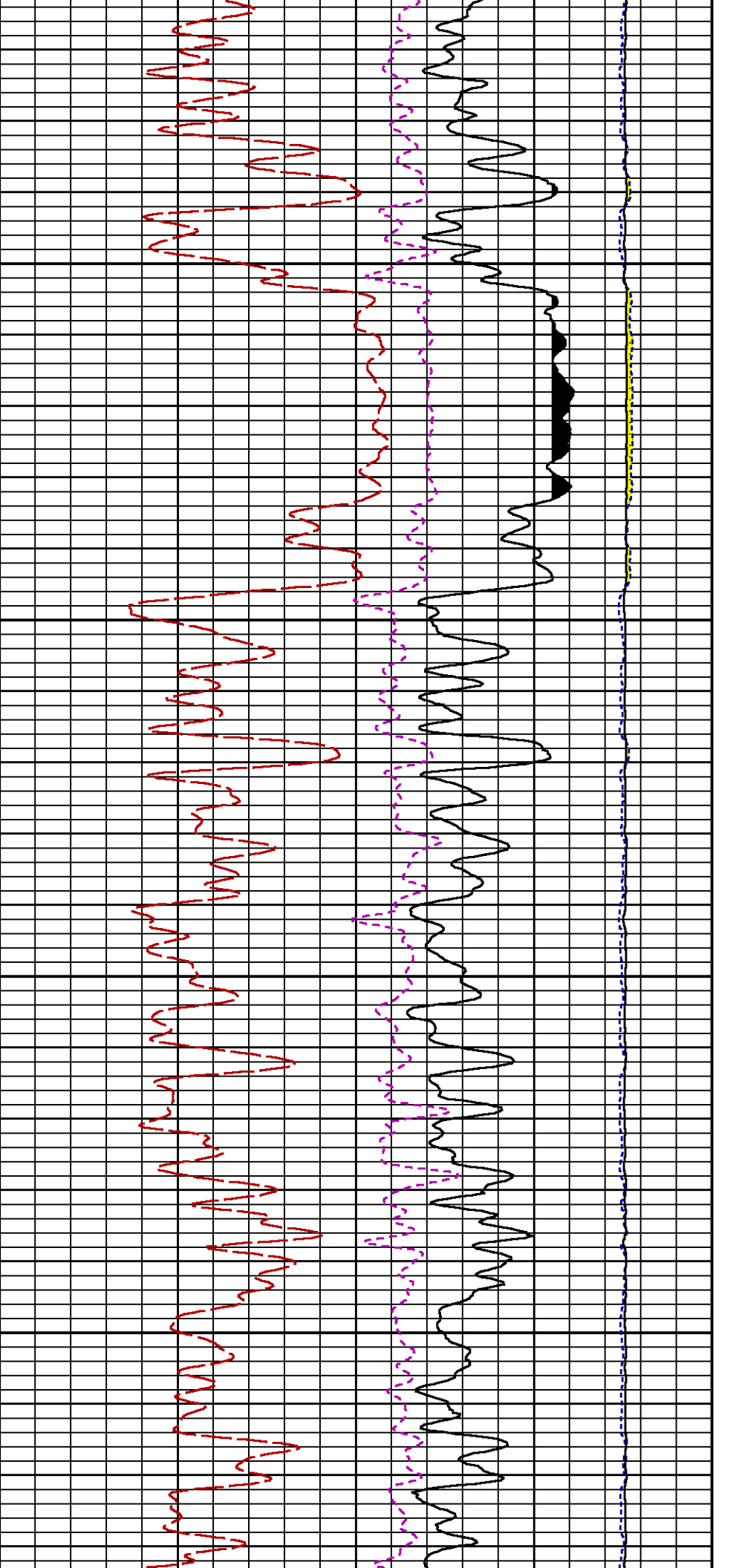


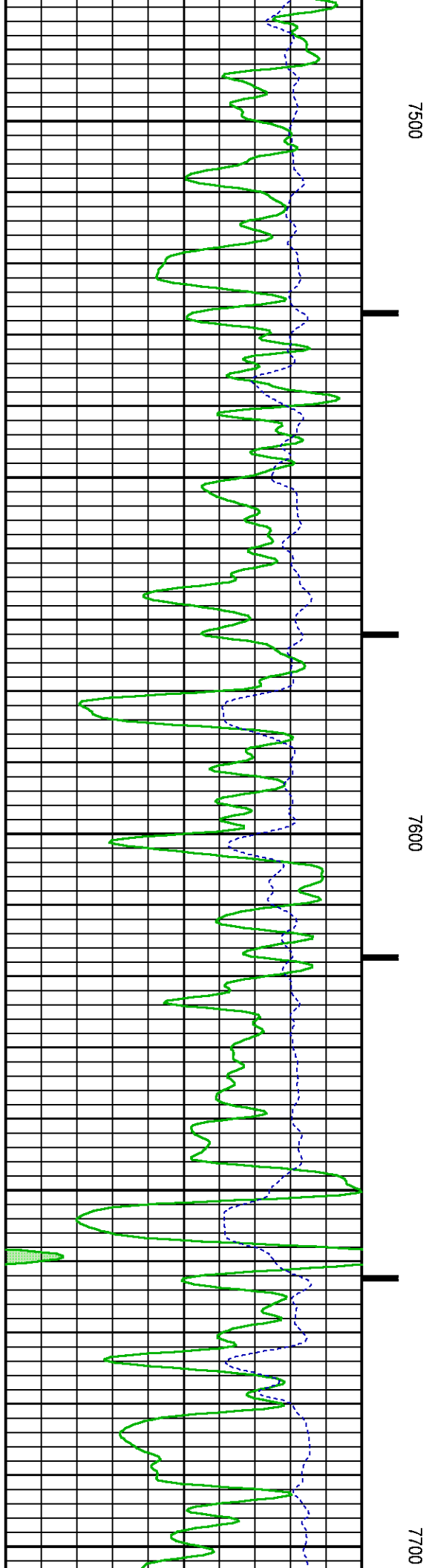
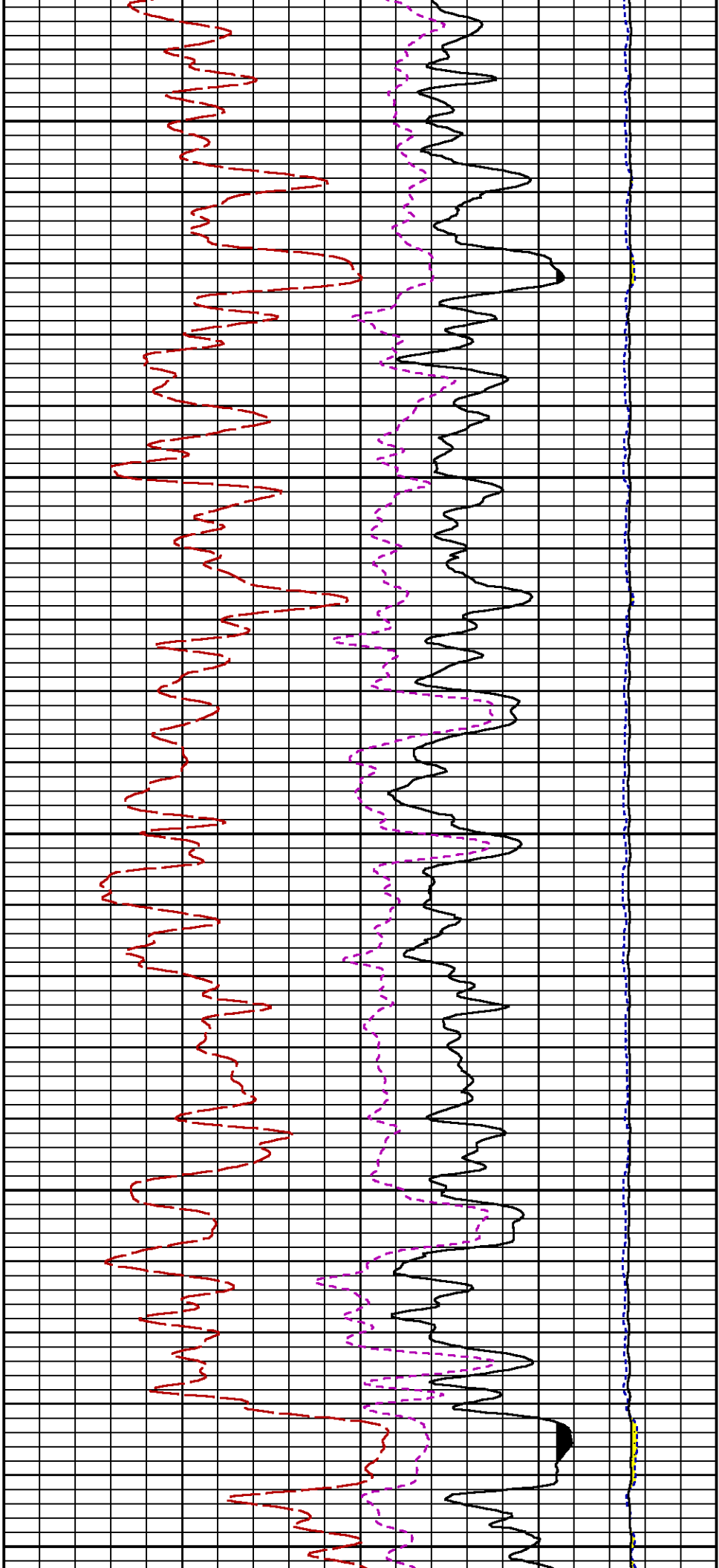


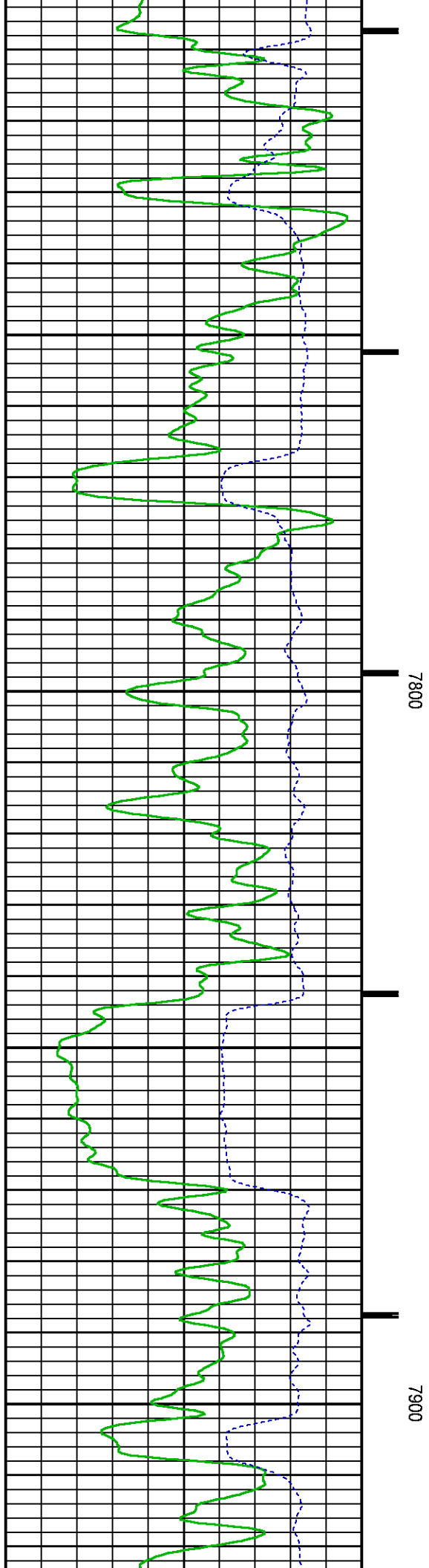
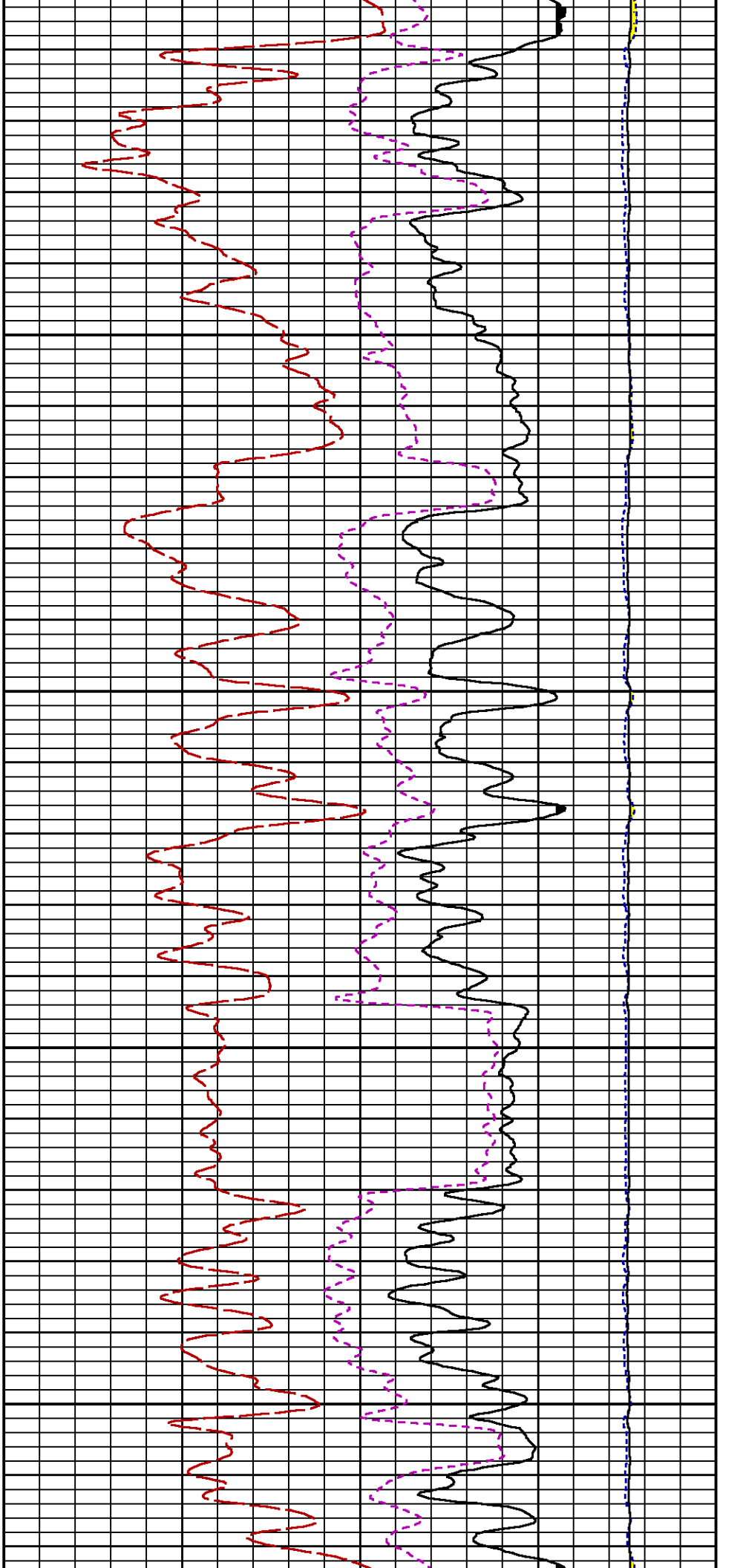
7100

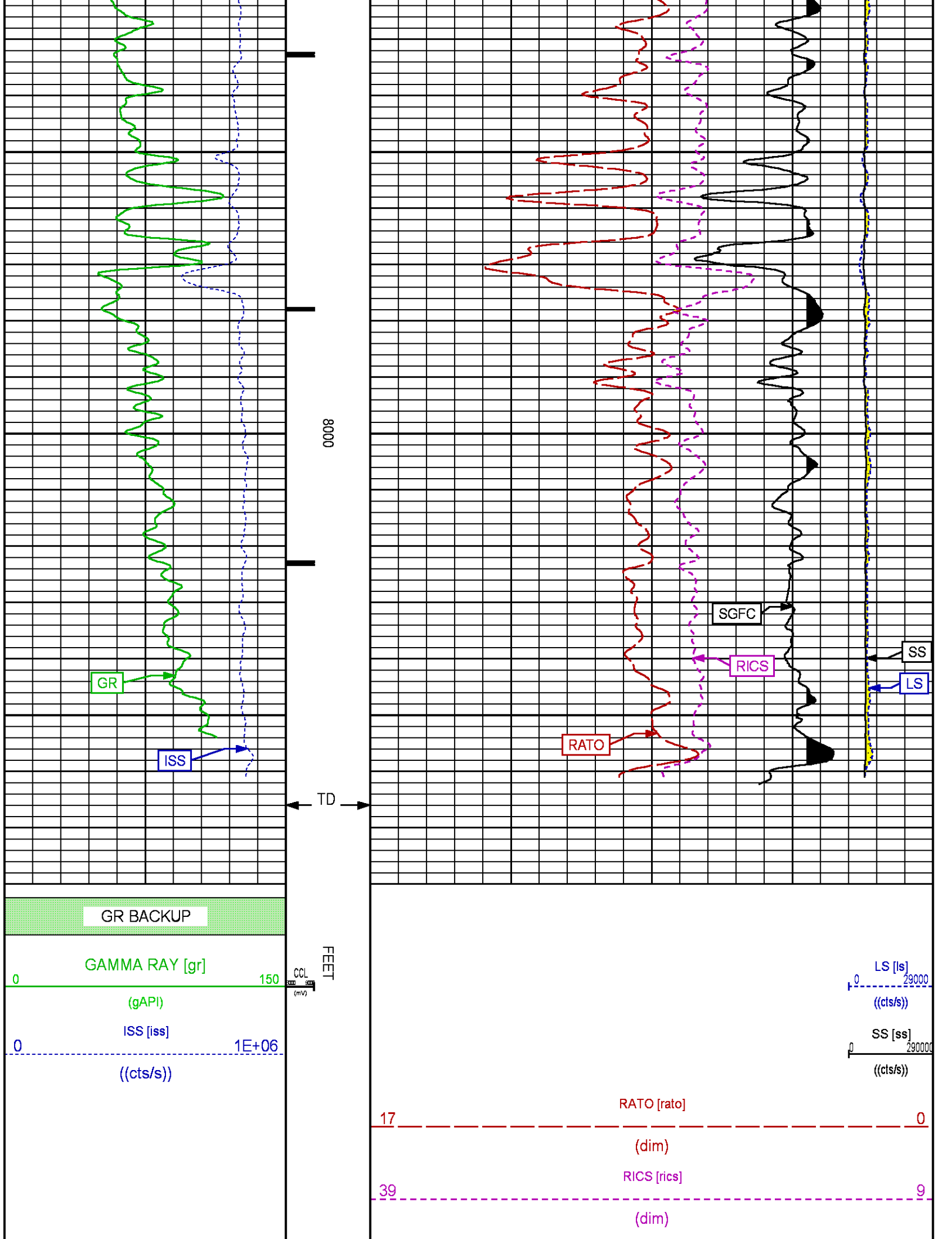
7200











60

SGFC [sgfc]

0

(cu)

REPEAT PASS

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

Patches: 2

Plotted: Tue Feb 6 17:46:34 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_30-15W/p353h01.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 5259.948 ft BOTTOM DEPTH: 5496.732 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	7.88	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	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation : SysA:/dat1a/LARAMIE\_BRUTON\_30-15W/30-15W\_RPM\_REPEAT.fvpdf [5"/100' Scale]  
 Plot Interval : 5270 - 5485 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE\_BRUTON\_30-15W/30-15W\_RPM\_REPEAT.xtf  
 Created On : N/A  
 Company : LARAMIE ENERGY LLC  
 Well : BRUTON 30-15W  
 Field : VEGA  
 File Interval : 5245.25 - 5506 Feet  
 OCT : p353h

GR BACKUP

GAMMA RAY [gr]

(gAPI)

ISS [iss]

((cts/s))

FEET

CCL  
(mV)

5300

5400

LS [ls]

((cts/s))

SS [ss]

((cts/s))

RATO [rato]

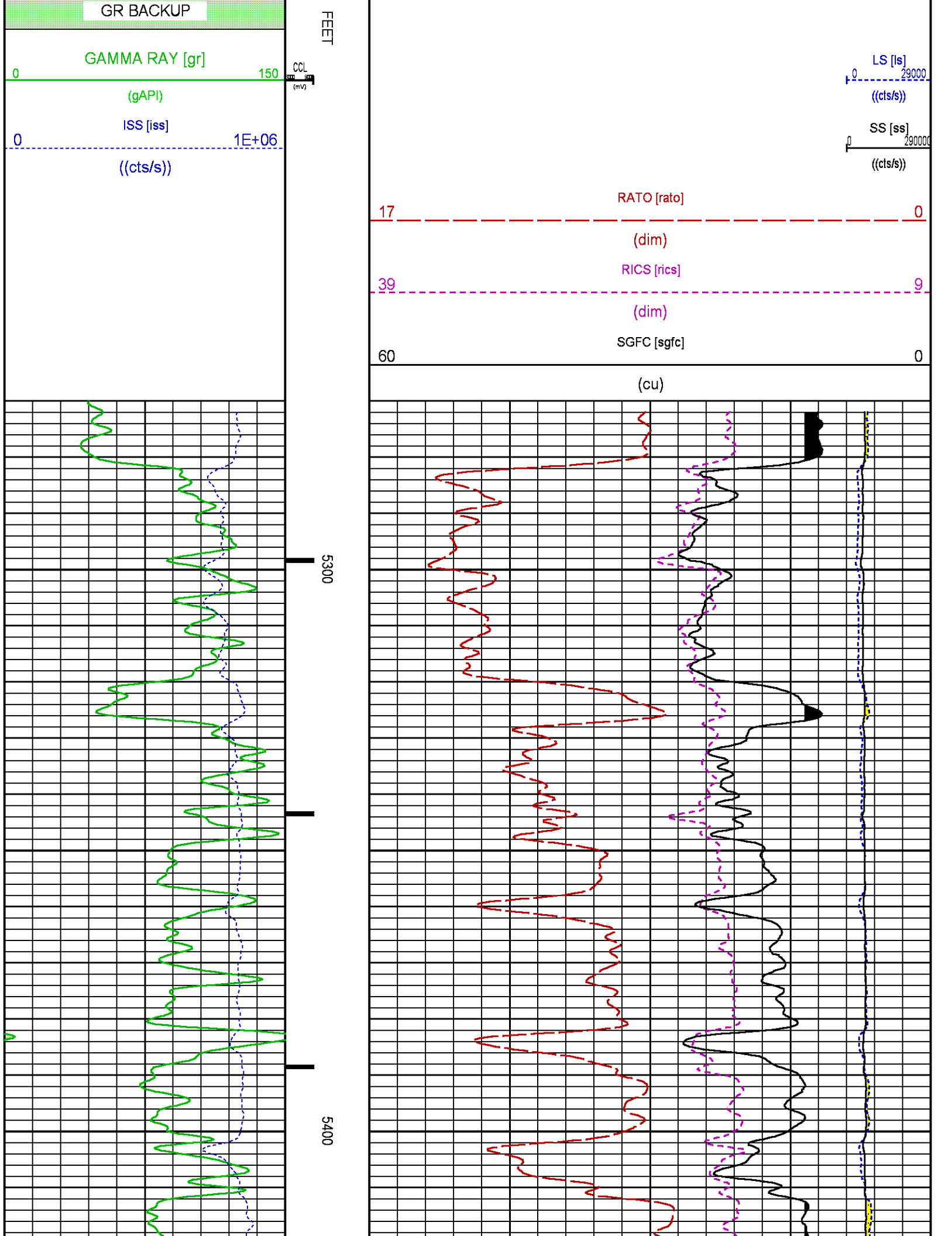
(dim)

RICS [rics]

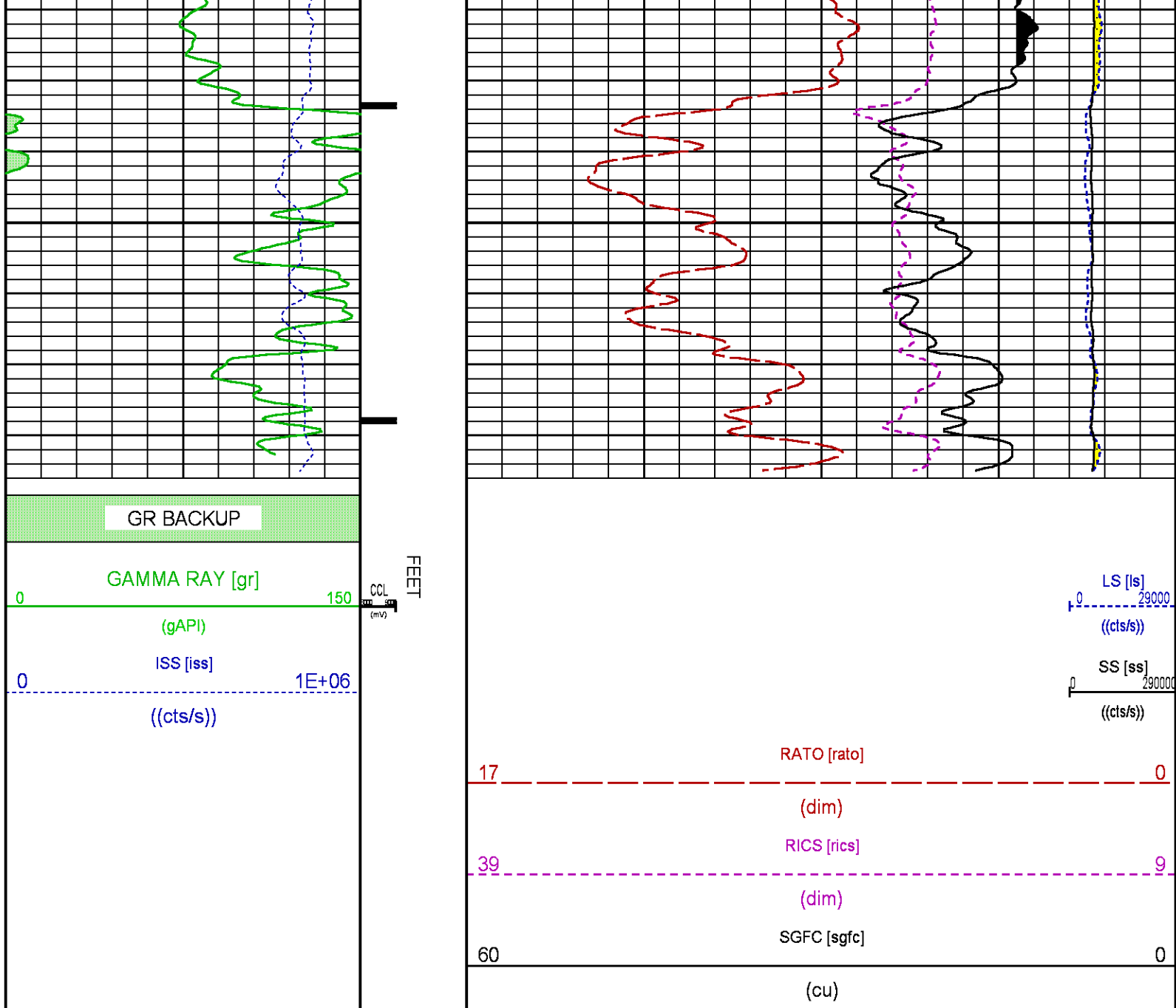
(dim)

SGFC [sgfc]

(cu)







## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE\_BRUTON\_30-15W/p353h.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Sat Jan 20 08:55:31 2018

UNIT #: 4352 ML4352

CALB JIG #: 4702NK DA\_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	58.42	336.96	278.5	0.664	38.80	223.80	185

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Sat Jan 20 08:58:00 2018

TOOL #: 8283PA 10190200 DATE/TIME PERFORMED: Sat Jan 20 11:23:45 2018

UNIT #: 4352 ML4352 VERI JIG #: 4702NK DA\_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	59.02	336.93	0.664	39.20	223.79	184.59
						175.00 195.00

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10190200

DATE/TIME PERFORMED: Sat Jan 20 11:23:45 2018

UNIT: 3882TD HL6728

CALIBRATOR: 2437XB 120052

SOURCE: 8281AA 10408960

HOURS: 8281AA 98

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (uSec)	RCAL
Raw Data	809388	126	2266	2230	2285	93	9.5	0.9606

Interpolated	1300000	153	2243	2224	2277			
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	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	809388	7357	1127	150	26.22	0.14	24.24	0.31
					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	809388	175615	27609	96901	34428	8787	58424	14068
Fit Quality %		1.010	1.290	1.259	1.256	1.310	1.081	1.352

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	809388	1.43	4.61	29.33	13.85	11.03	3.92	4.15
		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 %		0.057	0.296	0.312	0.307	0.010	0.041	0.063
Reduced	1401166	1.43	4.62	29.41	13.90	11.03	3.92	4.16
		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\_BRUTON\_30-15W/RPM-tdg

A3 CABLEHEAD  
Diameter : 1.37"

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

34.08'

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

CCL MP 26.03'

GAMMA RAY  
Diameter : 1.70"  
Length : 3.02'  
Weight : 15 lbs  
Series : 8262XA  
Mnemonic : GR  
Measure Point: 0.89': GR MP

GR MP 22.90'

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

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  
Measure Point: 1.52': PRES MP

TEMP MP 1.65'  
PRES MP

Measure Point: 1.52' TEMP MP

1 RES MP

BULL PLUG 1 11/16

0.00'

TOTAL LENGTH: 34.08'  
TOTAL WEIGHT: 144 lbs  
MAX DIAMETER: 0'1.70"

**BAKER  
HUGHES**  
a GE company



**ECLIPS**

**COMPANY**

LARAMIE ENERGY LLC

**WELL**

BRUTON 30-15W

**FIELD**

VEGA

**COUNTY**

MESA

**STATE** COLORADO

**FILE NO:**

CH132067

**API NO:**

05077104800000

**LOCATION:**

SHL: 2619' FNL & 1878' FEL

BHL: 1658' FSL & 1309' FWL

**ELEVATIONS:**

KB 7673 FT

DF

GL 7643 FT

SEC 30 TWP 9S RGE 93W

**DATE**

06-Feb-2018