



FILE NO:	COMPANY	LARAMIE ENERGY LLC
API NO:	WELL	BRUTON 30-17E
05077104770000	FIELD	VEGA
	COUNTY	MESA
	STATE	COLORADO

Ver. 4.10	LOCATION:	OTHER SERVICES
	SHL: 2645' FSL & 1859' FEL	RAL
	BHL: 1117' FSL & 1341' FEL	
	SEC 30 TWP 9S RGE 93W	

PERMANENT DATUM	GL	ELEVATION	7643 FT	ELEVATIONS: KB 7673 FT DF 7672 FT GL 7643 FT
LOG MEASURED FROM	KB	30 FT	ABOVE P.D.	
DRILL. MEAS. FROM	KB			

DATE	31-Mar-2018
RUN	1
TRIP	1
SERVICE ORDER	US132072
DEPTH DRILLER	7917 FT
DEPTH LOGGER	7847 FT
BOTTOM LOGGED INTERVAL	7847 FT
TOP LOGGED INTERVAL	2468 FT
TIME STARTED	10:00
TIME FINISHED	16:00
OPERATOR RIG TIME	6 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	56 FT
LOGGED CEMENT TOP	529 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	90 FMIN
MAX. RECORDED TEMP.	231 DEGF
REFERENCE LOG	BAKER HUGHES RAL
REFERENCE LOG DATE	10-Feb-2018
EQUIP. NO.	ML-4291
LOCATION	GRAND JCT.
RECORDED BY	T. NEWELL
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: 5962' - 5982'  
SJ: 7051' - 7070'

### EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11745584	FREE
1	1	TEL/CCL	8248ED	10183585	FREE
1	1	GR	8262XA	10485470	FREE
1	1	RPM	8281EA	10294755	FREE
1	1	RPM	8283PA	10066691	FREE
1	1	RPM	8281FA	10066992	FREE
1	1	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: 3

Plotted: Sat Mar 31 16:34:42 2018

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_30\_17E/p353h03.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 2457.998 ft BOTTOM DEPTH: 3099.948 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

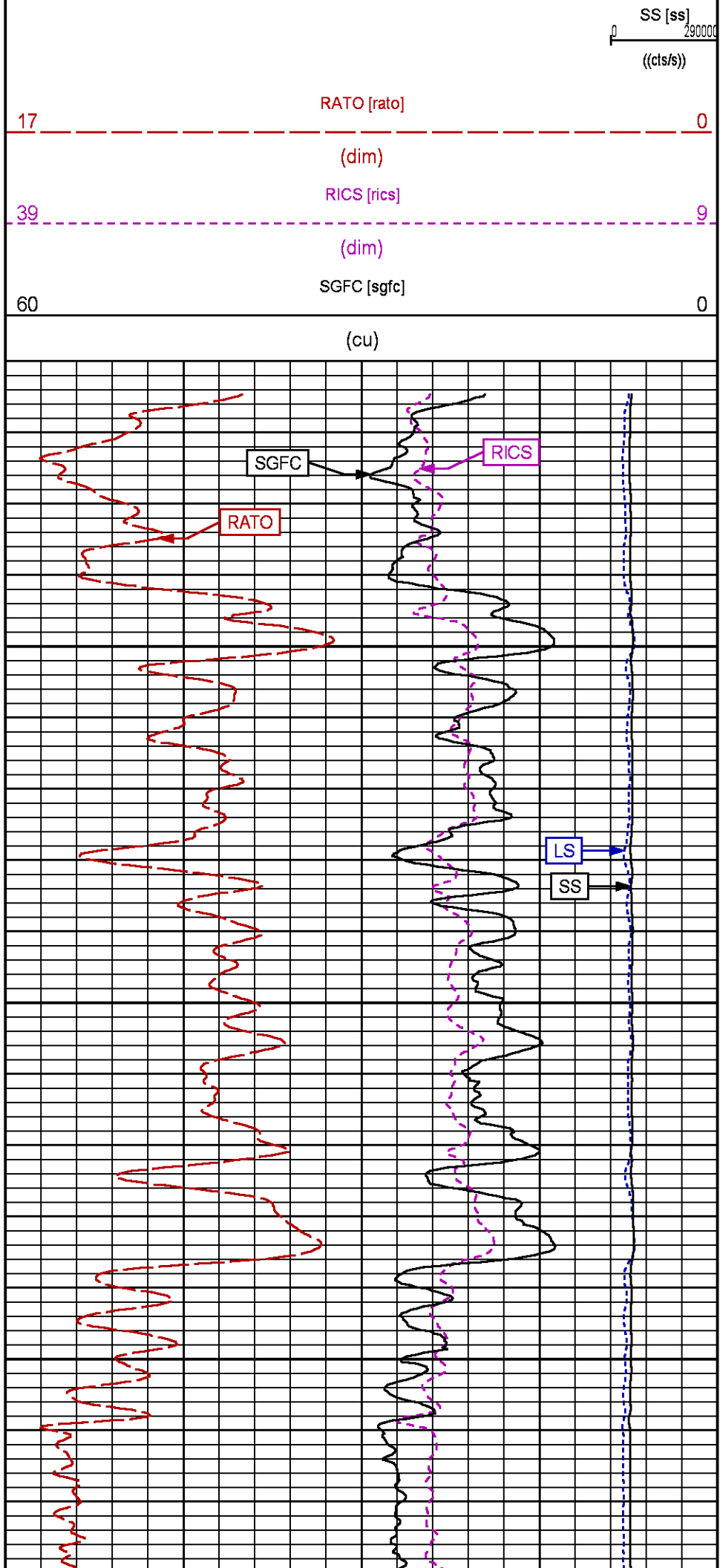
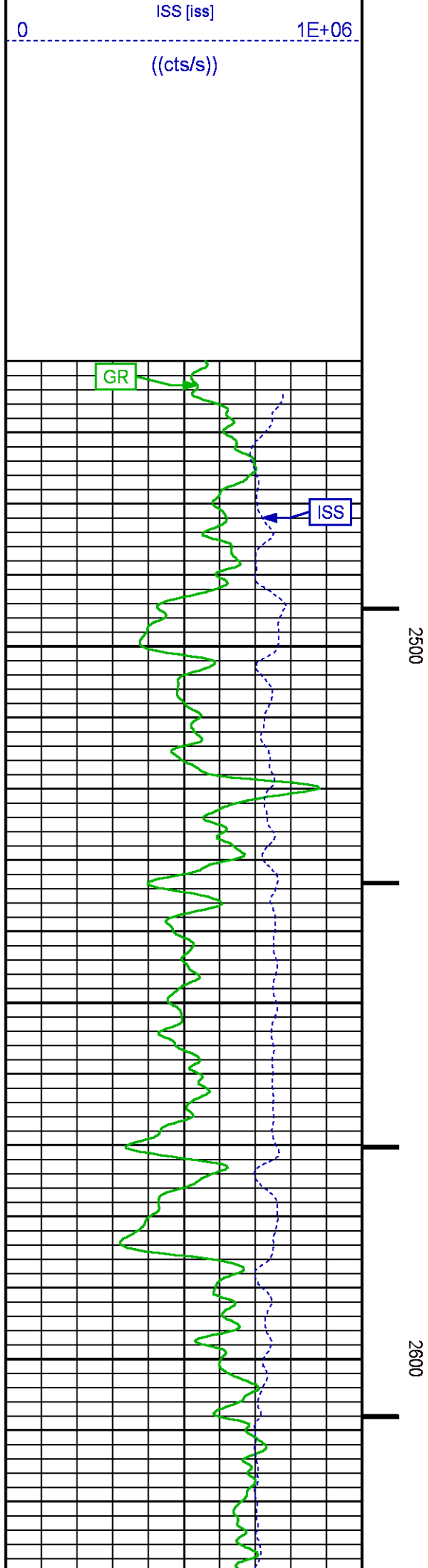
## CURVE MEASURE POINT OFFSET

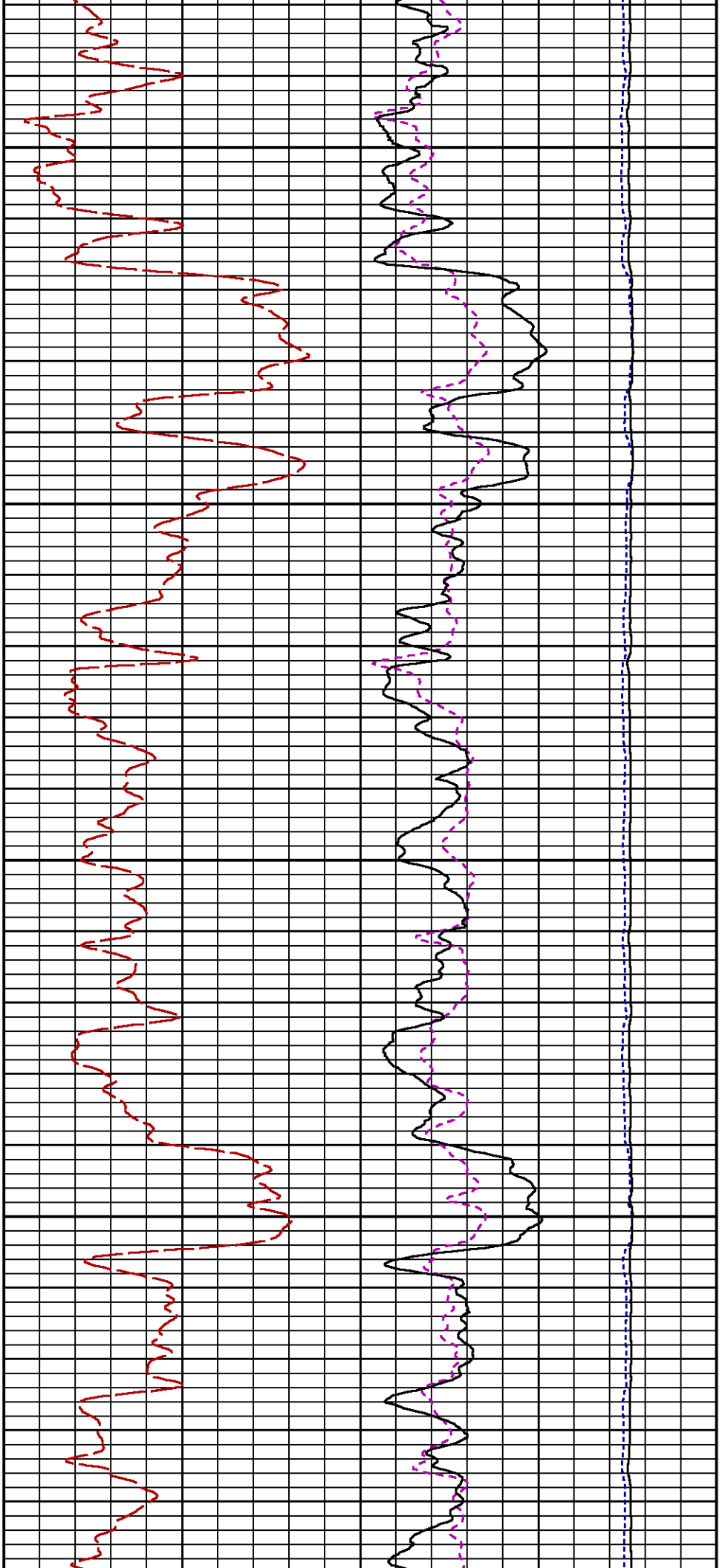
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation : SysA:/dat1a/LARAMIE\_BRUTON\_30\_17E/30-17E\_RPM\_GS.fvpdf [5"/100' Scale]  
 Plot Interval : 2460 - 3075 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE\_BRUTON\_30\_17E/30-17E\_RPM\_GS.xtf  
 Created On : N/A  
 Company : LARAMIE ENERGY LLC  
 Well : BRUTON 30-17E  
 Field : VEGA  
 File Interval : 2438 - 3102.75 Feet  
 OCT : p353h

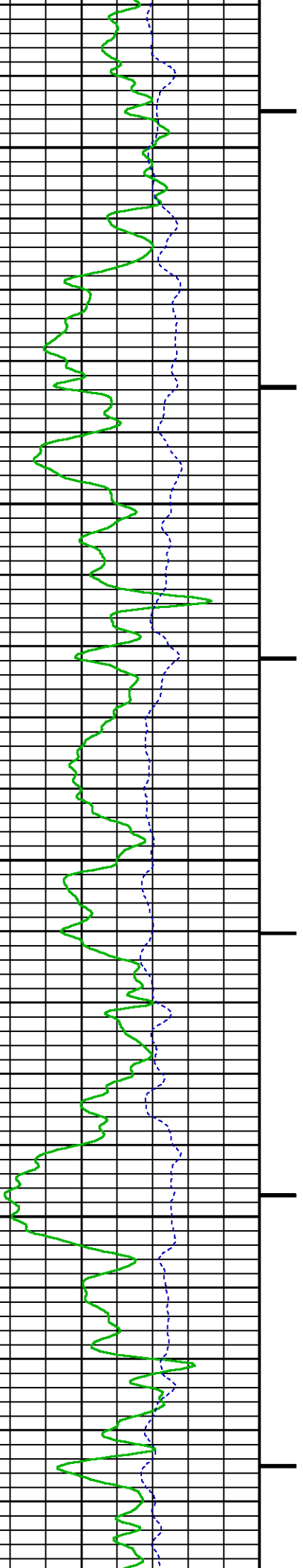


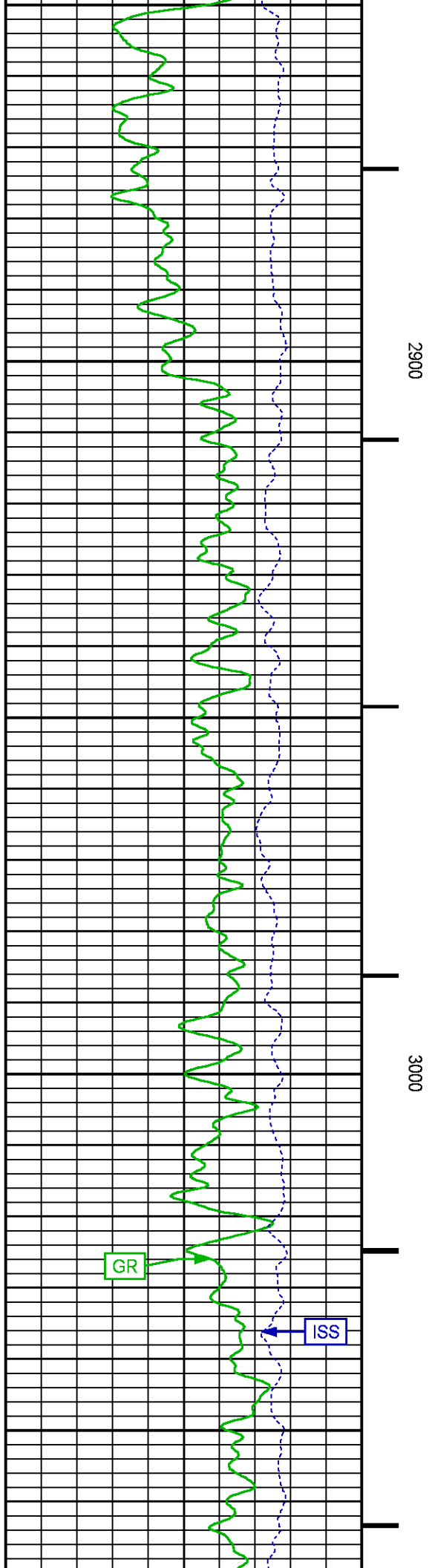
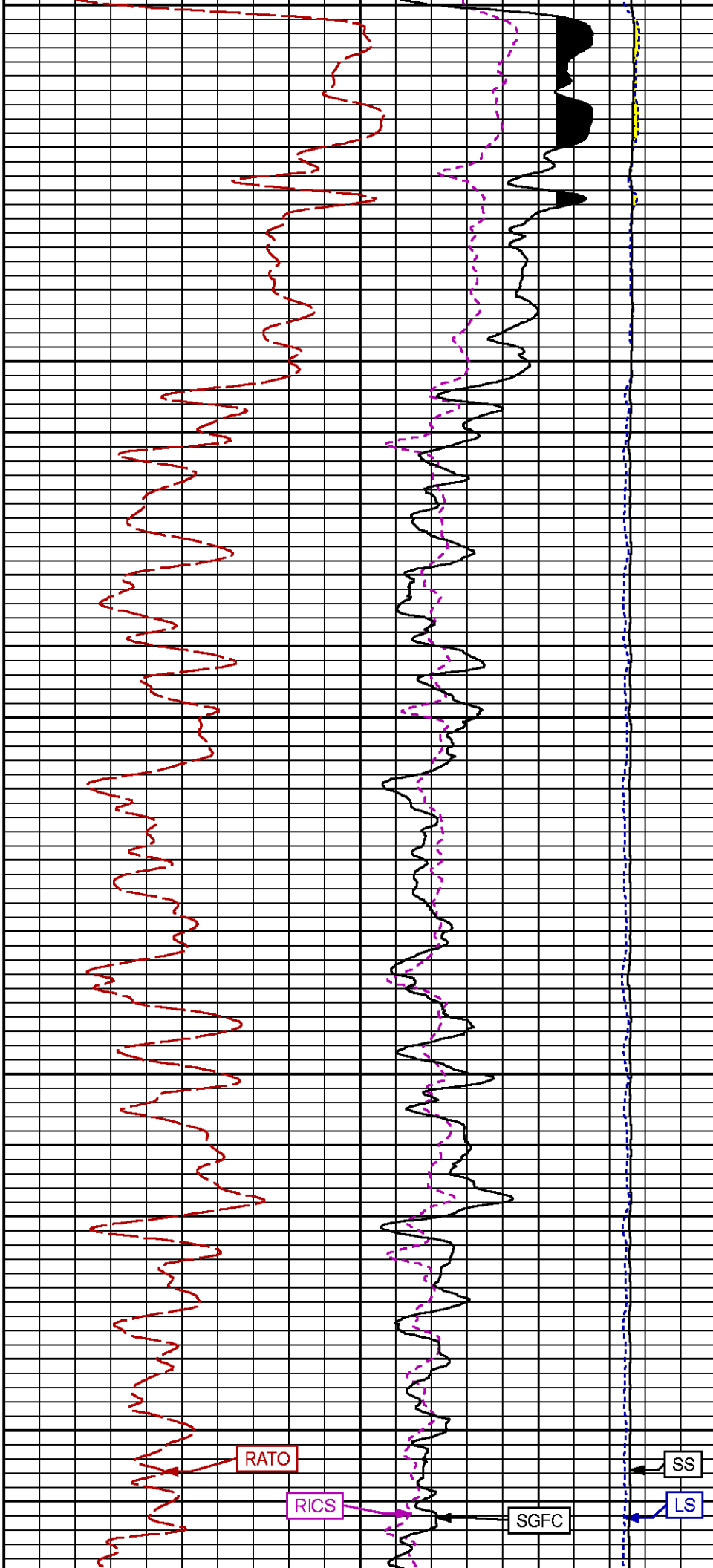


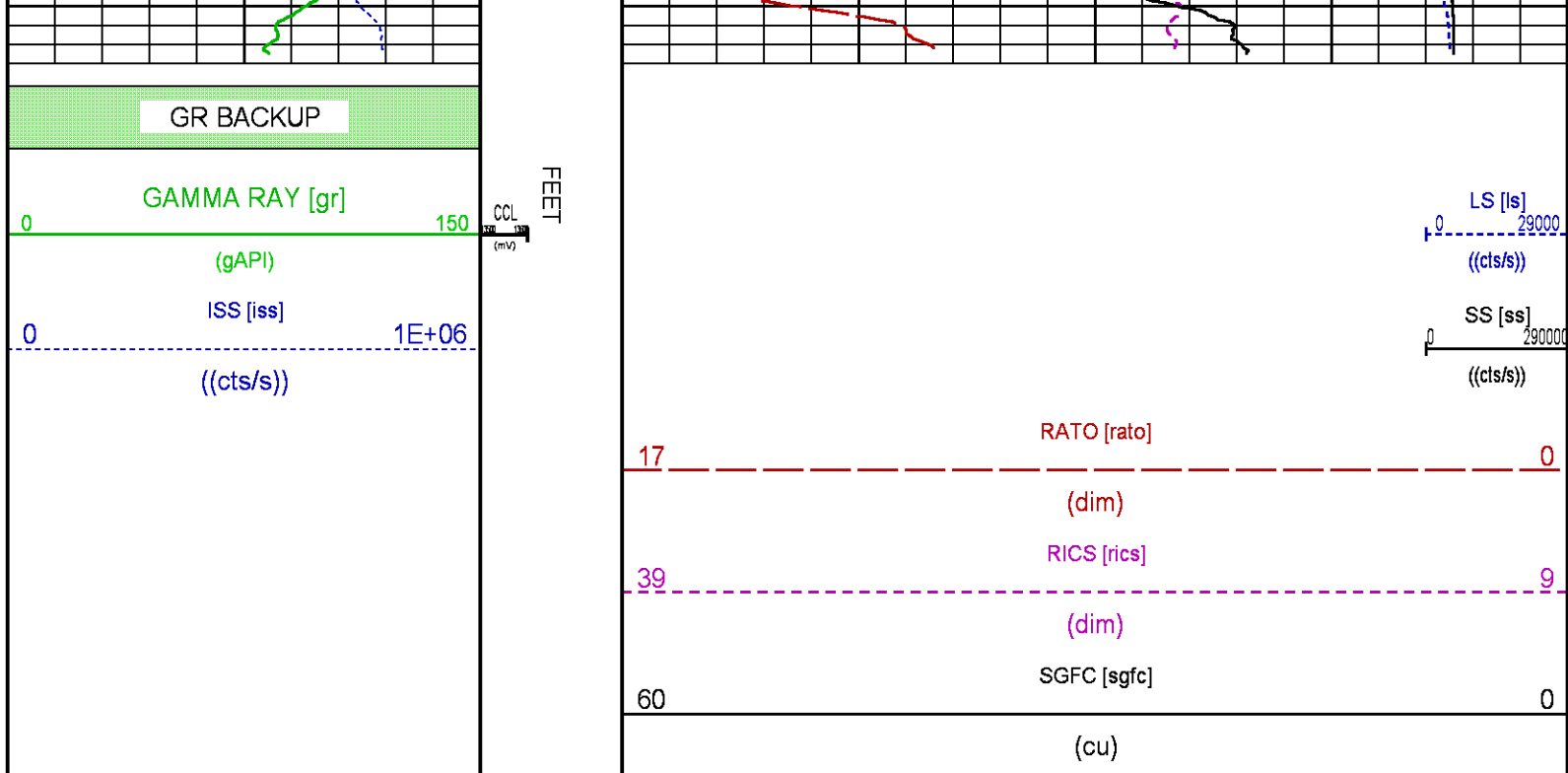


2700

2800







## RPM MAIN PASS WILLIAMS FORK

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

Patches: 3

Plotted: Sat Mar 31 15:52:52 2018

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_30\_17E/p353h02.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 4558.622 ft BOTTOM DEPTH: 7876.543 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

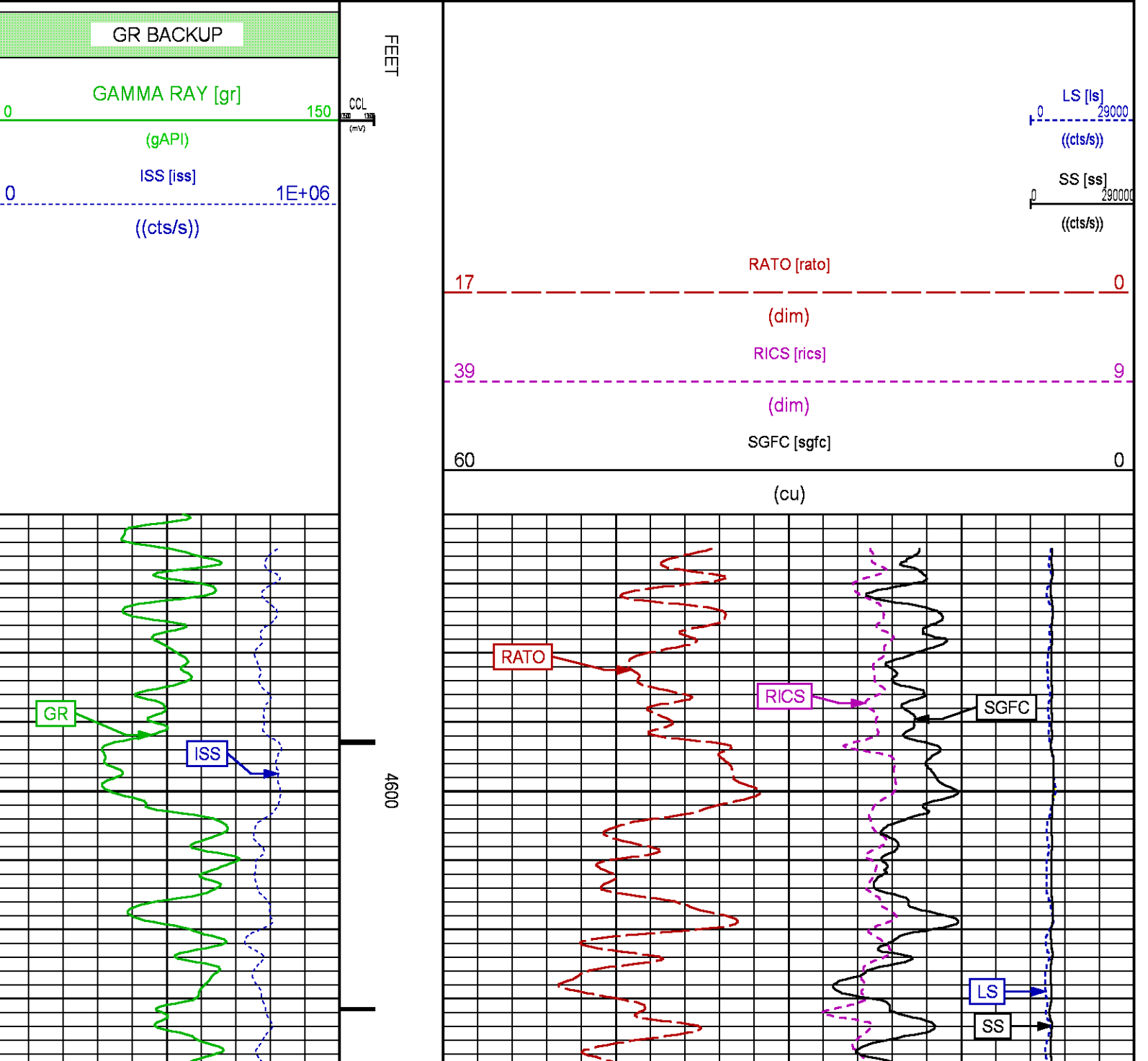
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR	N/A	GAMMA RAY
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE

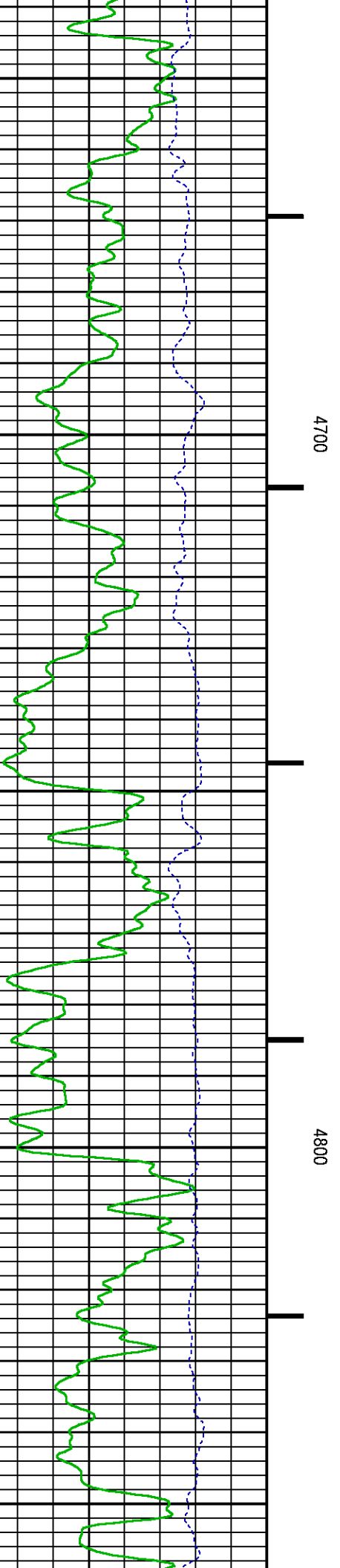
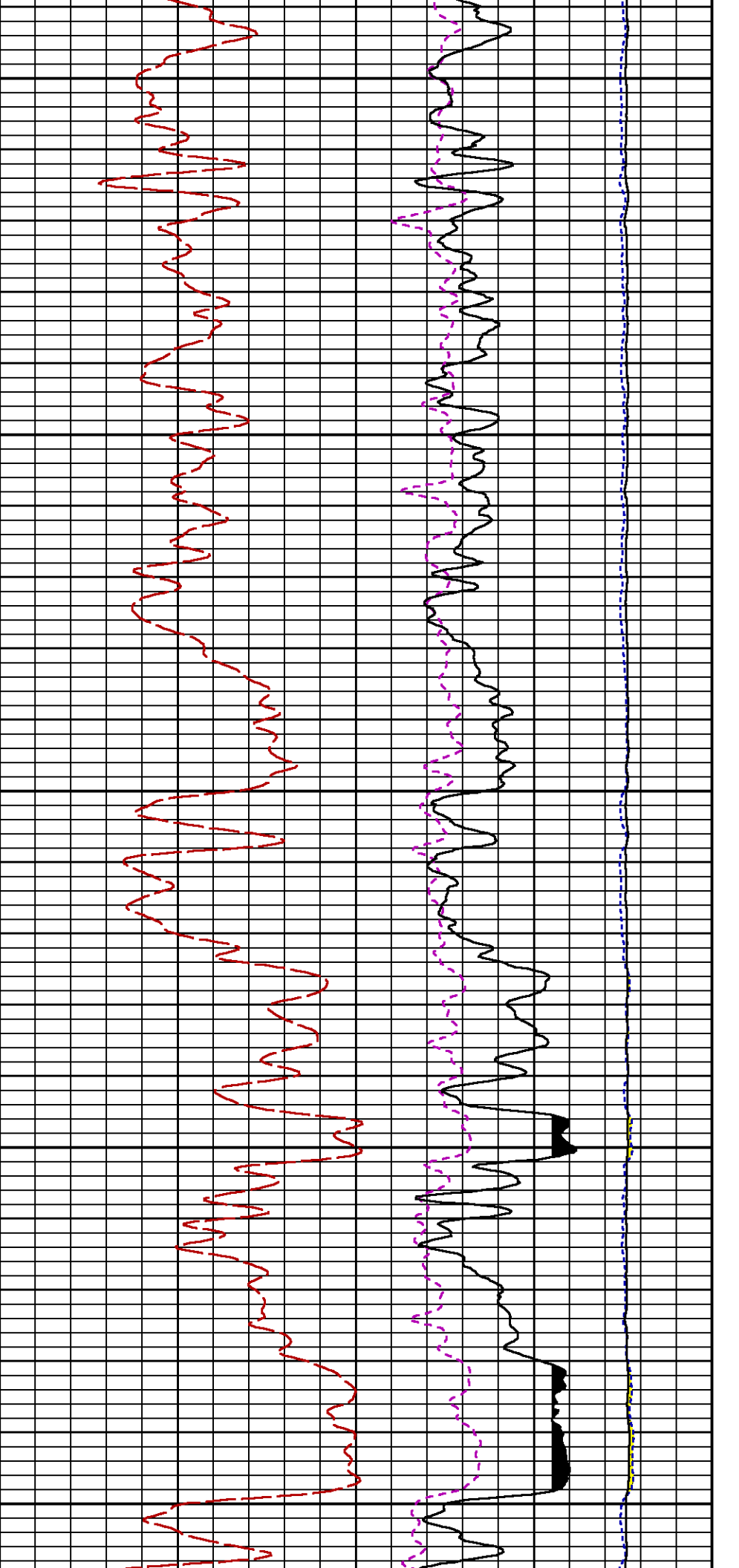
CURVE MEASURE POINT OFFSET

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

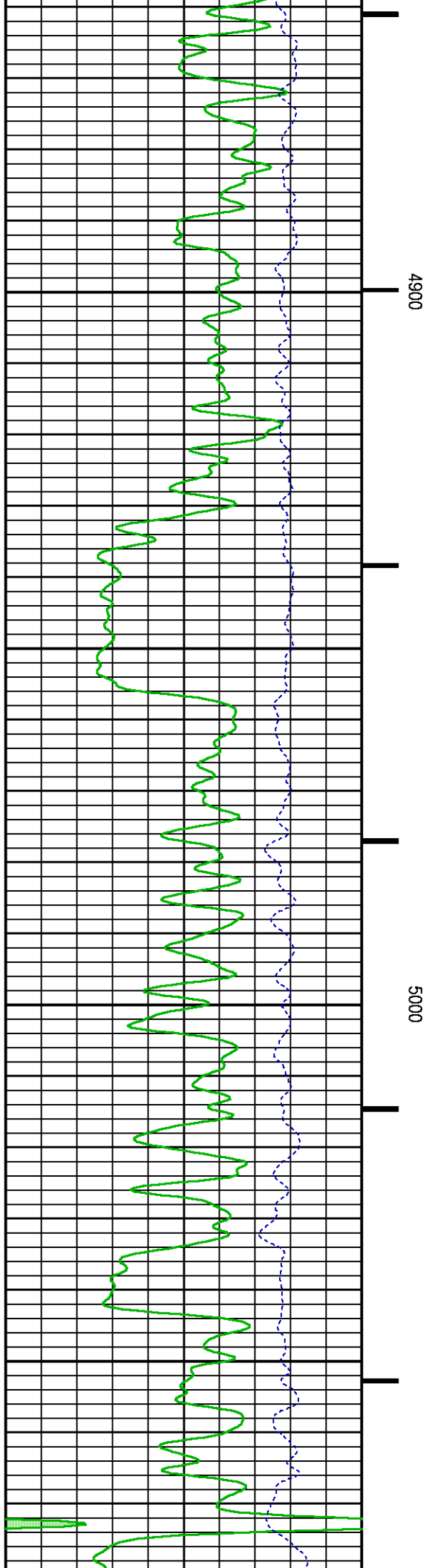
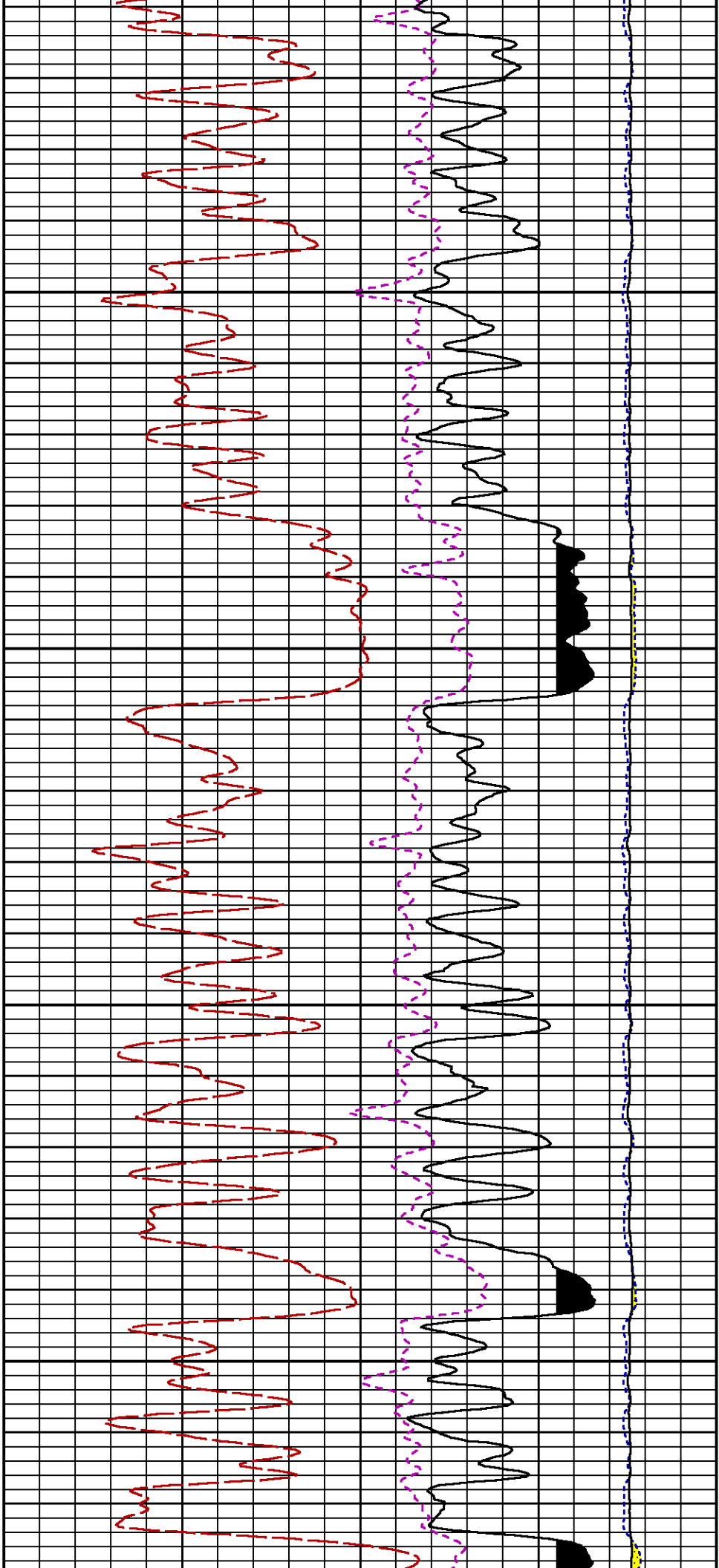
Presentation : SysA:/dat1a/LARAMIE\_BRUTON\_30\_17E/30-17E\_RPM\_WF.fvpdf [5"/100" Scale]  
Plot Interval : 4560 - 7865 Feet

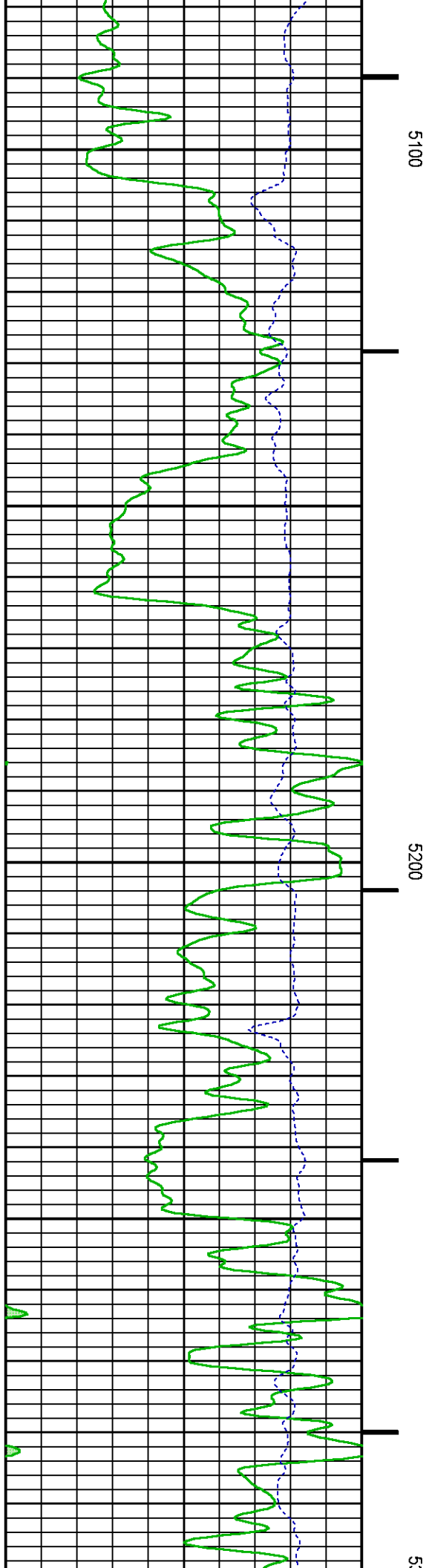
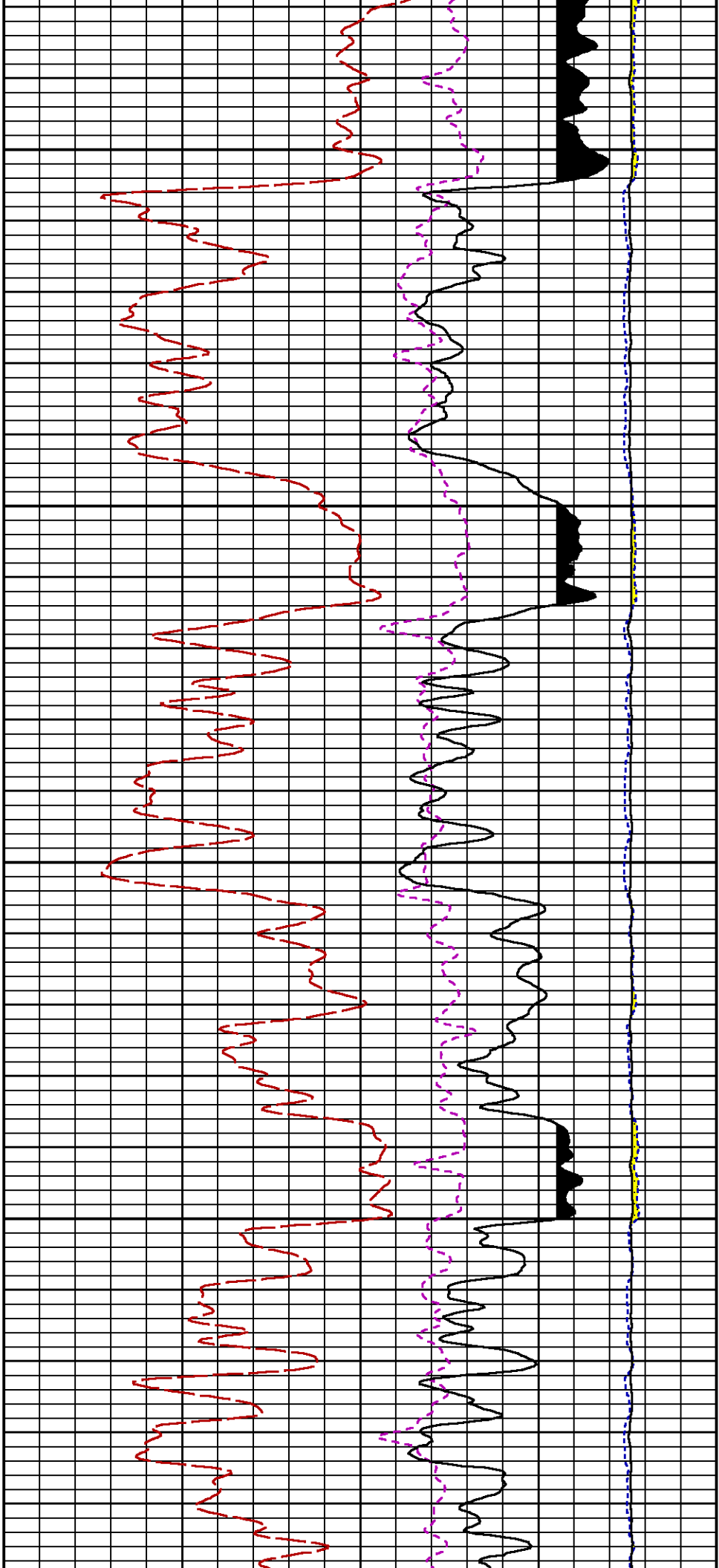
Data File 1 : F1 : SysA:/dat1a/LARAMIE\_BRUTON\_30\_17E/30-17E\_RPM\_MAIN.xtf  
Created On : N/A  
Company : LARAMIE ENERGY LLC  
Well : BRUTON 30-17E  
Field : VEGA  
File Interval : 4538.25 - 7879 Feet  
OCT : p353h

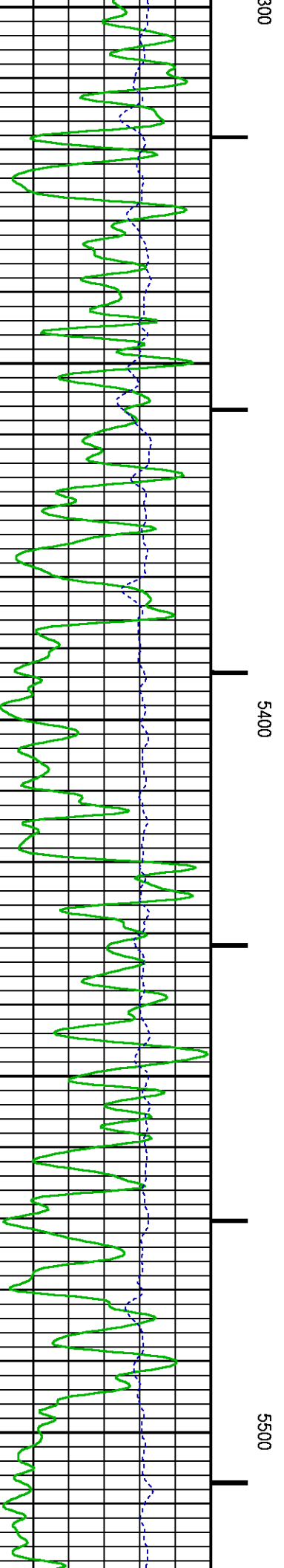
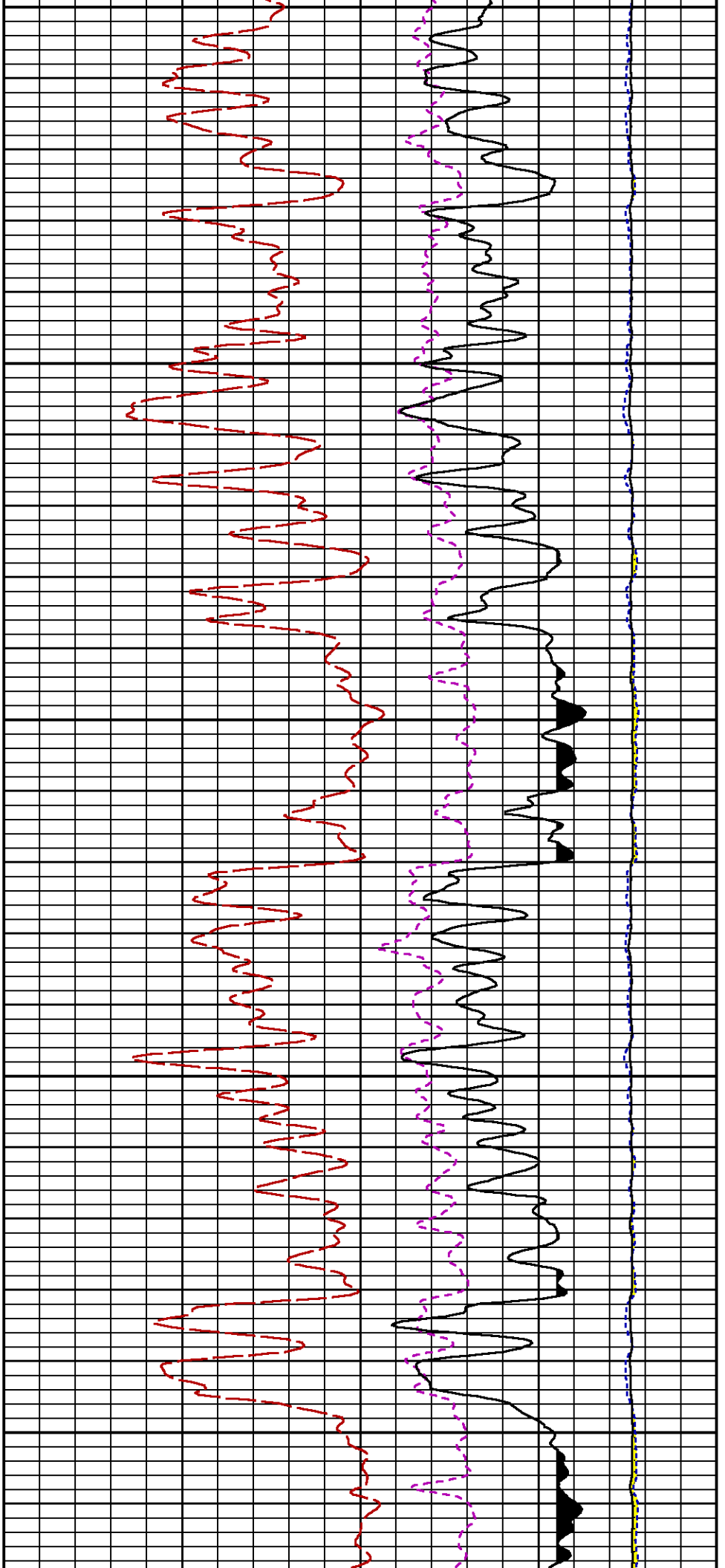


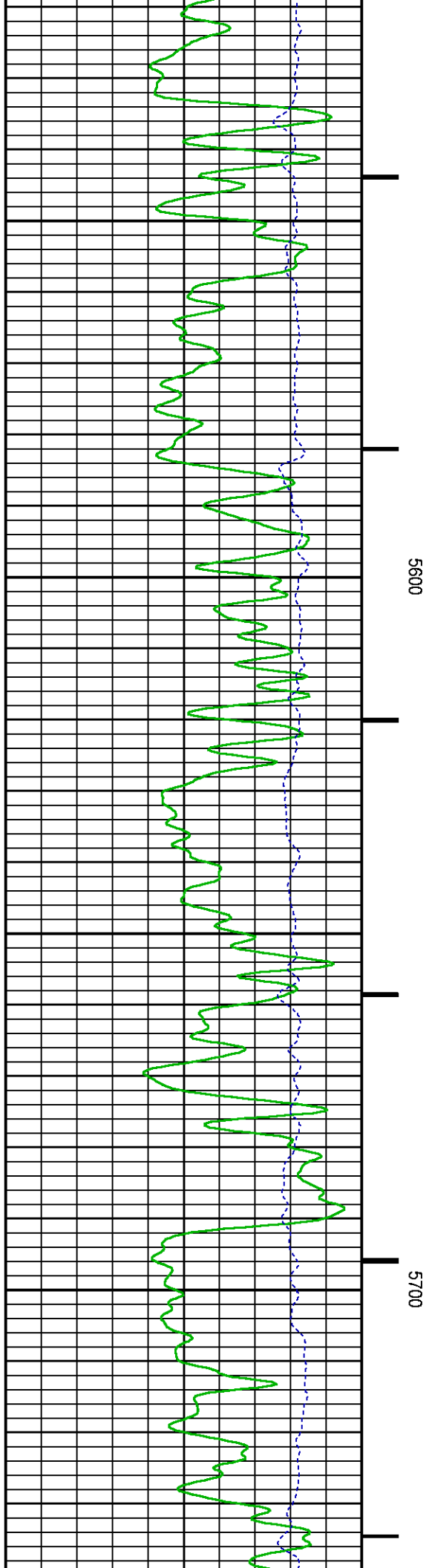
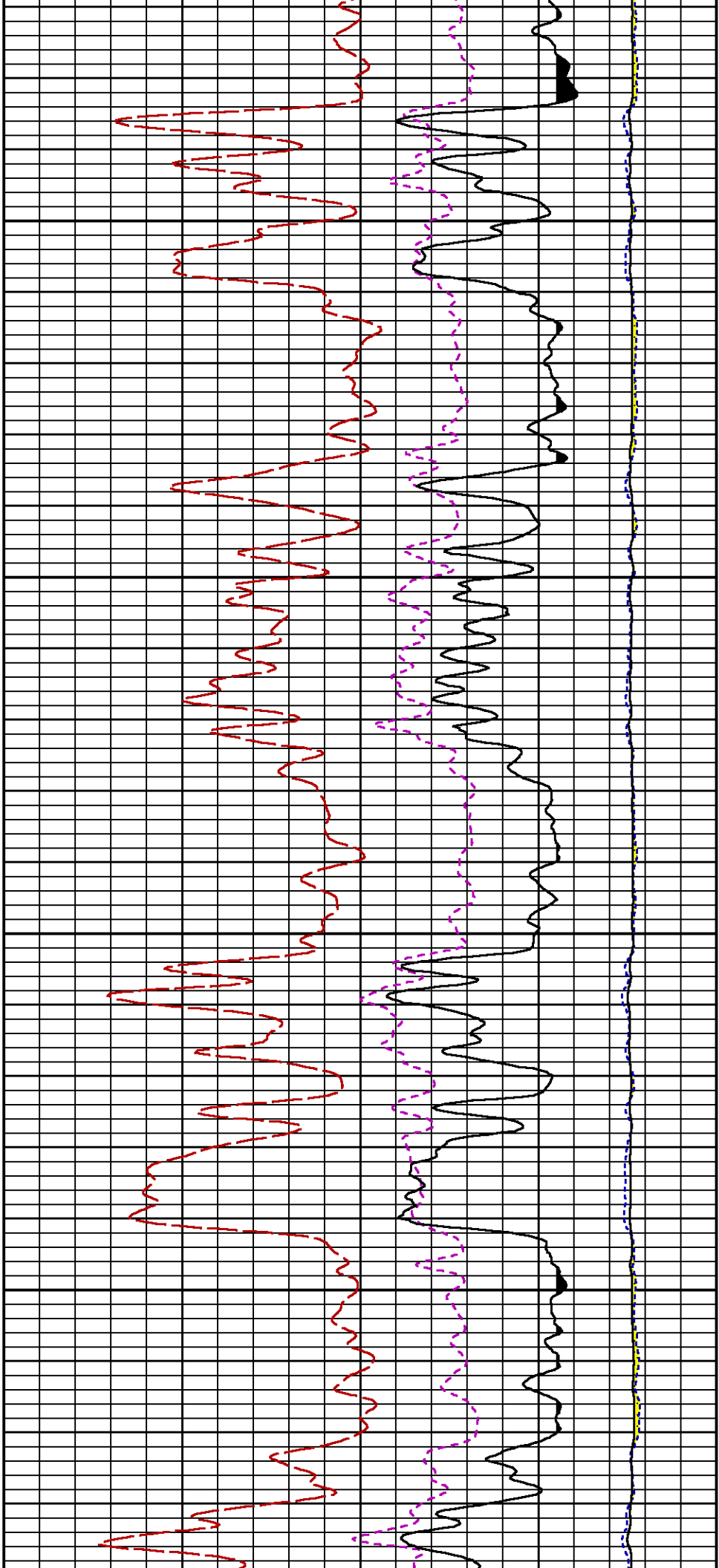


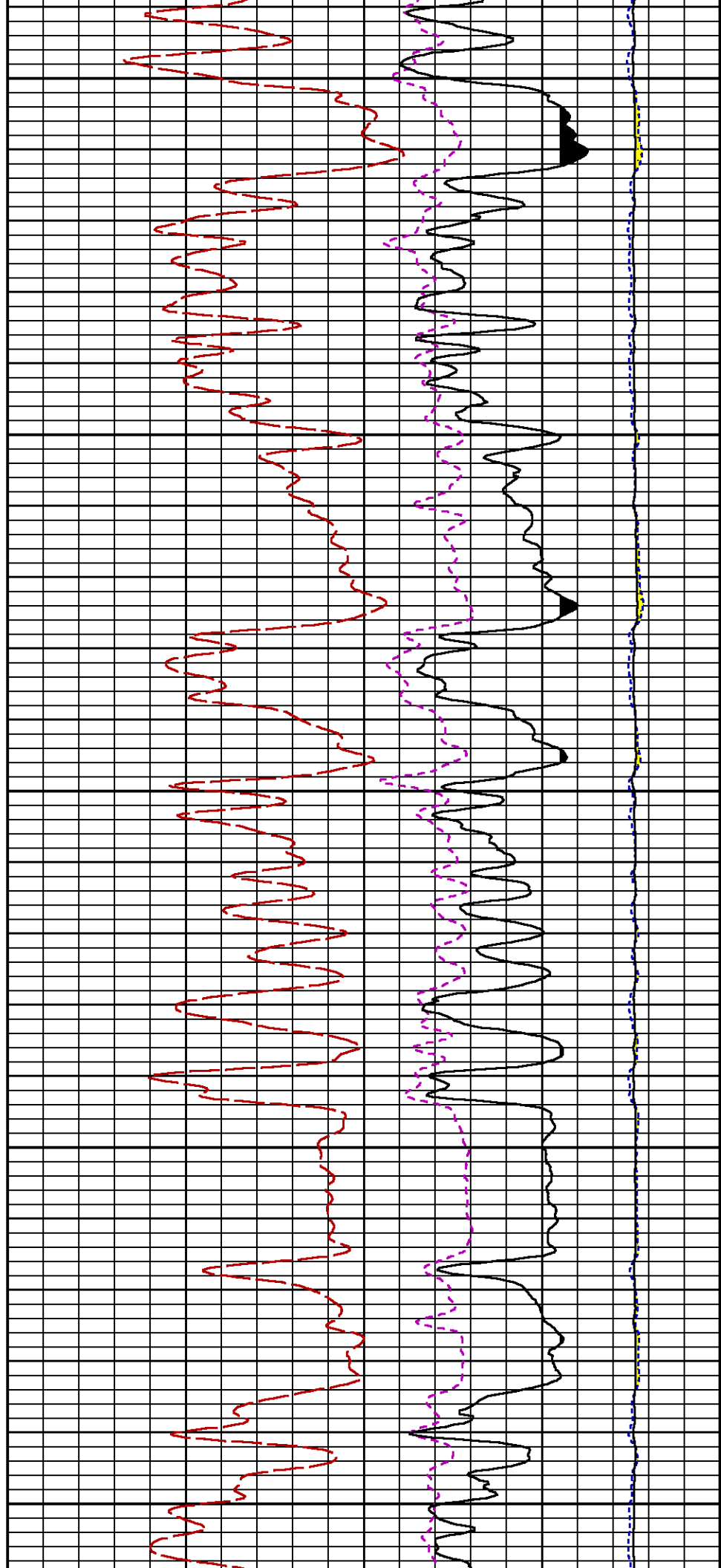
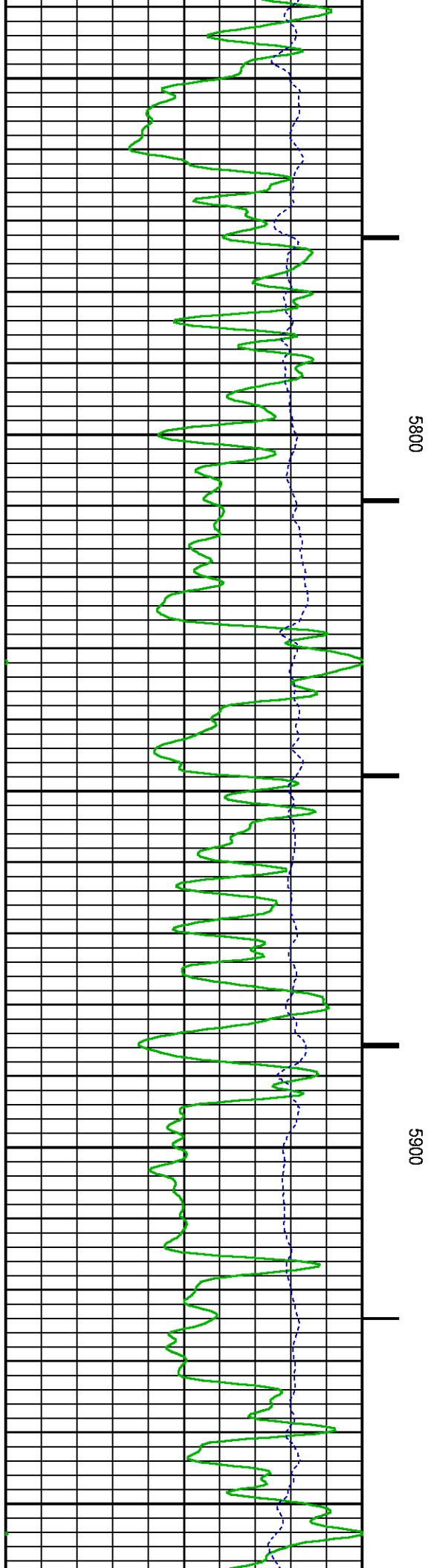


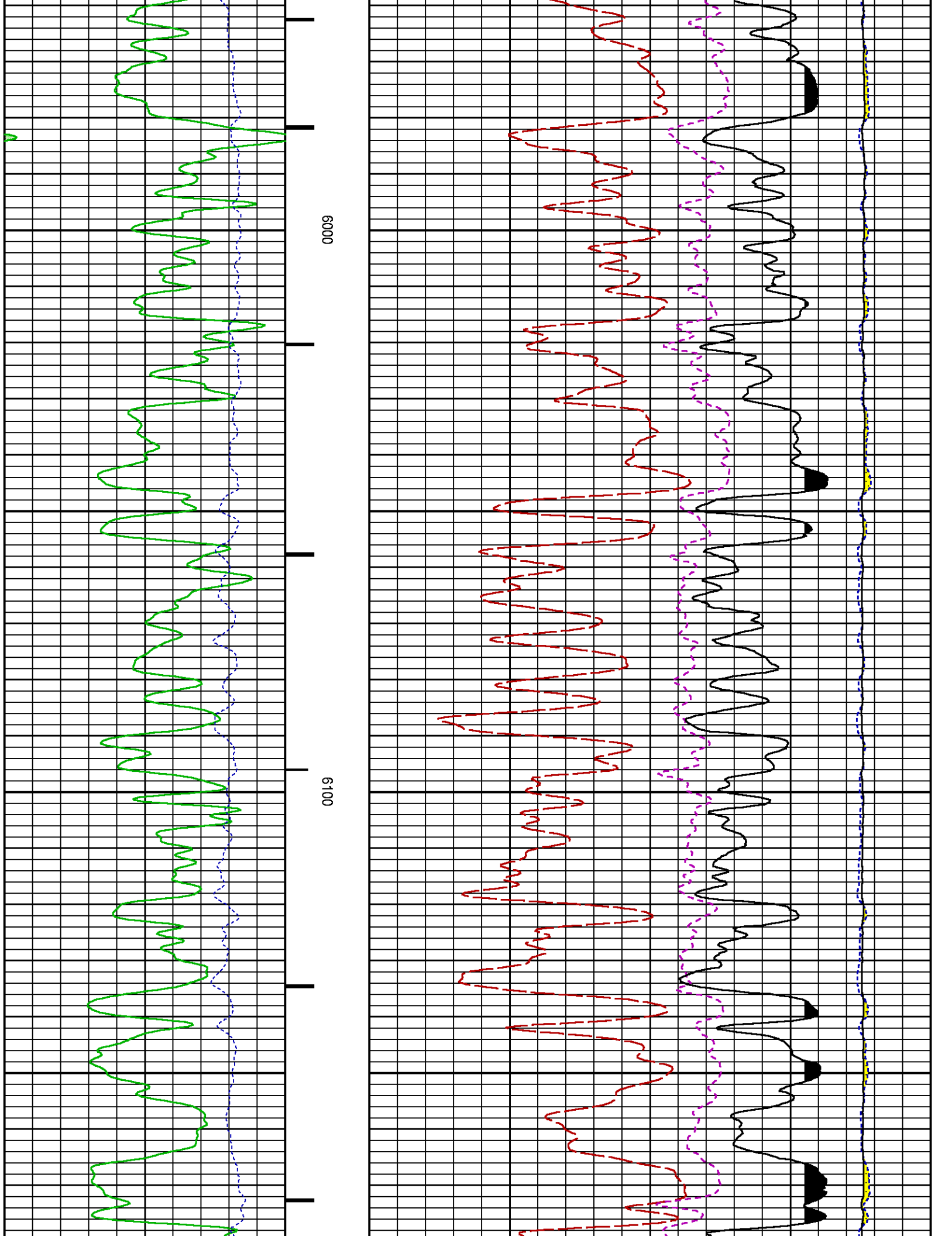


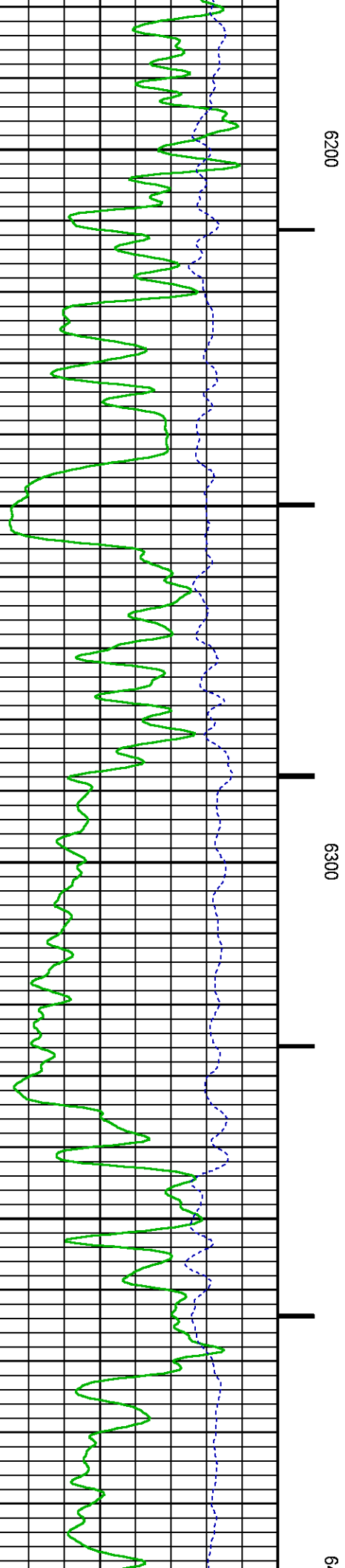
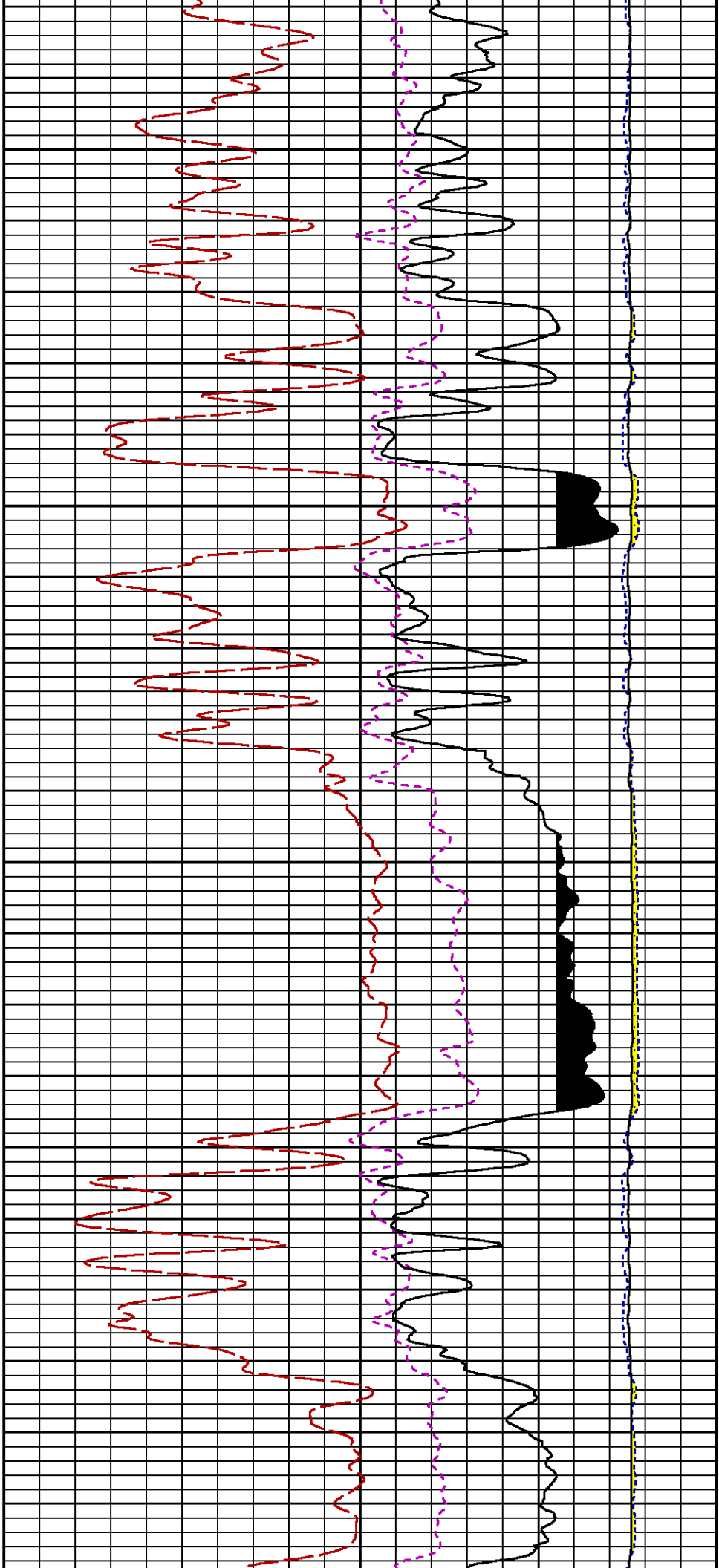


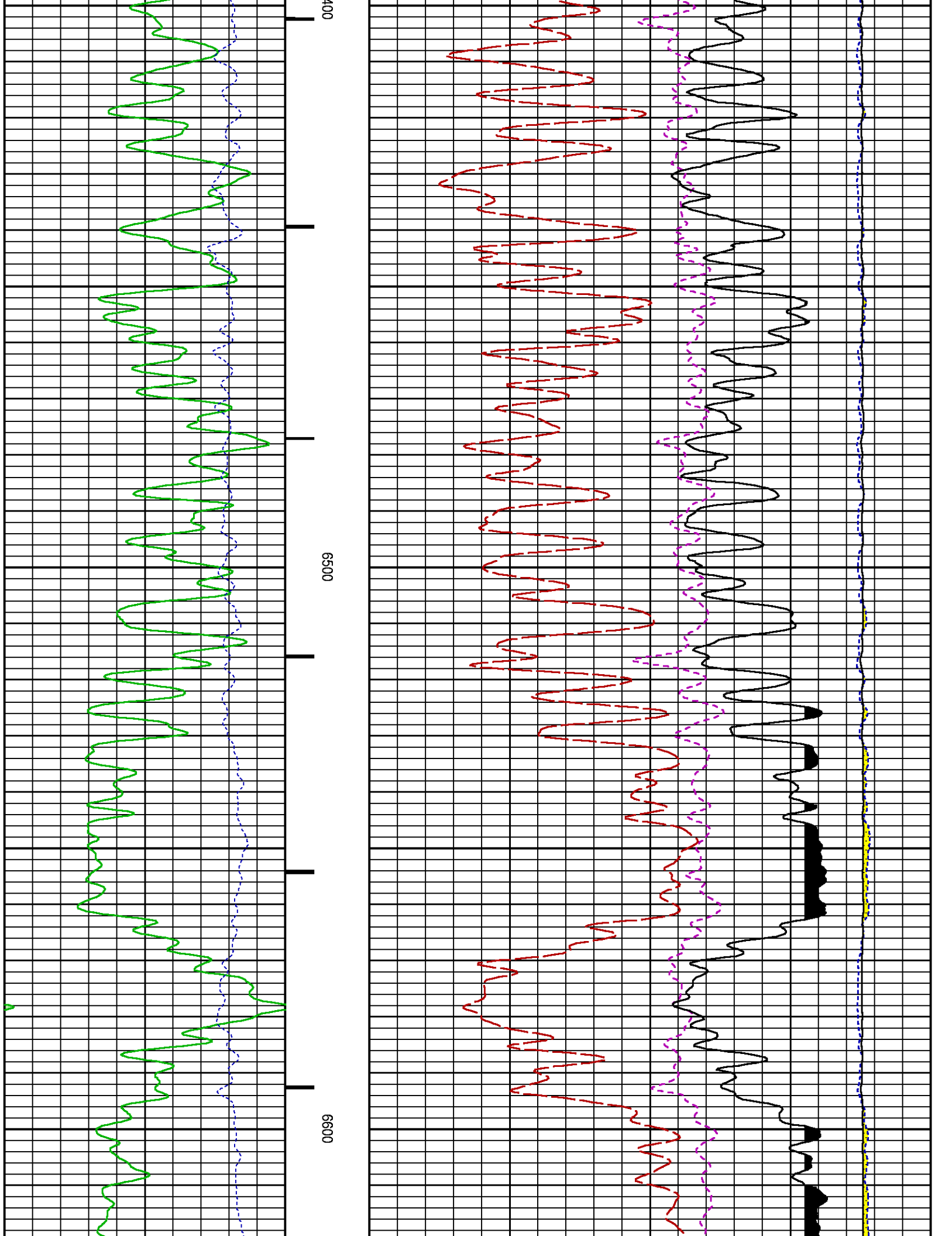




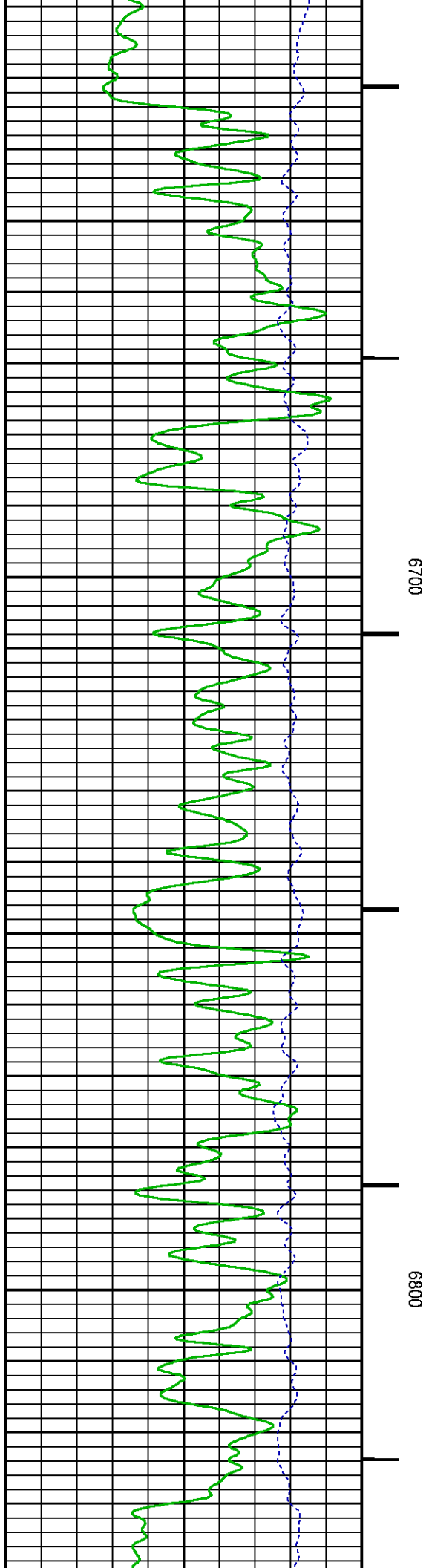
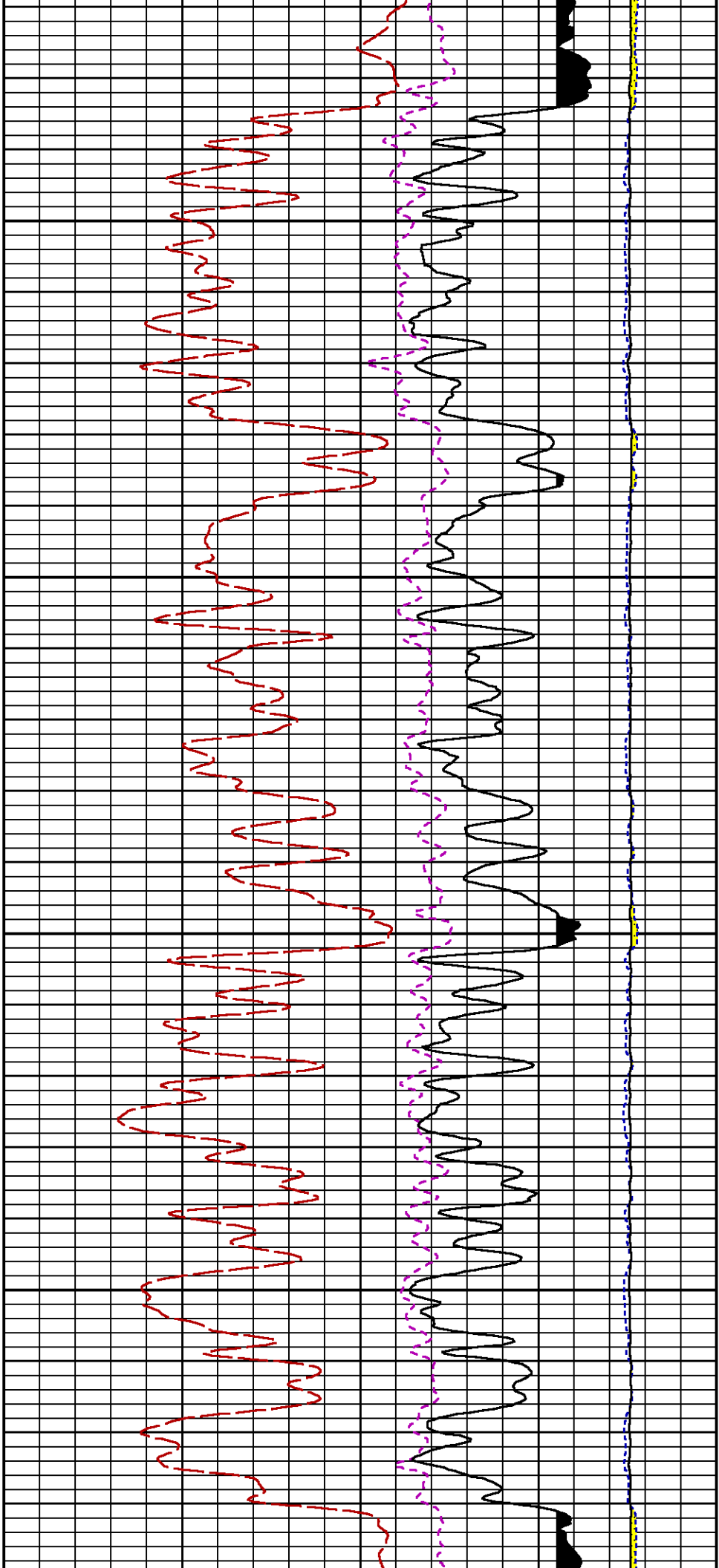


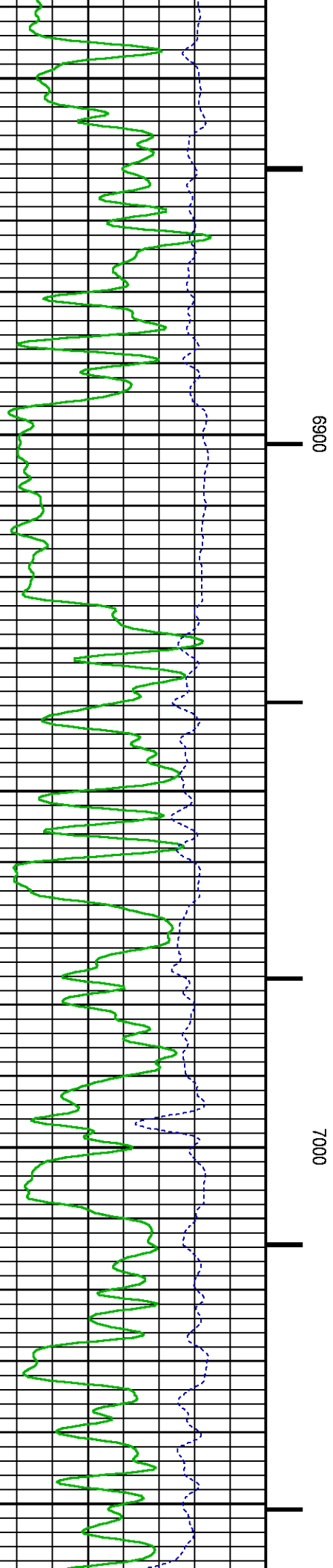
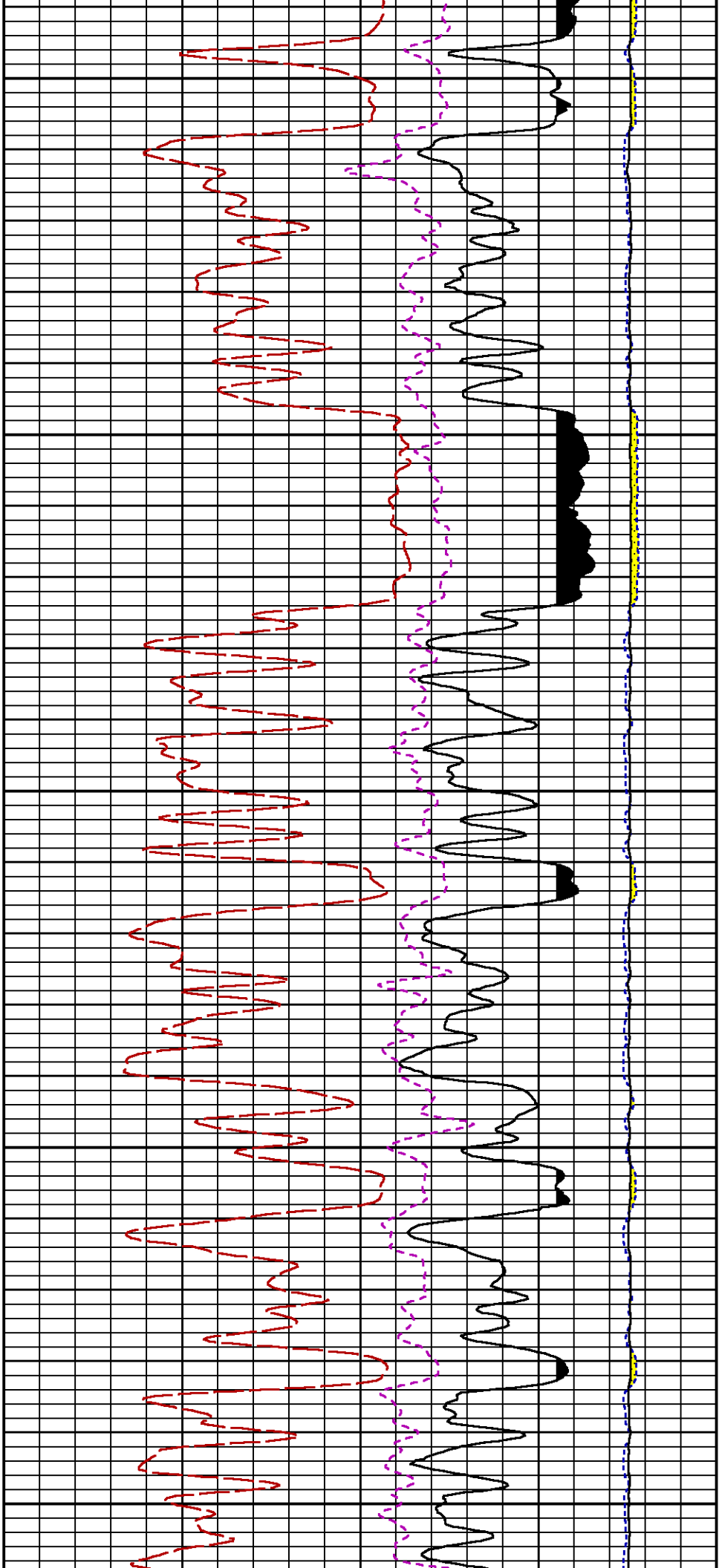


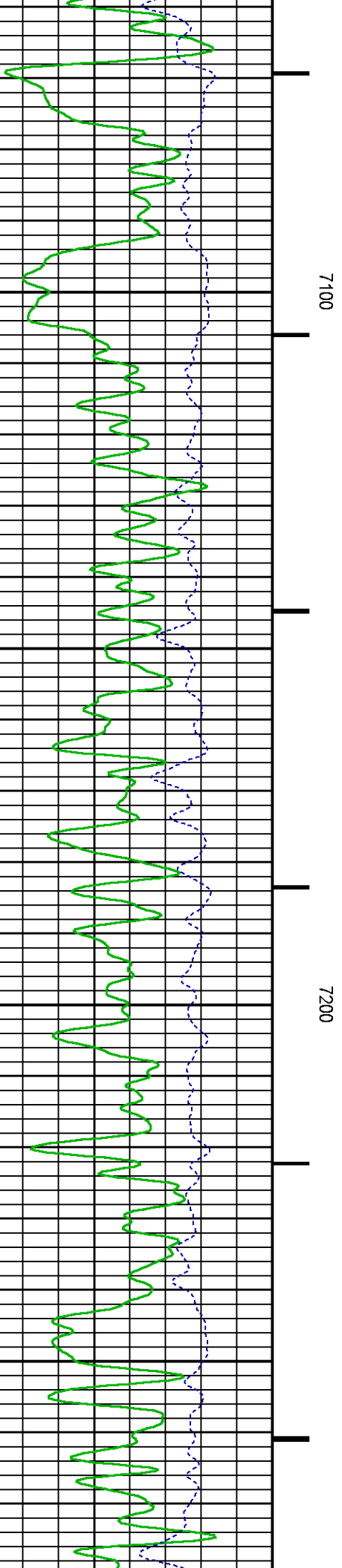
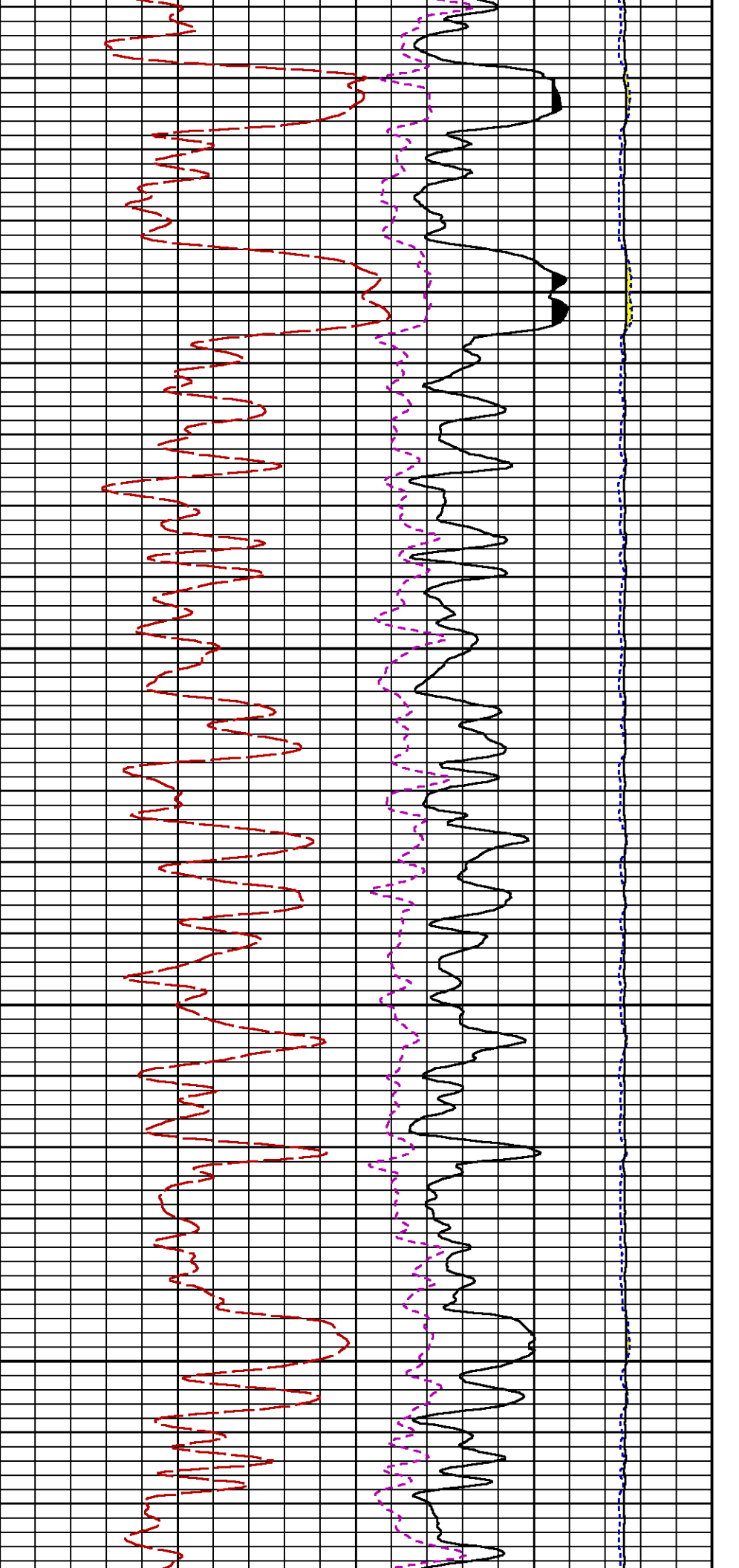


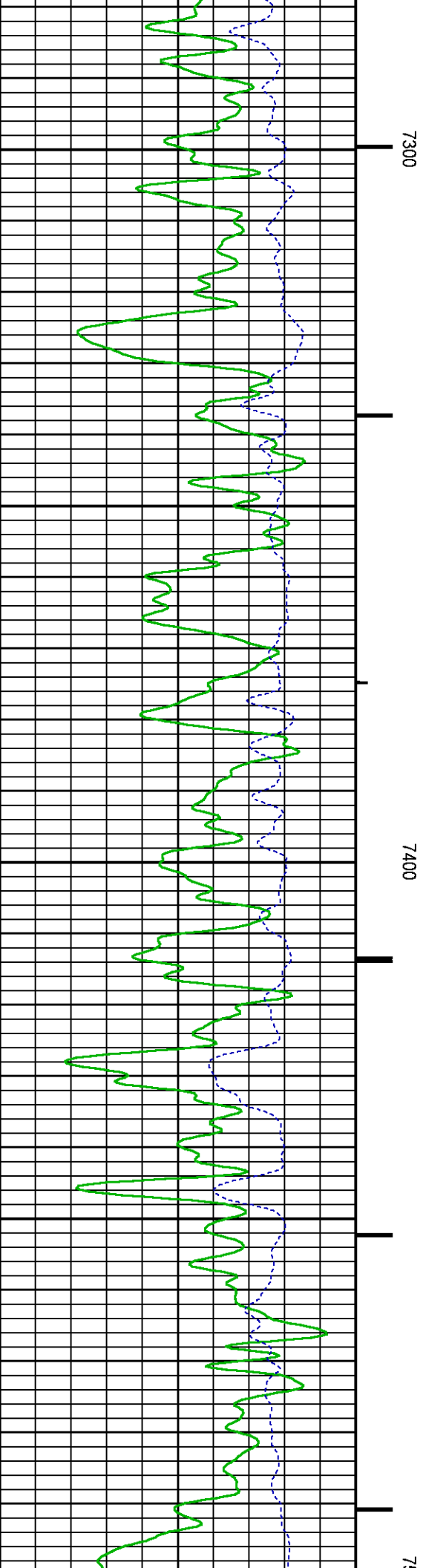
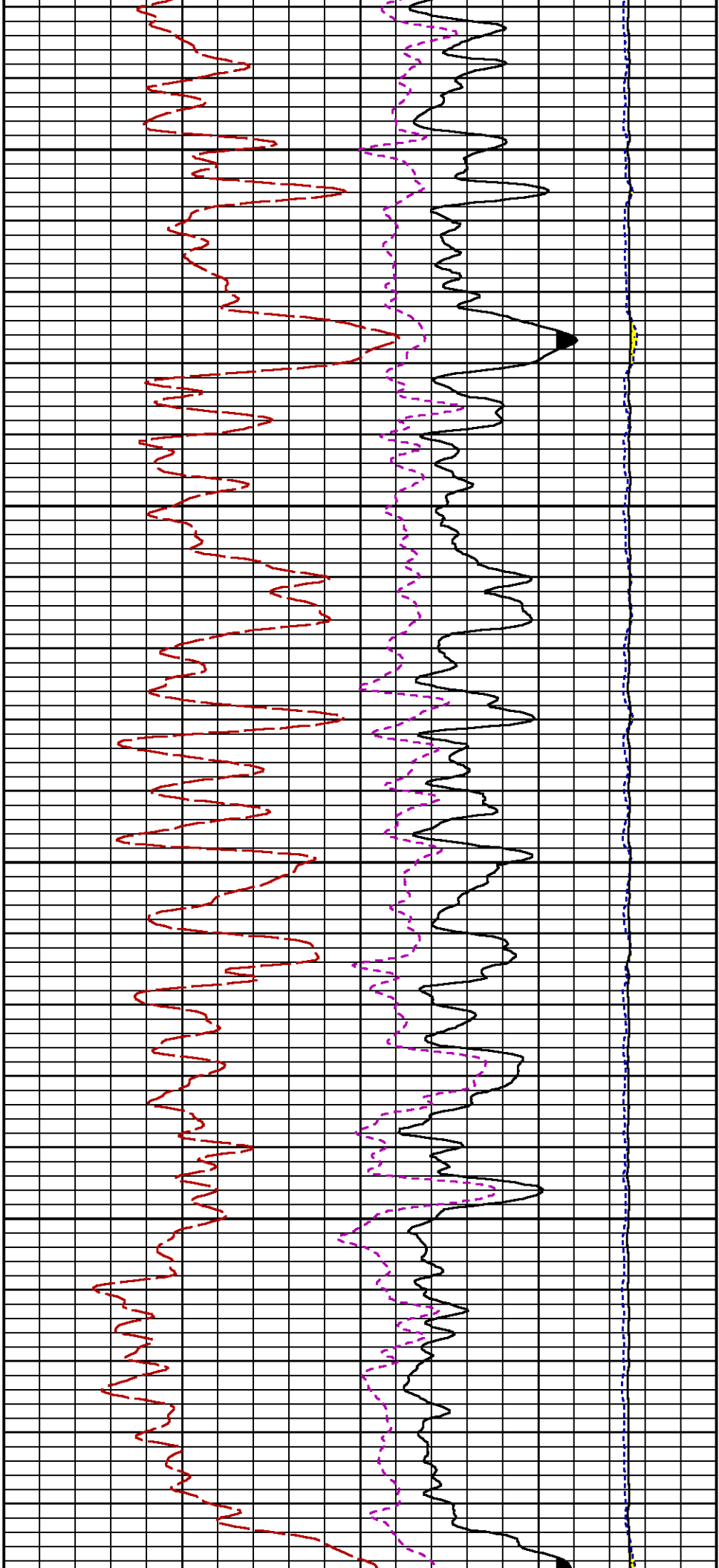


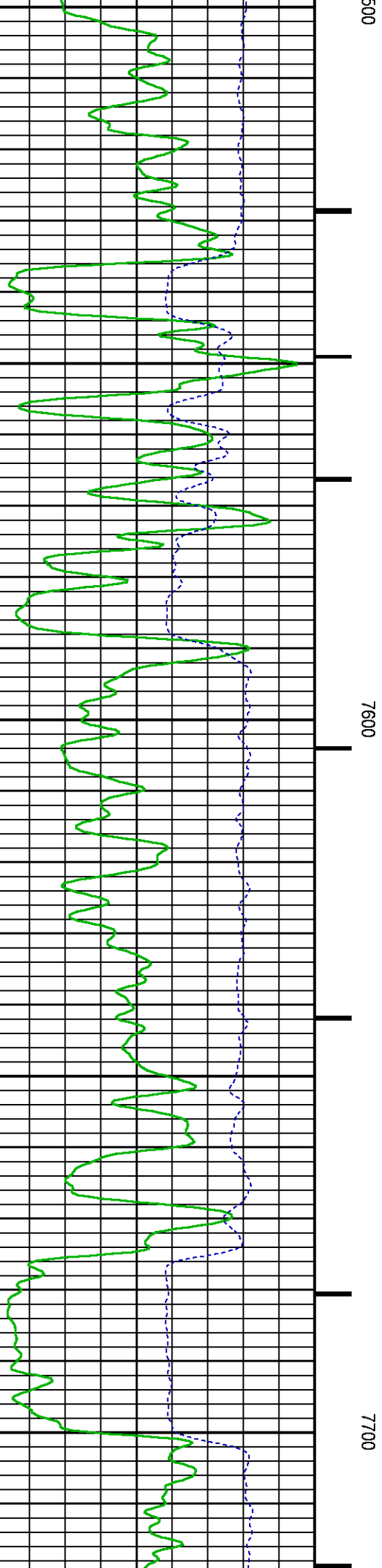
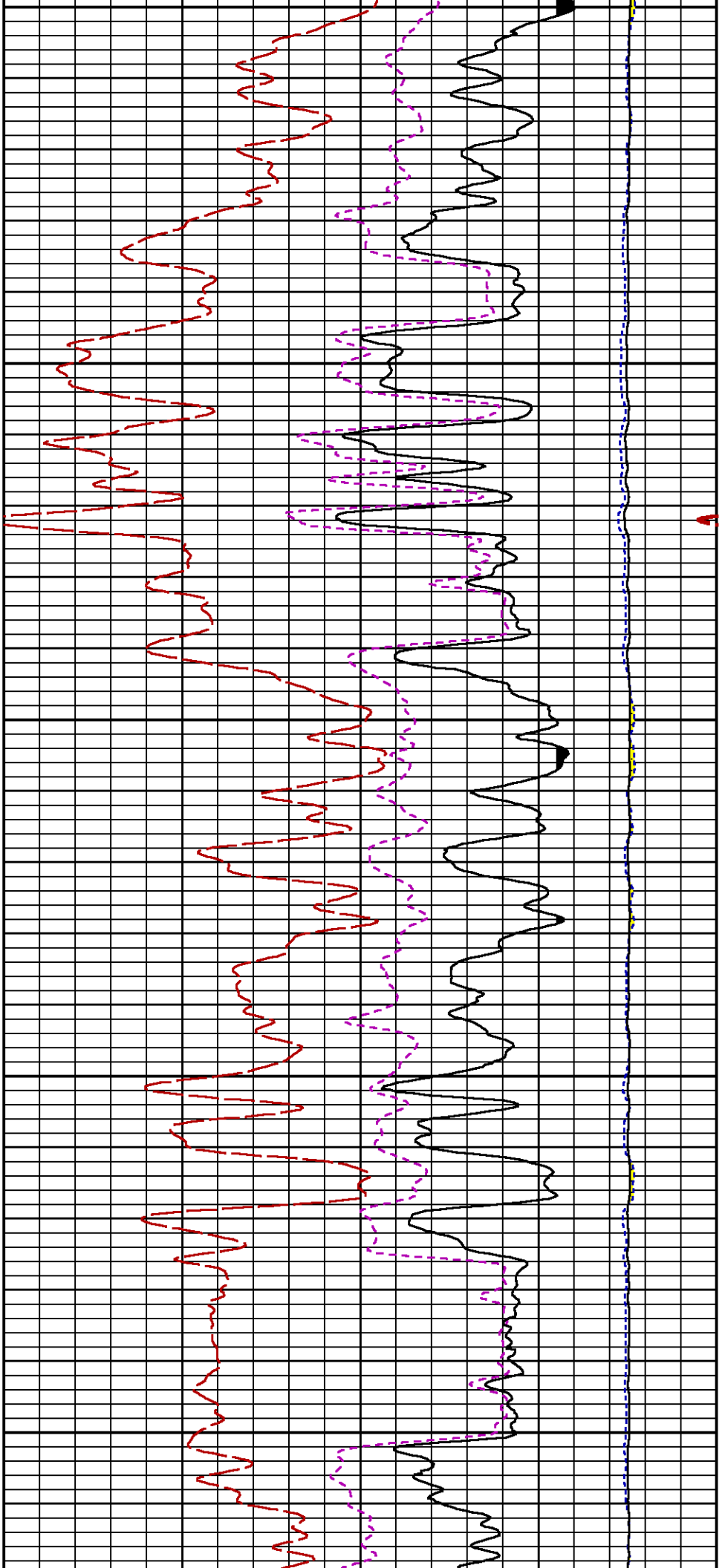


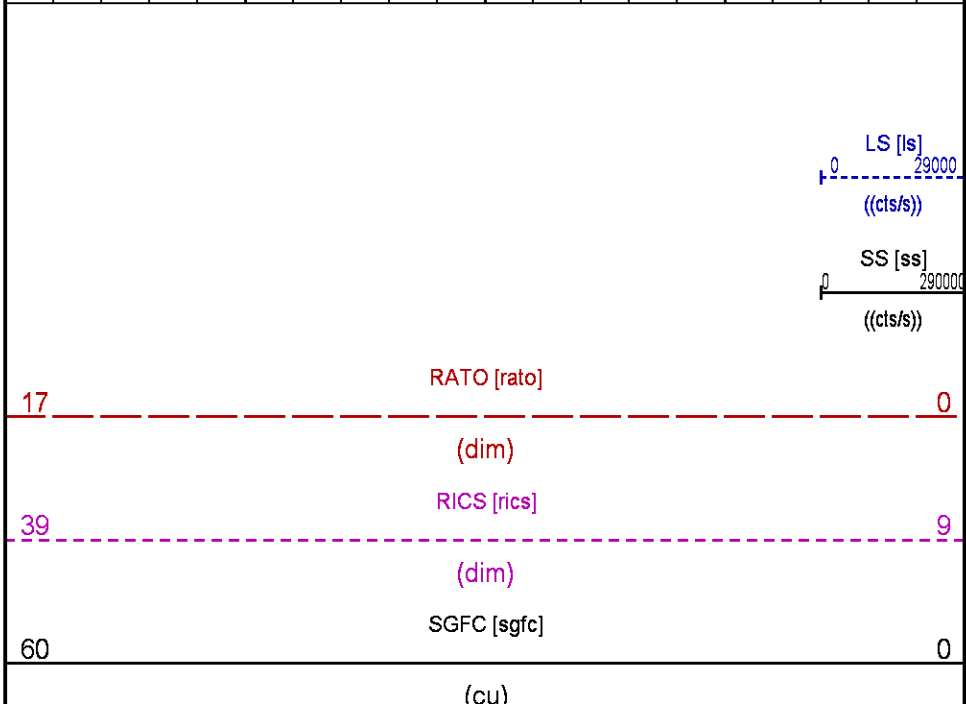
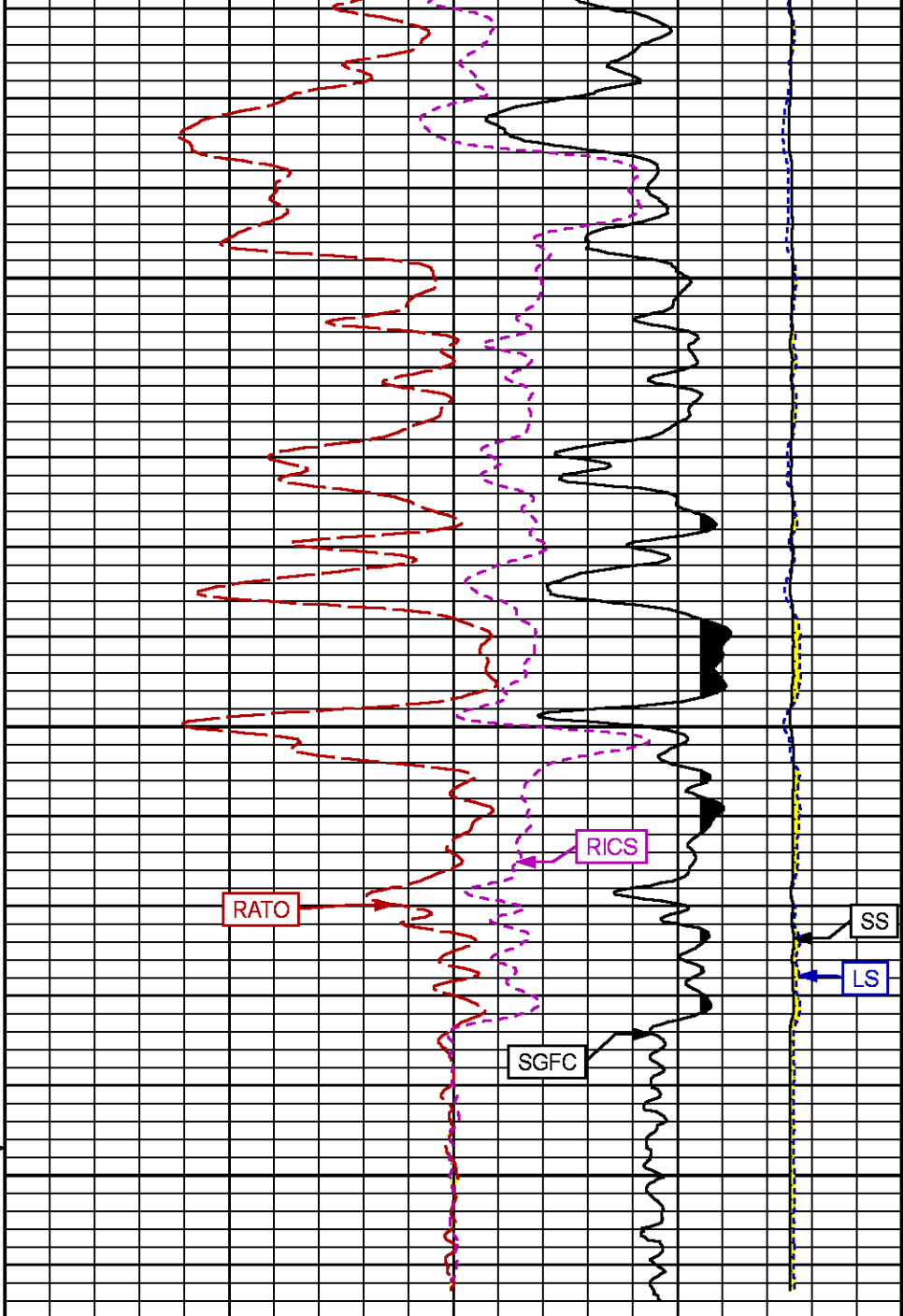
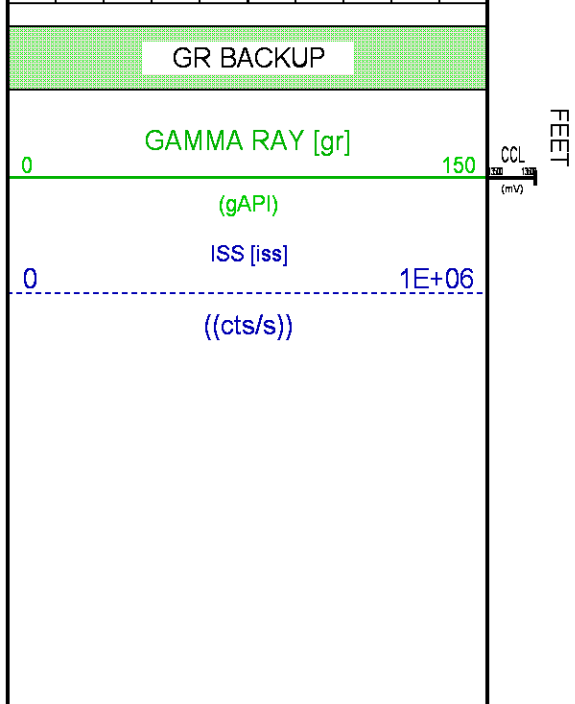
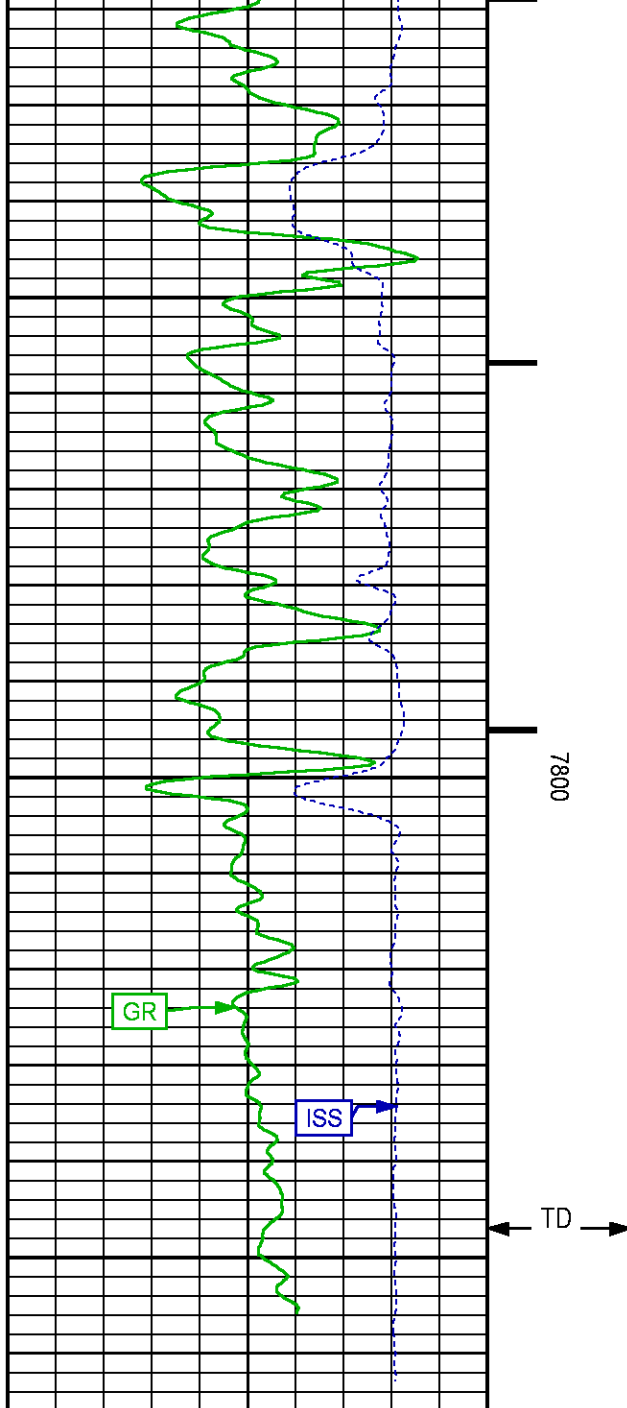












## REPEAT PASS

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

Patches: 3

Plotted: Sat Mar 31 15:44:08 2018

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_30\_17E/p353h01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 5220.642 ft BOTTOM DEPTH: 5450.721 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

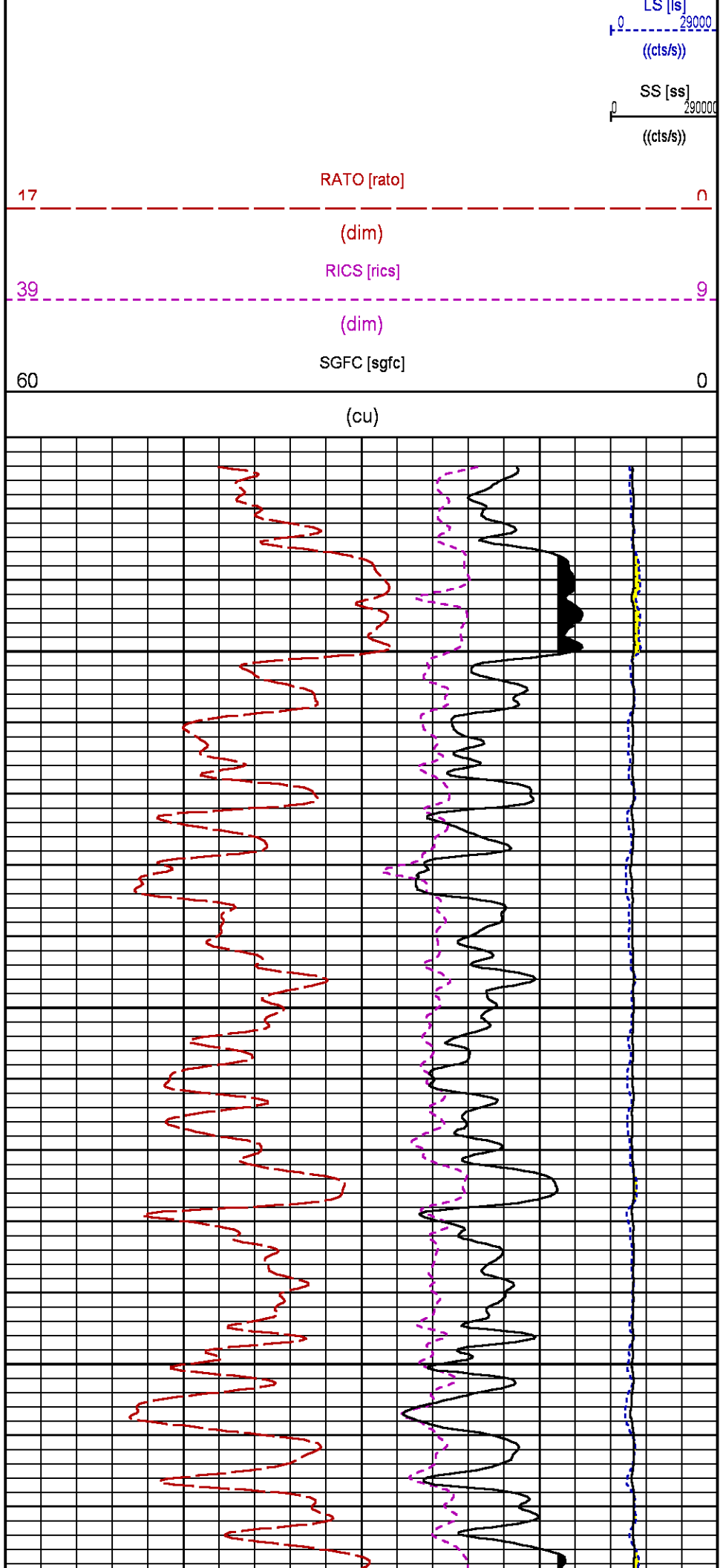
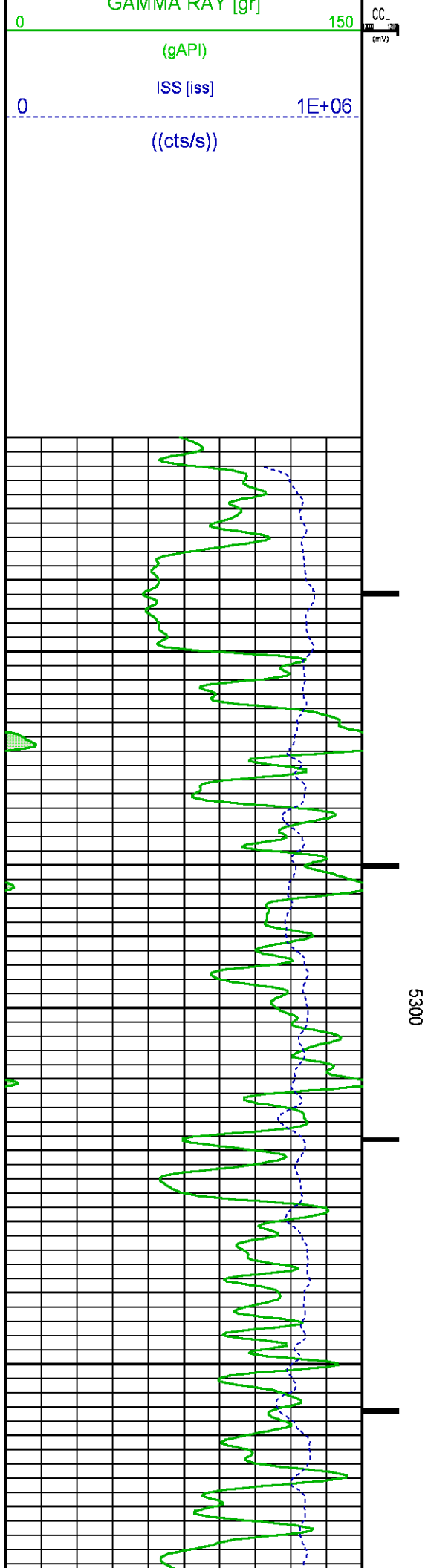
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-26.00	ISS	-12.75	RATO	-12.75	SGFC	-12.75
GR	-23.00	LS	-12.75	RICS	-12.75	SS	-12.75

Presentation : SysA:/dat1a/LARAMIE\_BRUTON\_30\_17E/30-17E\_RPM\_REPEAT.fvpdf [5"/100' Scale]  
Plot Interval : 5220 - 5440 Feet

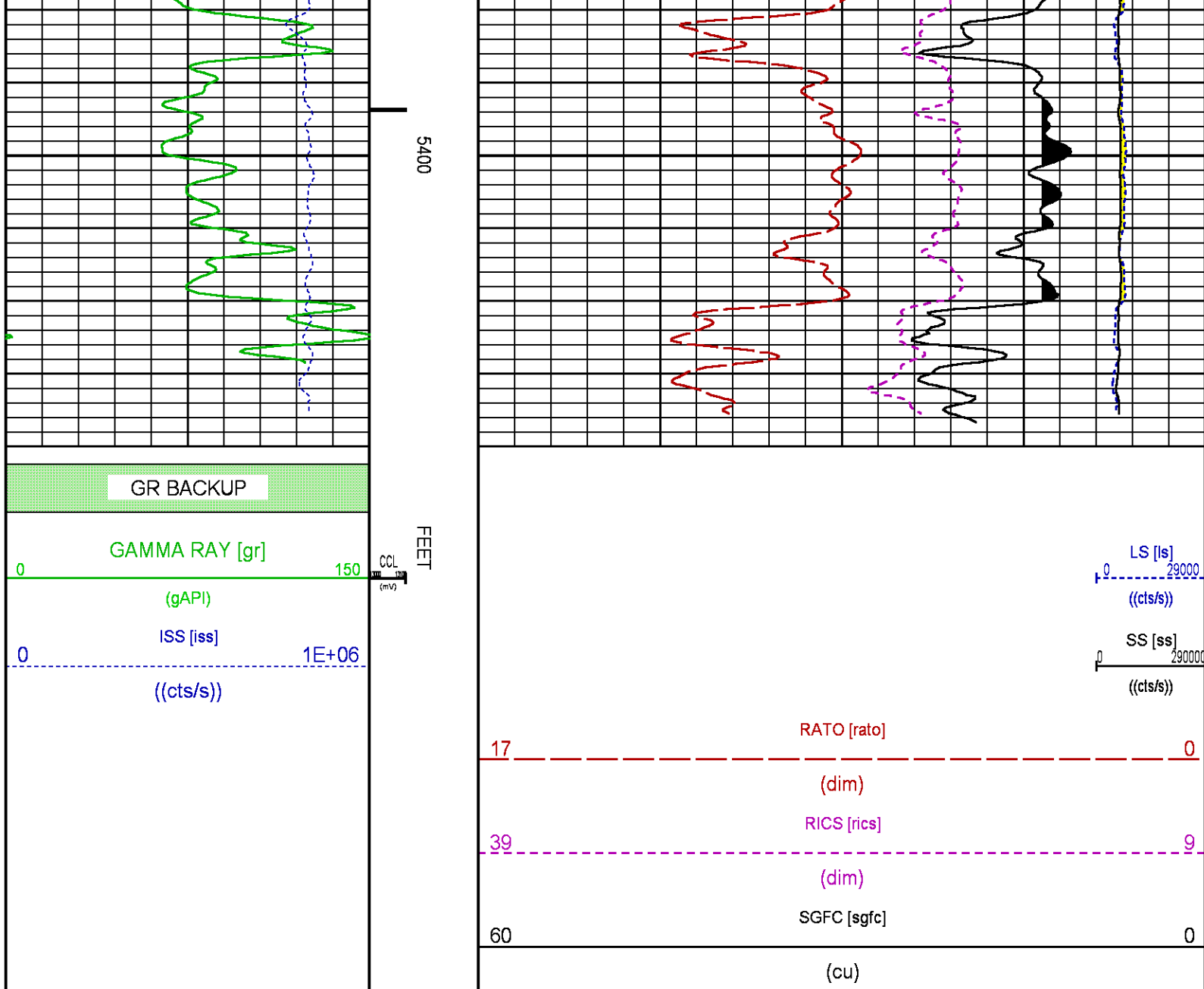
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Created On : N/A  
Company : LARAMIE ENERGY LLC  
Well : BRUTON 30-17E  
Field : VEGA  
File Interval : 5197.5 - 5451.75 Feet  
OCT : p353h

GR BACKUP

FEET







## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE\_BRUTON\_30\_17E/p353h.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10485470

DATE/TIME PERFORMED: Fri Nov 17 17:07:45 2017

UNIT #: 3882TD HL6728

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	77.51	403.02	325.5	0.568	44.05	229.05	185

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10485470

DATE/TIME PERFORMED: Fri Nov 17 17:13:21 2017

UNIT #: 3882TD HL 6728

VERI JIG #: 4702NK DA\_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	78.38	398.71	0.568	44.54	226.60	182.06
						175.00 195.00

## RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10430258

DATE/TIME PERFORMED: Wed Mar 28 19:08:19 2018

UNIT: 5753XD 111111

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10430258

HOURS: 8281AA 19

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	809301	122	2198	2389	2242	108	8.0	0.9715
Interpolated	1300000	143	2176	2381	2236			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	809301	6008	943	130	26.12	0.15	24.24	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	809301	169224	26183	89244	31721	8211	54062	13165
Fit Quality %		0.813	0.977	0.775	0.776	0.762	0.739	0.755

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	809301	1.43	4.78	30.92	14.97	10.87	3.86	4.11
		1.42 1.45	3.55 5.52	22.20 32.70	10.89 16.34	10.06 11.10	3.57 3.95	3.76 4.22
Fit Quality %		0.043	0.140	0.095	0.134	0.015	0.022	0.029
Reduced	1378034	1.43	4.80	31.03	15.01	10.87	3.86	4.11
		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\_17E/RPM-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 : 4.42'

34.08'

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

TEMP MP 1.65'  
PRES 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 30-17E

**FIELD** VEGA

**COUNTY** MESA **STATE** COLORADO

**FILE NO:**

**API NO:**

05077104770000

**LOCATION:**

SHL: 2645' FSL & 1859' FEL

BHL: 1117' FSL & 1341' FEL

**ELEVATIONS:**

KB 7673 FT

DF 7672 FT

GL 7643 FT

**SEC** 30 **TWP** 9S **RGE** 93W

**DATE** 31-Mar-2018