



FILE NO:	COMPANY	LARAMIE ENERGY
API NO:	WELL	BRUTON 19-14E
05077103770000	FIELD	VEGA
	COUNTY	MESA
	STATE	COLORADO
Ver. 4.06	LOCATION:	OTHER SERVICES
	SHL: LAT:39.255232N;LONG:107.806537W	RPM
	BHL: LAT:39.260779N;LONG:107.806983W	
	SEC 19 TWP 9S RGE 93W	
PERMANENT DATUM	GL	ELEVATION
LOG MEASURED FROM	KB	24 FT ABOVE P.D.
DRILL. MEAS. FROM	KB	
		ELEVATIONS:
		KB 7449 FT
		DF 7448 FT
		GL 7425 FT

DATE	22-AUG-2017
RUN	2
TRIP	1
SERVICE ORDER	US126725
DEPTH DRILLER	8064 FT
DEPTH LOGGER	8007 FT
BOTTOM LOGGED INTERVAL	8007 FT
TOP LOGGED INTERVAL	2500 FT
TIME STARTED	07:00
TIME FINISHED	13:00
OPERATOR RIG TIME	6 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	50 FT
LOGGED CEMENT TOP	2330 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	15 FMN
MAX. RECORDED TEMP.	240 DEGF
REFERENCE LOG	BAKER RALGR
REFERENCE LOG DATE	21-AUG-2017
EQUIP. NO.	HL-6670
LOCATION	WOODWARD
RECORDED BY	S. YASSA
WITNESSED BY	MR. CHUCK MALLARY

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 1: *2 OPERATIONS IN WELL*
**OPERATION 2: RPM/GR/CCL**
LOGGED WITH 0 PSI ON WELLHEAD
SJ: 6196' - 6215'
SJ: 7192' - 7210'
CREW: D.HUTCHINSON, J.PENA

EQUIPMENT DATA				
RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.
2	1	TELEMETRY	8250EA/8248EA	10185091/10323398
2	1	GAMMA RAY	8262XA	10485470
2	1	RPM	8281EA	103098716
2	1	RPM	8283PA	10184883
2	1	RPM	8281FA	10315572
2	1	TEMP	8255XA	120516

# G-SAND SECTION PNC 3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
 Updates: 1 Patches: 9

Plotted: Tue Aug 22 13:57:16 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_19\_14E/RPM3D03.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 2497.000 ft BOTTOM DEPTH: 3163.883 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	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

## CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 22 13:10:22 2017	CASING COLLAR LOCATOR
F1:GR	Aug 22 13:10:22 2017	GAMMA RAY
F1:ISS	Aug 22 13:10:22 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 22 13:10:22 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 22 13:10:22 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 22 13:10:22 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 22 13:10:22 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 22 13:10:22 2017	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 : cpu100:BRUTON\_19\_14E\_RPM\_GSAND.fvpdf [5"/100' Scale]  
 Plot Interval : 2471.25 - 3153.25 Feet

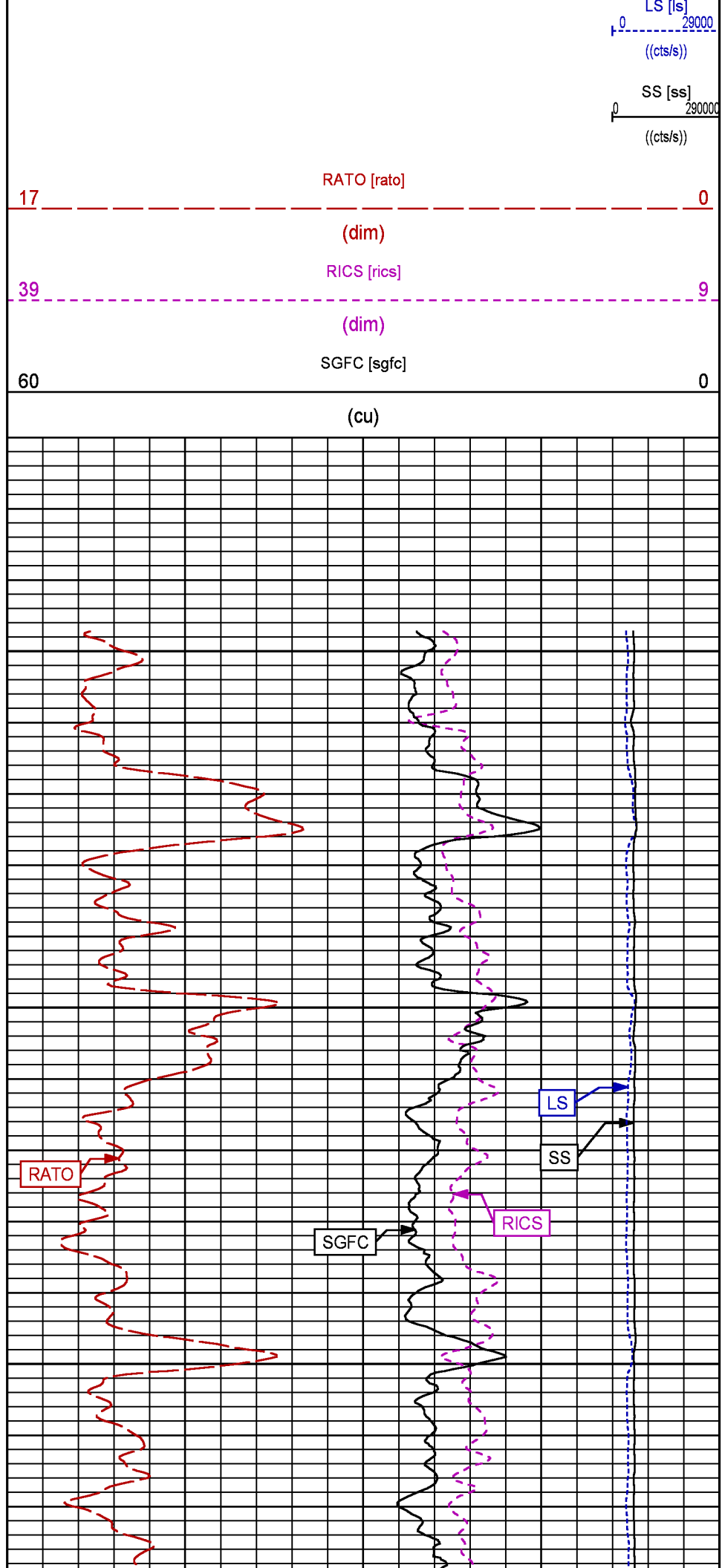
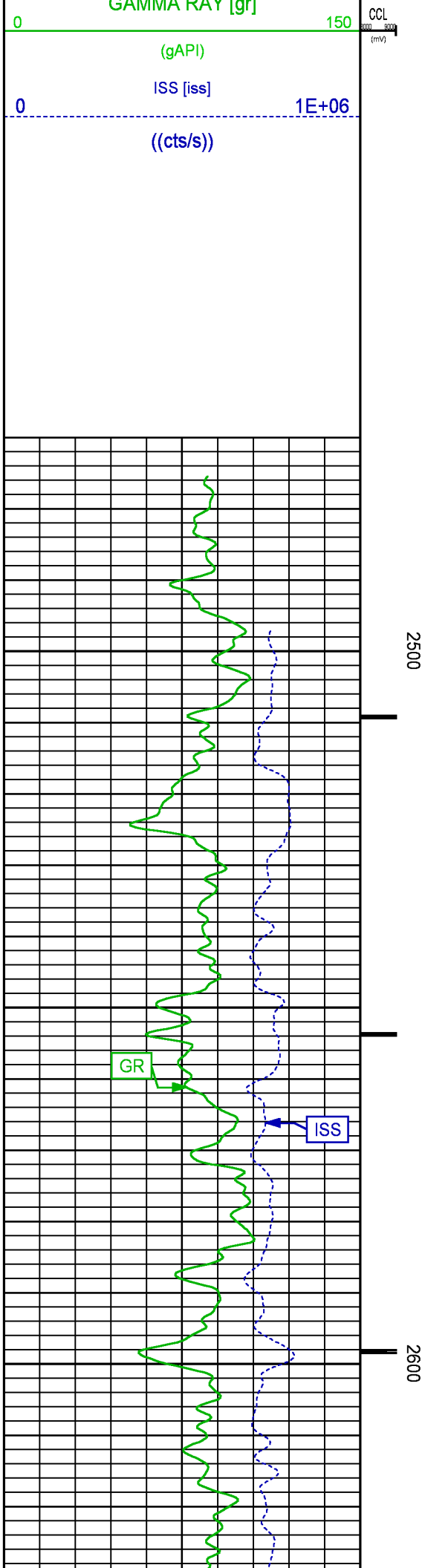
Data File 1 : F1 : cpu100:/dat1a/LARAMIE\_BRUTON\_19\_14E/BRUTON\_19\_14E\_RPM\_GSAND.xtf  
 Created On : Aug 22 13:10:22 2017  
 Company : LARAMIE ENERGY  
 Well : BRUTON 19-14E  
 Field : MESA  
 File Interval : 2470.5 - 3162 Feet  
 OCT : RPM3D

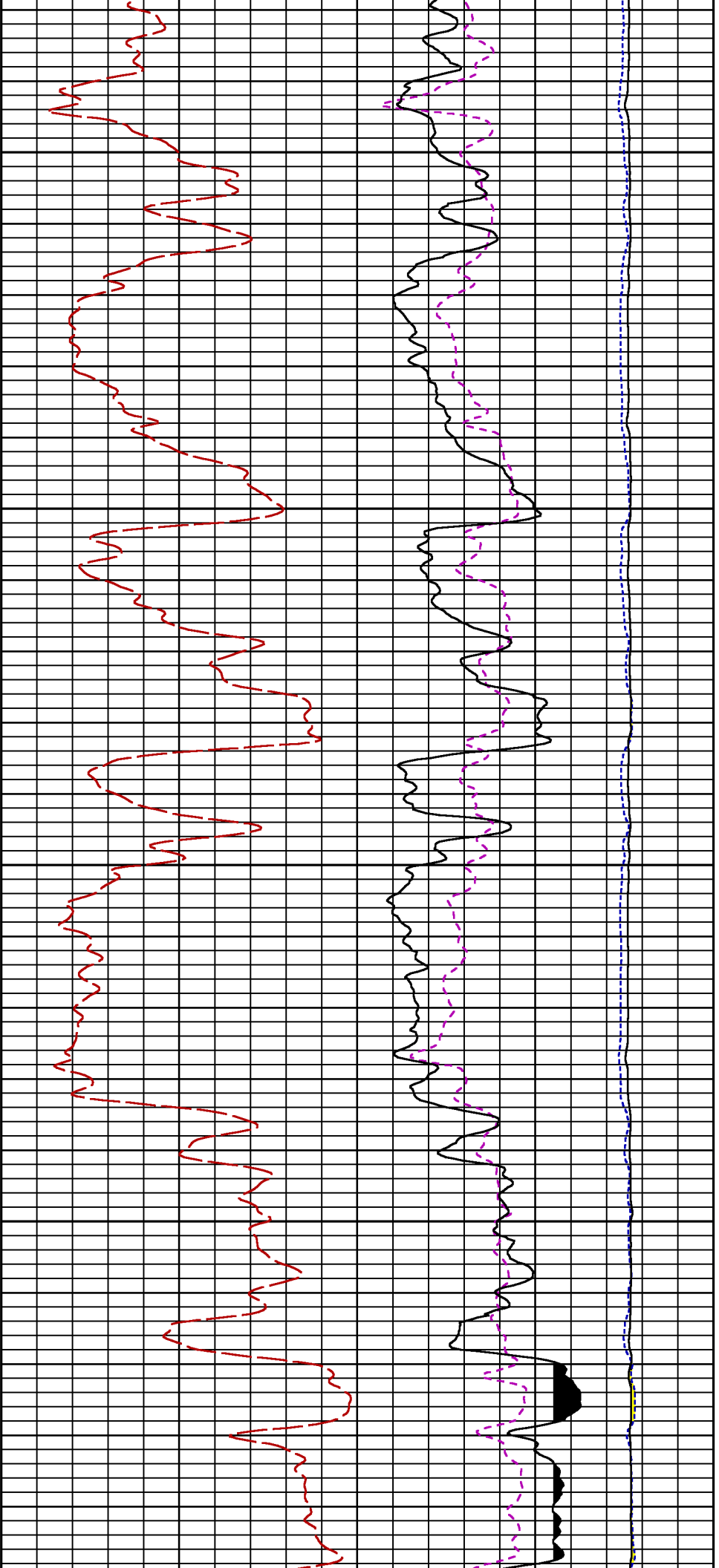
GR BACKUP

FEET

GAMMA RAY [ft]

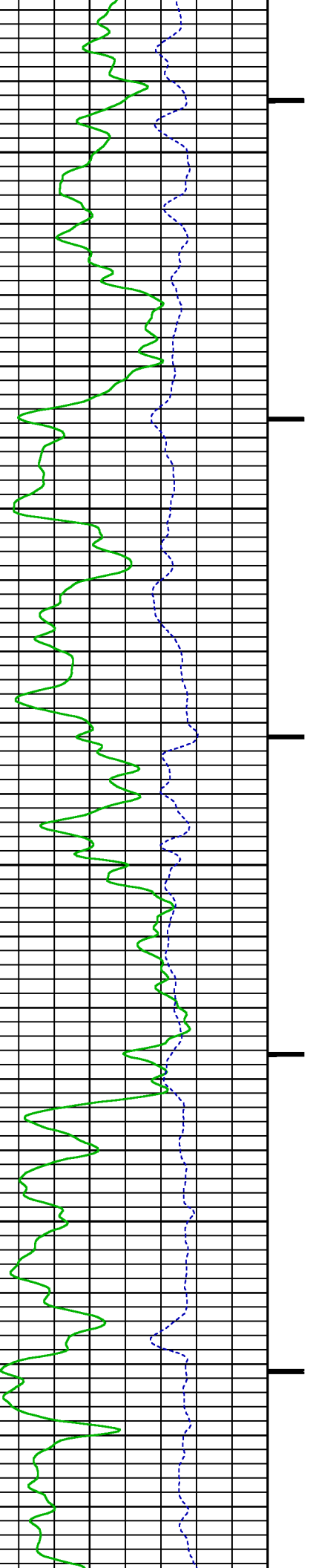
10000

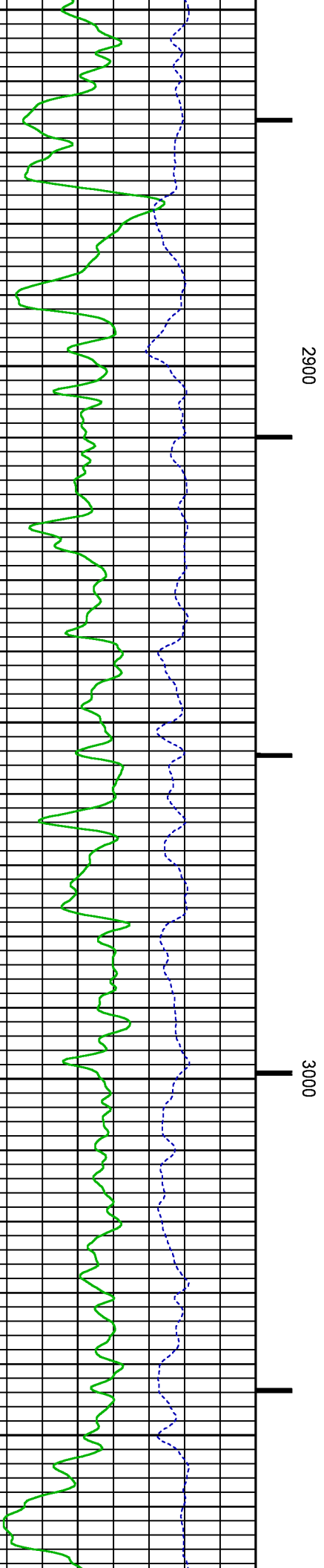
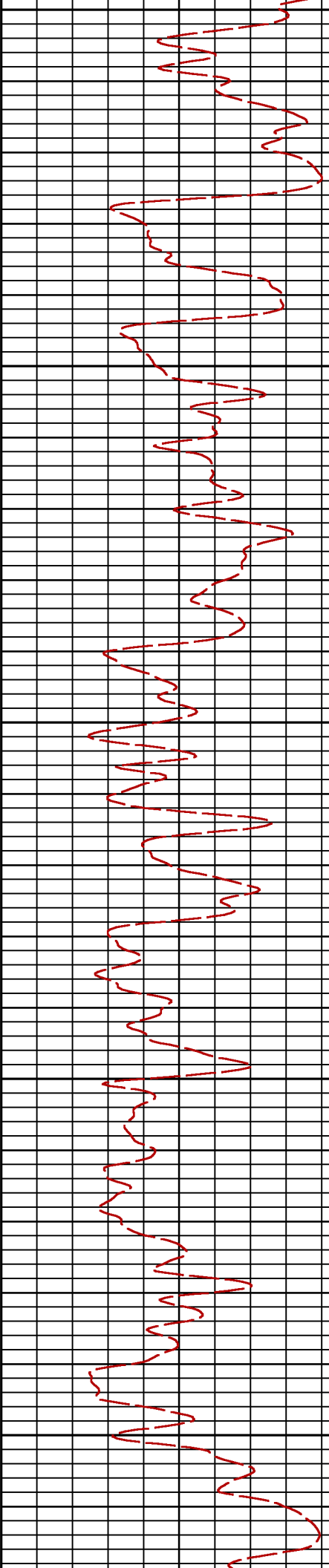
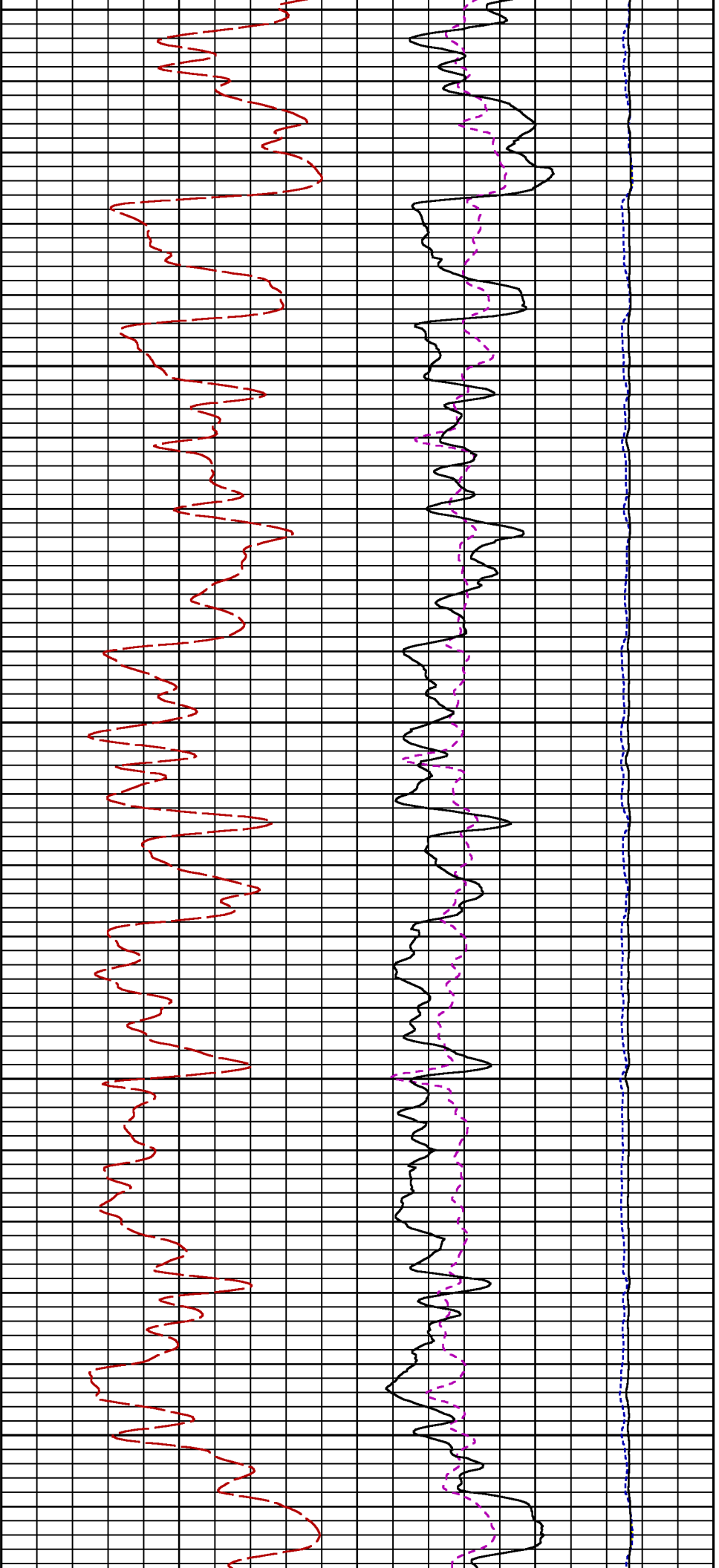


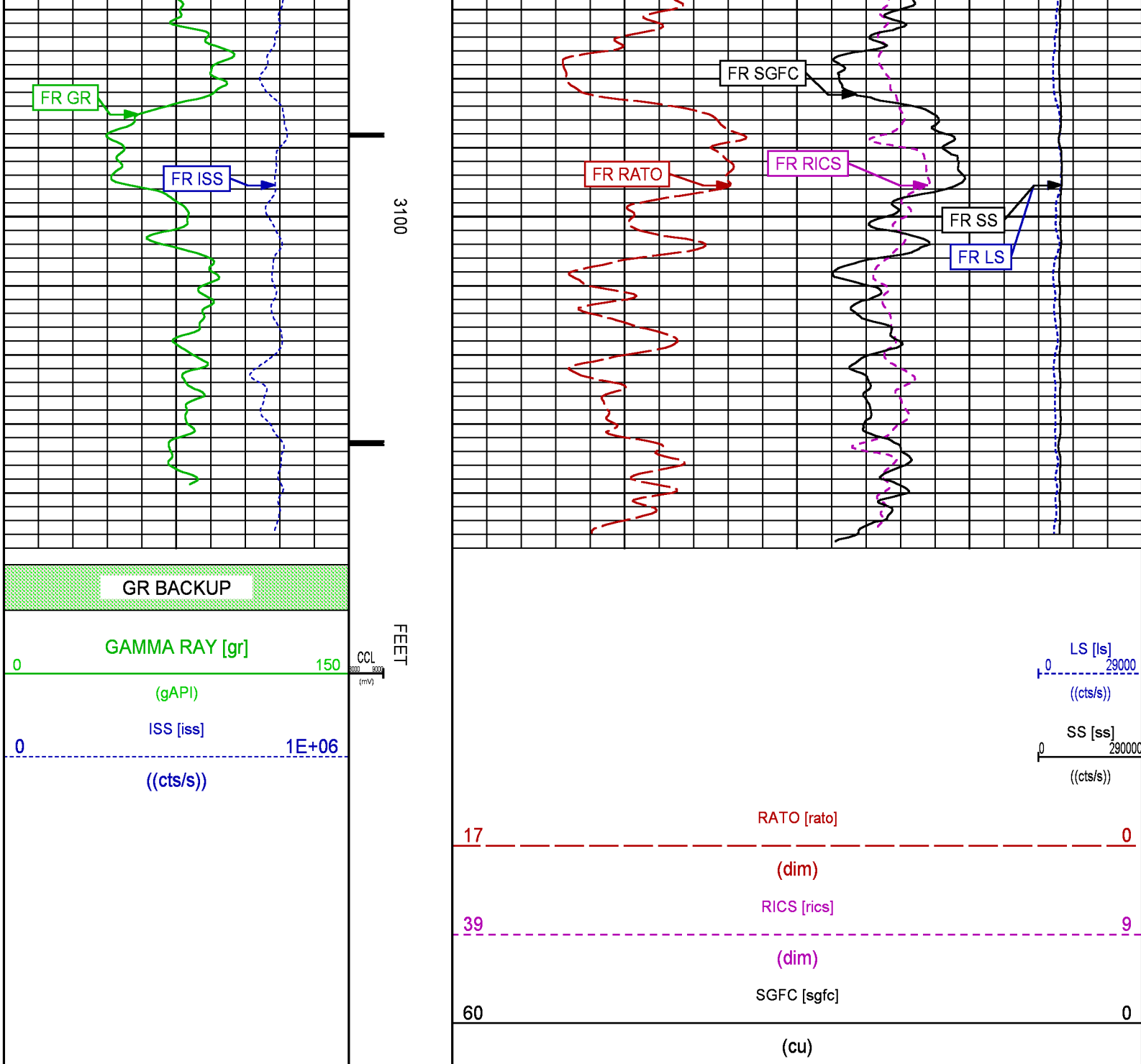


2700

2800







## MAIN PASS PNC-3D MODE

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

Updates: 1 Patches: 9

Plotted: Tue Aug 22 13:08:13 2017

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE\_BRUTON\_19\_14E/RPM3D02.prm

LOGGING MODE: DEPTH

DIRECTION: UP

TOP DEPTH: 4323.250 ft

BOTTOM DEPTH: 8021.500 ft

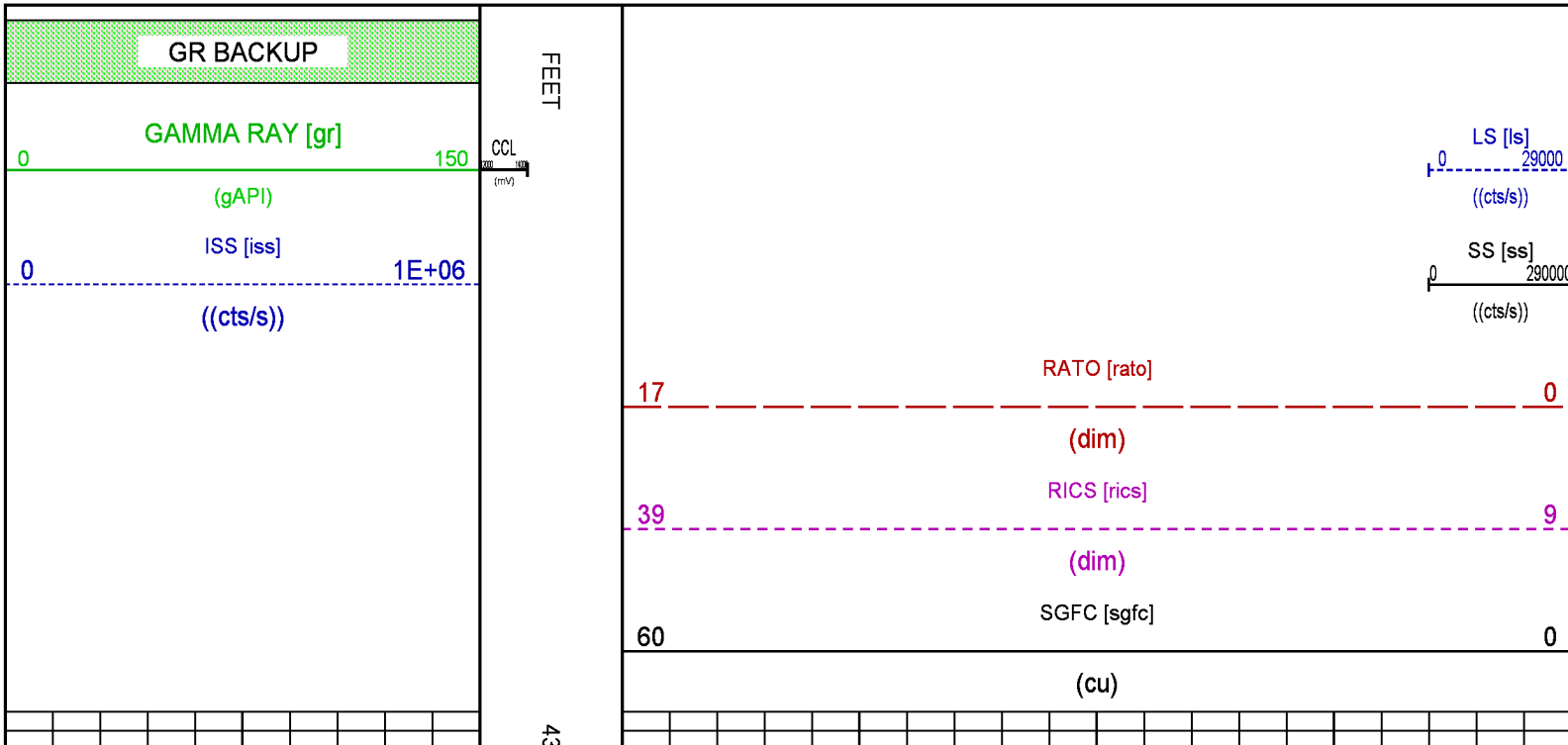
SYMMETRIC FILTER				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM

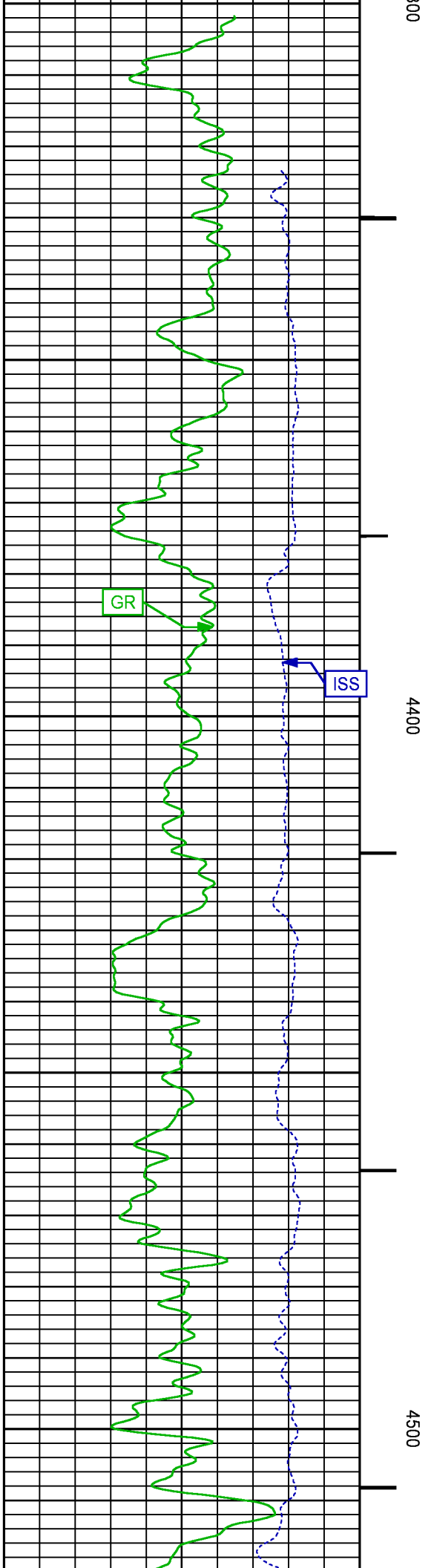
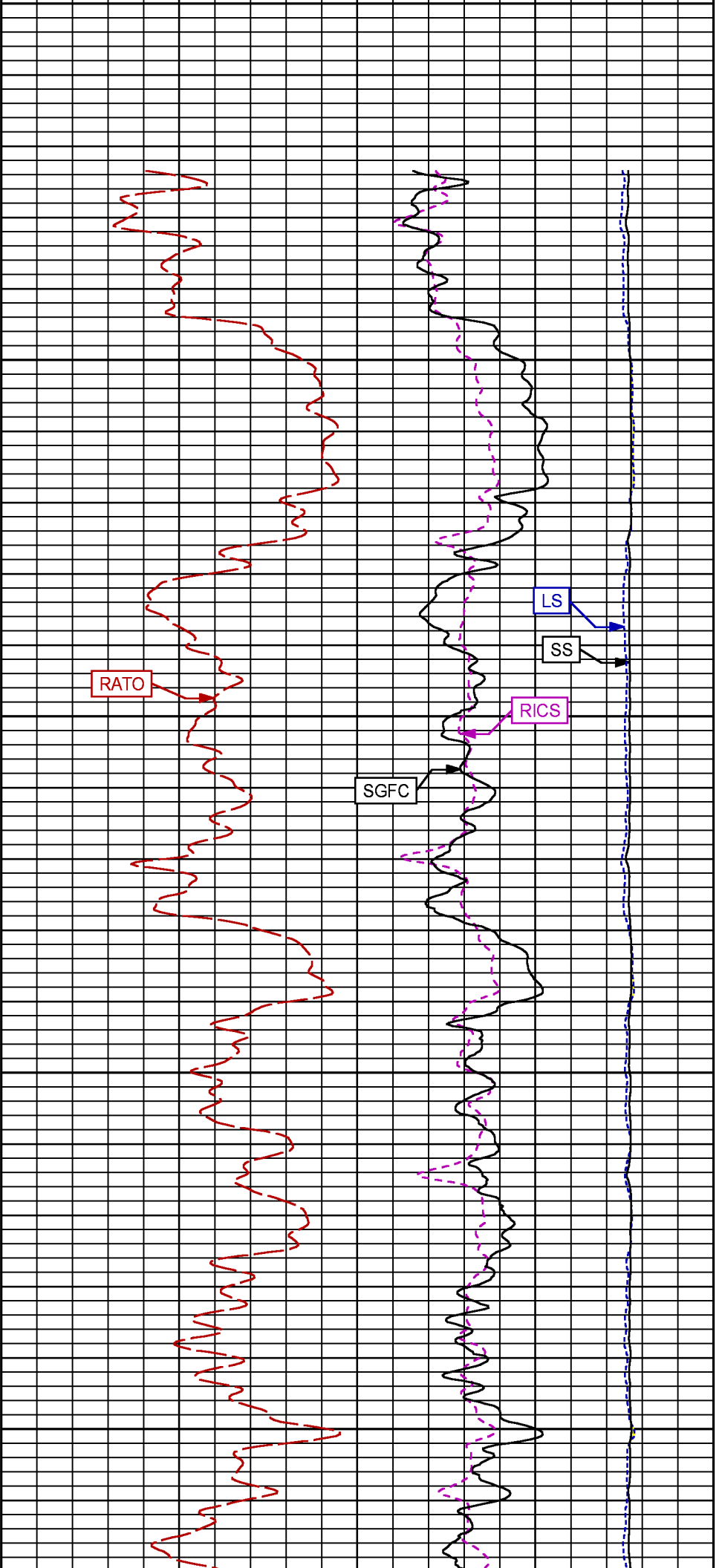
RPM PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP
	OPEN/CASED HOLE	CASED HOLE		BOTTOM
	BOREHOLE SIZE	7.88	in	"
	CASING SIZE	4.50	in	"
	MATRIX	SANDSTONE		"
	CORRECTION BUFFER	11		"

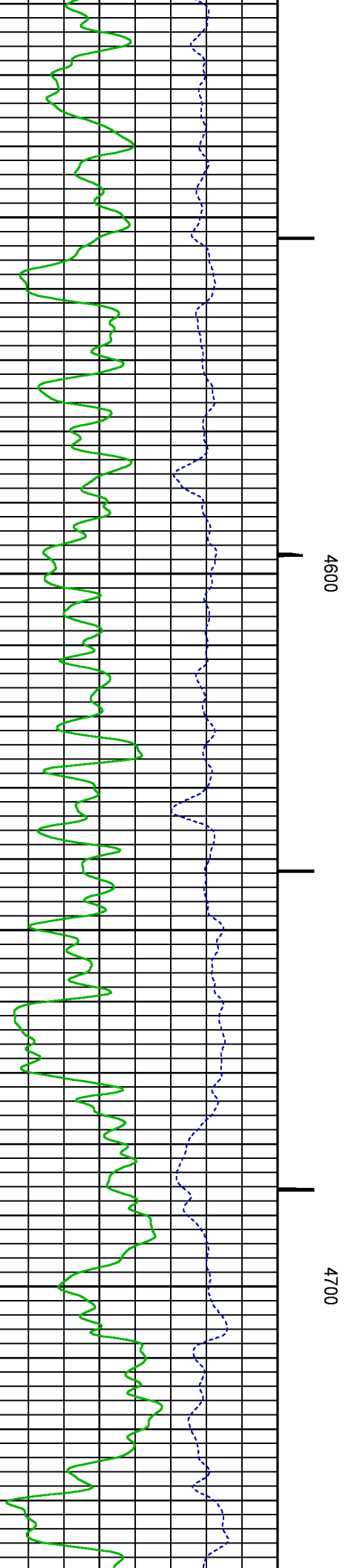
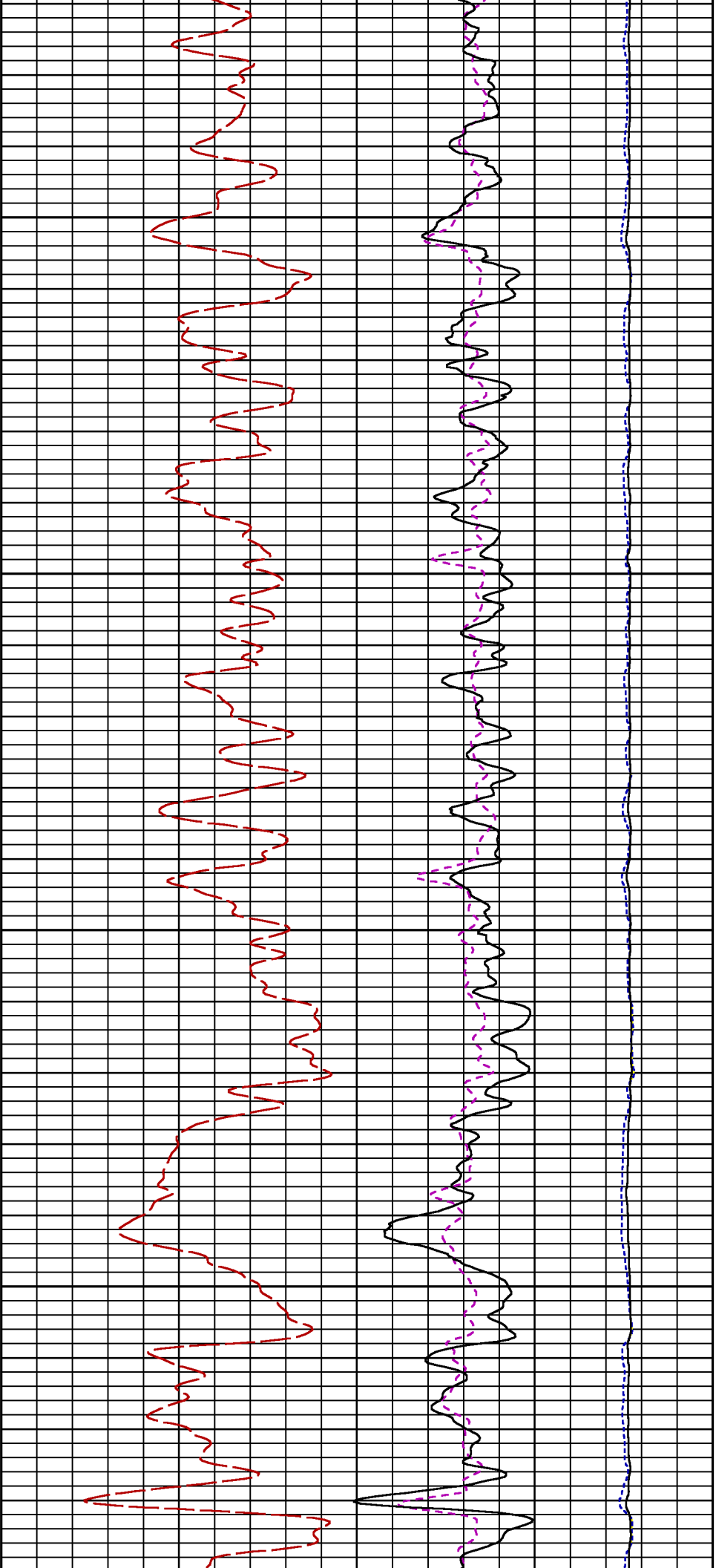
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 22 09:04:43 2017	CASING COLLAR LOCATOR
F1:GR	Aug 22 09:04:43 2017	GAMMA RAY
F1:ISS	Aug 22 09:04:43 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 22 09:04:43 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 22 09:04:43 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 22 09:04:43 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 22 09:04:43 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 22 09:04:43 2017	SHORT SPACE COUNT RATE

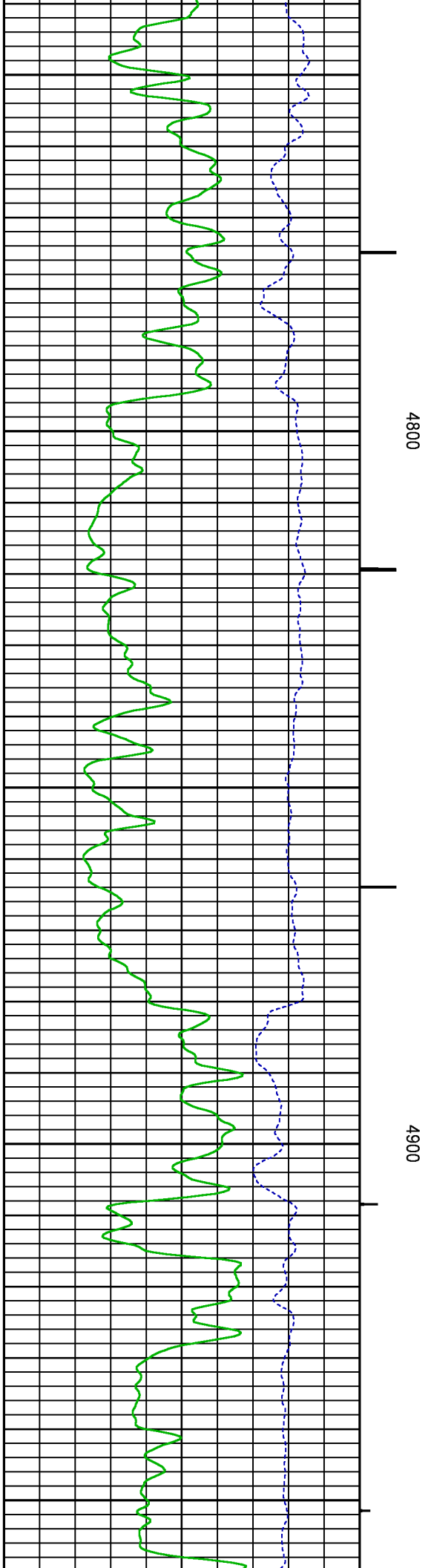
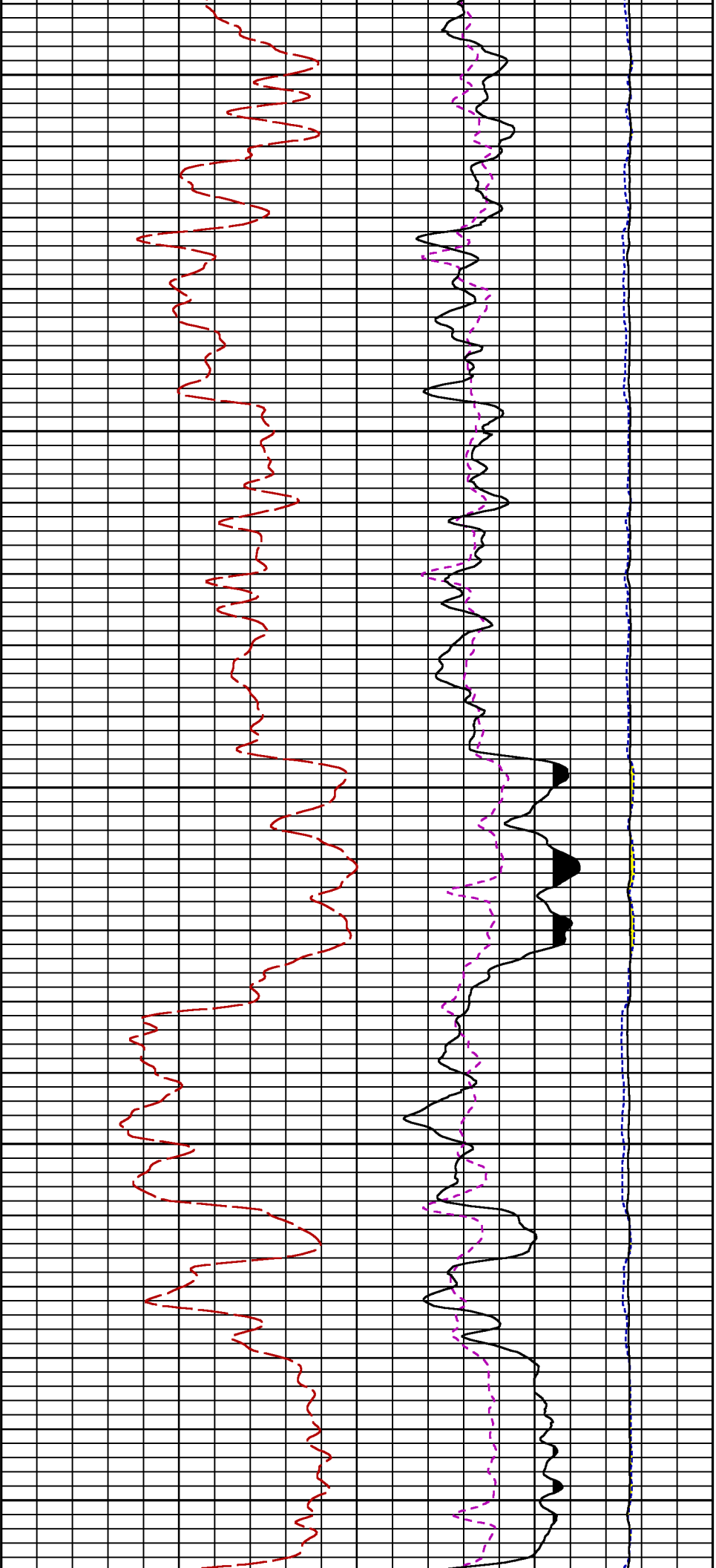
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

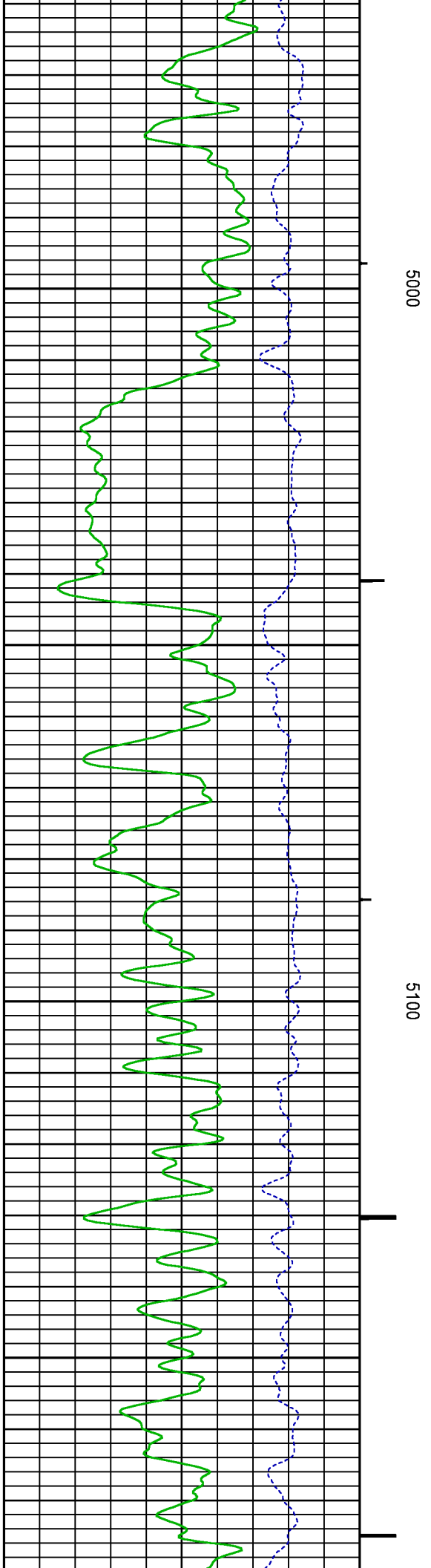
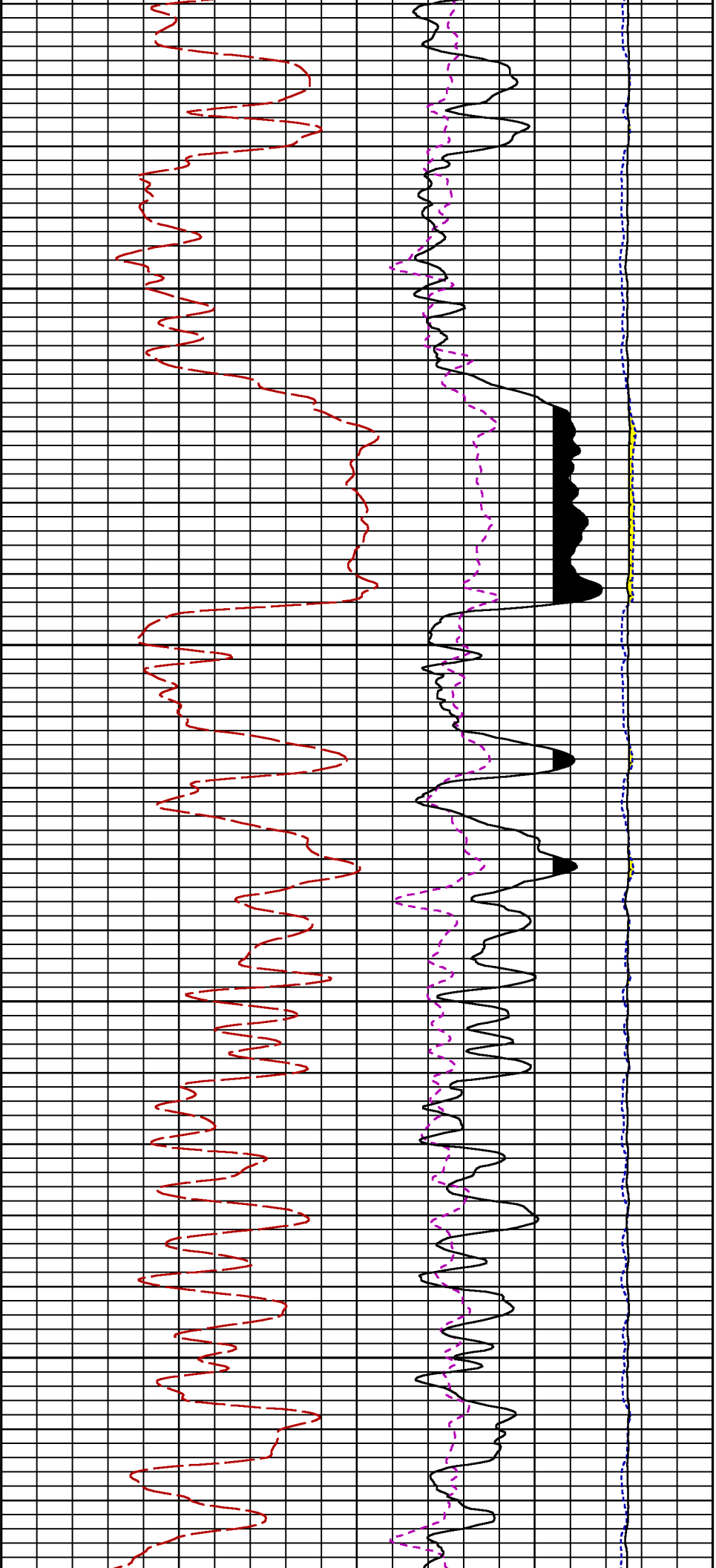
Presentation	: cpu100:BRUTON_19_14E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 4297.5 - 8012 Feet
Data File 1	: F1 : cpu100:/dat1a/LARAMIE_BRUTON_19_14E/BRUTON_19_14E_RPM_MAIN.xtf
Created On	: Aug 22 09:04:43 2017
Company	: LARAMIE ENERGY
Well	: BRUTON 19-14E
Field	: MESA
File Interval	: 4296.75 - 8020.75 Feet
OCT	: RPM3D

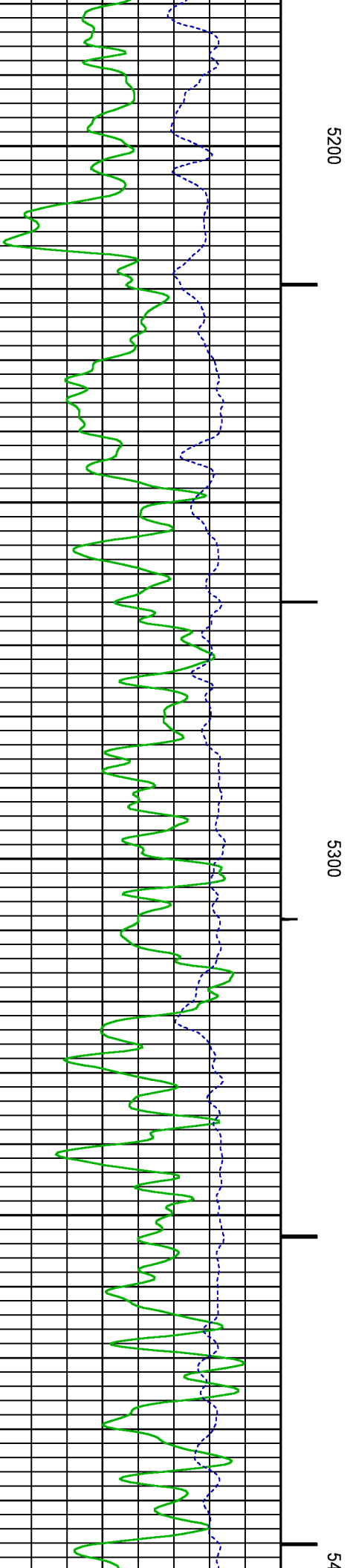
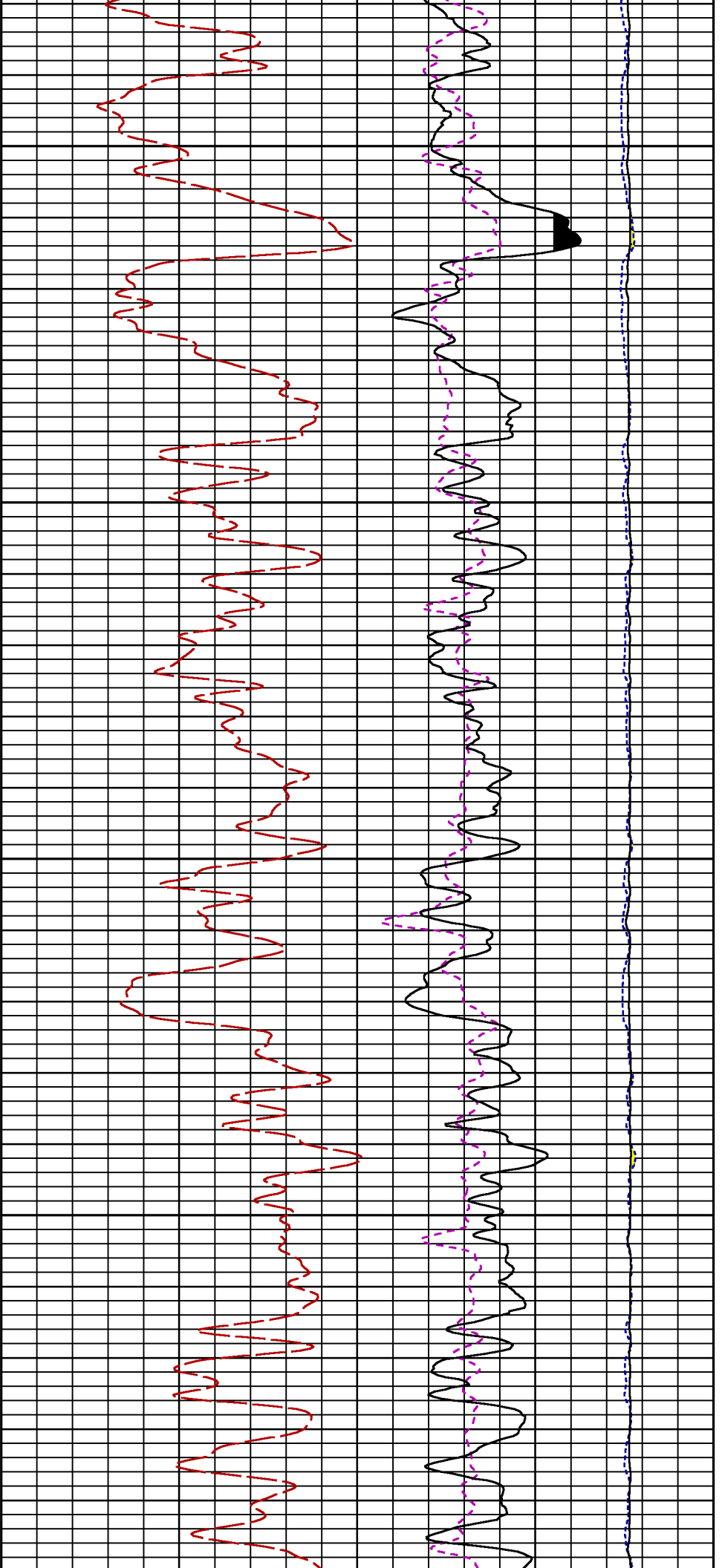


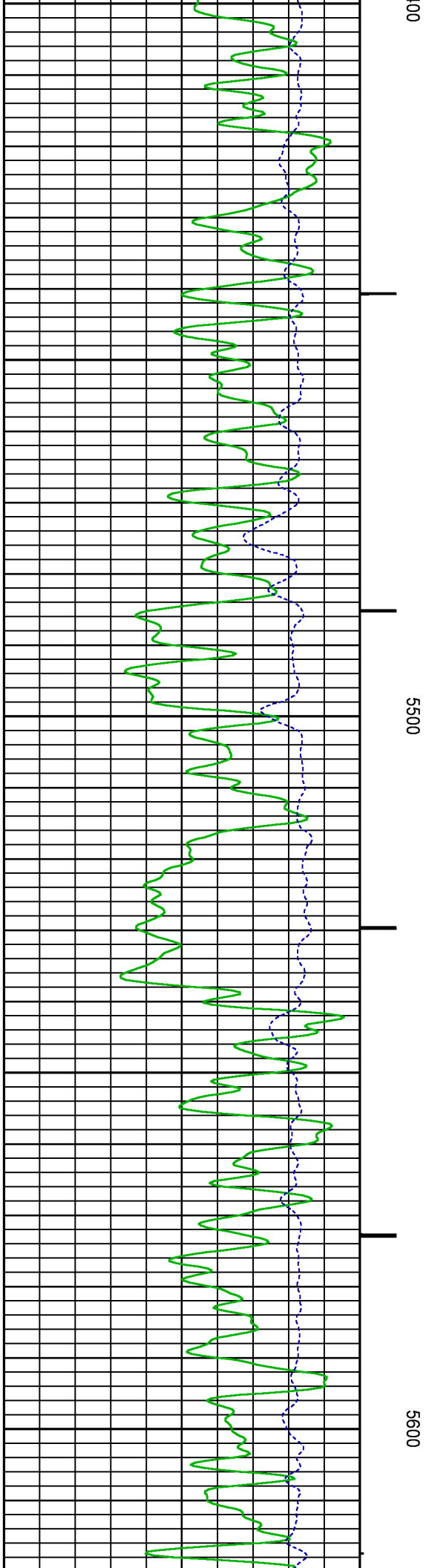
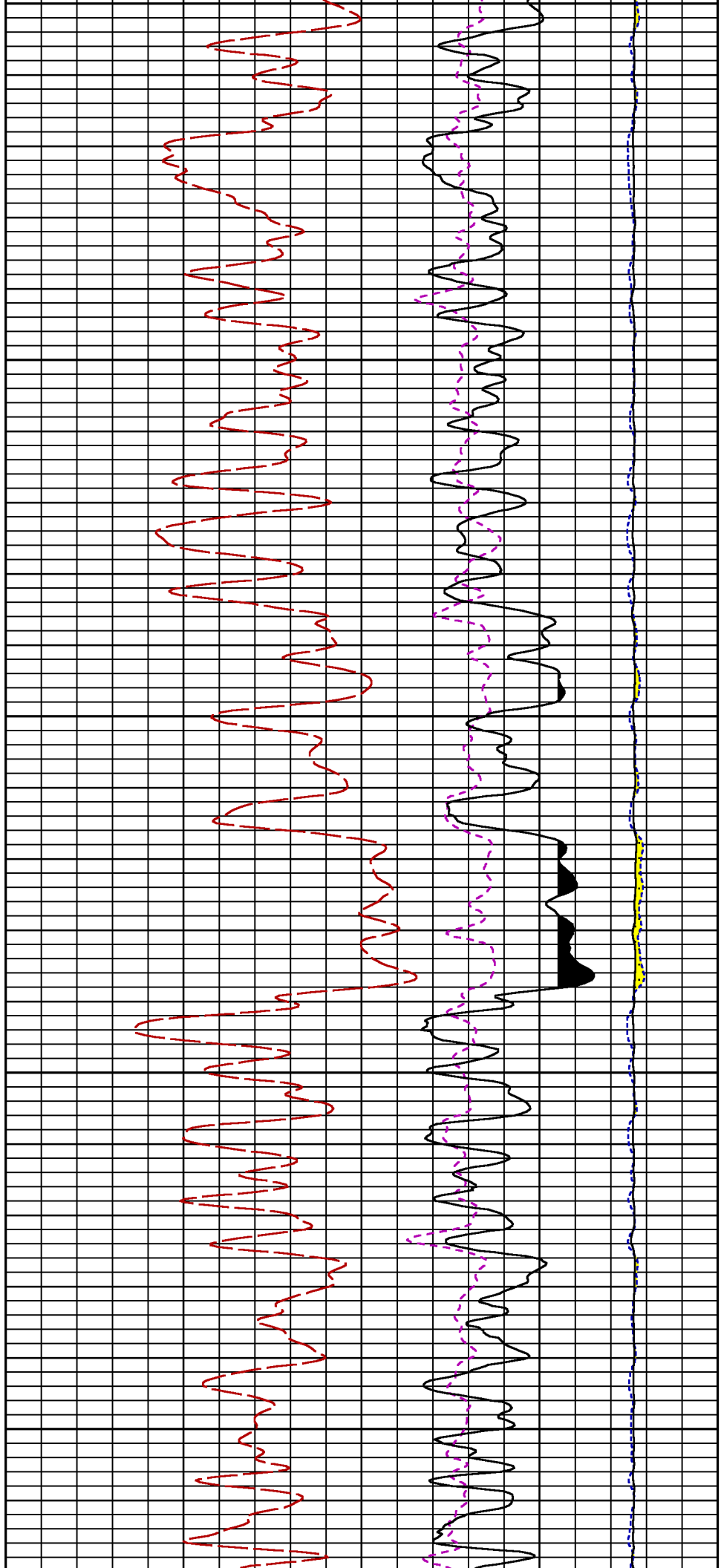


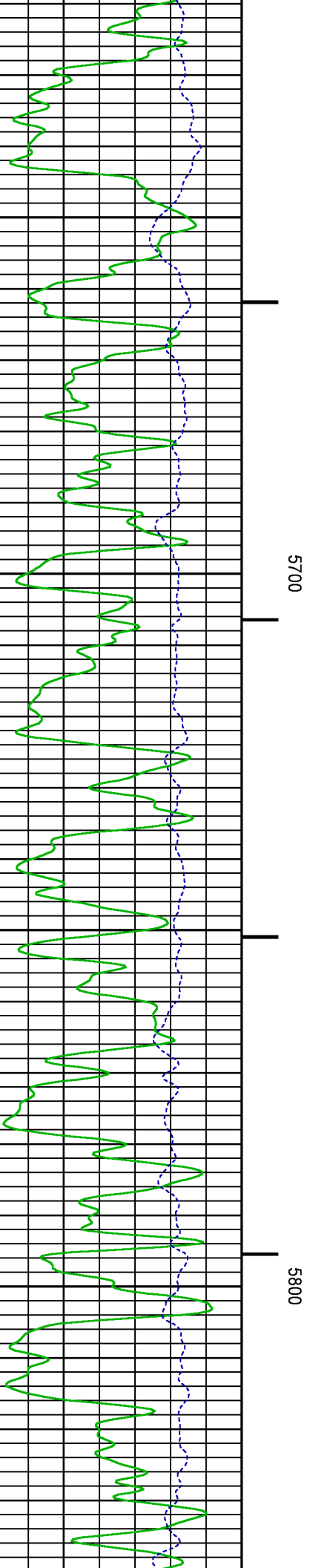
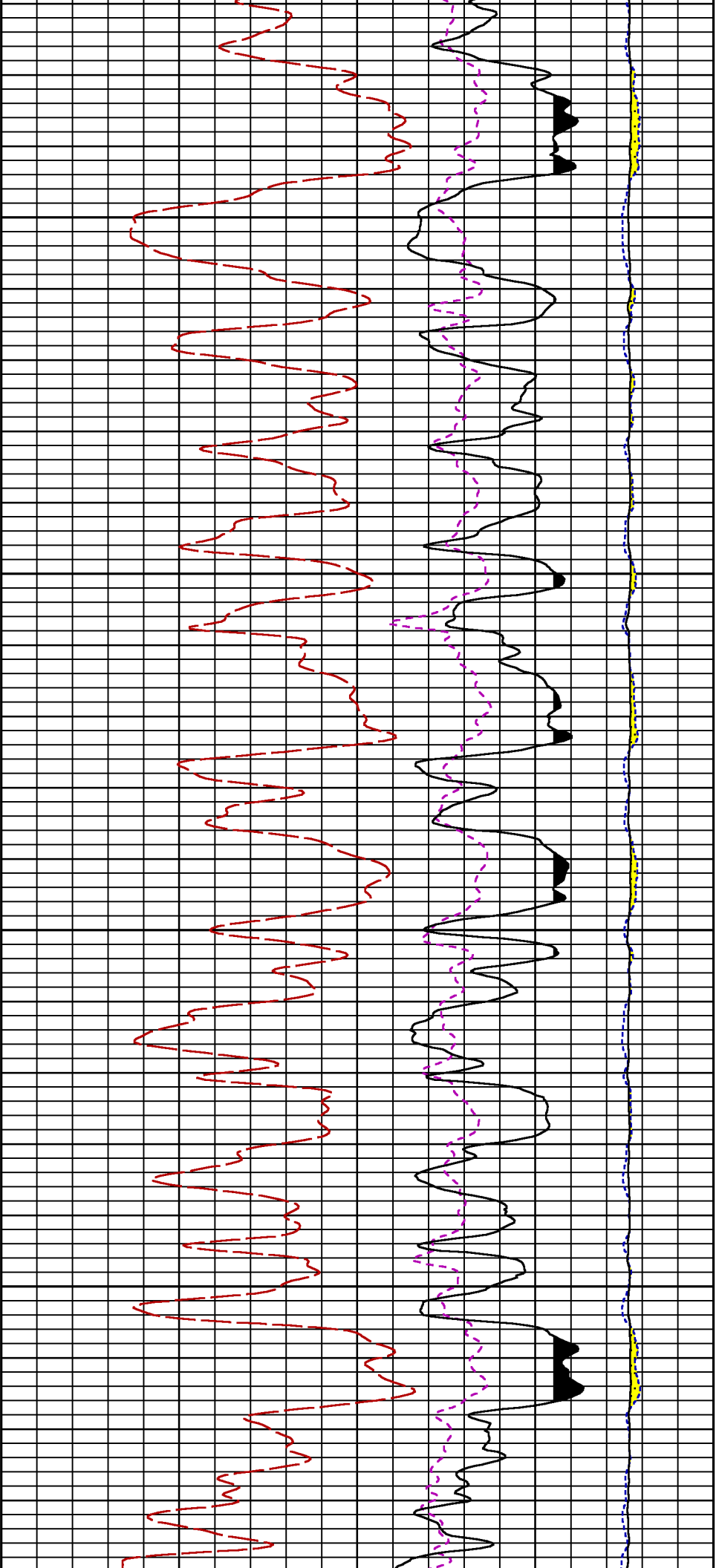


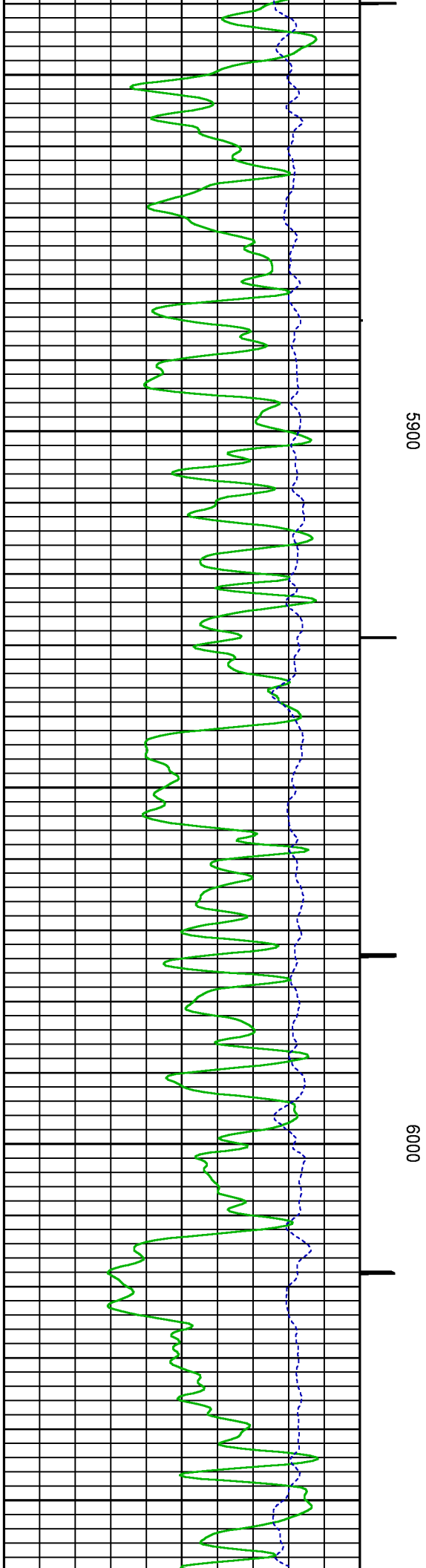
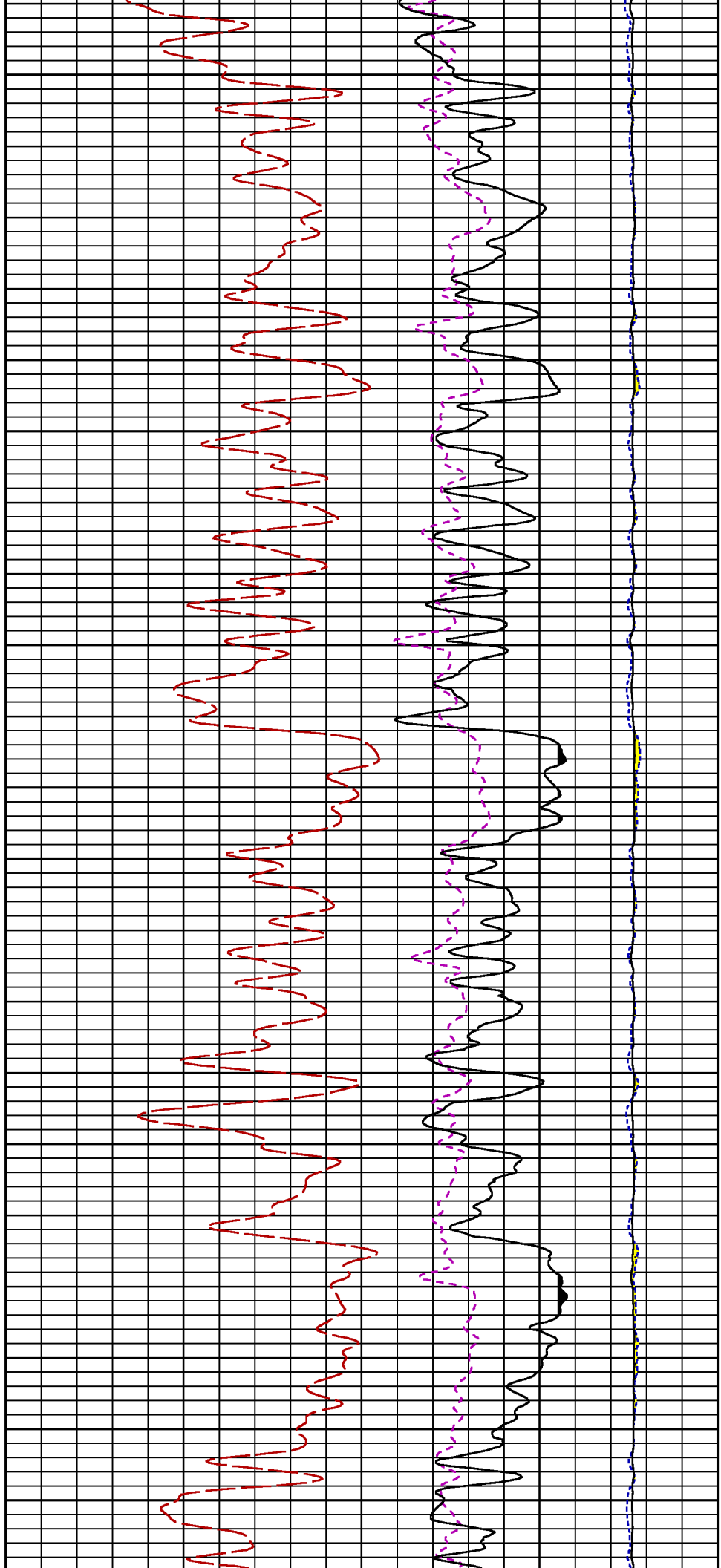


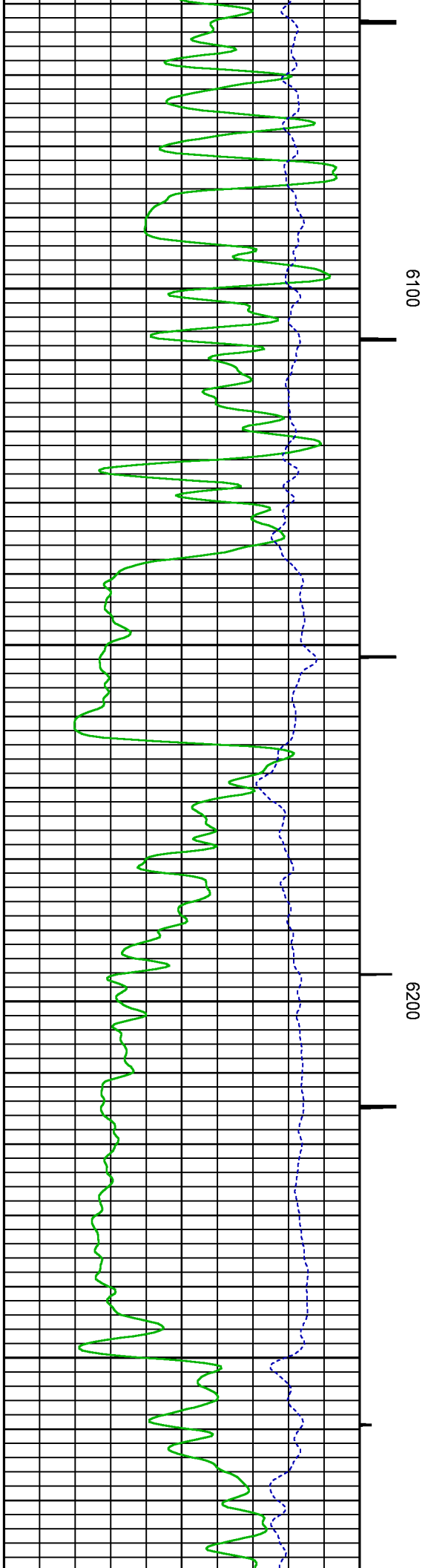
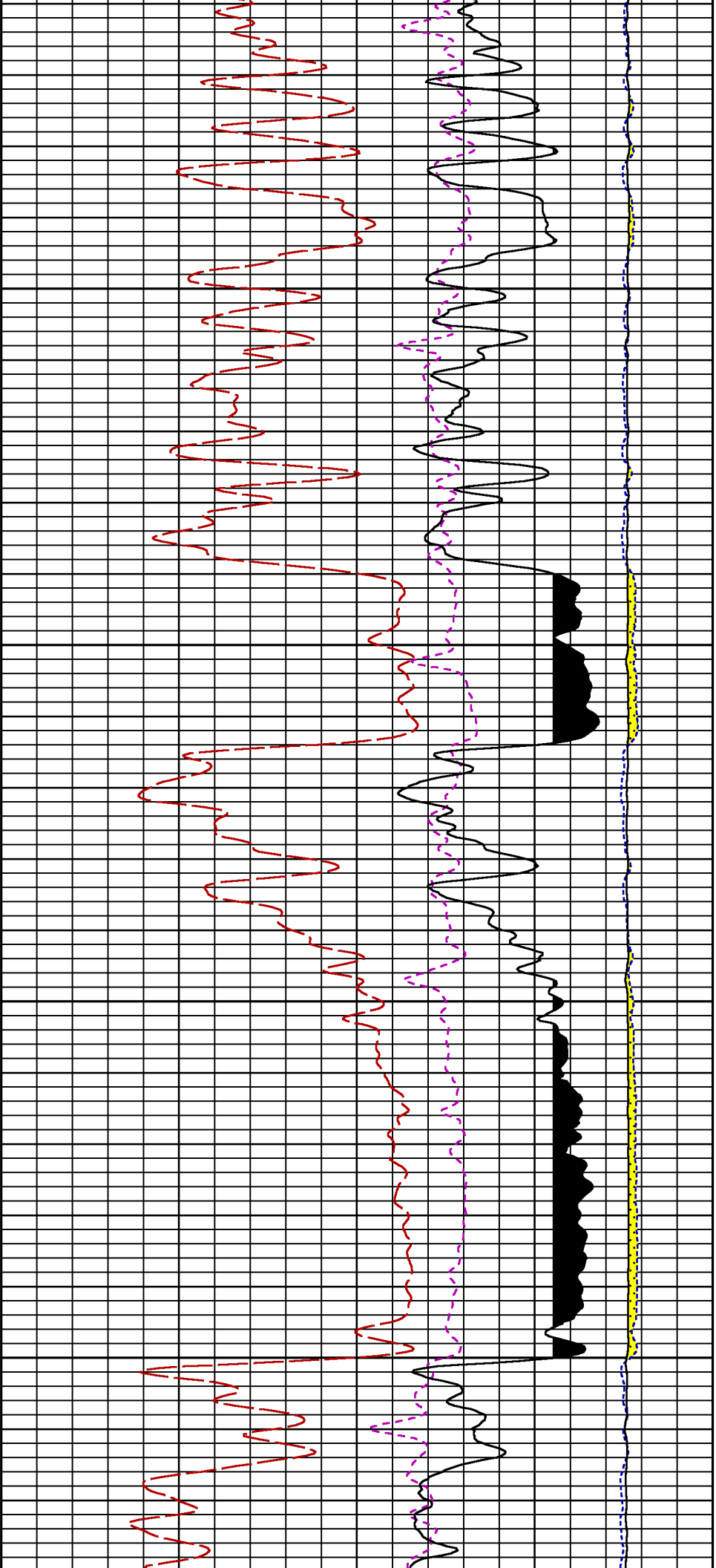


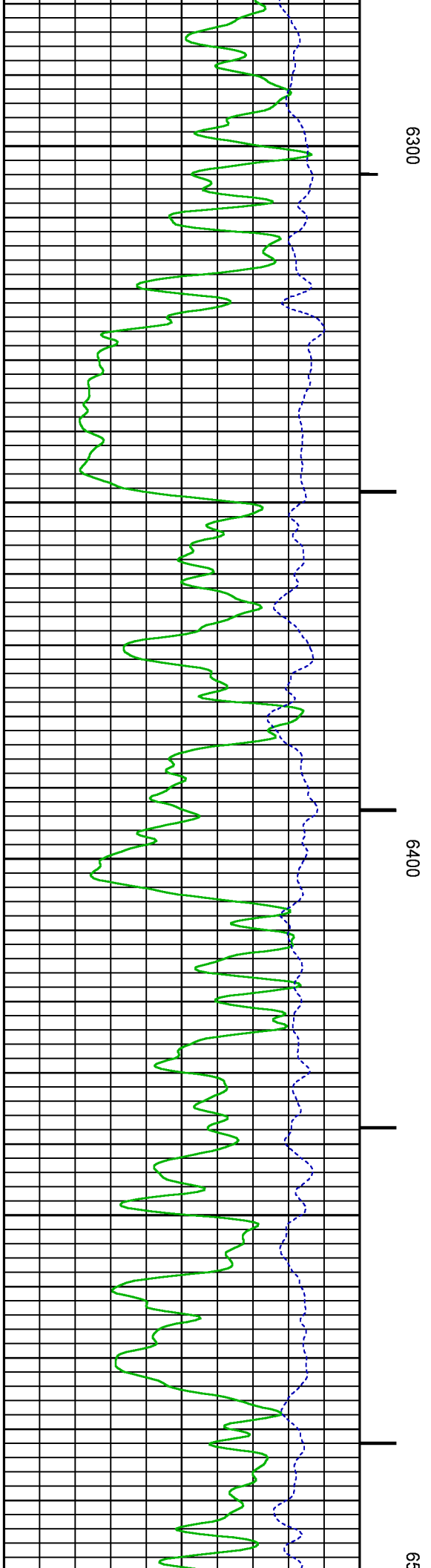
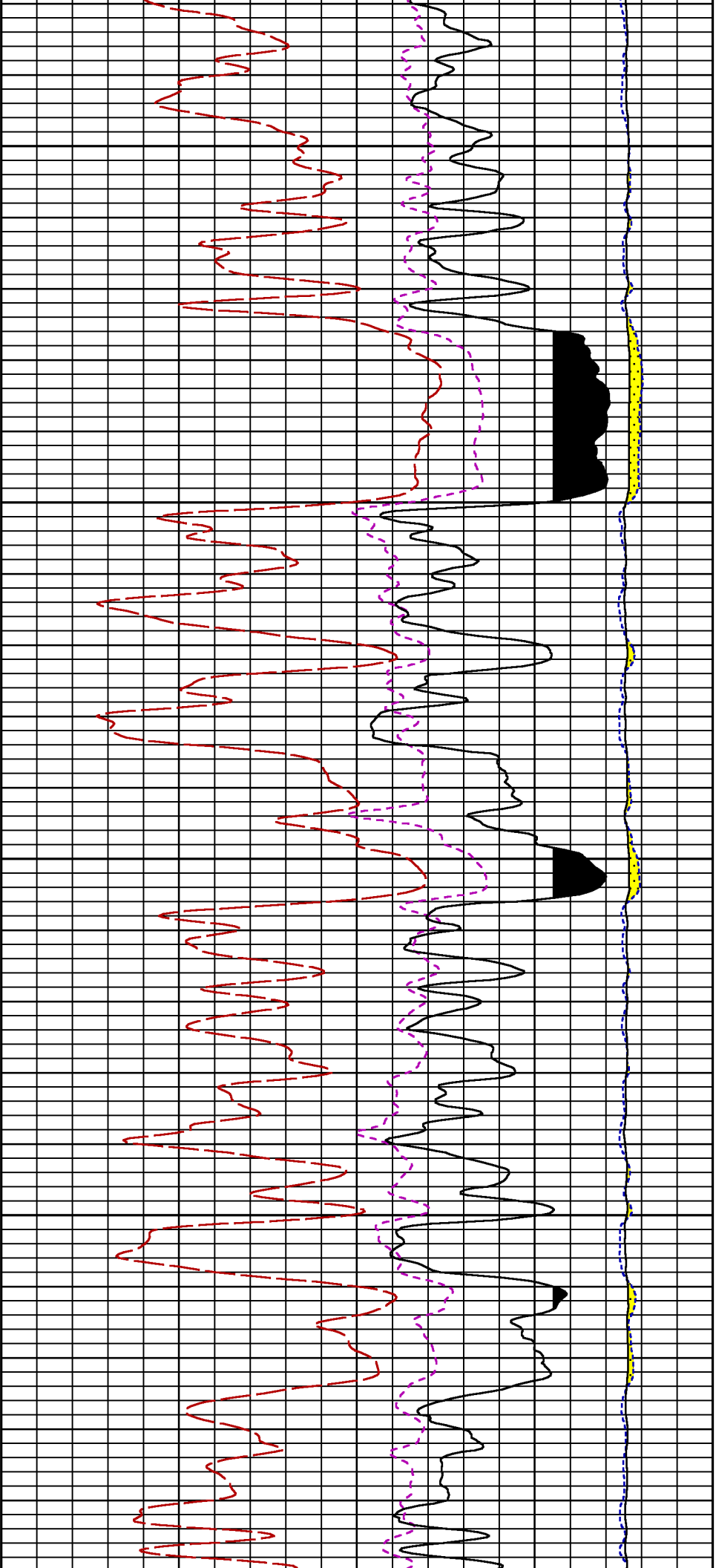


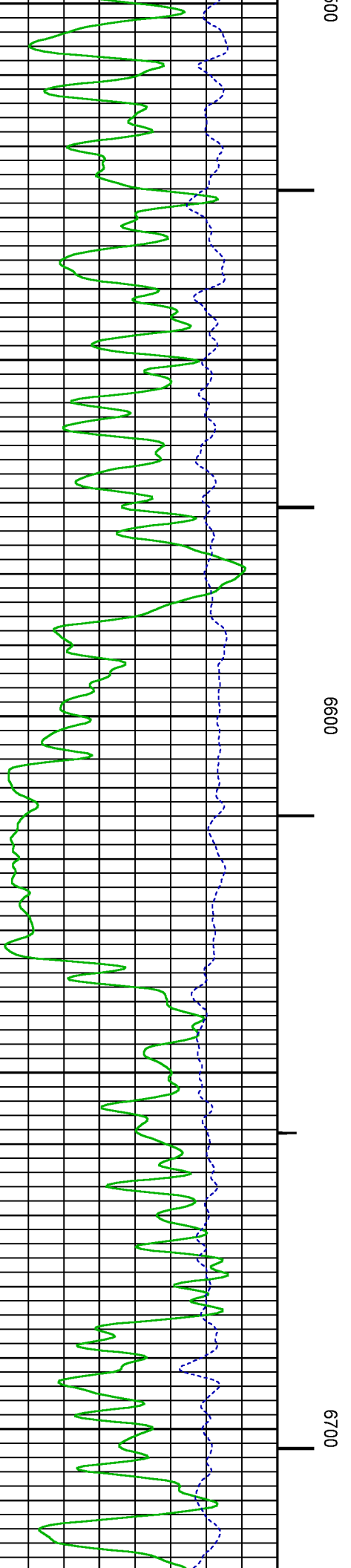
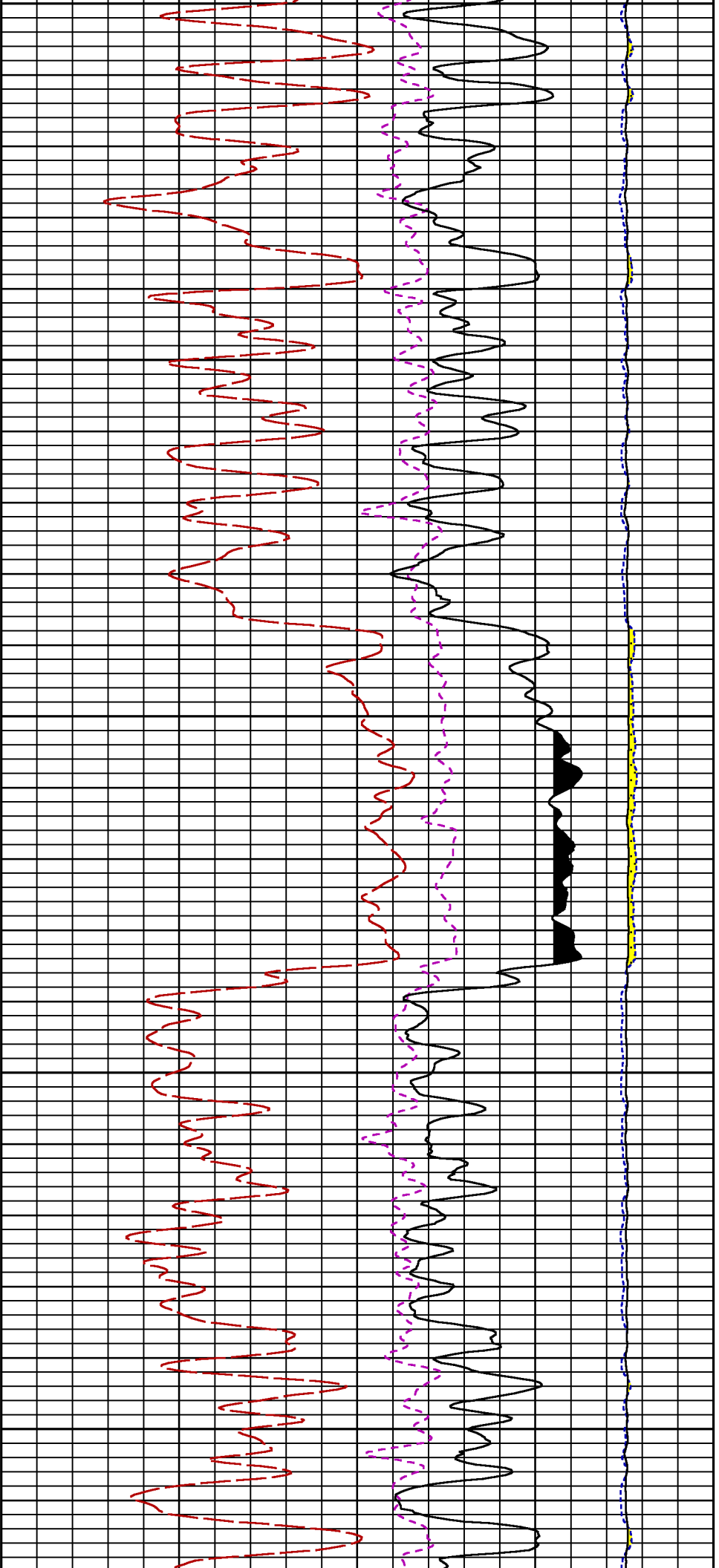


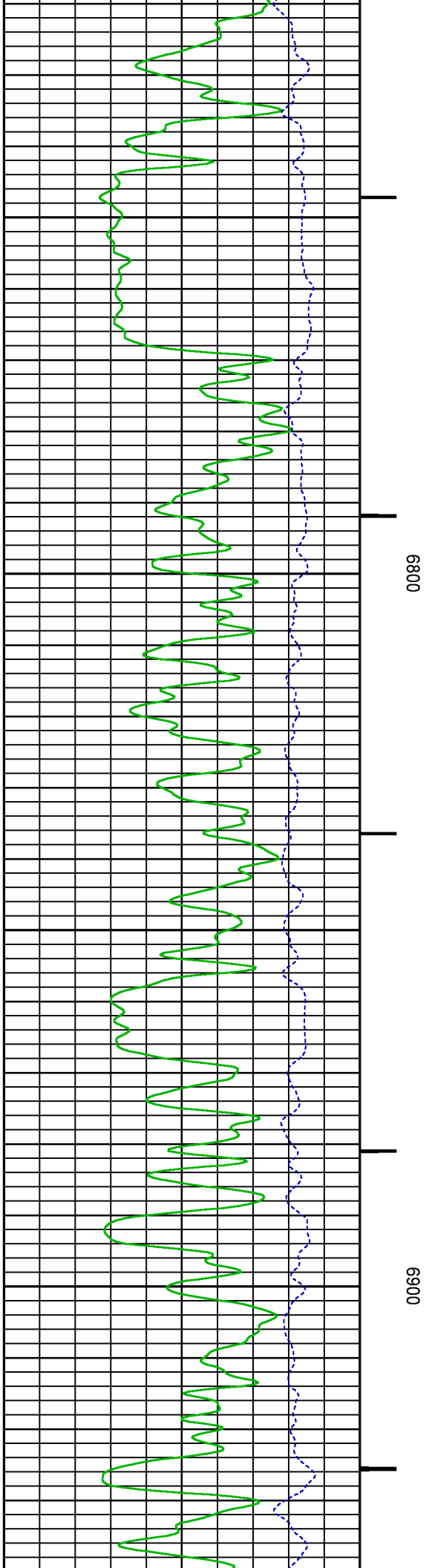
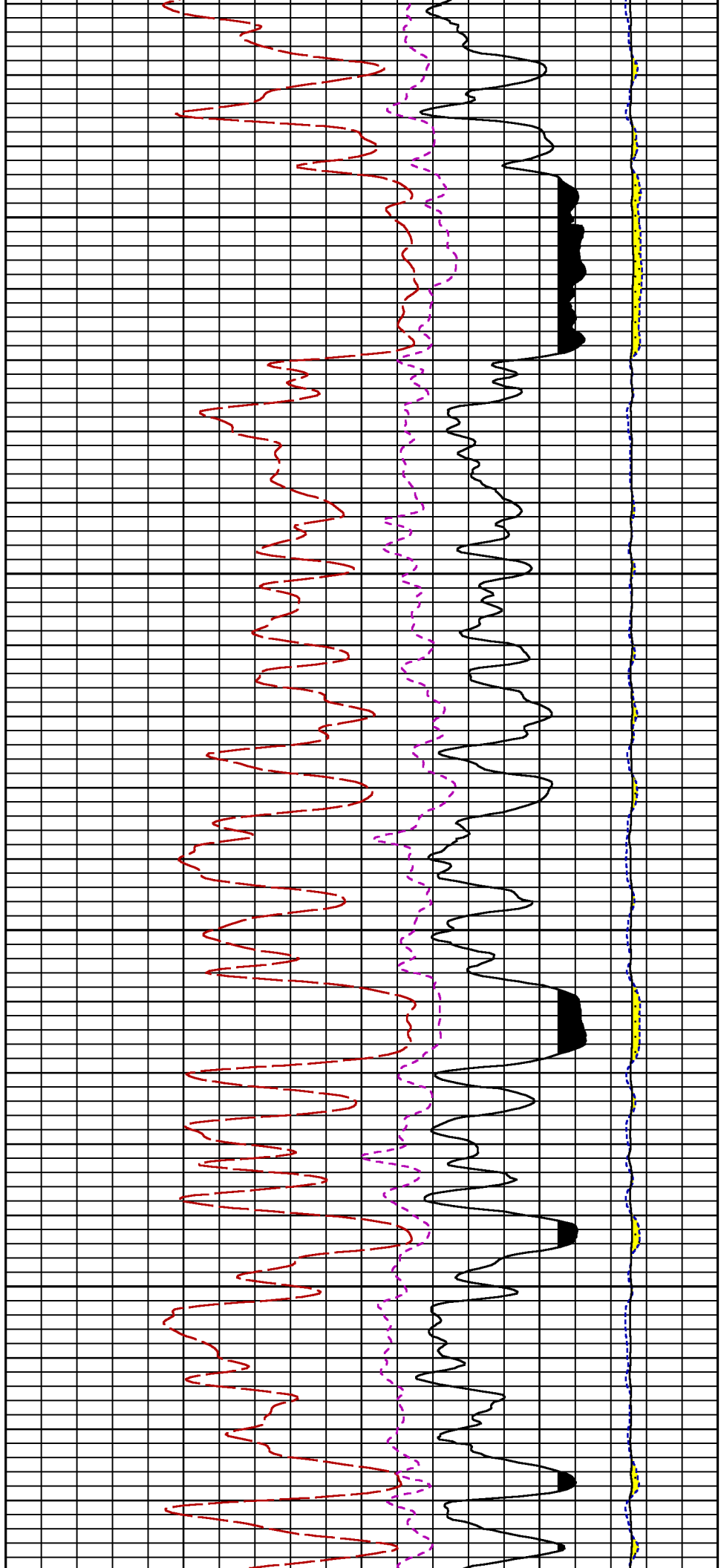


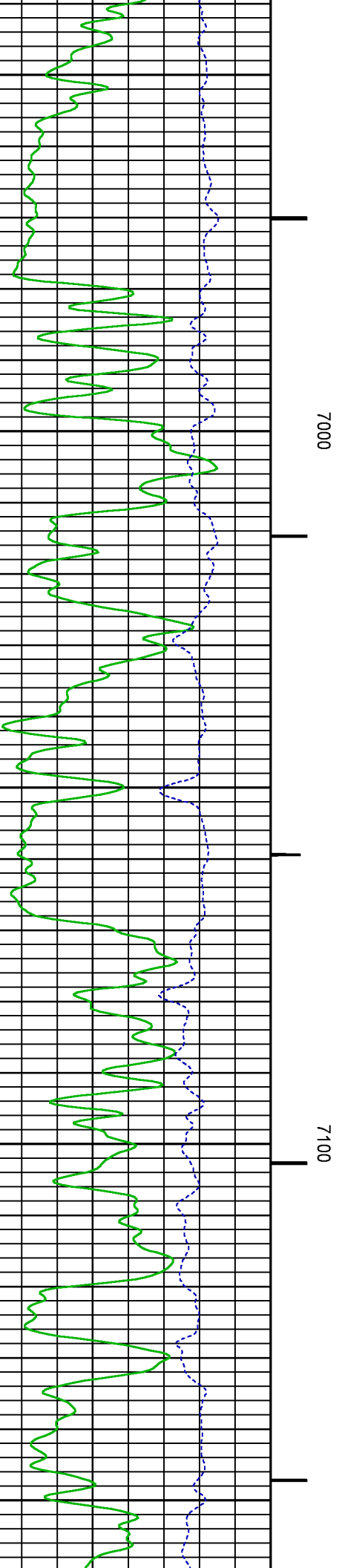
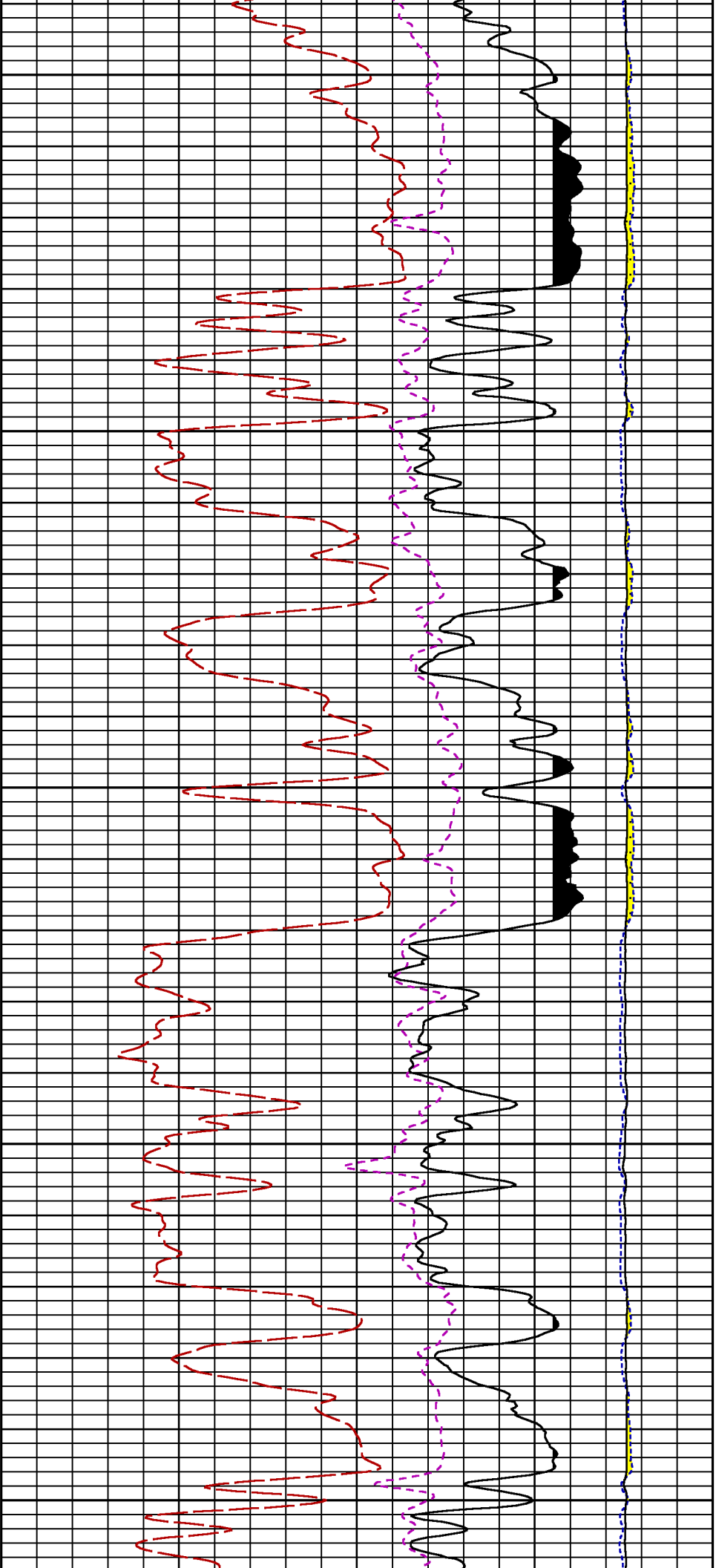


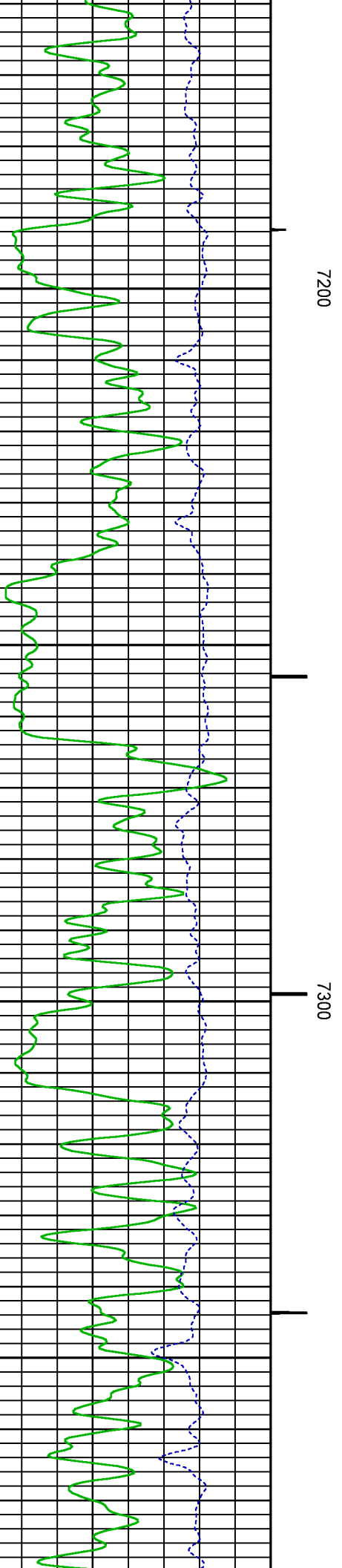
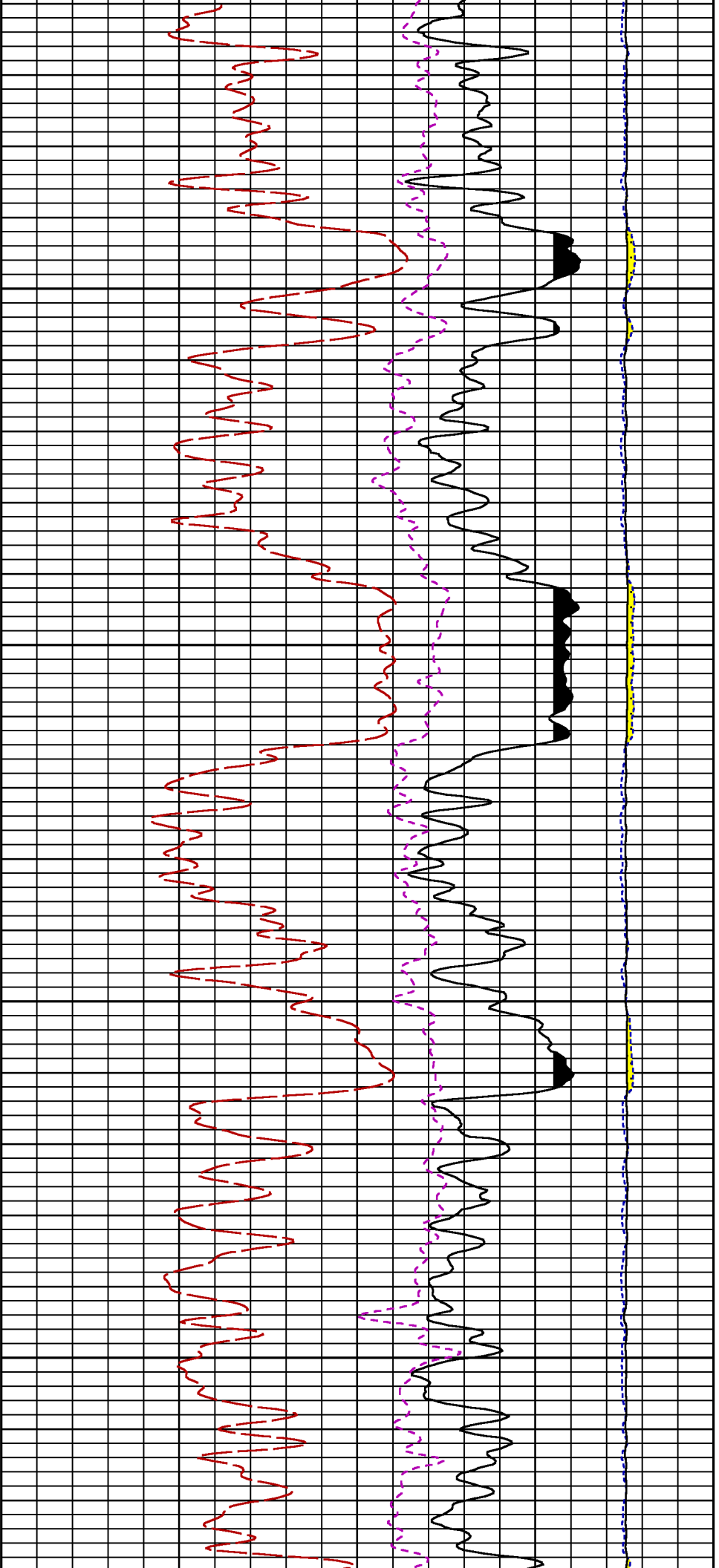


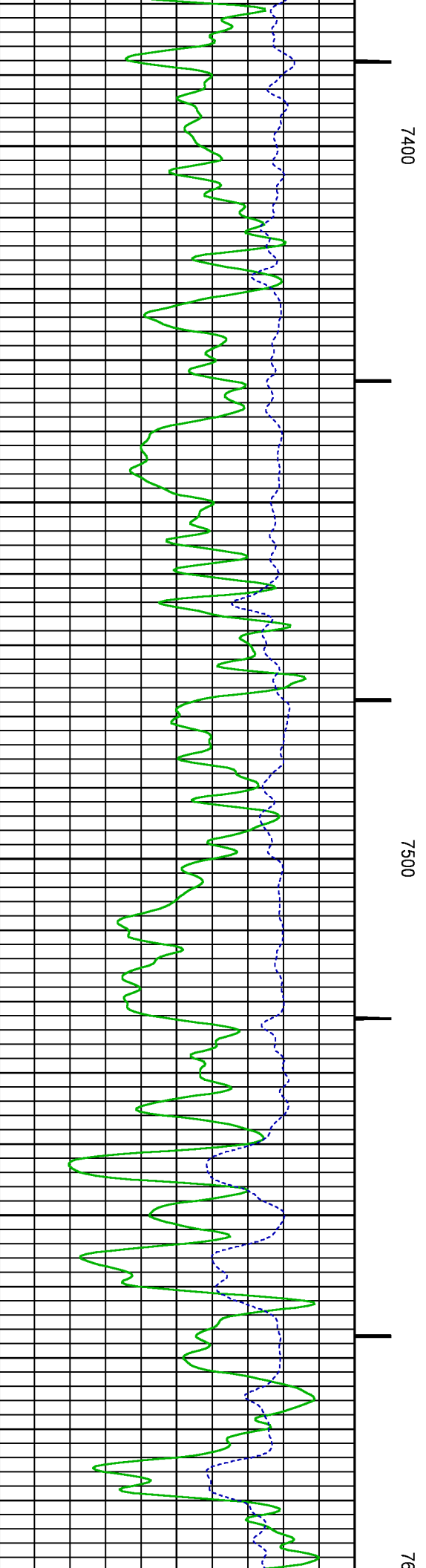
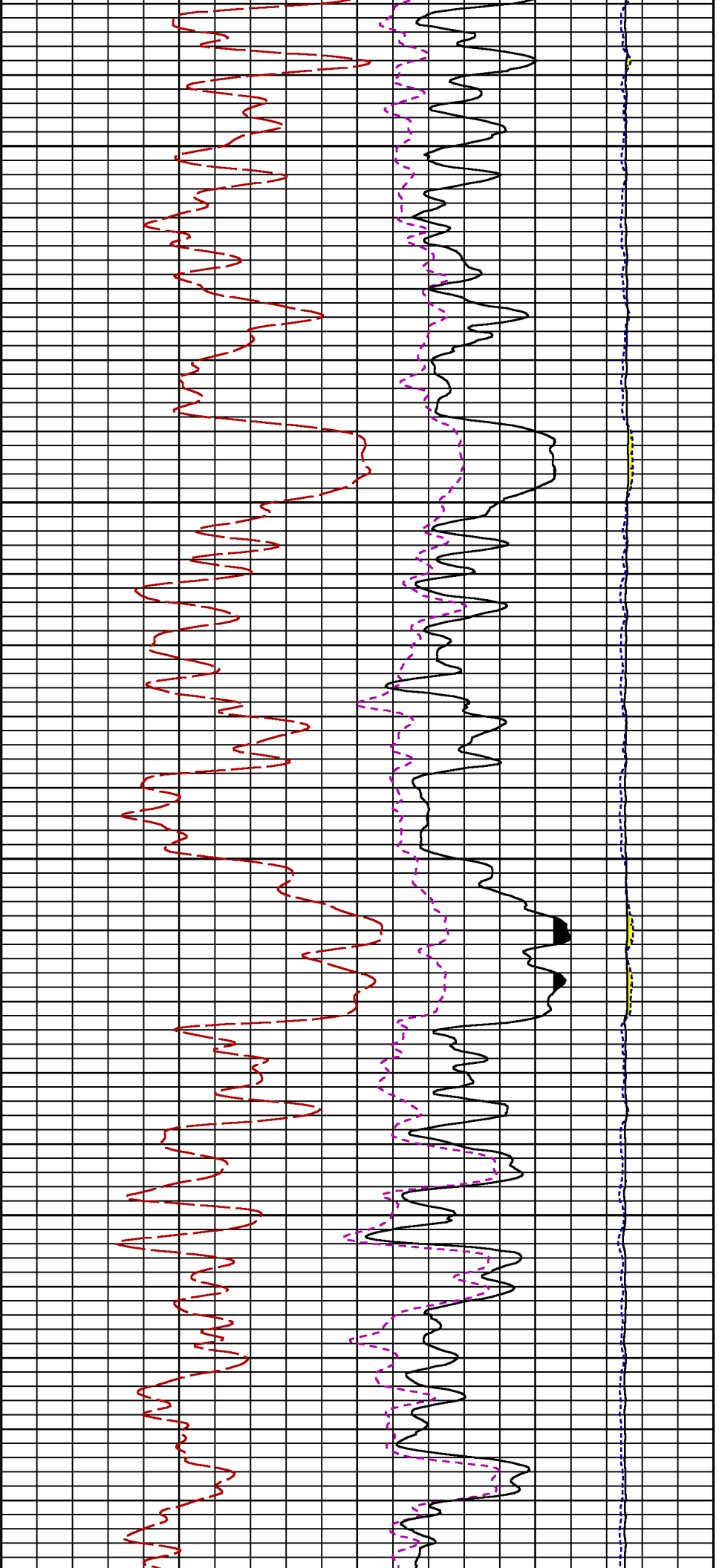


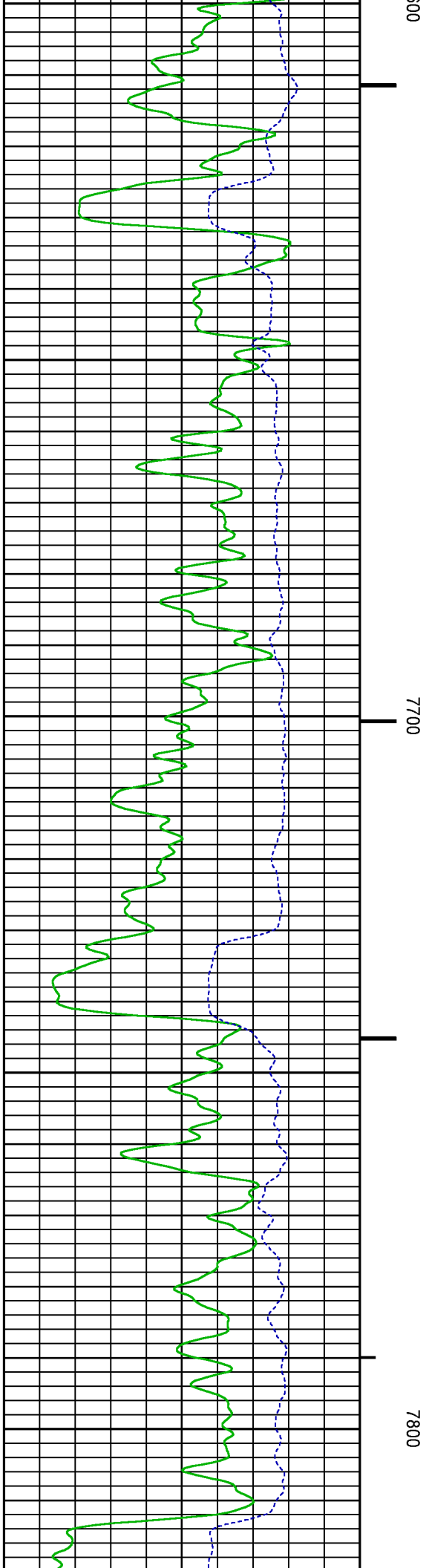
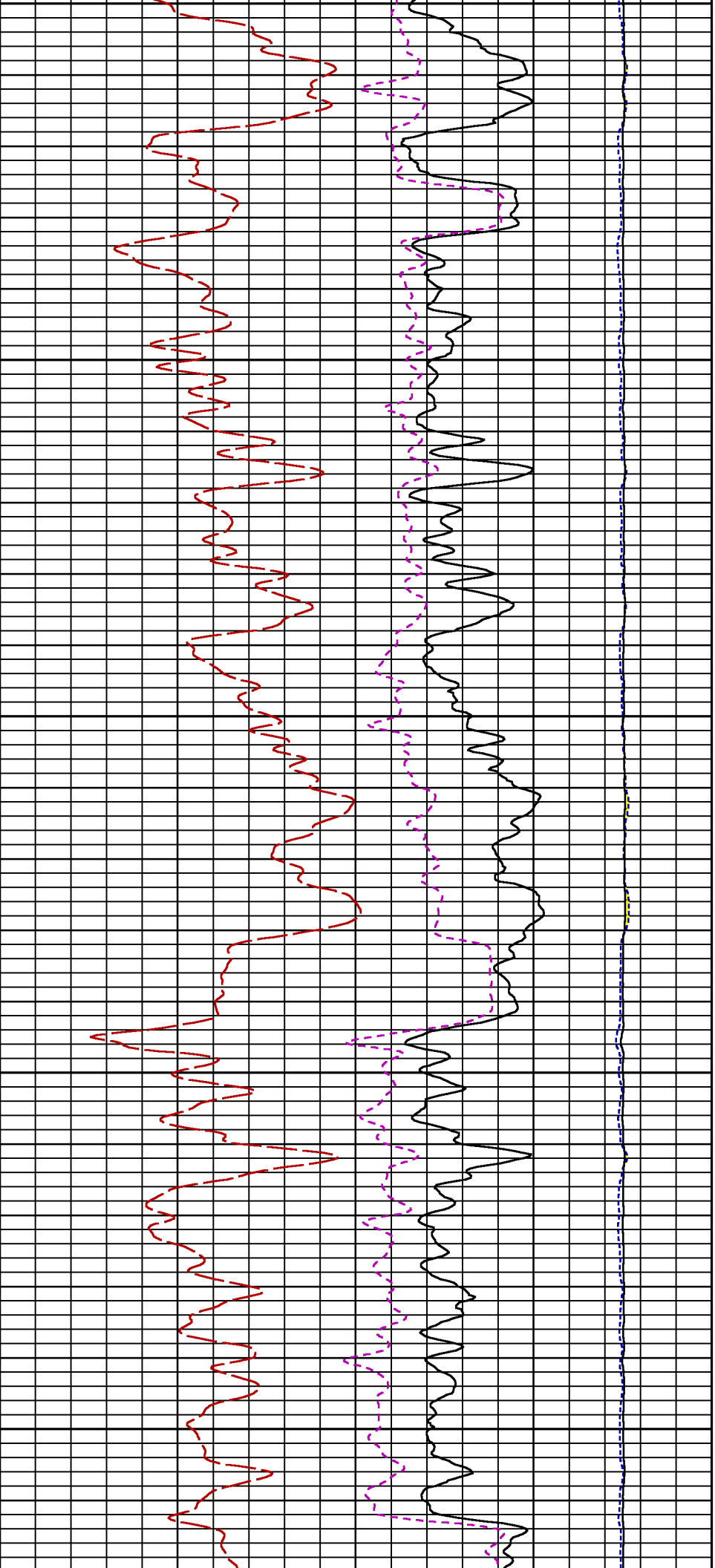


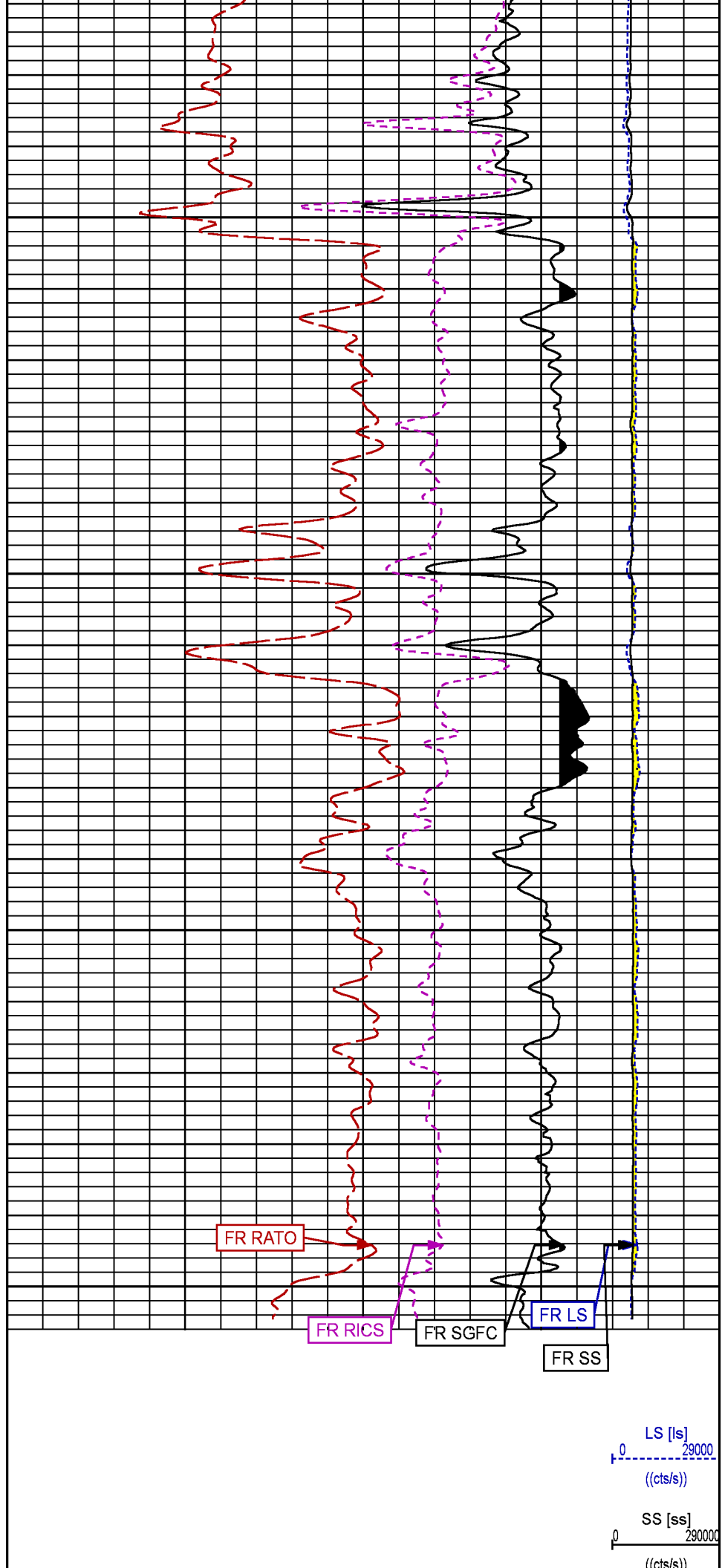
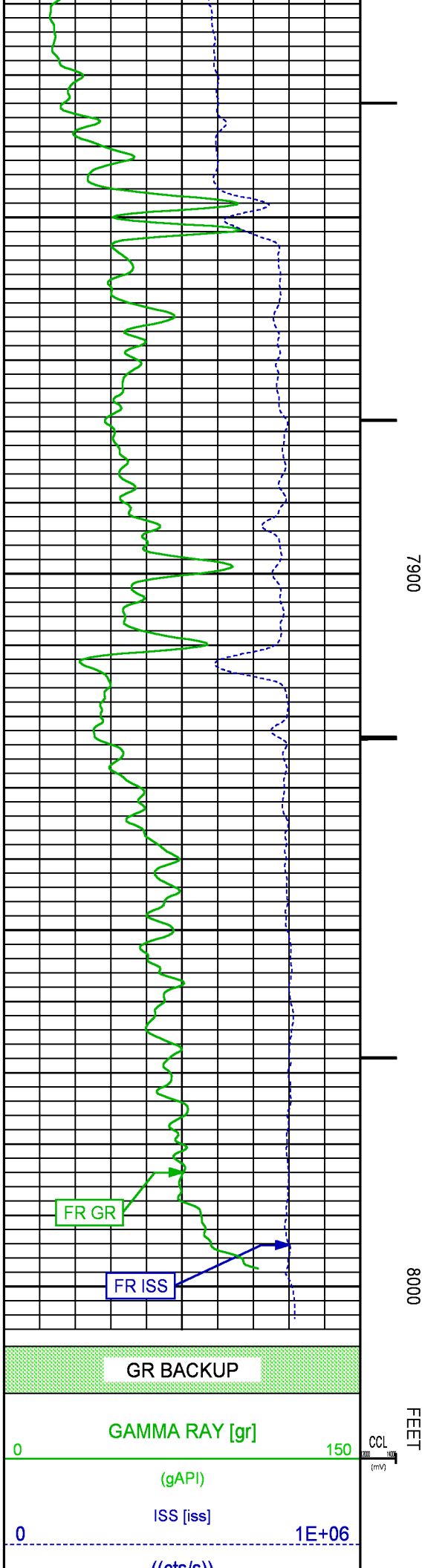












		17	RATO [rato] 0
			(dim)
		39	RICS [rics] 9
			(dim)
		60	SGFC [sgfc] 0
			(cu)

REPEAT PASS PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1 Patches: 9

Plotted: Tue Aug 22 09:03:32 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_BRUTON_19_14E/RPM3D01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 7474.000 ft BOTTOM DEPTH: 7693.500 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	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 22 08:47:07 2017	CASING COLLAR LOCATOR
F1:GR	Aug 22 08:47:07 2017	GAMMA RAY
F1:ISS	Aug 22 08:47:07 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 22 08:47:07 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 22 08:47:07 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 22 08:47:07 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 22 08:47:07 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 22 08:47:07 2017	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

Plot Interval : 7454 - 7689.5 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE\_BRUTON\_19\_14E/BRUTON\_19\_14E\_RPM\_RPT.xtf  
Created On : Aug 22 08:47:07 2017  
Company : LARAMIE ENERGY  
Well : BRUTON 19-14E  
Field : MESA  
File Interval : 7453.25 - 7698.25 Feet  
OCT : RPM3D

GR BACKUP

GAMMA RAY [gr]

(gAPI)

ISS [iss]

((cts/s))

FEET

CCL  
(mV)

7500

LS [ls]

((cts/s))

SS [ss]

((cts/s))

RATO [rato]

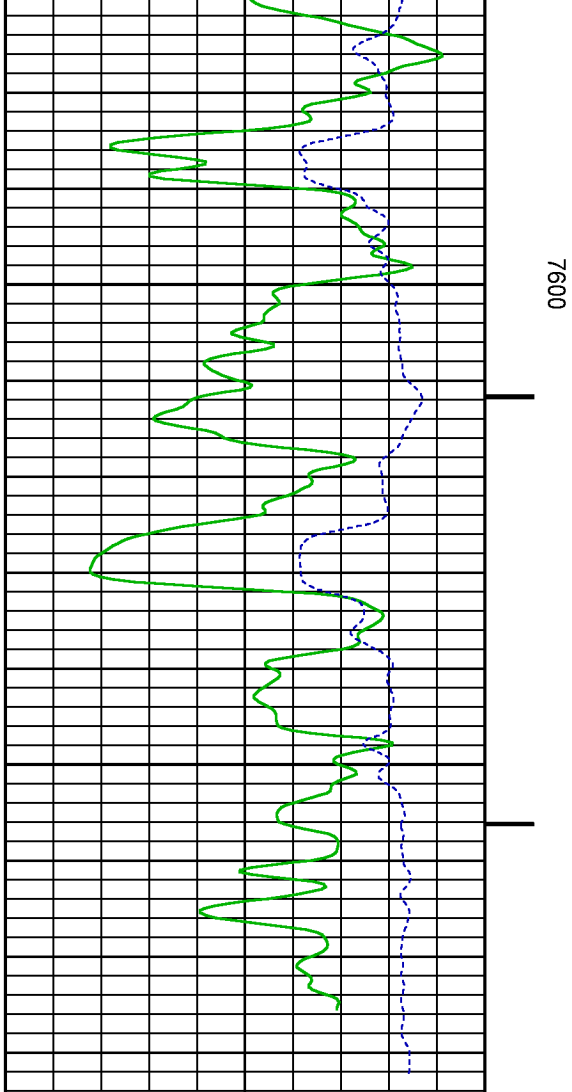
(dim)

RICS [rics]

(dim)

SGFC [sgfc]

(cu)



7600

FEET

GR BACKUP

GAMMA RAY [gr]

0 150

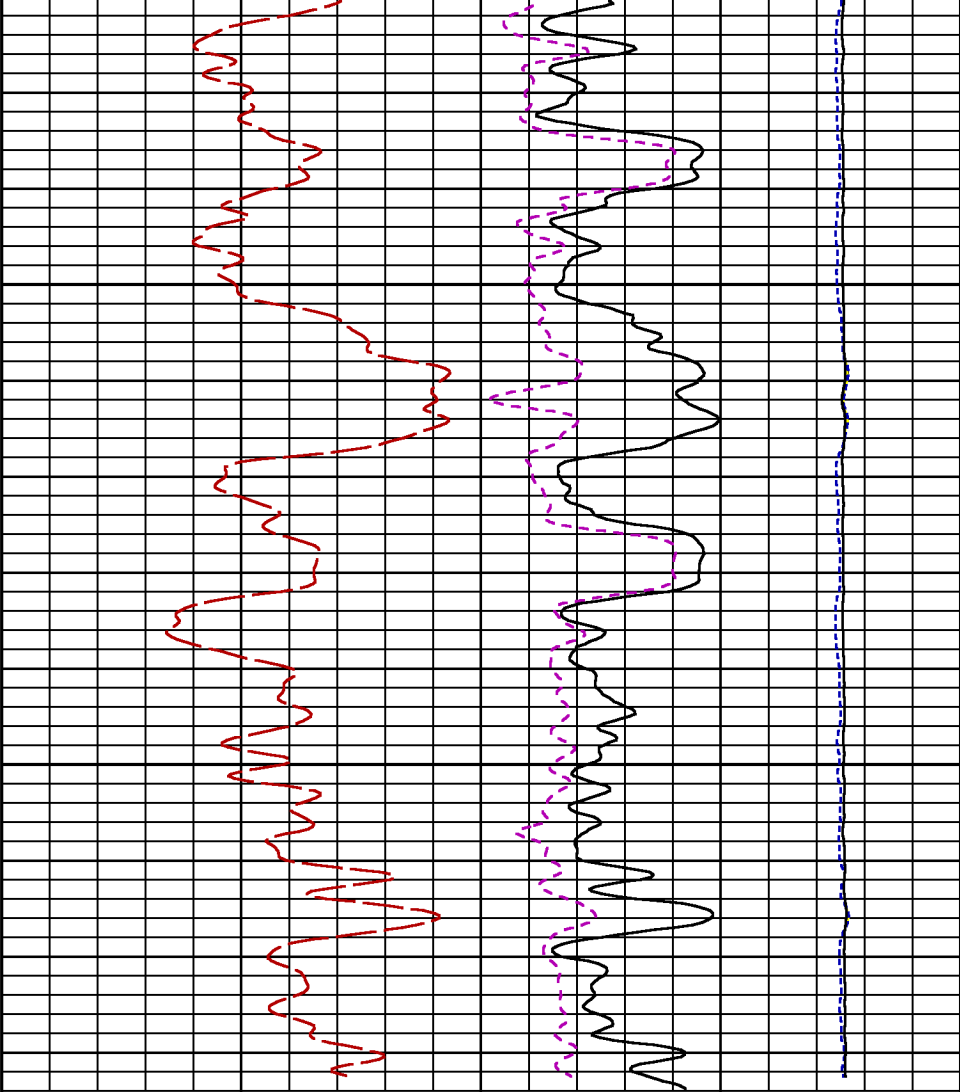
(gAPI)

ISS [iss]

1E+06

((cts/s))

CCL  
(mV)



RATO [rato]

17

0

(dim)

RICS [rics]

39

9

(dim)

SGFC [sgfc]

60

0

(cu)

LS [ls]

0 29000

((cts/s))

SS [ss]

0 290000

((cts/s))

CALIBRATION / VERIFICATION SUMMARY

GR PRIMARY CALIBRATION SUMMARY

TOOL #:

8262XA 10485470

DATE/TIME PERFORMED:

Tue Jan 17 13:32:11 2017

UNIT #:

3882ML ML4352

CALB JIG #:

4702NK DA\_228

BACKGROUND CALBRTR ON

CR DIFF

MULT

BACKGROUND CALBRTR ON

CALBRTR

(cts/s)

(cts/s)

(cts/s)

(gAPI)

(gAPI)

(gAPI)

GR

63.76

399.13

335.4

0.552

35.17

220.17

185

GR PRIMARY VERIFICATION SUMMARY

TOOL #:

8262XA 10485470

DATE/TIME PERFORMED:

Tue Jan 17 13:34:45 2017

UNIT #:

3882ML ML4352

VERI JIG #:

4702NK DA\_228

BACKGROUND CALBRTR ON

MULT

BACKGROUND CALBRTR ON

DIFF.

(cts/s)

(cts/s)

(cts/s)

(gAPI)

(gAPI)

(gAPI)

GR

63.44

394.18

0.552

35.00

217.44

182.44

175.00

196.00

RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL:

8283PA 10184883

DATE/TIME PERFORMED:

Thu Jul 13 15:06:49 2017

UNIT:

3882TD HL6728

CALIBRATOR:

2437XB 120057

SOURCE:

8281AA 10160595

HOURS:

8281AA 228

ISS

Mtr Vlt

SS Gain

LS Gain

XLS Gain

EA Temp

Sync Delay

RCAL

(V)

(degF)

(usec)

Raw Data

807240

123

2232

2259

2285

137

9.0

0.9874

Interpolated

1300000

146

2216

2251

2283

ISS

BKS

BKL

BKX

SGA1

SDA1

SGA2

SDA2

Raw Data

807240

6543

1352

236

25.88

0.15

24.03

0.34

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

807240

164687

25336

86104

30690

8086

52299

12945

Fit Quality %

0.492

0.443

0.487

0.490

0.506

0.462

0.494

ISS

RBOR

RIN

RIN13

RICS

RATO

RTWO

RONE

ISS/ILS

ISS/IXS

ISS/CSS

SS/LS

SS2/LS

CSS/CLS

Raw Data

807240

1.44

4.90

31.88

15.44

10.65

3.80

4.04

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 %

0.052

0.128

0.117

0.144

0.021

0.011

0.031

Reduced

1232260

1.44

4.91

31.91

15.45

10.65

3.80

4.04

1.42

1.45

4.33

5.52

27.60

32.70

13.70

16.34

10.06

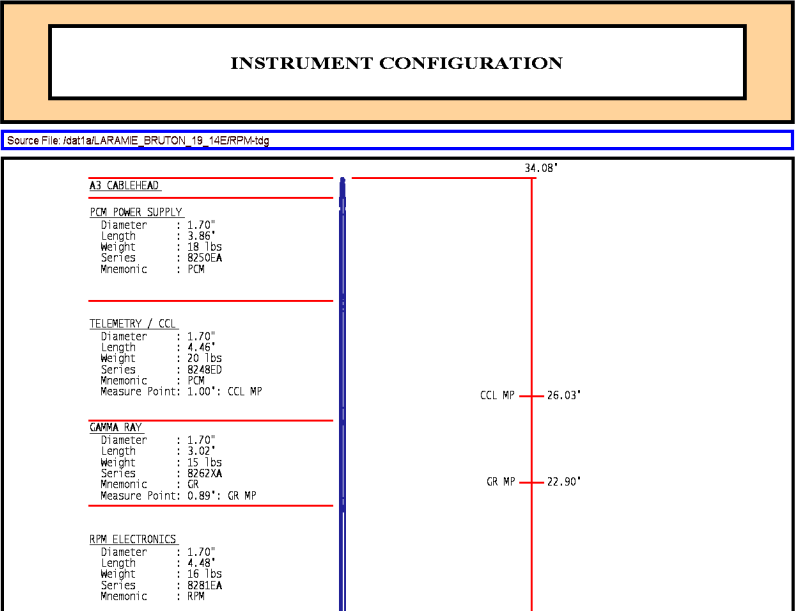
11.10

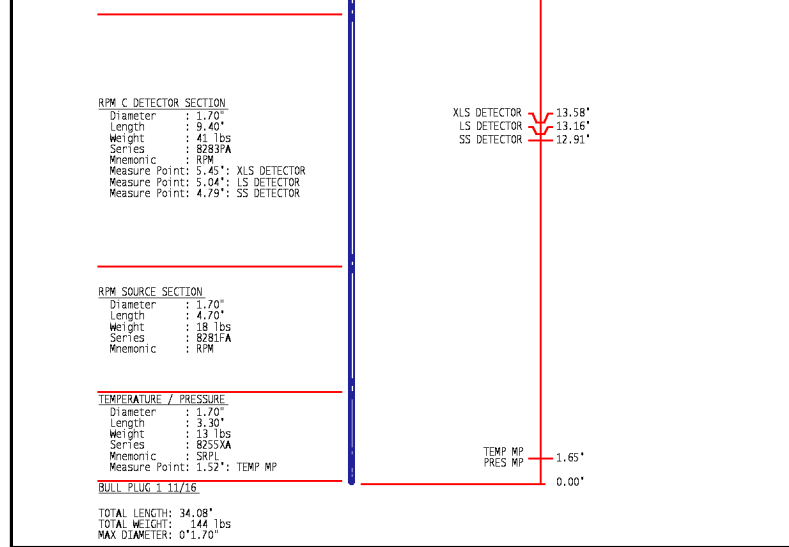
3.57

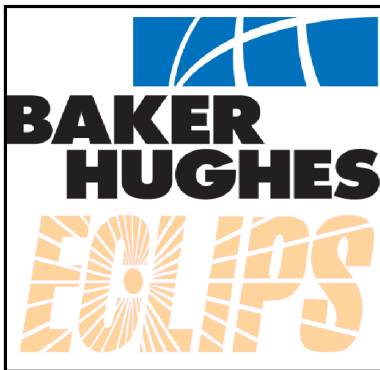
3.95

3.76

4.22





	<b>COMPANY</b> <u>LARAMIE ENERGY</u>		<b>FILE NO:</b> _____
	<b>WELL</b> <u>BRUTON 19-14E</u>		<b>API NO:</b> _____
	<b>FIELD</b> <u>VEGA</u>	<b>STATE</b> <u>COLORADO</u>	<b>API NO:</b> <u>05077103770000</u>
	<b>COUNTY</b> <u>MESA</u>		
<b>LOCATION:</b> SHL: LAT:39.255232N;LONG:107.806537W BHL: LAT:39.260779N;LONG:107.806983W SEC <u>19</u> TWP <u>9S</u> RGE <u>93W</u>		<b>ELEVATIONS:</b> KB 7449 FT DF 7448 FT GL 7425 FT	
		<b>DATE</b> <u>22-AUG-2017</u>	