



FILE NO: CH101513	COMPANY WELL FIELD COUNTY	LARAMIE ENERGY PICEANCE FEDERAL 28-09E VEGA MESA STATE COLORADO
API NO: 05077102550000		
Ver. 4.05 28 9S 93W 28-10 PAD PATTERSON 306	LOCATION: SHL: LAT 39.246680, LONG: -107.774793 BHL: LAT 39.249433, LONG -107.768135 SEC 28 TWP 9S RGE 93W	OTHER SERVICES RAL
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL. ELEVATION 7682 FT K.B. 22 FT ABOVE P.D. K.B.	ELEVATIONS: KB 7704 FT DF GL 7682 FT

DATE	21-Jan-2016
RUN	1
SERVICE ORDER	US101513J
DEPTH DRILLER	8419 FT
DEPTH LOGGER	8401 FT
BOTTOM LOGGED INTERVAL	8397 FT
TOP LOGGED INTERVAL	2832 FT
TIME STARTED	10:00
TIME FINISHED	17:00
OPERATOR RIG TIME	7 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	NA
LOGGED CEMENT TOP	NA
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	244 DEGF
REFERENCE LOG	BAKER HUGHES BOND LOG
REFERENCE LOG DATE	21-JAN-2016
EQUIP. NO.	HL-6685
LOCATION	SPENCER
RECORDED BY	JOHN GRUBICH
WITNESSED BY	

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
7.875 IN	0 FT	8503 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		0 FT	8503 FT

REMARKS
RUN 1 TRIP 1: ALL DATA ON THE LOG HAS BEEN SHIFTED ON BOTTOM TO MATCH THE DEPTH OF THE BAKER HUGHES BOND LOG DATED 21-JAN-2016.
AMOUNT OF LINEAR SHIFT WAS +6.5 FEET
WELL HEAD PRESSURE = 0 PSI
BHT = 245 DEGF
SJ = 6725' - 6746'
SJ = 7581' - 7603'
THANKS FOR CHOOSING BAKER HUGHES WIRELINE...THE BEST CHOICE!!!
CREW: COATE / OLSON

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8248ED	10460262	FREE
1	1	CCL	8250EA	10586851	FREE
1	1	GAMMA RAY	8262XA	10317216	FREE
1	1	RPM ELEC.	8281EA	10190984	FREE
1	1	RPM SOURCE	8283PA	10203151	FREE
1	1	RPM TNSMTR	8281FA	10238007	FREE
1	1	TEMP	8255XA	11774568	FREE

## 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: 8

Plotted: Thu Jan 21 17:03:34 2016

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH101513/n353h05.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 2831.500 ft BOTTOM DEPTH: 3454.750 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	Jan 21 16:23:25 2016	CASING COLLAR LOCATOR
F1:GR	Jan 21 16:23:25 2016	GAMMA RAY
F1:ISS	Jan 21 16:23:25 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jan 21 16:23:25 2016	LONG SPACE COUNT RATE
F1:RATO	Jan 21 16:23:25 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jan 21 16:23:25 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jan 21 16:23:25 2016	CORRECTED FORMATION SIGMA
F1:SS	Jan 21 16:23:25 2016	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 : cas6685:/dat1a/CH101513/RPM\_GSAND.fvpdf [5"/100' Scale]  
 Plot Interval : 2806.75 - 3440 Feet

Data File 1 : F1 : cas6685:/dat1a/CH101513/gsand.xtf  
 Created On : Jan 21 16:23:25 2016  
 Company : LARAMIE ENERGY

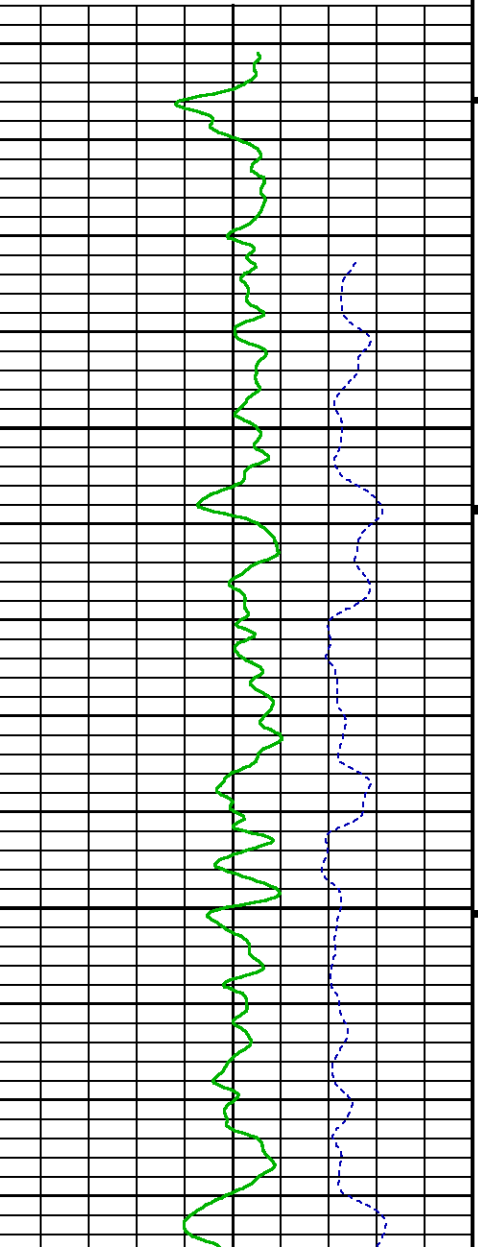
Company : LARAMIE ENERGY  
Well : PICEANCE FEDERAL 28-09E  
Field : VEGA  
File Interval : 2804.5 - 3456.25 Feet  
OCT : n353h

GR BACKUP

ISS [iss] 0 1E+06  
(cts/s)  
GAMMA RAY [gr] 0 150  
(gAPI)

FEET

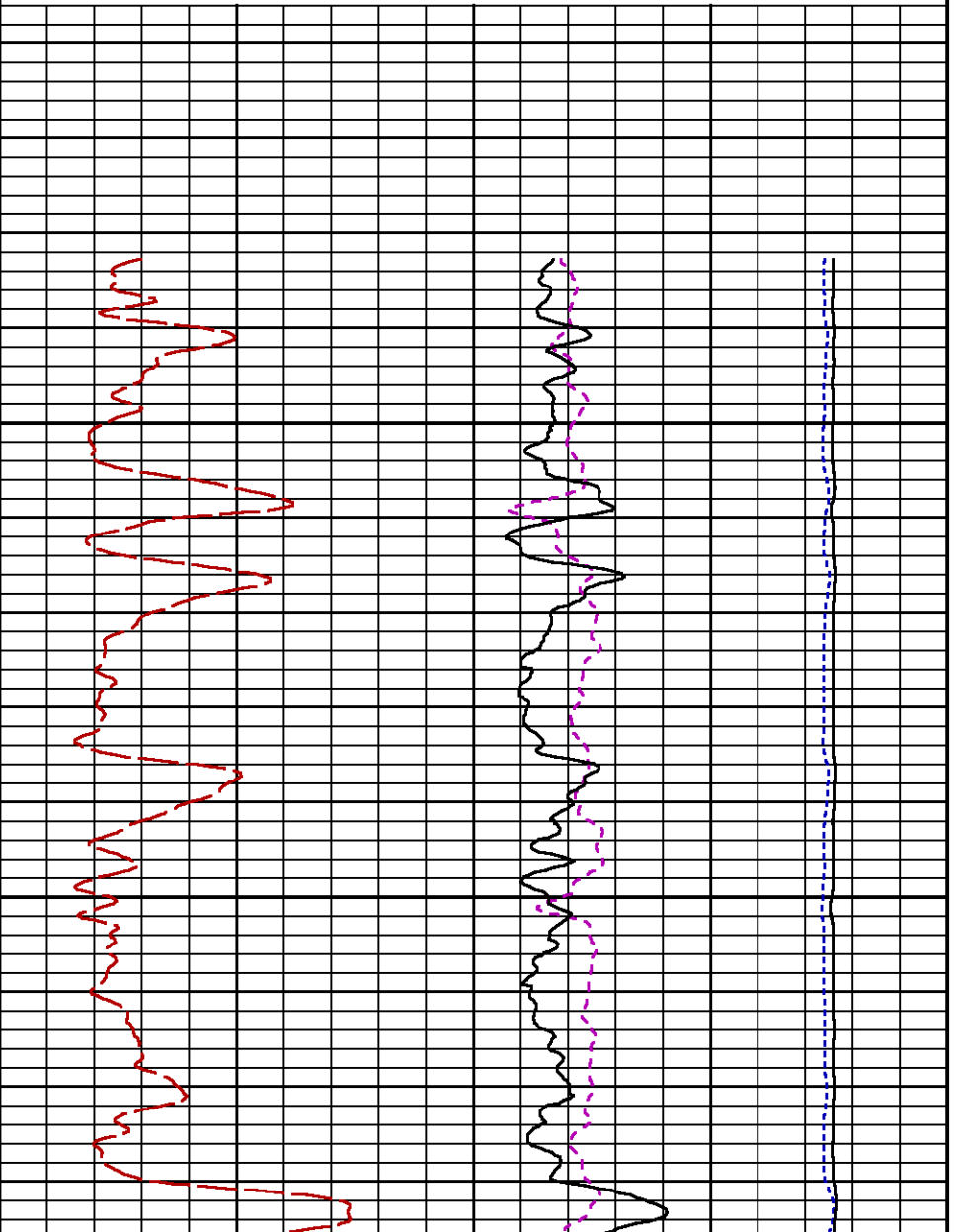
CCL 6in  
(mV)

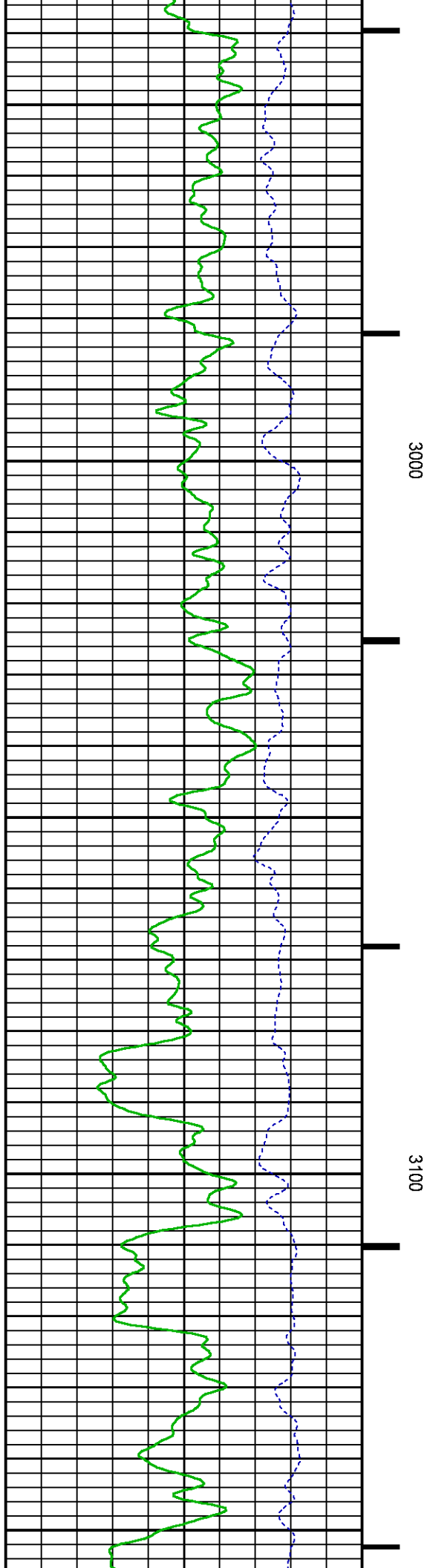
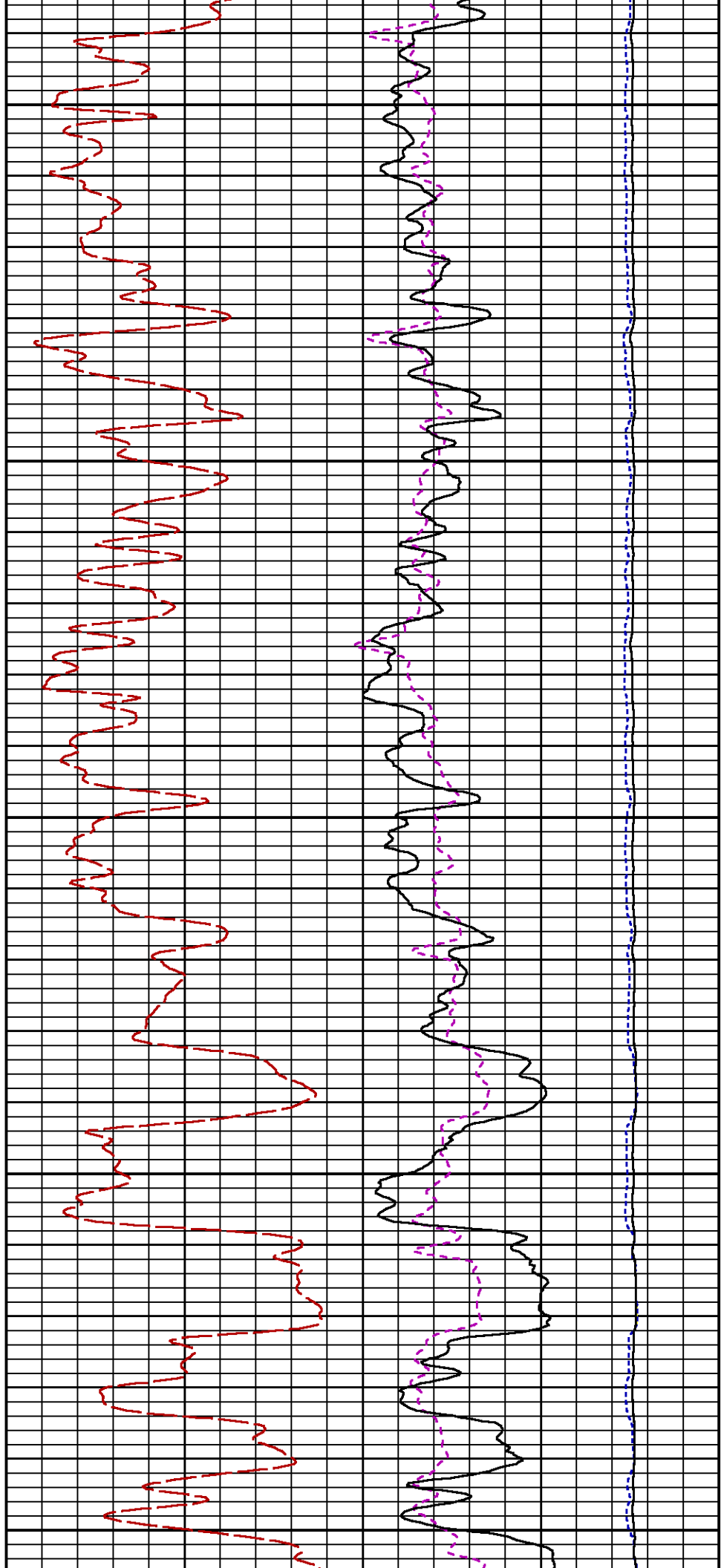


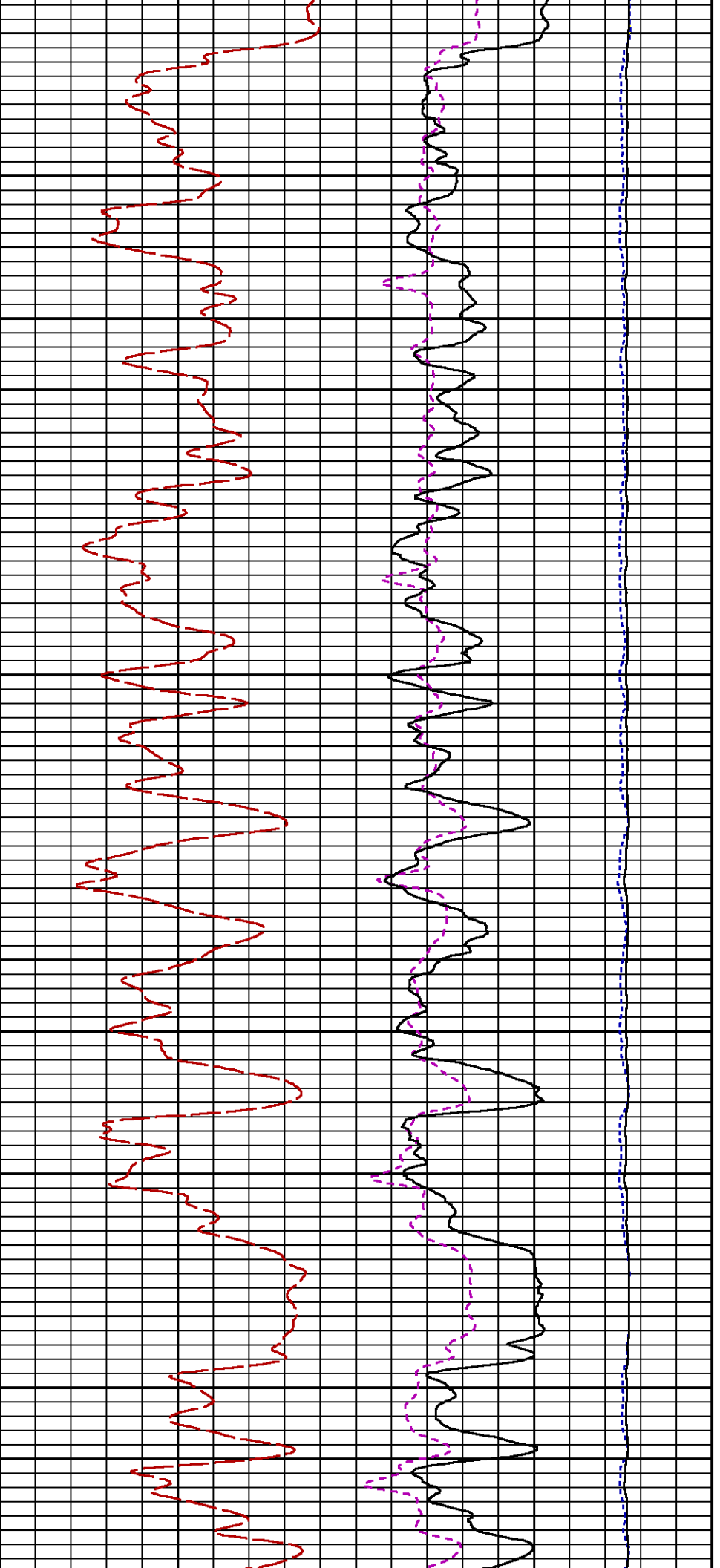
2900

LS [ls] 0 29000  
(cts/s)  
SS [ss] 0 290000  
(cts/s)

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

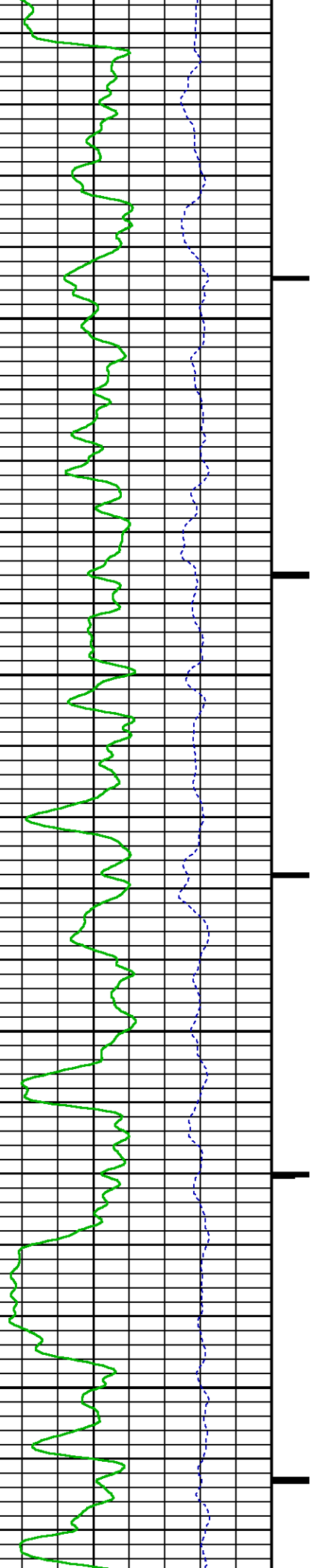


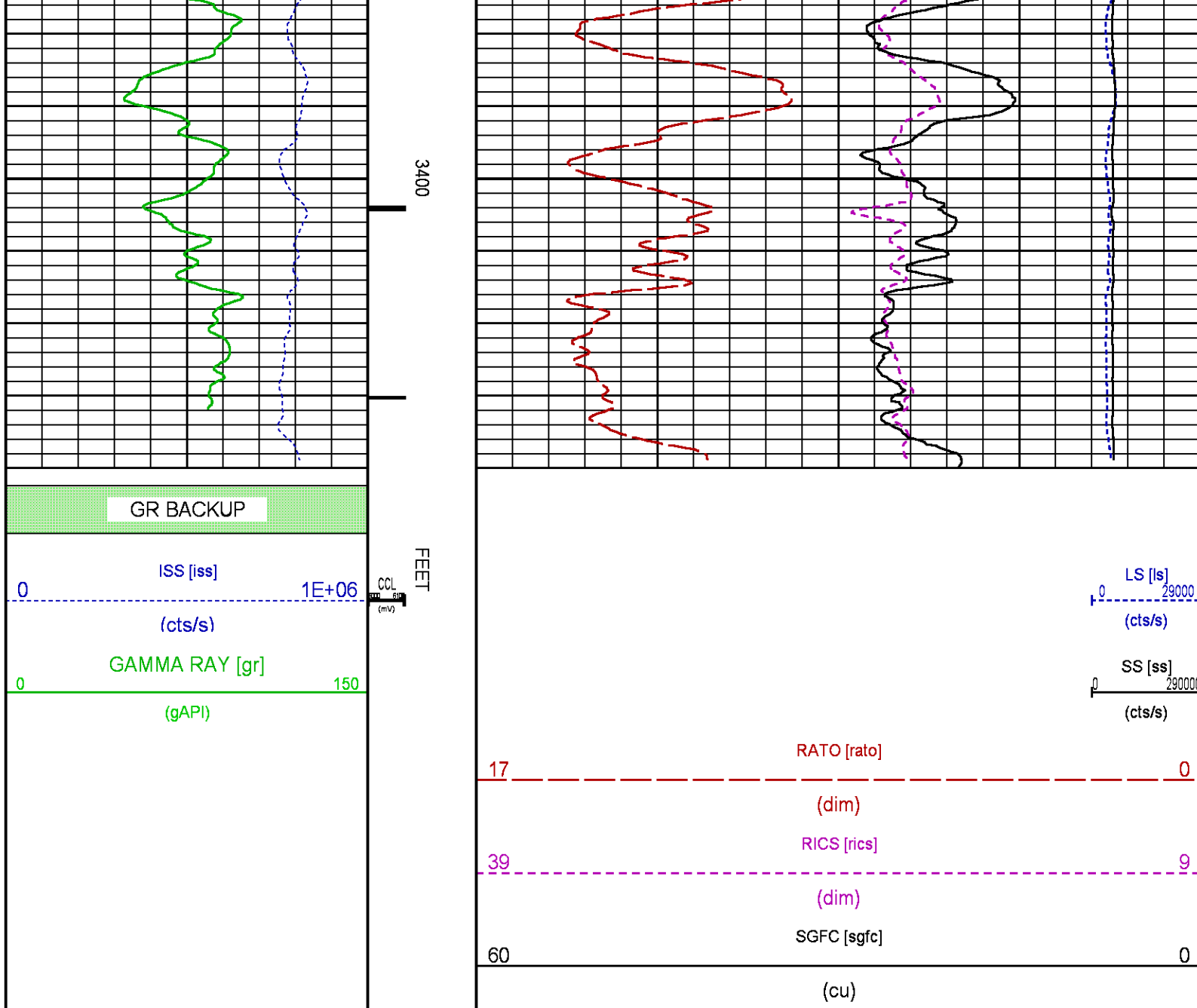




3200

3300





## MAIN SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1 Patches: 8

Plotted: Thu Jan 21 16:17:49 2016

### PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH101513/n353h04.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 5047.000 ft BOTTOM DEPTH: 8410.853 ft

### SYMMETRIC FILTER

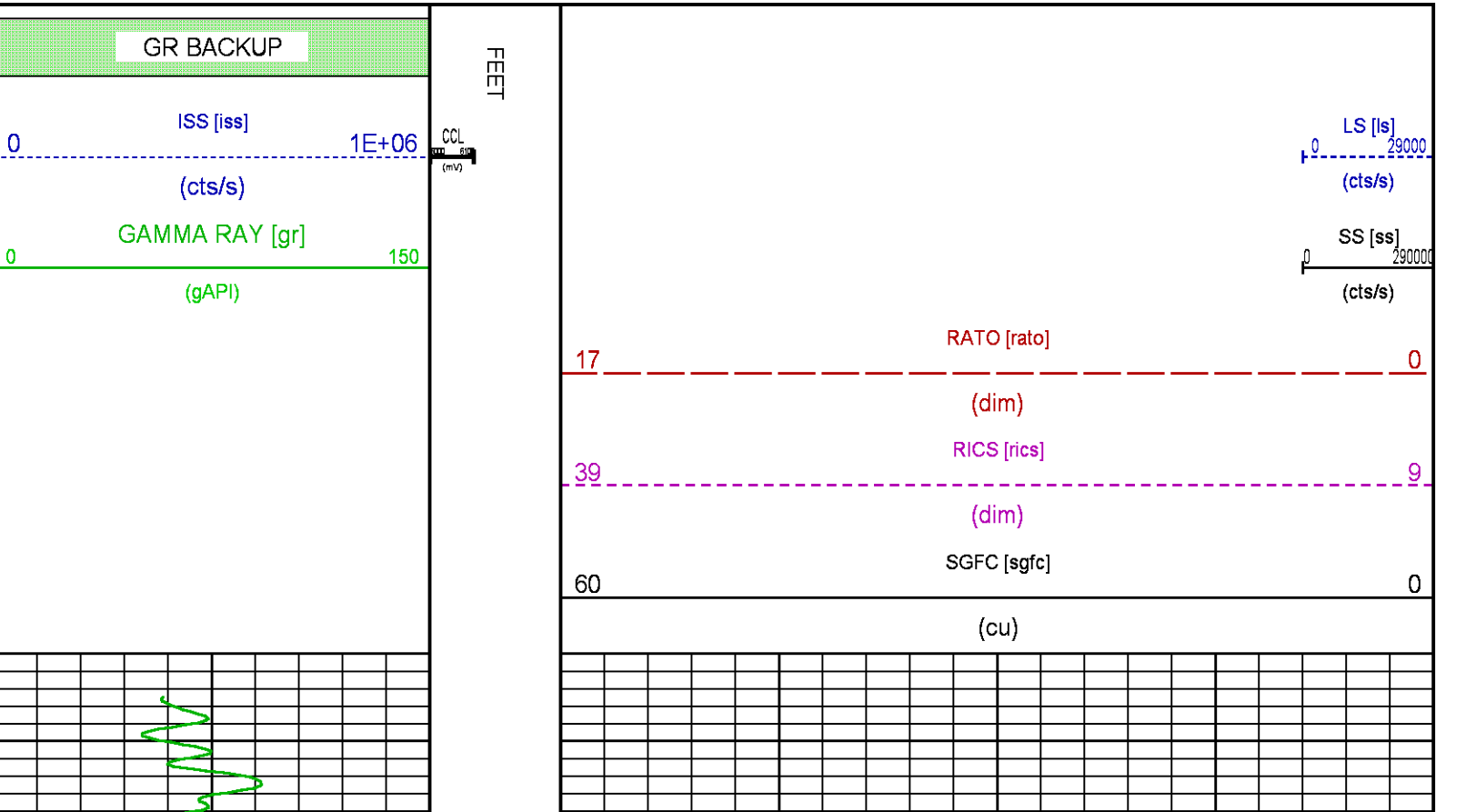
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
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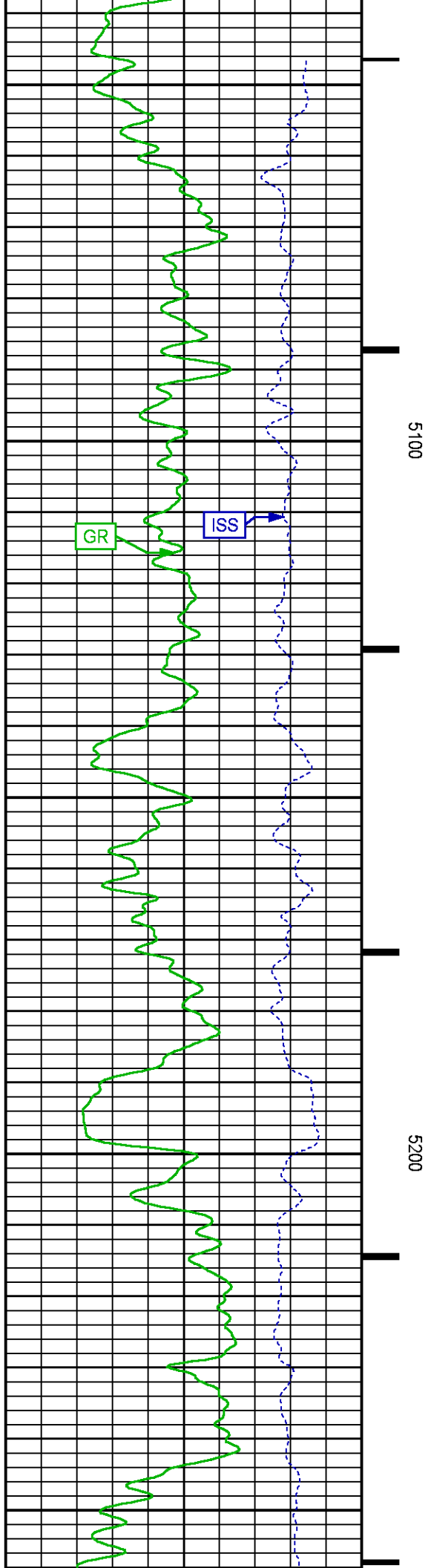
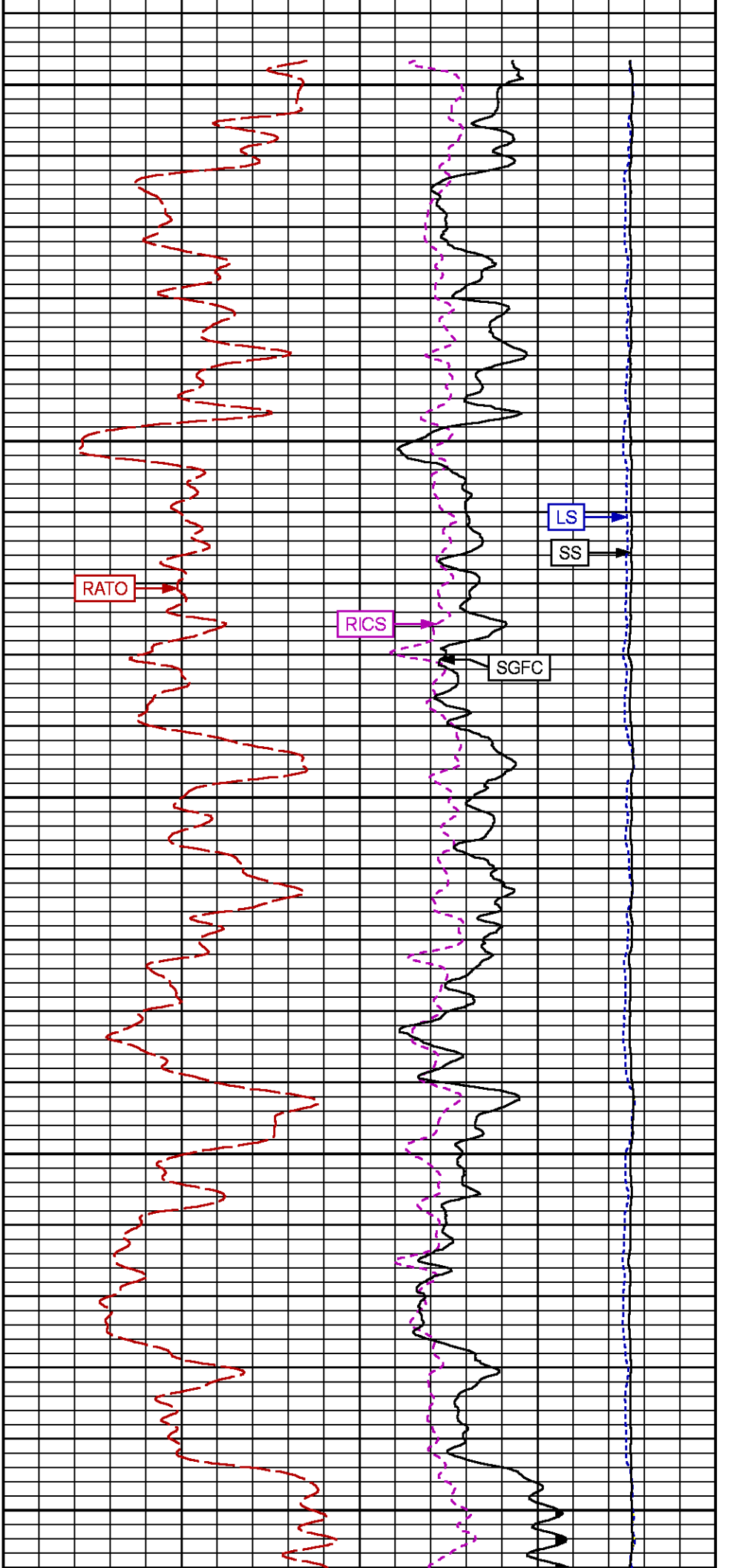
GR	FILTER ()	medium (1)	TOP	BOTTOM
RPM PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP
	OPEN/CASED HOLE	CASED HOLE		BOTTOM
	BOREHOLE SIZE	7.88	in	"
	CASING SIZE	4.50	in	"
	MATRIX	SANDSTONE		"
	CORRECTION BUFFER	11		"

CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jan 21 12:48:44 2016	CASING COLLAR LOCATOR
F1:GR	Jan 21 12:48:44 2016	GAMMA RAY
F1:ISS	Jan 21 12:48:44 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jan 21 12:48:44 2016	LONG SPACE COUNT RATE
F1:RATO	Jan 21 12:48:44 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jan 21 12:48:44 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jan 21 12:48:44 2016	CORRECTED FORMATION SIGMA
F1:SS	Jan 21 12:48:44 2016	SHORT SPACE COUNT RATE

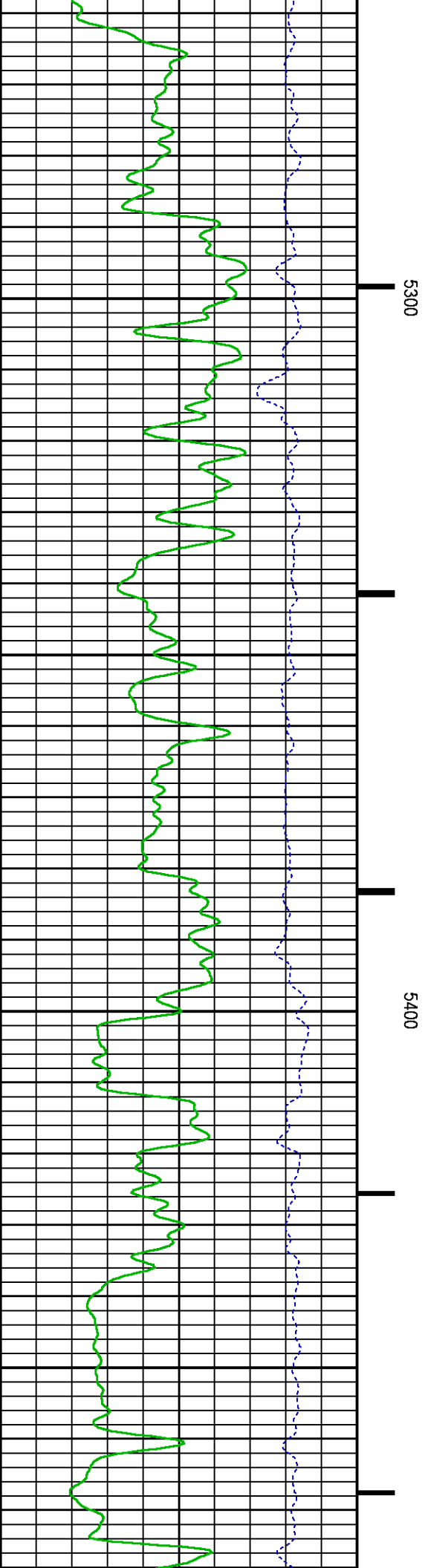
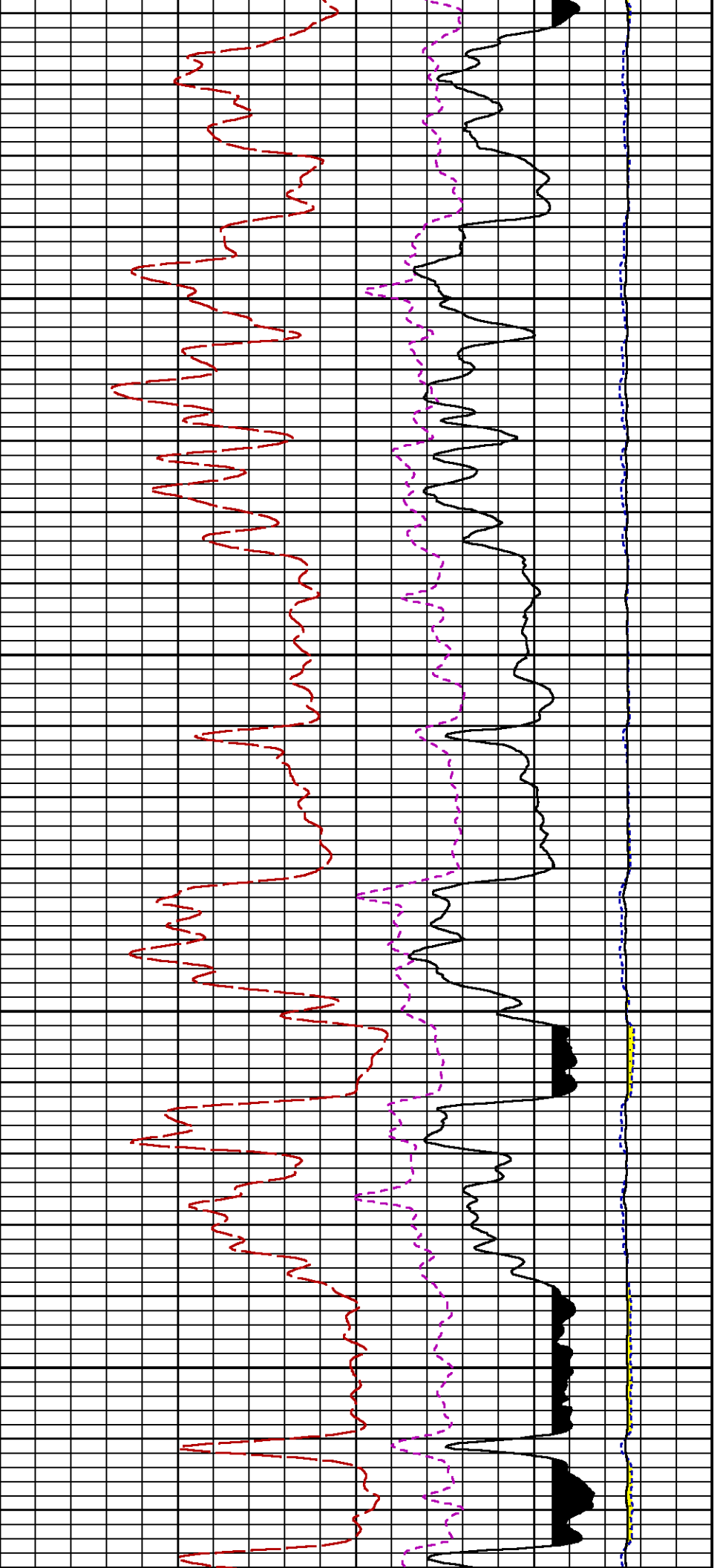
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

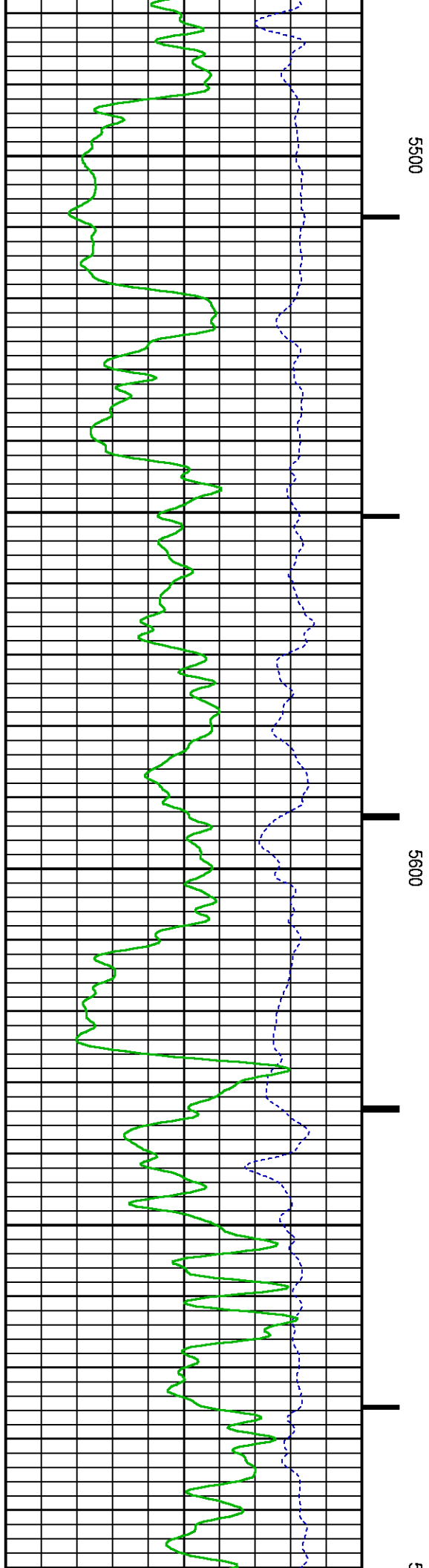
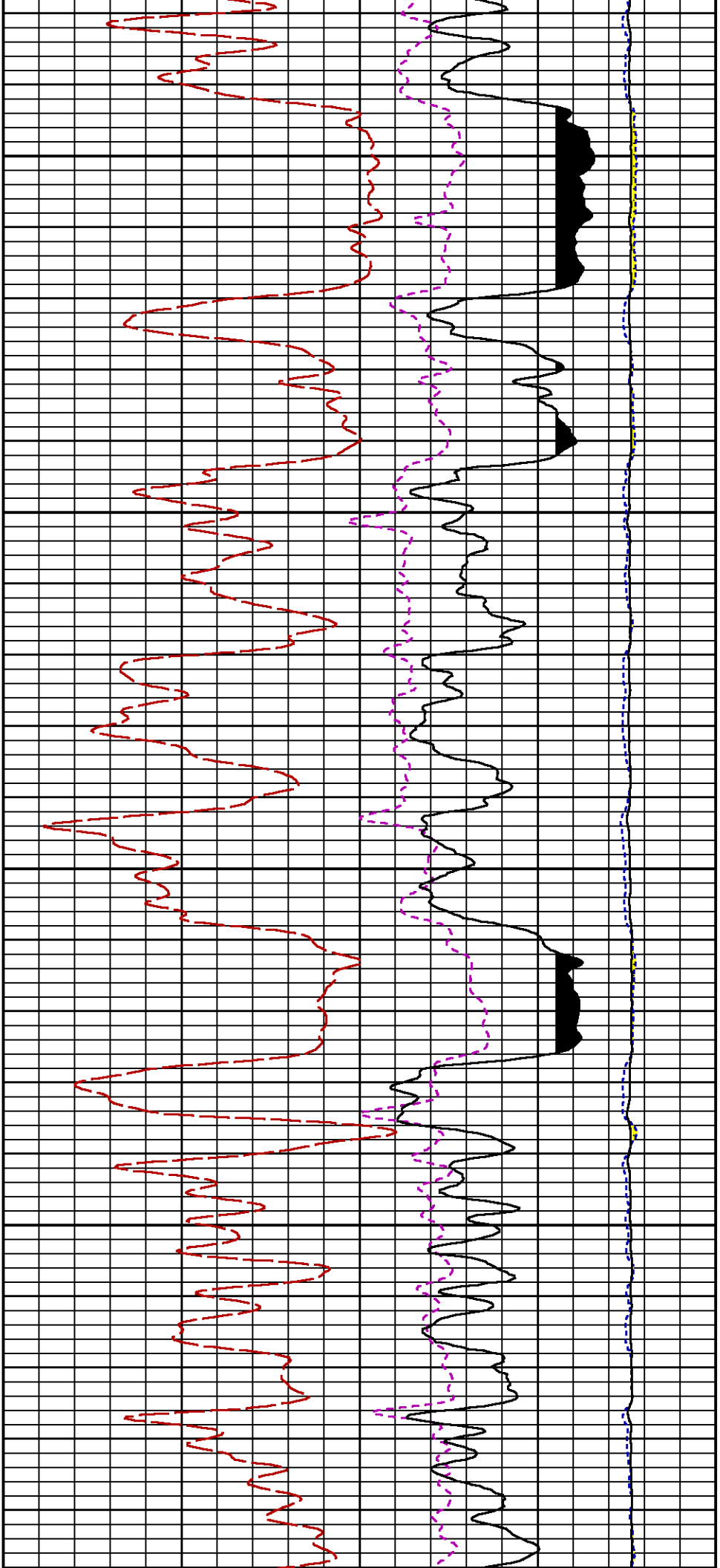
Presentation	: cas6685:/dat1a/CH101513/RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval	: 5020.75 - 8392.5 Feet
Data File 1	: F1 : cas6685:/dat1a/CH101513/n353h04.aff
Created On	: Jan 21 12:48:44 2016
Company	: LARAMIE ENERGY
Well	: PICEANCE FEDERAL 28-09E
Field	: VEGA
File Interval	: 5018.75 - 8408.75 Feet
OCT	: n353h

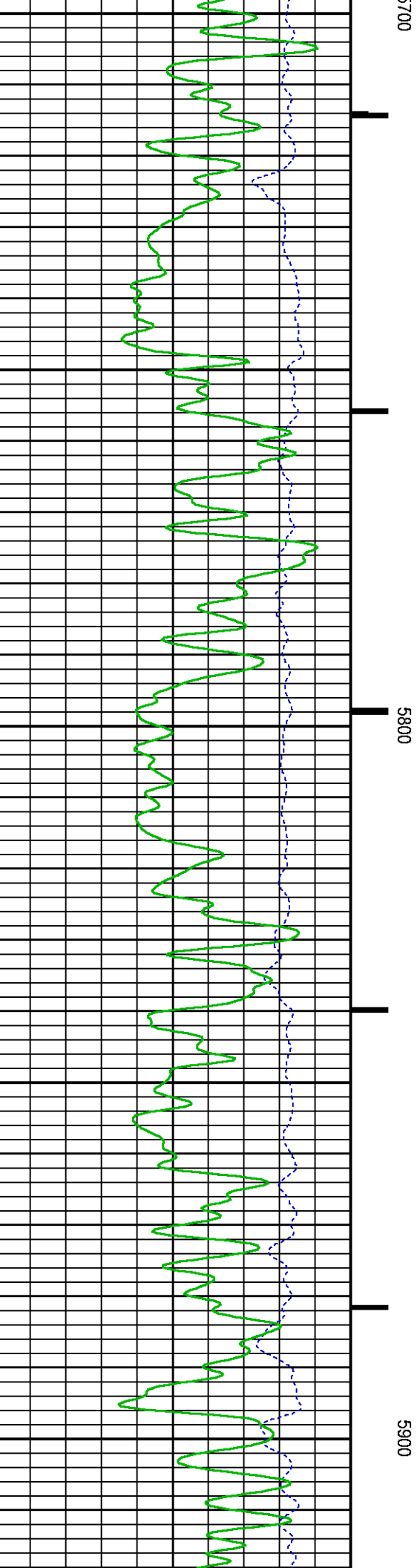
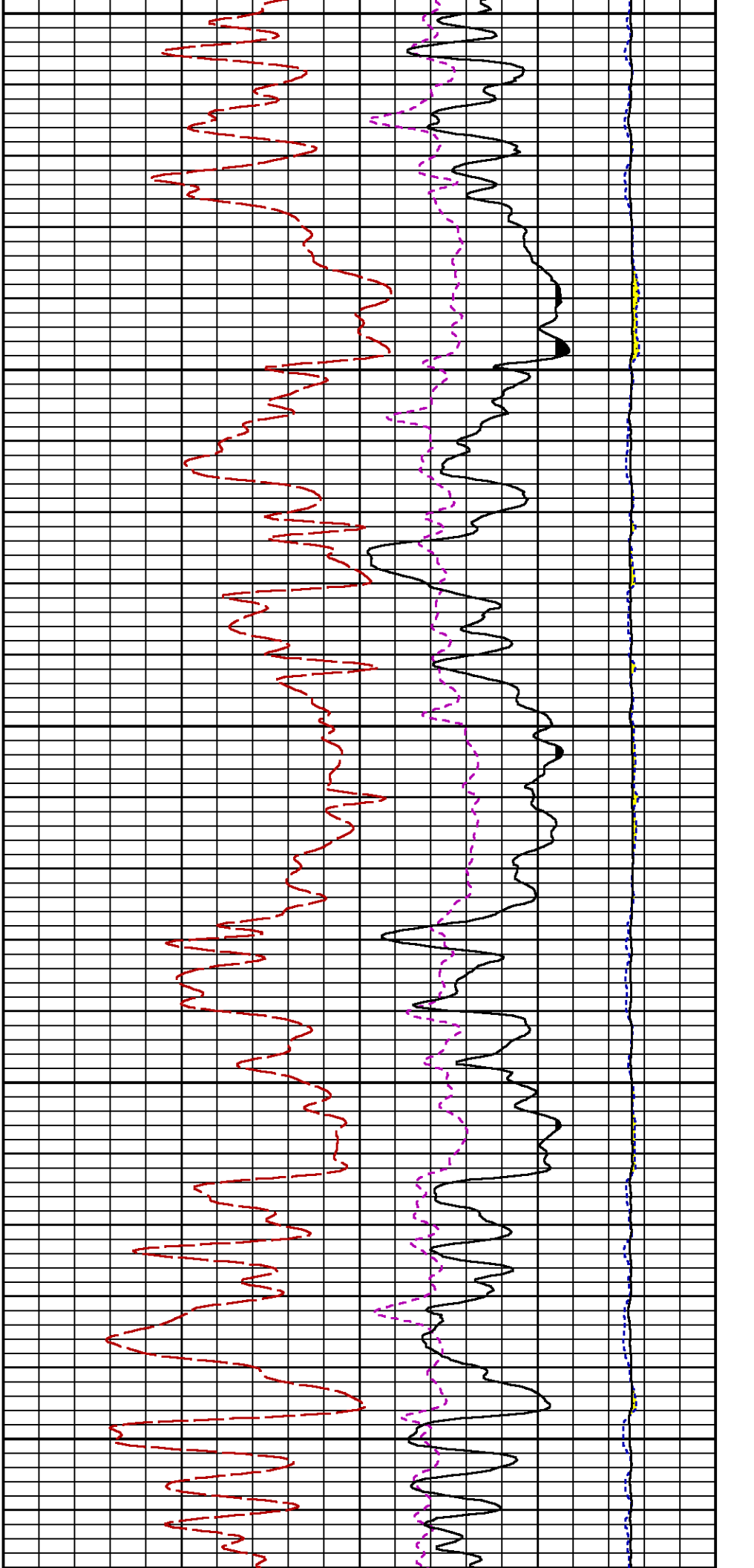


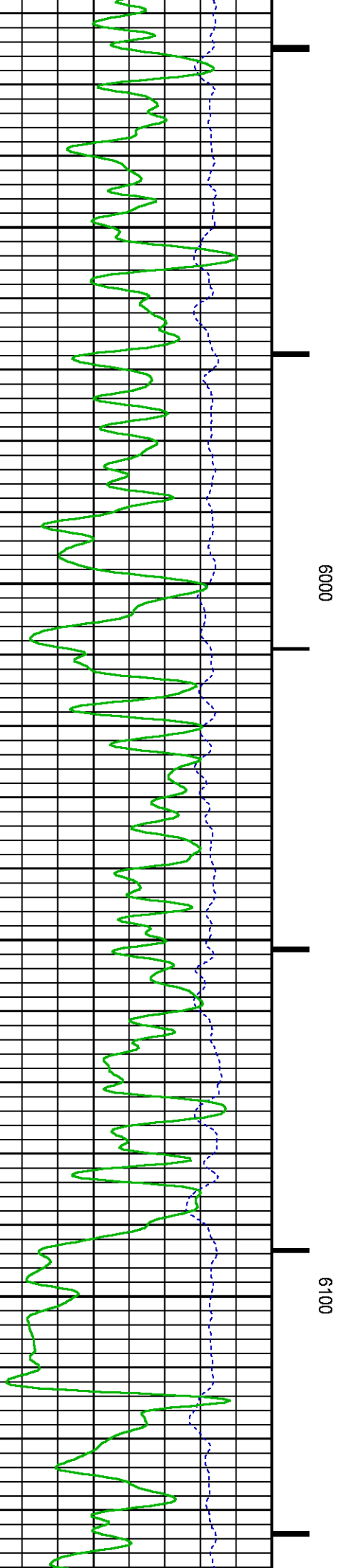
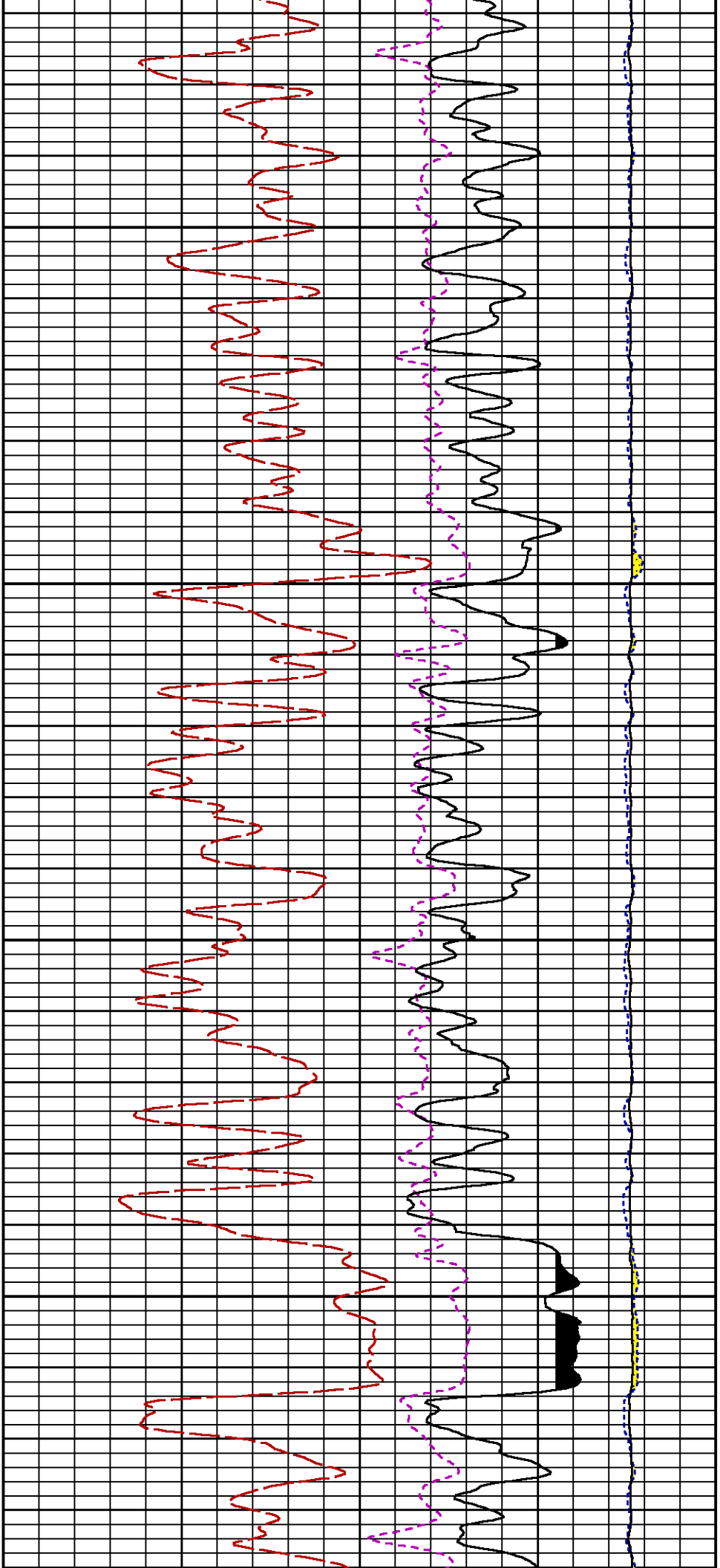


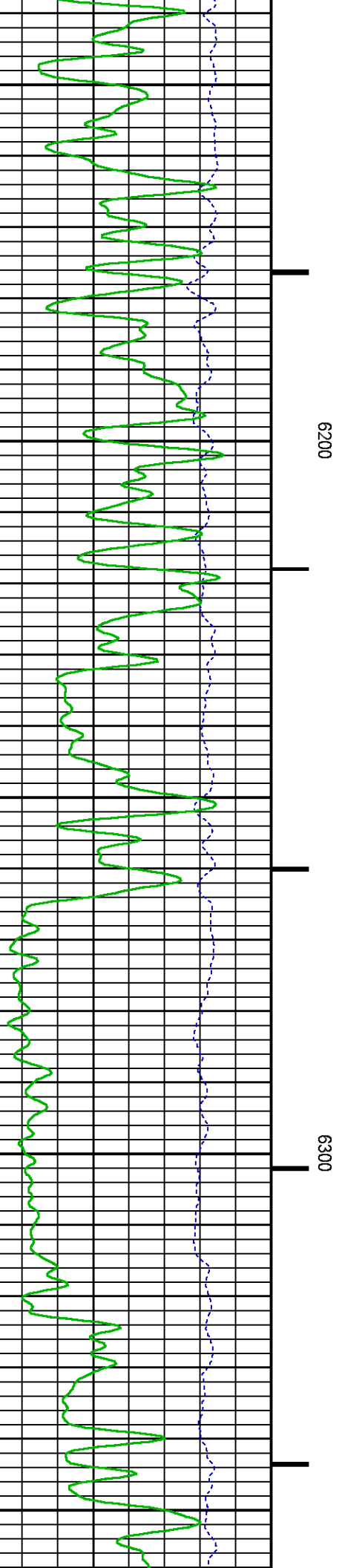
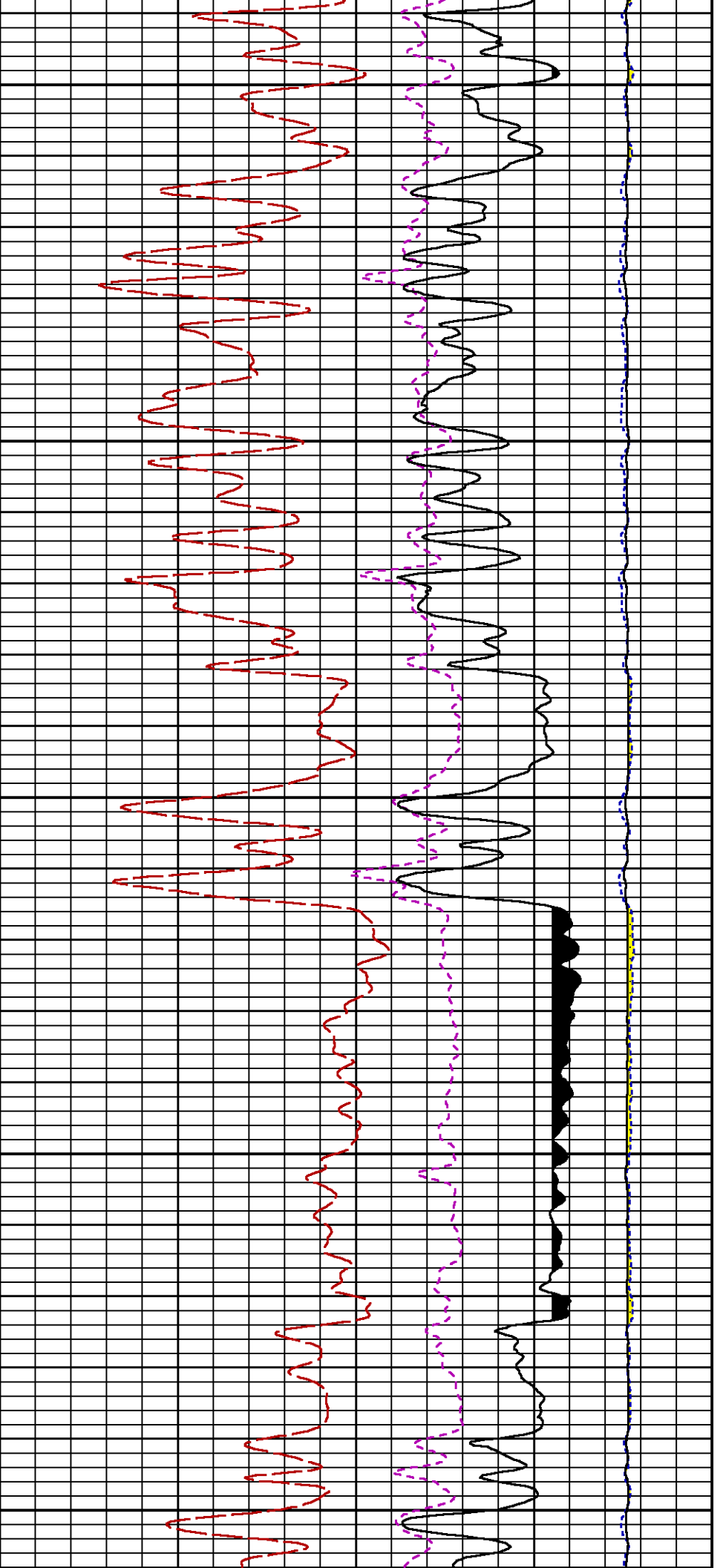


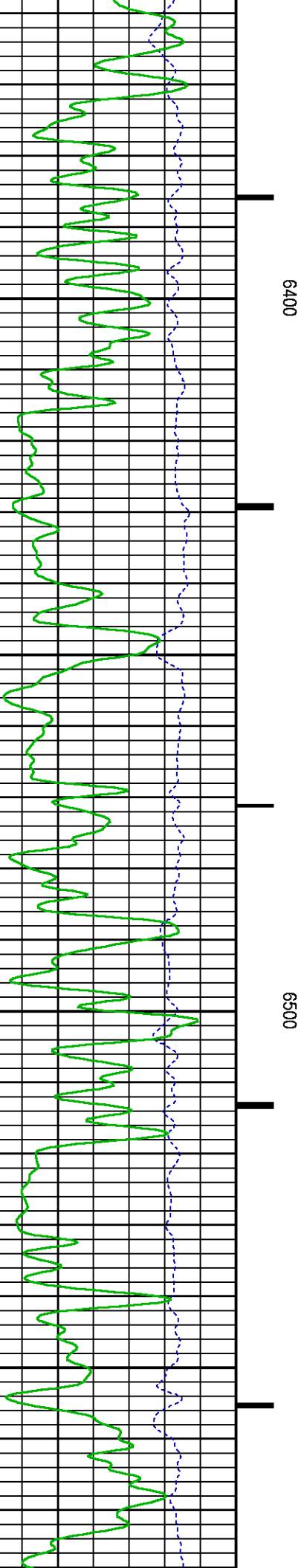
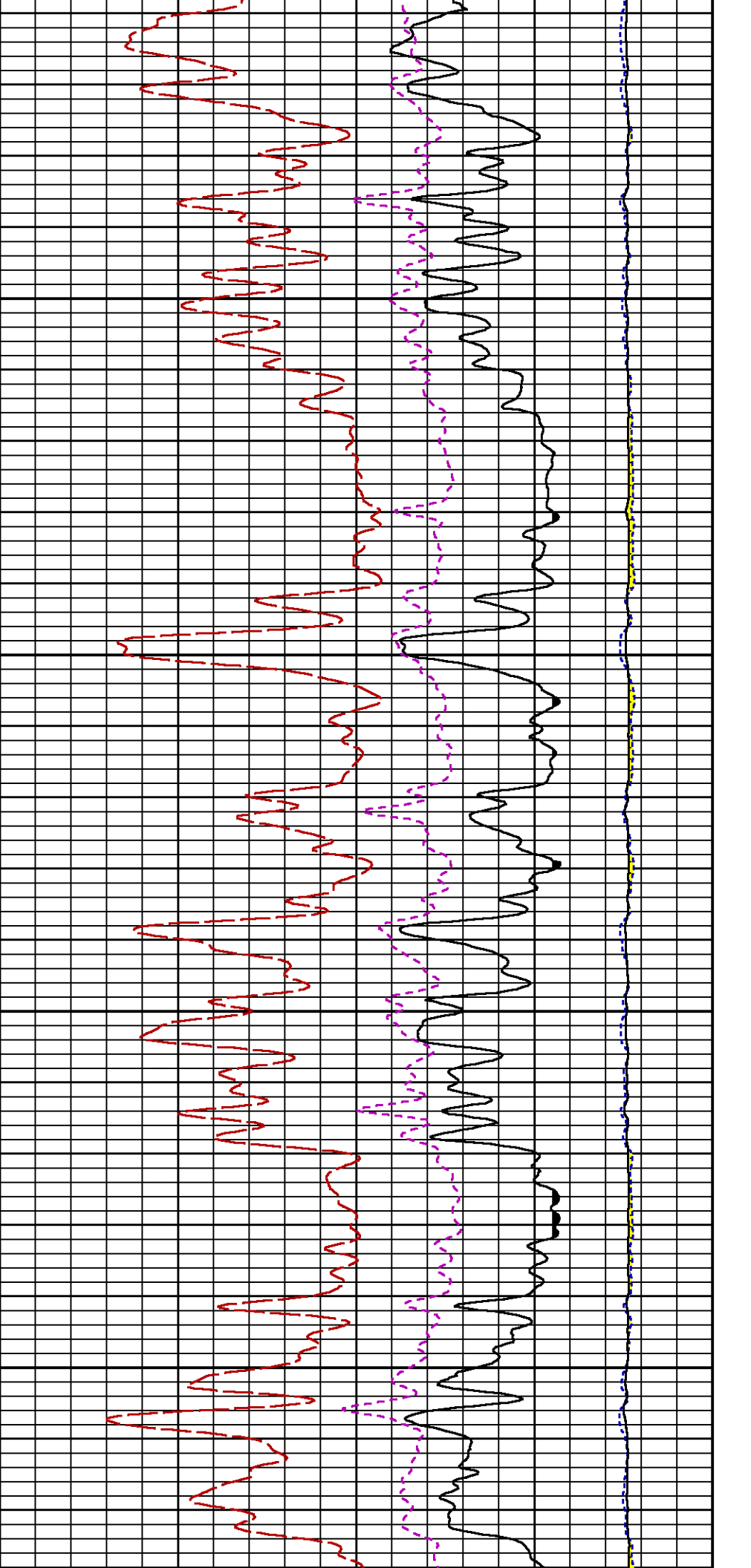


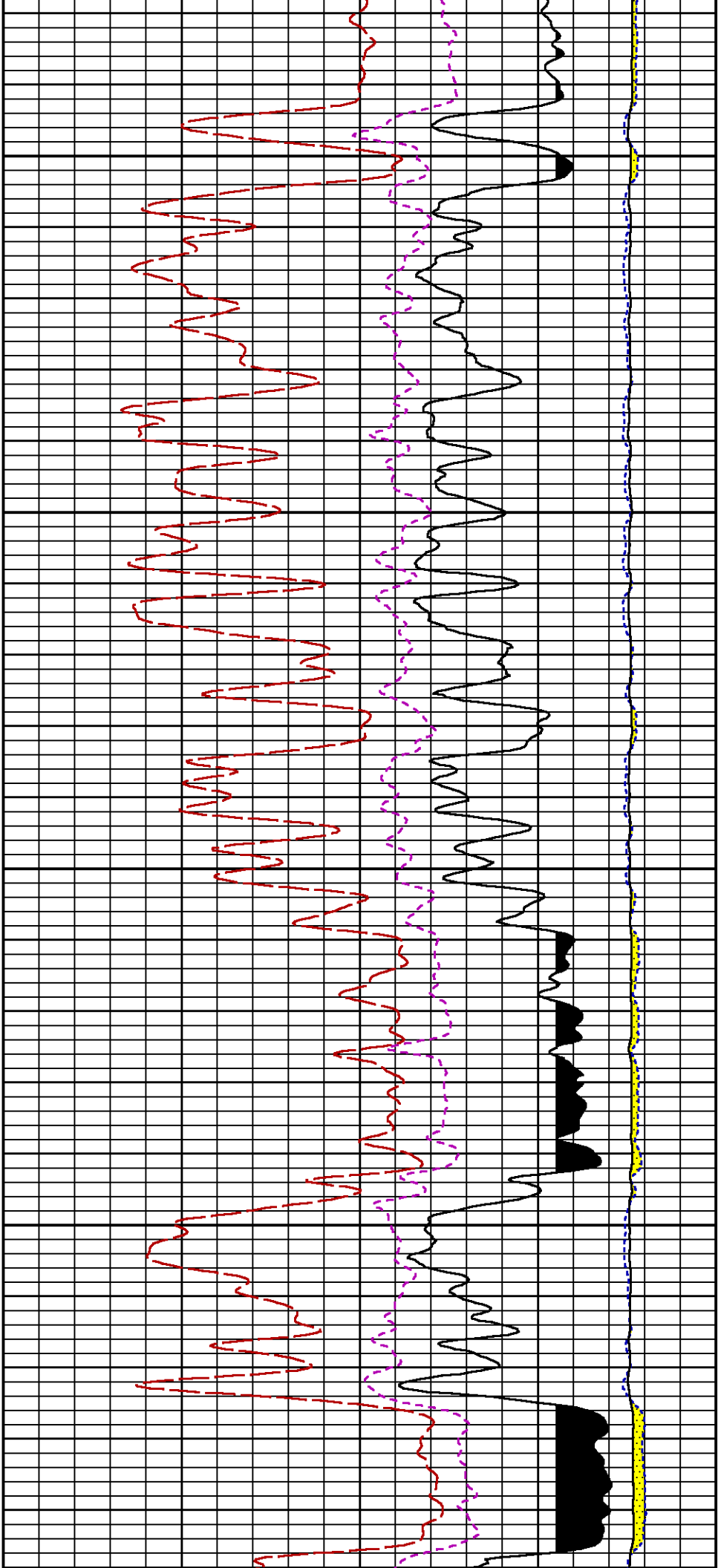










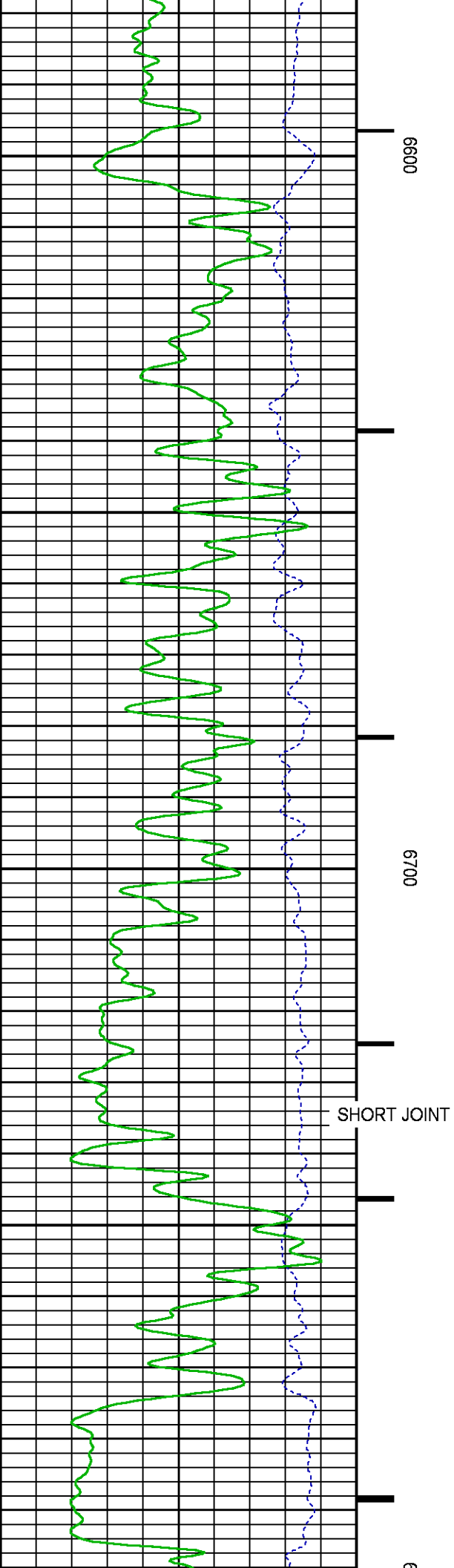


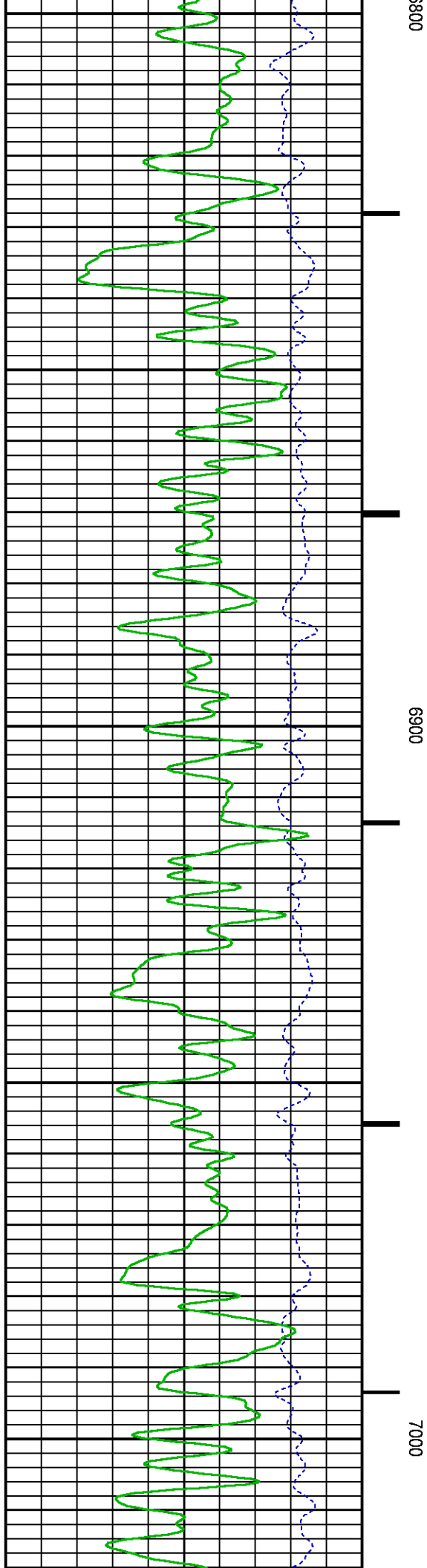
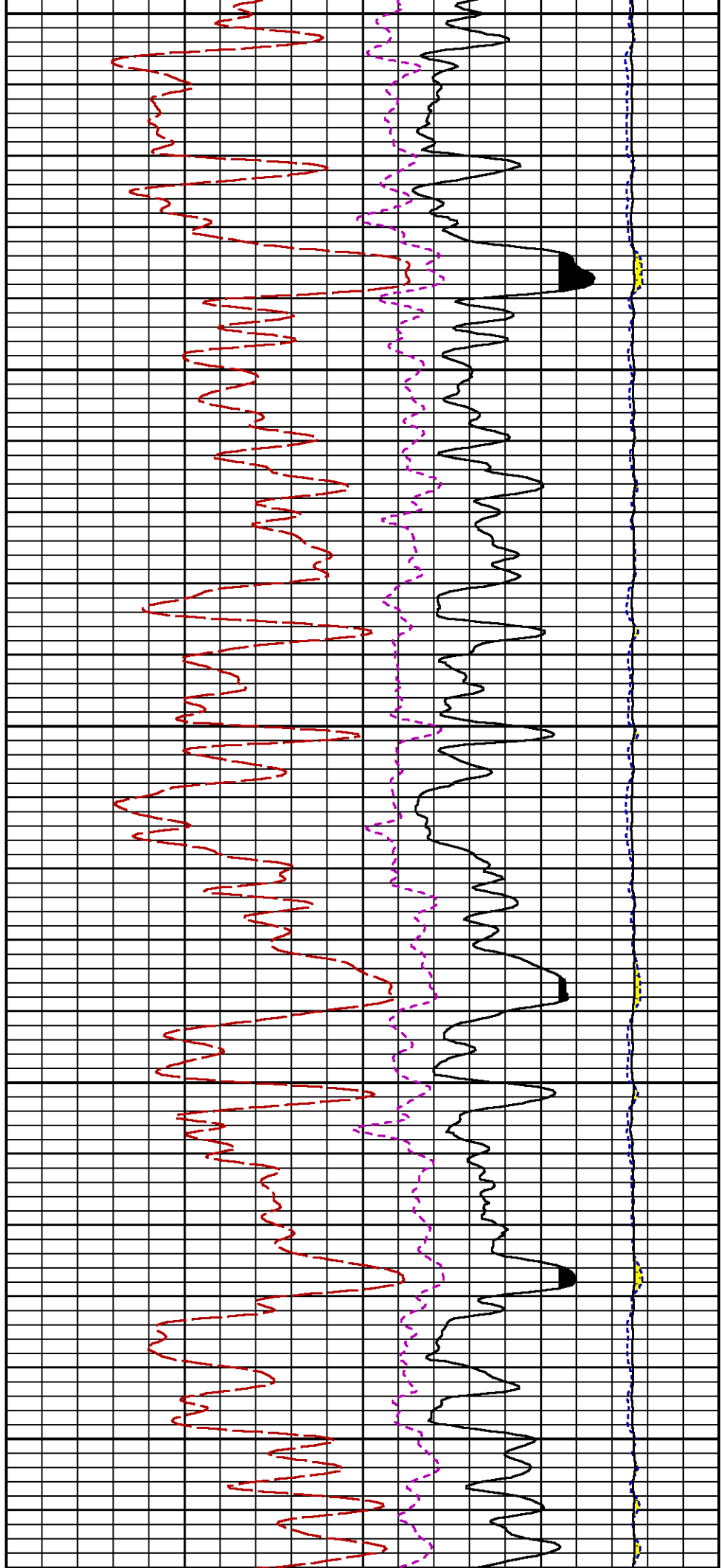
6600

6700

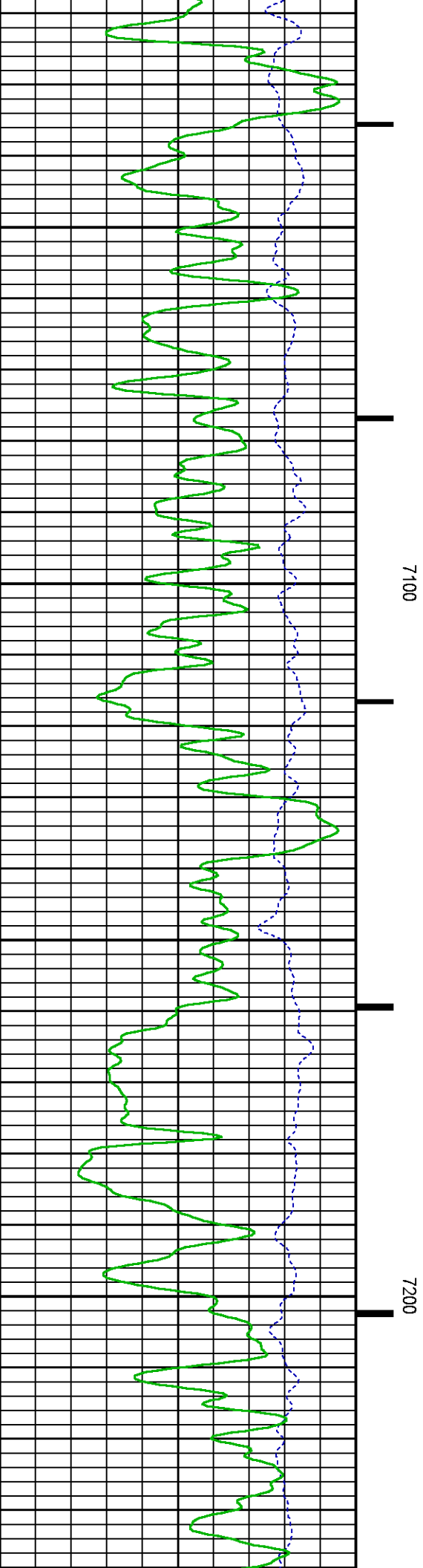
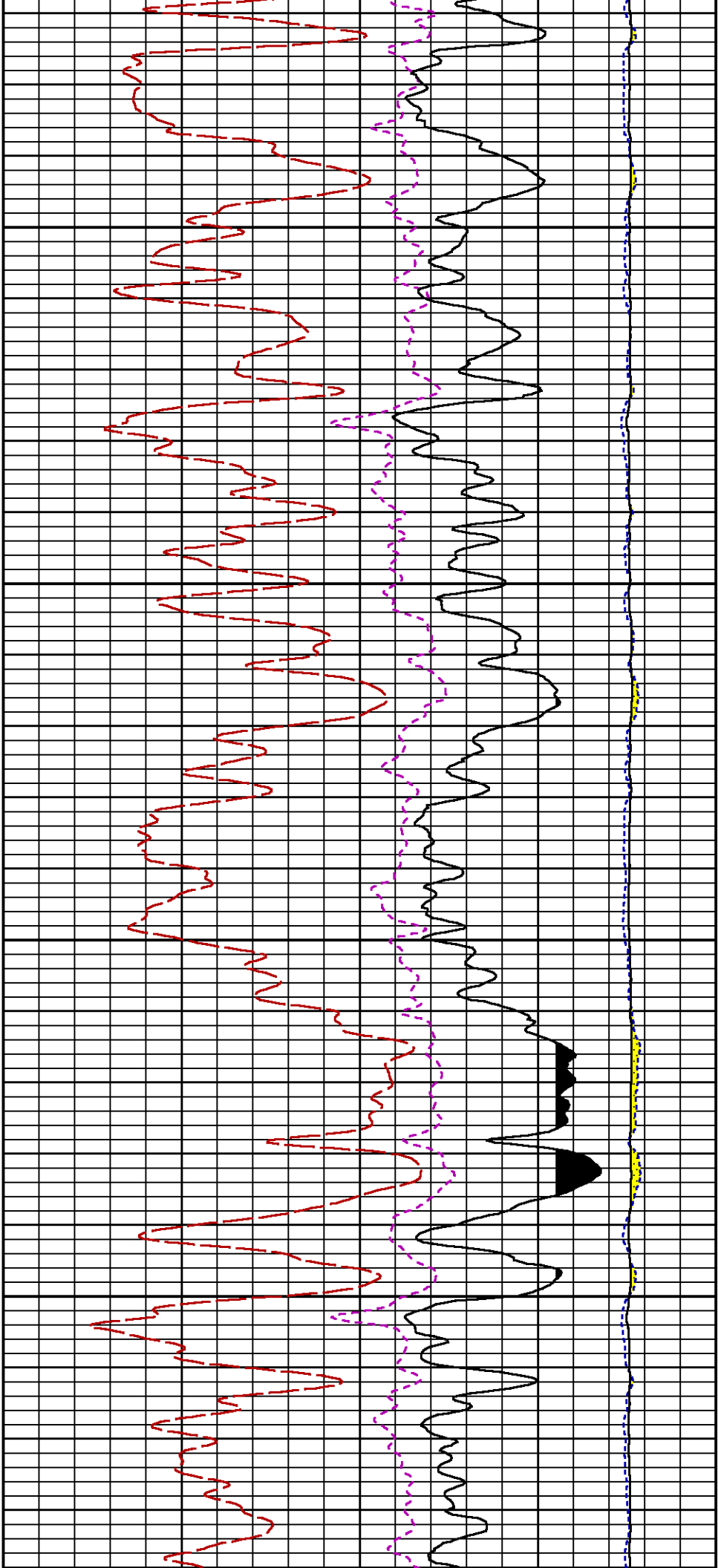
SHORT JOINT

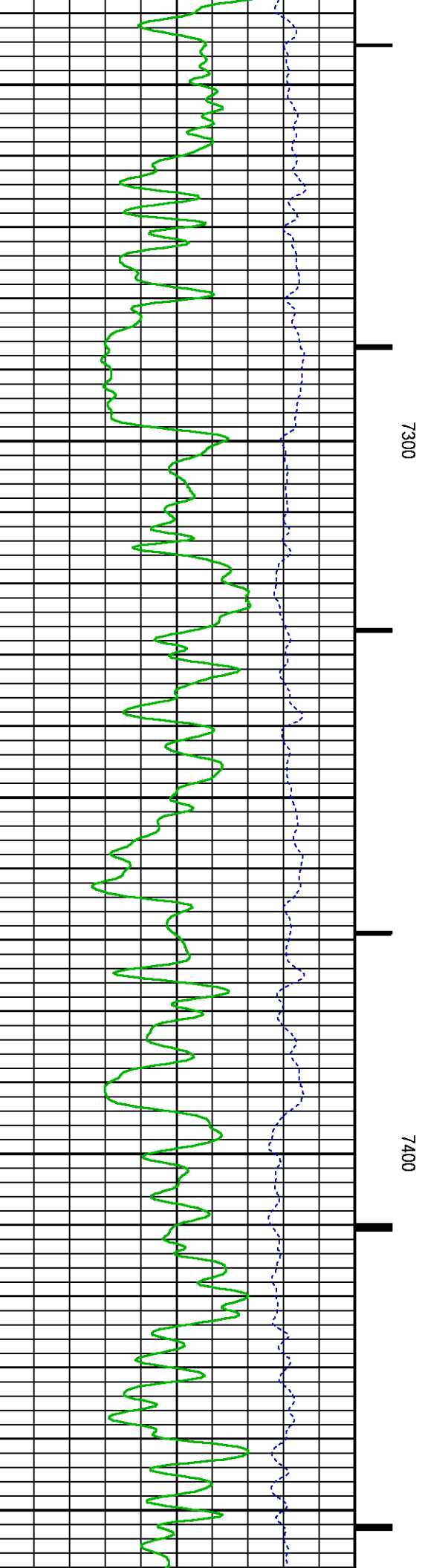
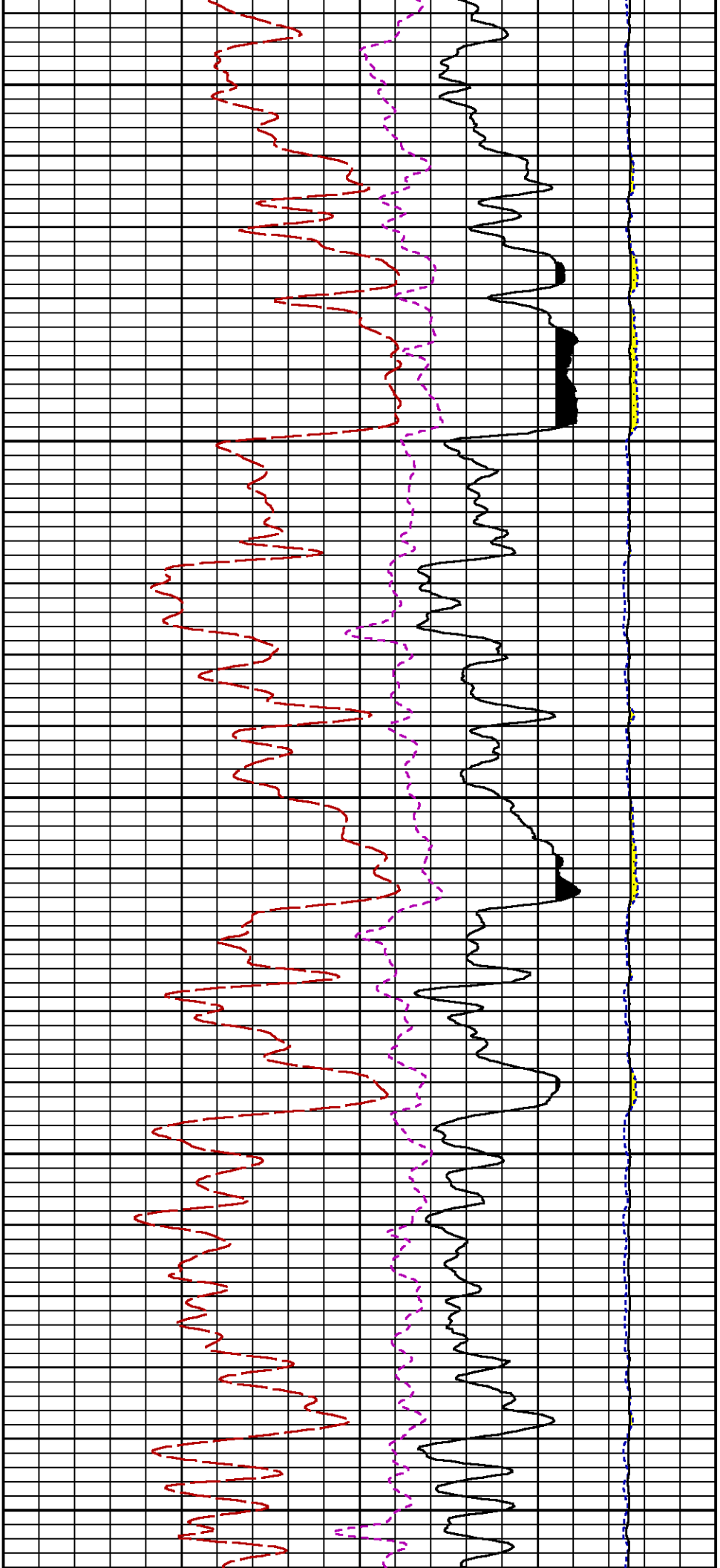
6

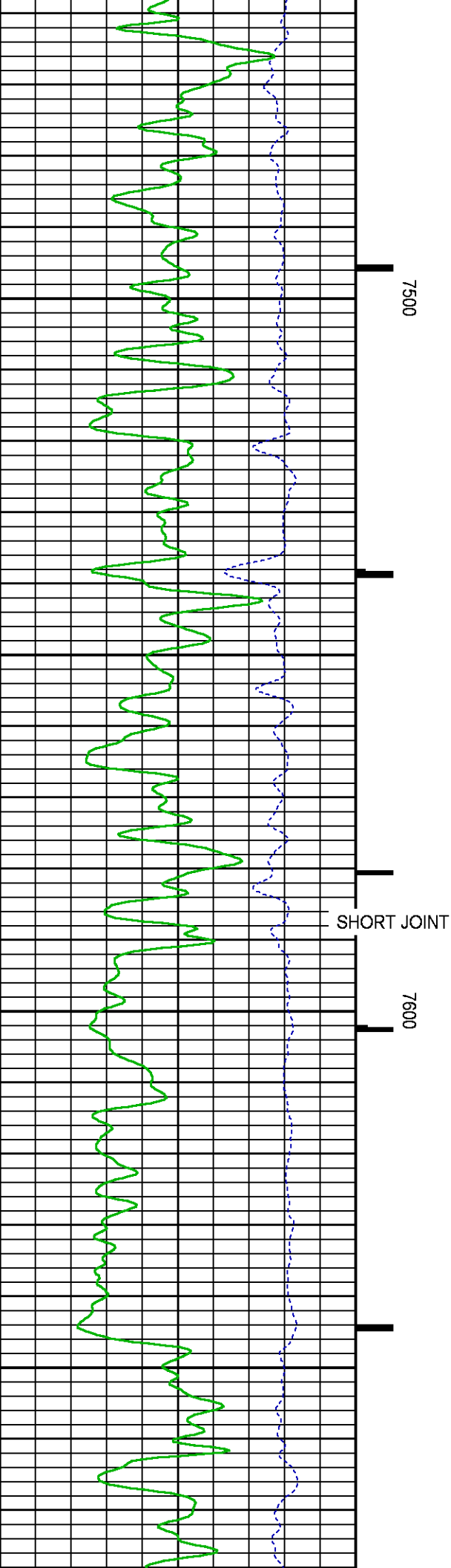
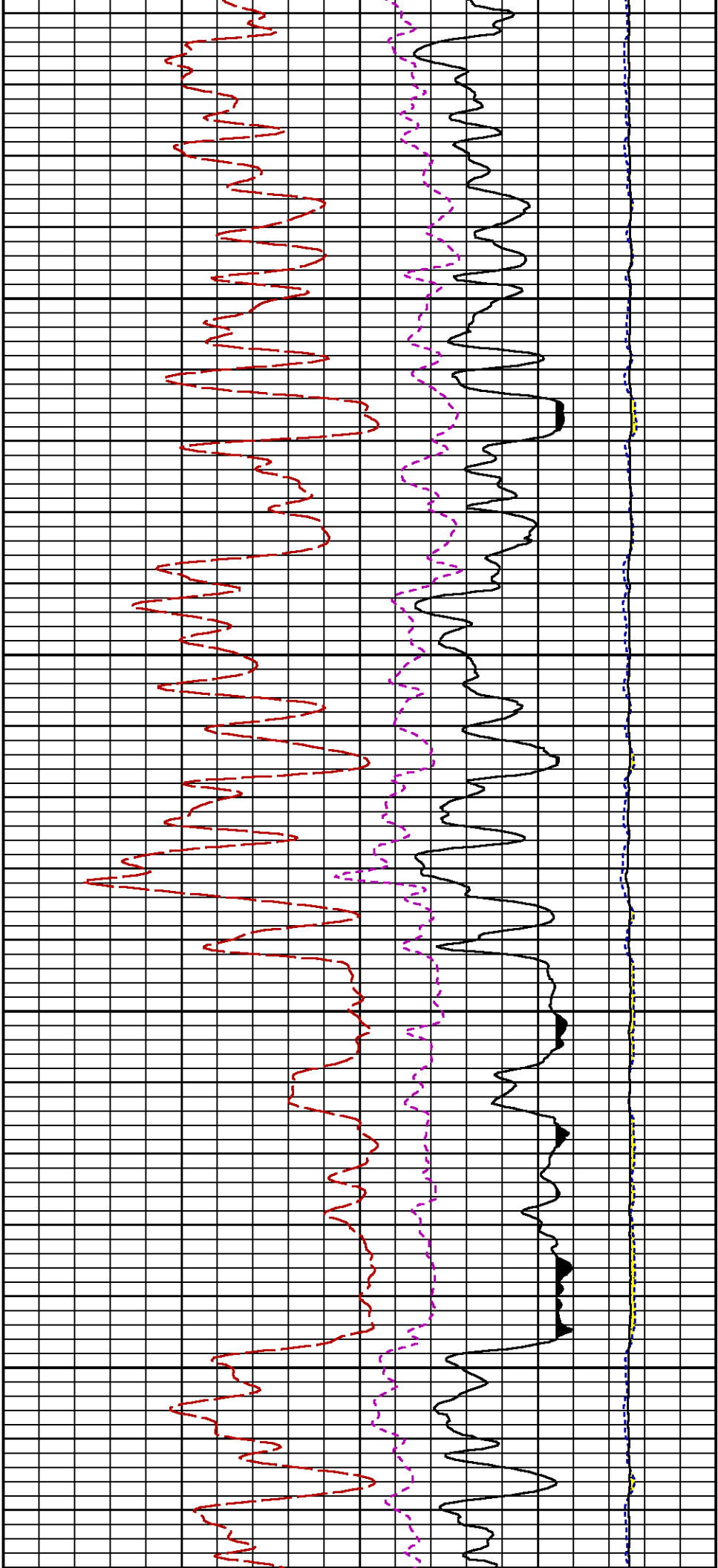


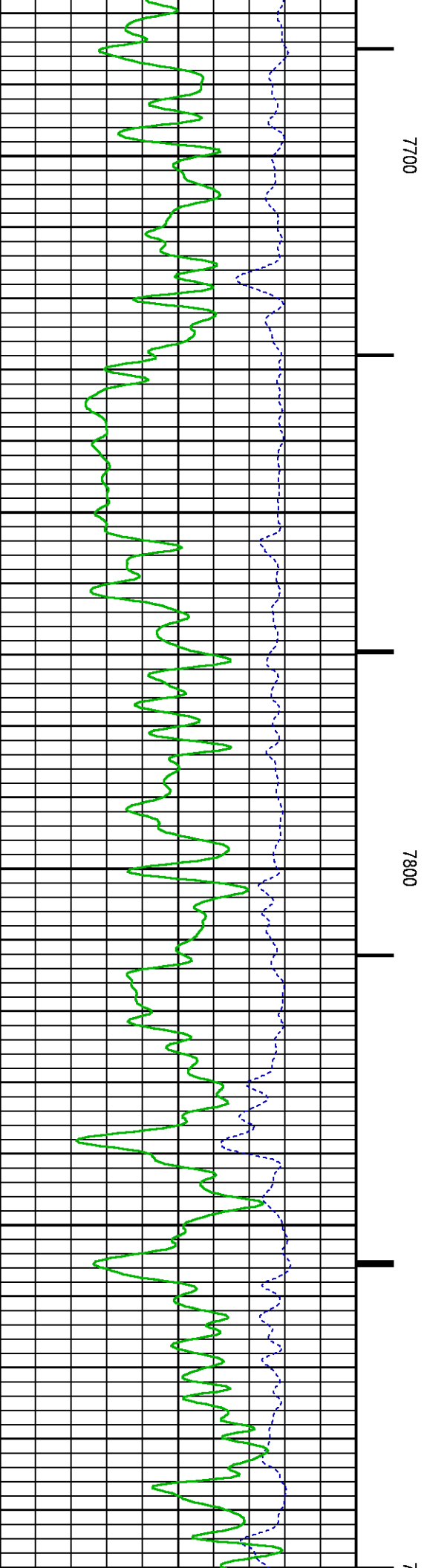
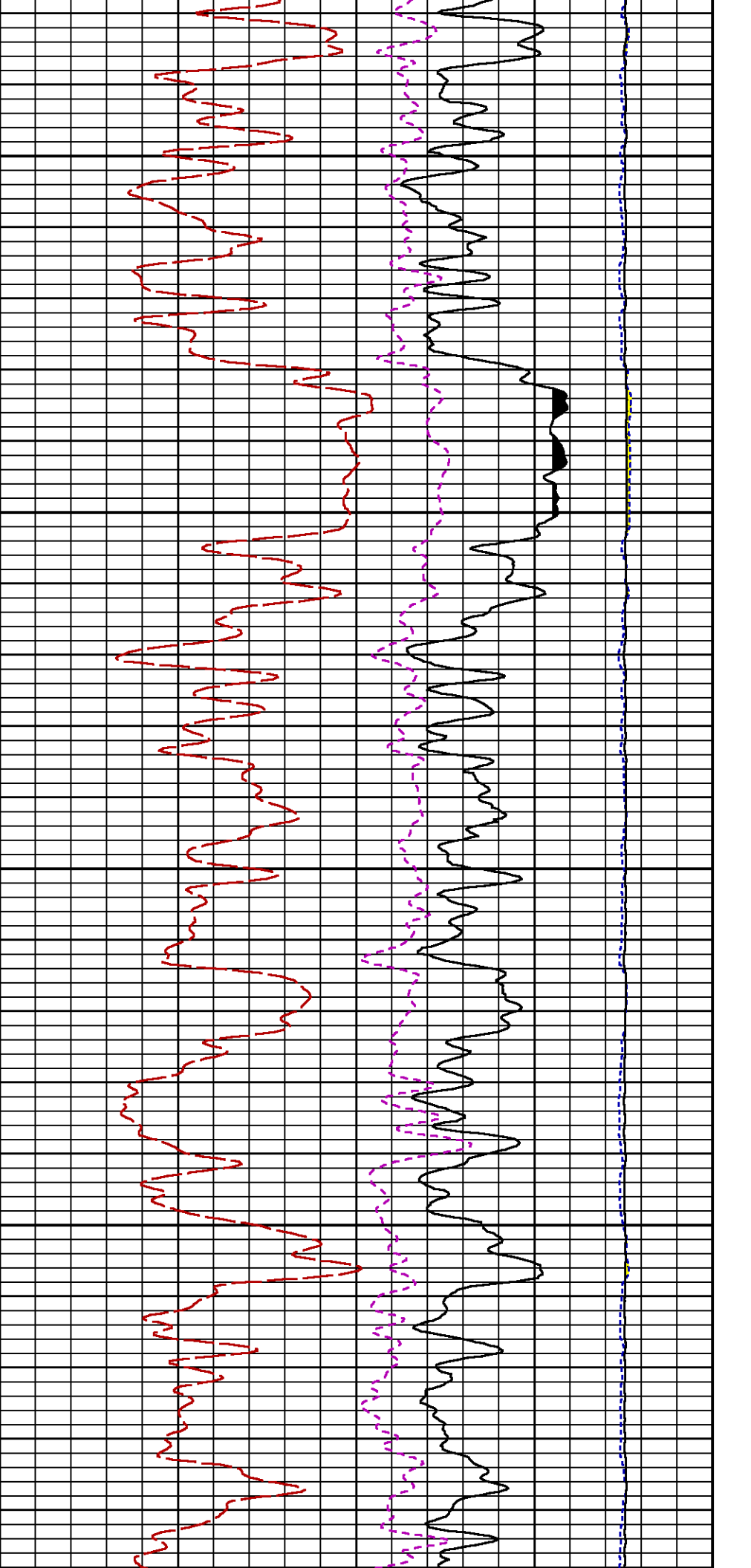


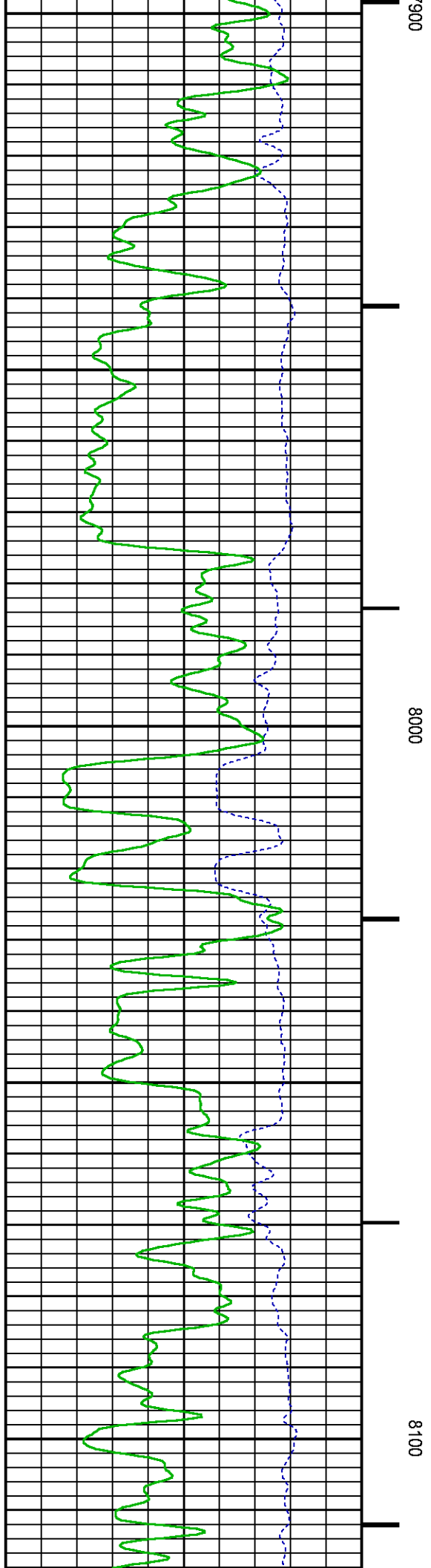
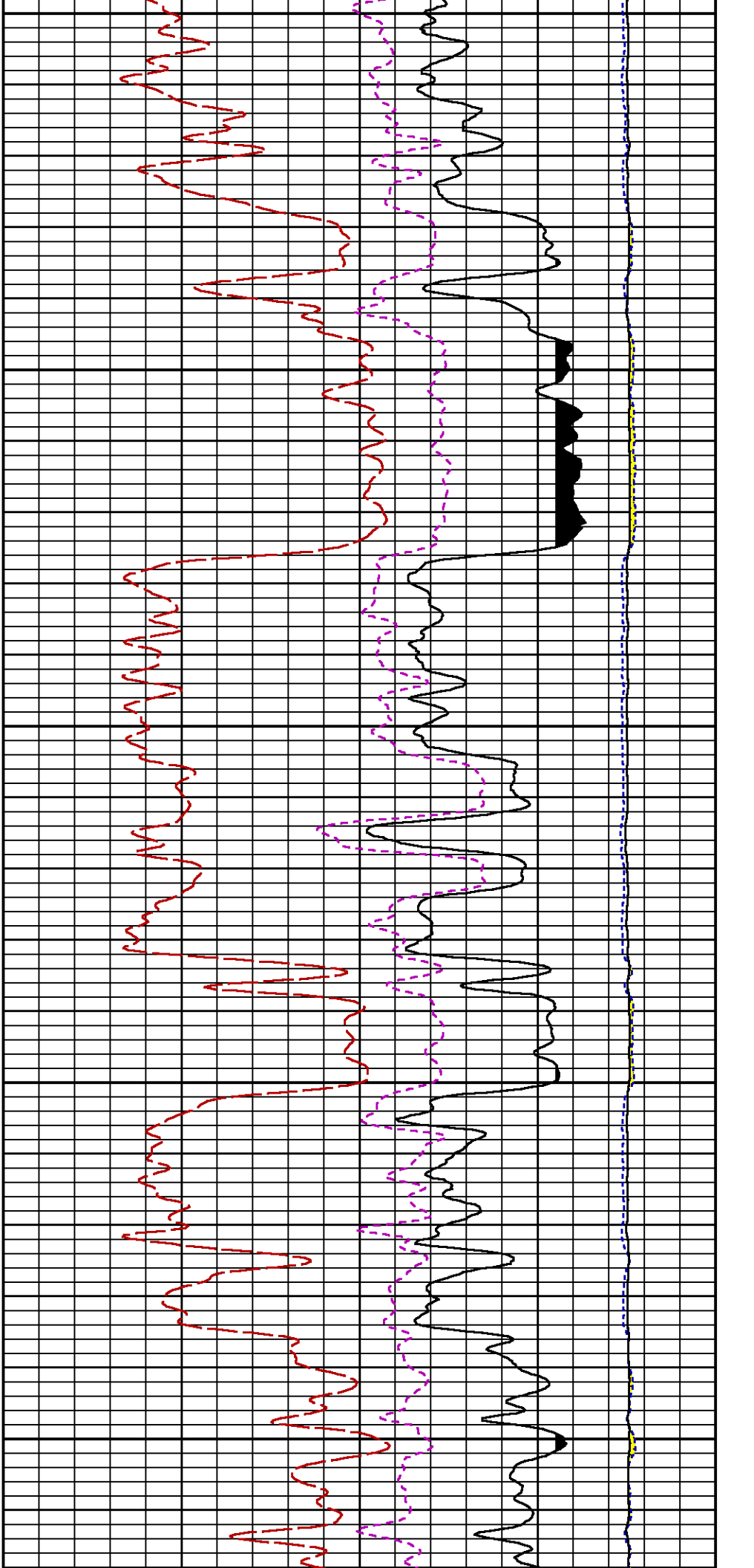


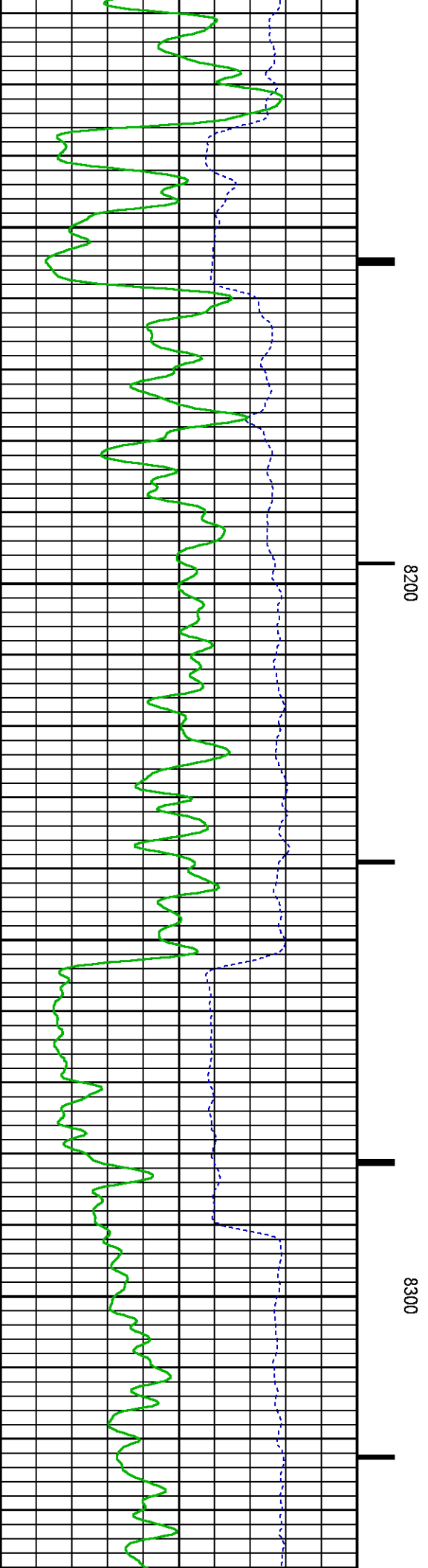
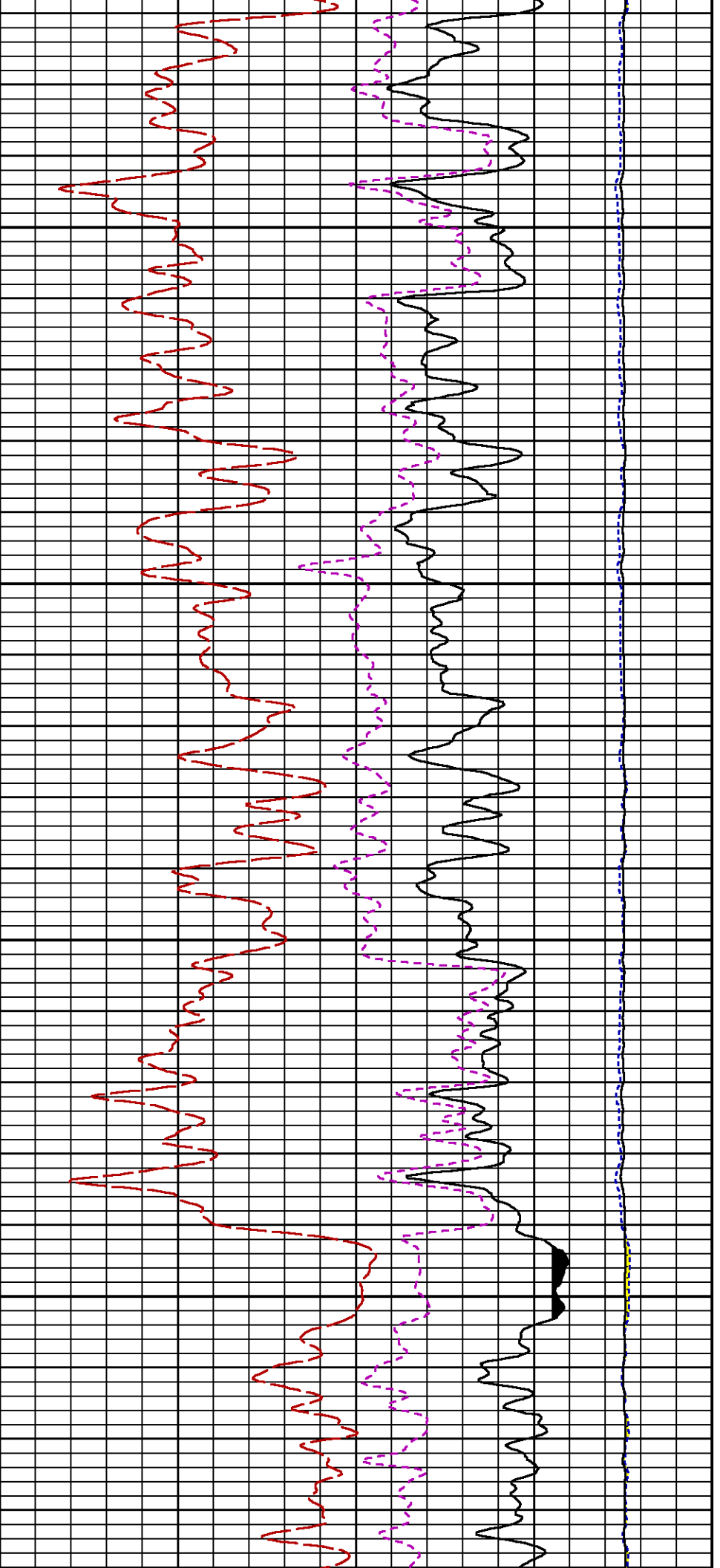


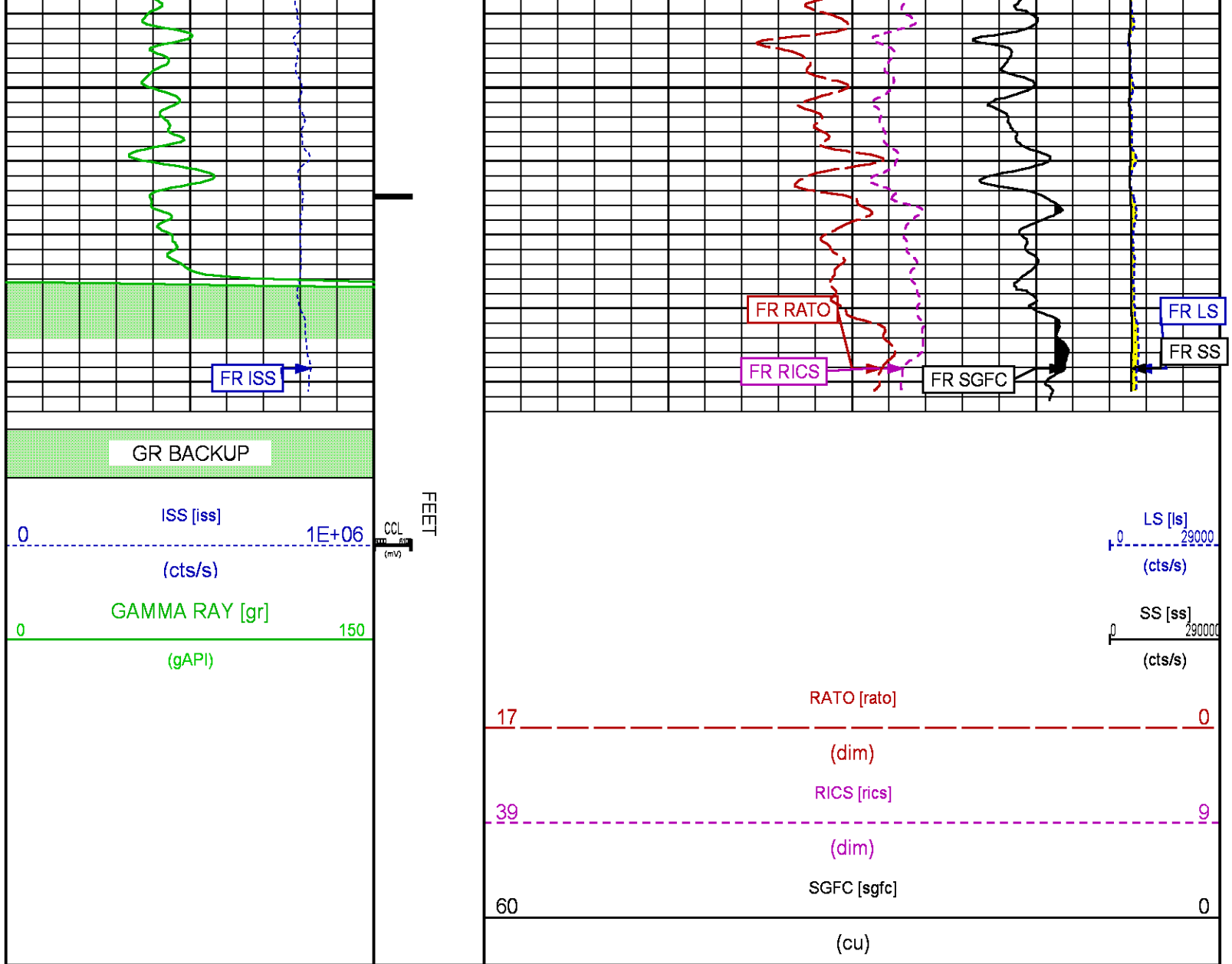












REPEAT SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1 Patches: 8

Plotted: Thu Jan 21 13:54:51 2016

## PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH101513/n353h01.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 8193.500 ft BOTTOM DEPTH: 8408.750 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		"	"

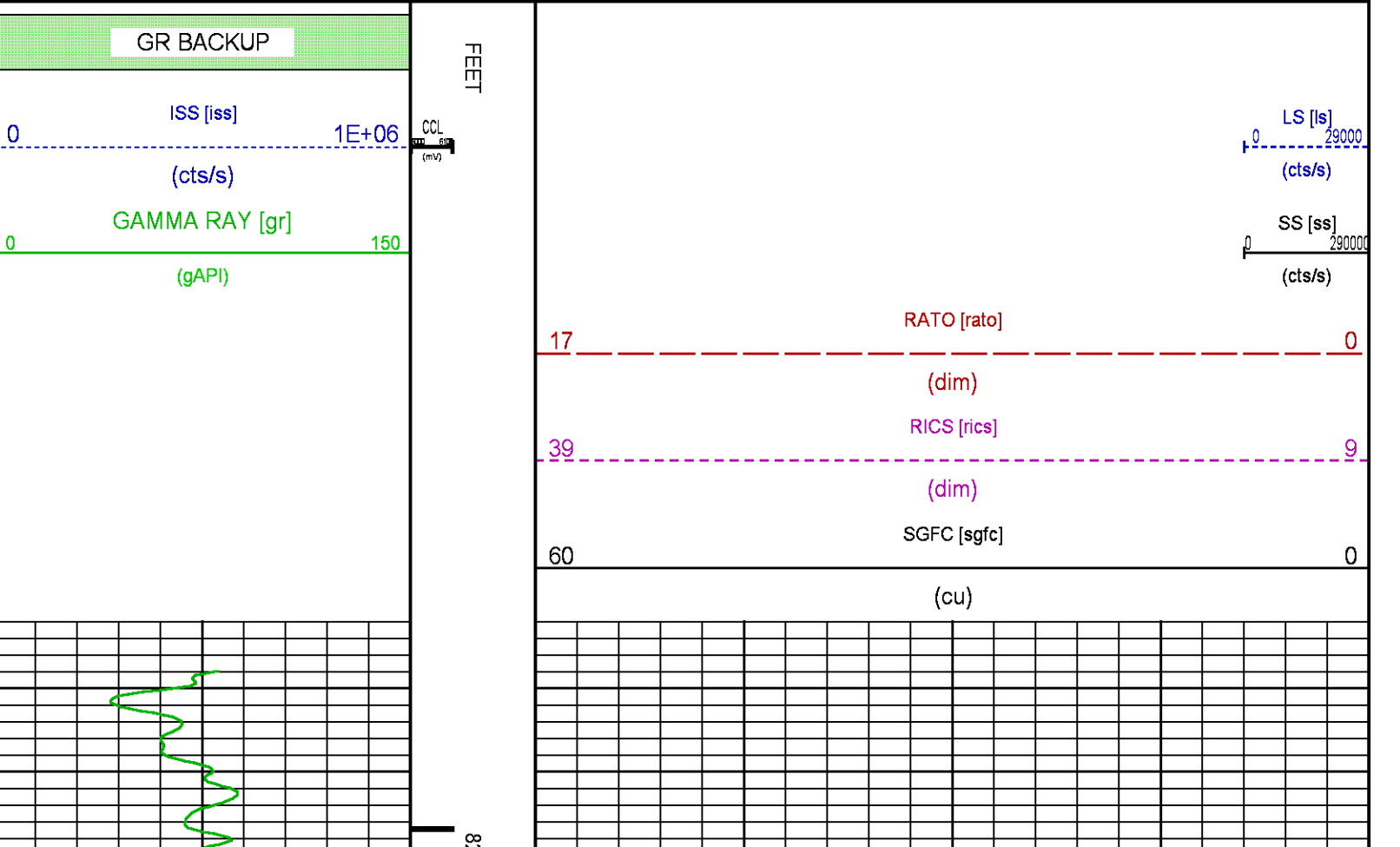
CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jan 21 12:30:50 2016	CASING COLLAR LOCATOR
F1:GR	Jan 21 12:30:50 2016	GAMMA RAY
F1:ISS	Jan 21 12:30:50 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jan 21 12:30:50 2016	LONG SPACE COUNT RATE
F1:RATO	Jan 21 12:30:50 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jan 21 12:30:50 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jan 21 12:30:50 2016	CORRECTED FORMATION SIGMA
F1:SS	Jan 21 12:30:50 2016	SHORT SPACE COUNT RATE

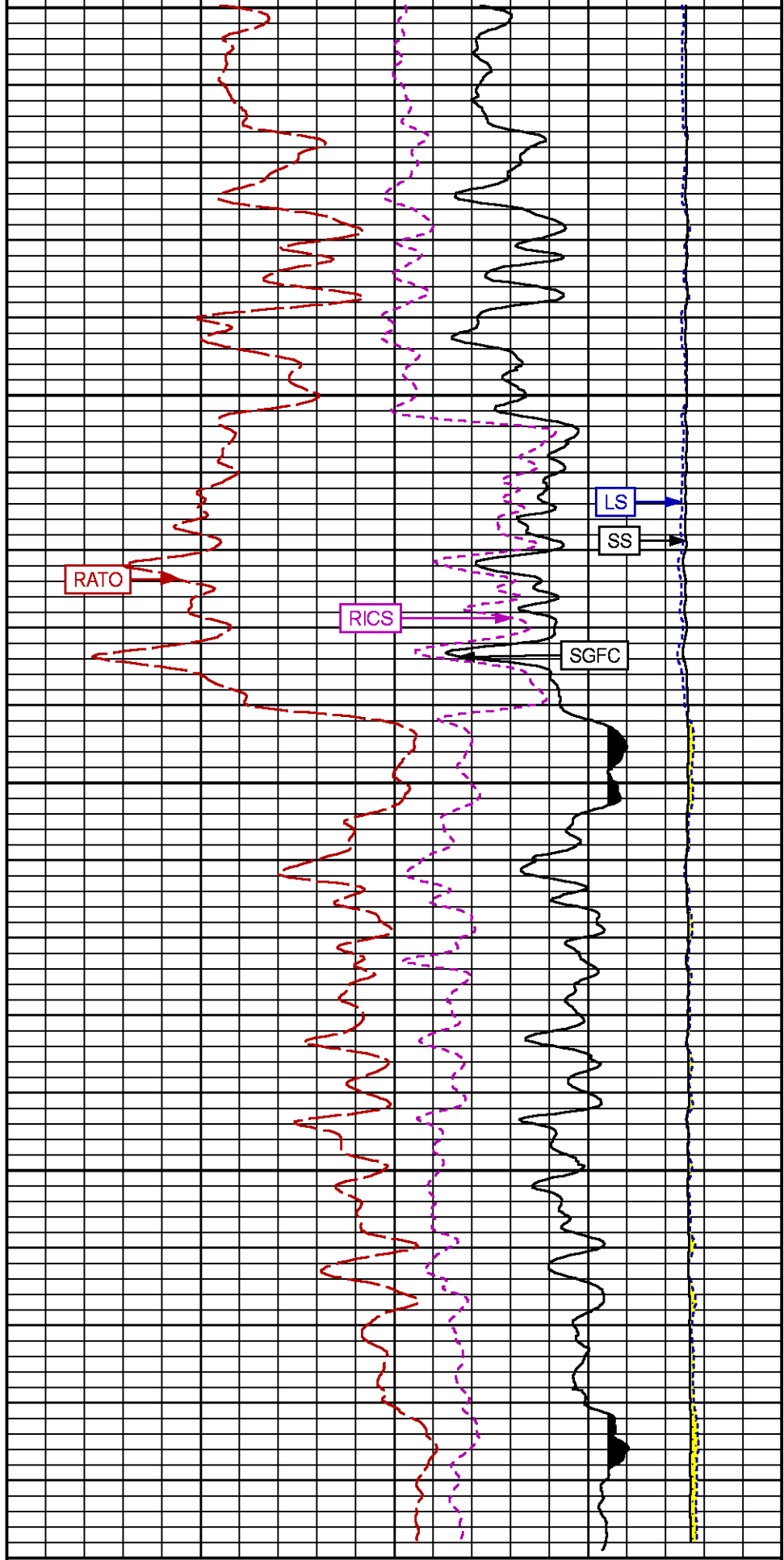
CURVE MEASURE POINT OFFSET

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	: cas6685:/dat1a/CH101513/RPM_RPT.fvpdf [5"/100' Scale]
Plot Interval	: 8173.75 - 8399 Feet
Data File 1	: F1 : cas6685:/dat1a/CH101513/n353h01.xtf
Created On	: Jan 21 12:30:50 2016
Company	: LARAMIE ENERGY
Well	: PICEANCE FEDERAL 28-09E
Field	: VEGA
File Interval	: 8166.5 - 8415.25 Feet
OCT	: n353h



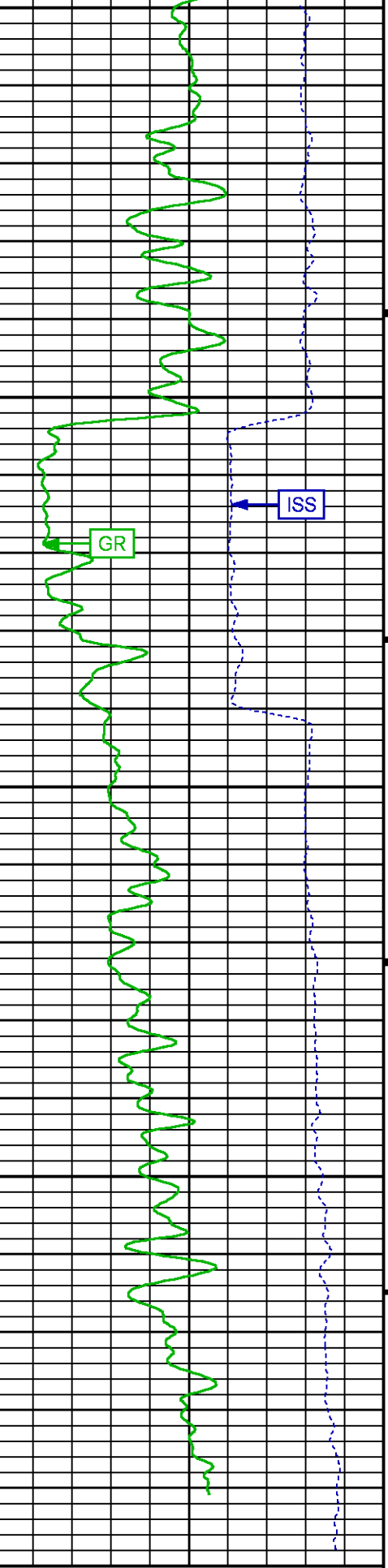




LS [ls]  
0 29000

200 8300 8400

FEEET



GR BACKUP  
ISS [iss]  
0 1E+06

(cts/s)		(cts/s)
GAMMA RAY [gr]		SS [ss]
0	150	0
(gAPI)		(cts/s)
		RATO [rato]
	17	0
		(dim)
		RICS [rics]
	39	9
		(dim)
		SGFC [sgfc]
	60	0
		(cu)

## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH101513/m353h.tp1

### GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Mon Jan 18 10:46:03 2016

UNIT #: 3885TC 6685

CALB JIG #: 4702NK BA-905

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	68.11	414.24	346.1	0.520	35.42	215.42	180

### GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Mon Jan 18 10:48:06 2016

UNIT #: 3885TC 6685

VERI JIG #: 4702NK BA-905

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	70.38	414.87	0.520	36.60	215.74	179.14
						170.00 190.00

### RPM\_PNC\_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10203151

DATE/TIME PERFORMED: Mon Jan 11 11:21:12 2016

UNIT: 3880TA HL6670

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 11803641

HOURS: 8281AA 418

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	807400	124	2290	2370	2449	126	7.0	0.9665
Interpolated	1300000	147	2275	2369	2437			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	807400	8034	1221	162	26.06	0.15	24.11	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	807400	165244	25673	87246	31025	7989	52815	12795
Fit Quality %		0.829	0.833	0.893	0.851	0.976	0.810	0.984
	ISS	RBOR	RIN	RIN13	RICS	RATO	RTWO	RONE
			ISS/ILS	ISS/IXS	ISS/CSS	SS/LS	SS2/LS	CSS/CLS
Raw Data	807400	1.43	4.89	31.47	15.29	10.93	3.89	4.13
		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 %		0.028	0.215	0.140	0.126	0.184	0.197	0.174
Reduced	1387478	1.43	4.91	31.56	15.33	10.96	3.90	4.14
		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

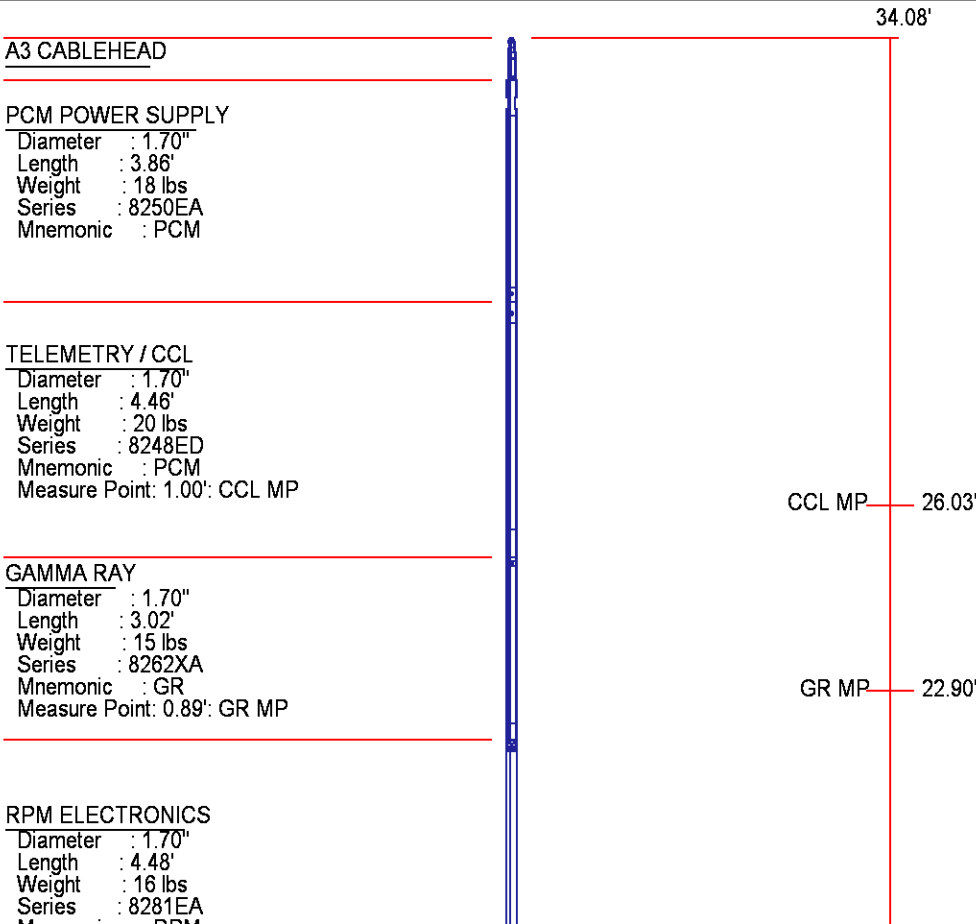
TPSETEMP PRIMARY CALIBRATION SUMMARY

TOOL #:	8255XA 11774568	DATE/TIME PERFORMED:	Wed May 14 12:39:45 2014
UNIT #:	3880TA HL6670		

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Temp	-9.274653E+00	1.055639E-01	2.143764E-06	-2.782846E-10

INSTRUMENT CONFIGURATION

Source File: /dat1a/CH101513/n353h~joe-tdg



Mnemonic : RPM

#### RPM C DETECTOR SECTION

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

XLS DETECTOR 13.58'  
LS DETECTOR 13.16'  
SS DETECTOR 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: 34.08'  
TOTAL WEIGHT: 144 lbs  
MAX DIAMETER: 0'1.70"

0.00'

	COMPANY	<u>LARAMIE ENERGY</u>		FILE NO:	<u>CH101513</u>
	WELL	<u>PICEANCE FEDERAL 28-09E</u>		API NO:	<u>05077102550000</u>
	FIELD	<u>VEGA</u>			
	COUNTY	<u>MESA</u>	STATE	<u>COLORADO</u>	
LOCATION:		ELEVATIONS:		28 9S 93W	
SHL: LAT 39.246680, LONG: -107.774793		KB 7704 FT		28-10 PAD	
BHL: LAT 39.249433, LONG -107.768135		DF		PATTERSON 306	
GL 7682 FT		DATE		21-Jan-2016	
SEC <u>28</u> TWP <u>9S</u> RGE <u>93W</u>					