



FILE NO:

COMPANY

LARAMIE ENERGY

WELL

GUNDERSON 20-03W

FIELD

BUZZARD CREEK

API NO:
05077103380000

COUNTY

MESA

STATE COLORADO

Ver. 4.06

LOCATION:

SHL: LAT:39.266947N; LONG:107.795317W

OTHER SERVICES
RAL

BHL: LAT:39.267824N; LONG:107.797721W

SEC 20 TWP 9S RGE 93W

PERMANENT DATUM

GL

ELEVATION

7144 FT

LOG MEASURED FROM

KB

30 FT

ABOVE P.D.

ELEVATIONS:

KB 7174 FT

DF 7173 FT

GL 7144 FT

DRILL. MEAS. FROM

KB

DATE

10-AUG-2017

RUN

TRIP

1

1

SERVICE ORDER

US125136

DEPTH DRILLER

7508 FT

DEPTH LOGGER

7420 FT

BOTTOM LOGGED INTERVAL

7420 FT

TOP LOGGED INTERVAL

2100 FT

TIME STARTED

18:00

TIME FINISHED

02:00

OPERATOR RIG TIME

8HRS

TYPE OF FLUID IN HOLE

WATER

FLUID DENSITY

NA

FLUID SALINITY

NA

FLUID LEVEL

50 FT

LOGGED CEMENT TOP

1478 FT

WELLHEAD PRESSURE

0 PSI

MAXIMUM HOLE DEVIATION

NA

NOMINAL LOGGING SPEED

100 F/MN

MAX. RECORDED TEMP.

240 DEGF

REFERENCE LOG

NA

REFERENCE LOG DATE

NA

EQUIP. NO.

HL-6670

LOCATION

WOODWARD

RECORDED BY

LOHANDLEY

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 1 TRIP 1: *2 OPERATIONS IN WELL*

OPERATION 1: RAL/GR/CCL RUN CENTRALIZED

SAT DOWN EARLY

LOGGED WITH 0 PSI ON WELLHEAD

SJ:5600'

SJ:6560'

ALL DATA HAS BEEN DEPTH SHIFTED AND STRETCHED TO CORRELATE WITH THE OPEN HOLE LOG OVER IT'S ENTIRE LENGTH OF THE LOG.
THIS PROCESS CAN CAUSE THE CASING LENGTHS TO CHANGE FROM THEIR ORIGINAL LOGGED LENGTHS AND POSITIONS.

CREW: K.WATSON, C.GOLOBY

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	TELEMETRY	8250EA/8248EA	10185091/10323398	FREE

1	1	GAMMA RAY	8262XA	10485470	FREE
1	1	RPM	8281EA	10387162	FREE
1	1	RPM	8283PA	10184883	FREE
1	1	RPM	8281FA	10315572	FREE
1	1	TEMP	8255XA	120516	FREE

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: Fri Aug 11 00:35:34 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_03W/RPM_PNC3D02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 3848.000 ft BOTTOM DEPTH: 7420.837 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	8.50	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

CURVE DESCRIPTION REPORT

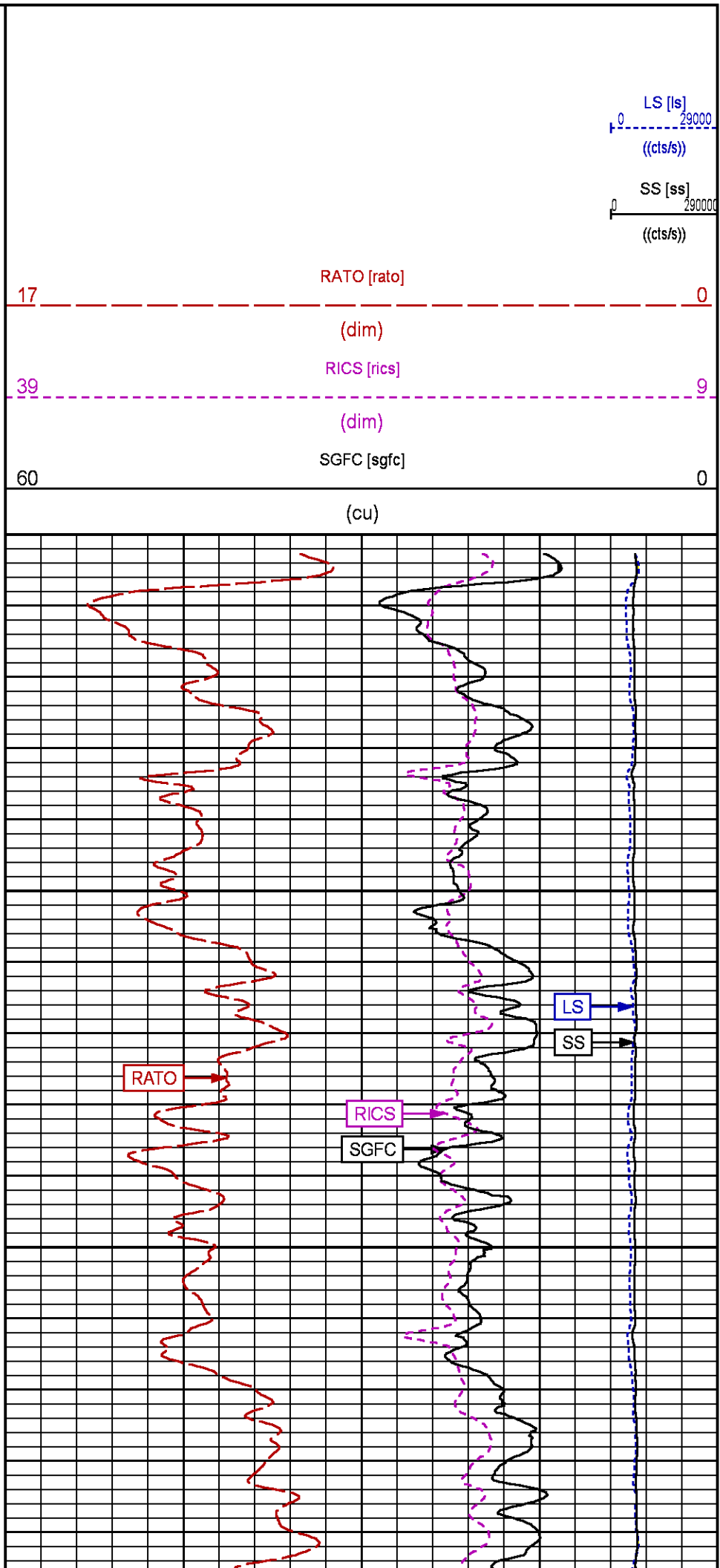
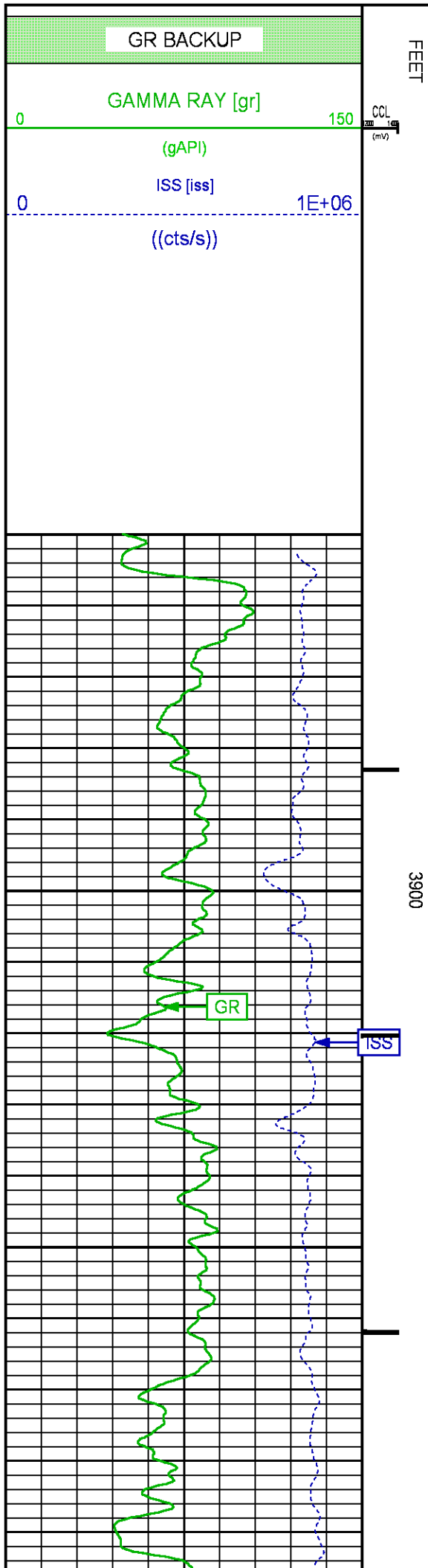
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 10 20:31:35 2017	CASING COLLAR LOCATOR
F1:GR	Aug 10 20:31:35 2017	GAMMA RAY
F1:ISS	Aug 10 20:31:35 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 10 20:31:35 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 10 20:31:35 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 10 20:31:35 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 10 20:31:35 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 10 20:31:35 2017	SHORT SPACE COUNT RATE

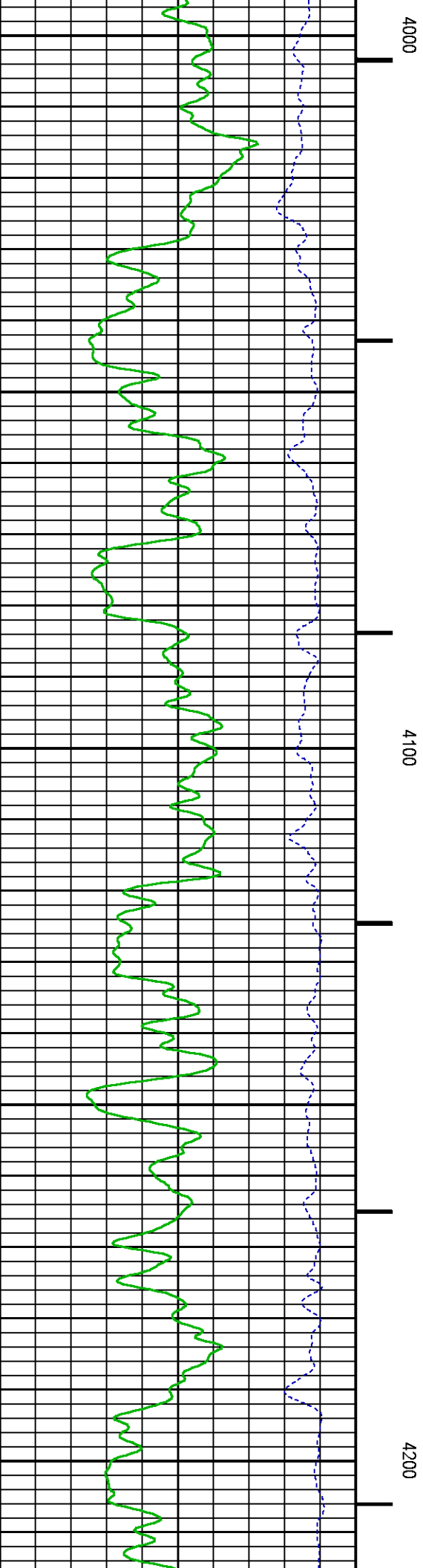
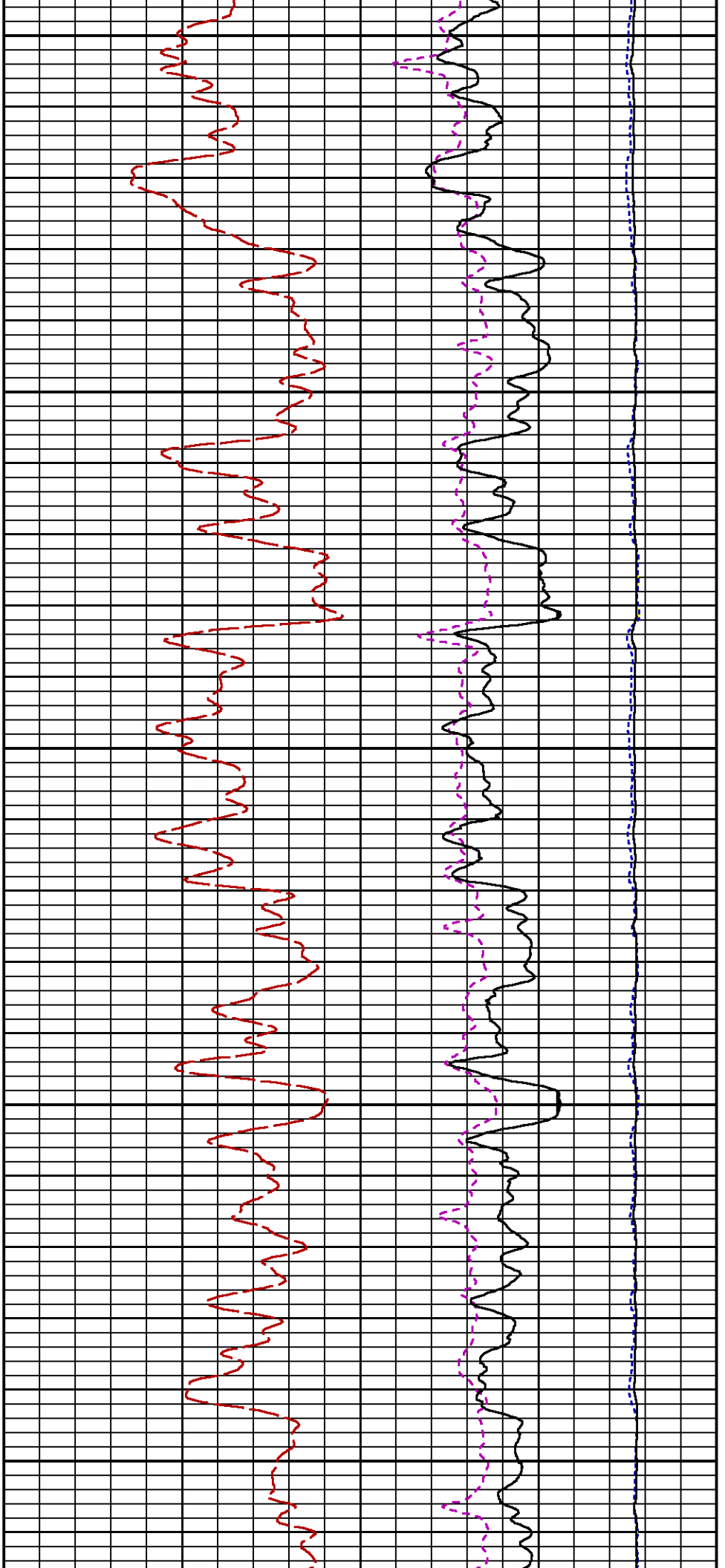
CURVE MEASURE POINT OFFSET

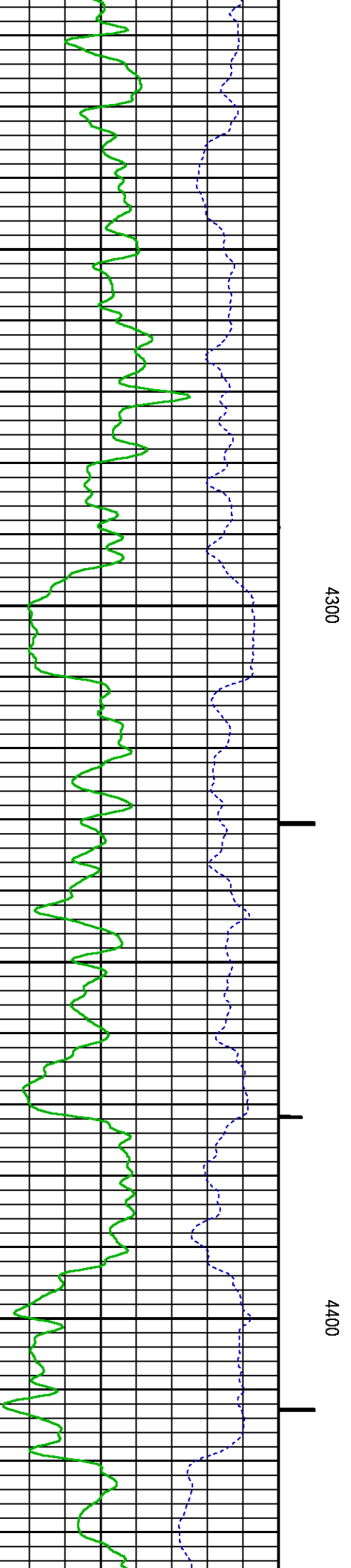
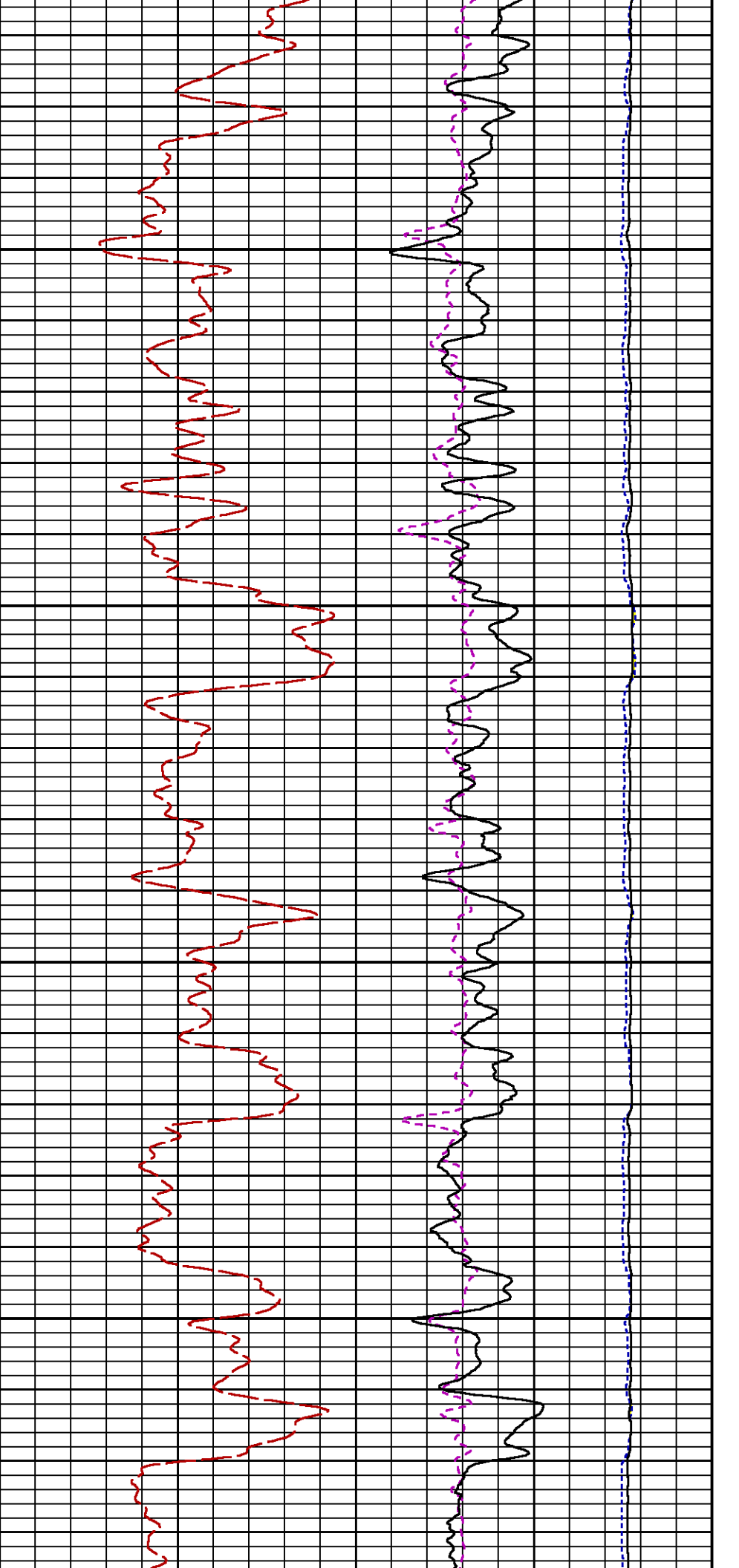
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

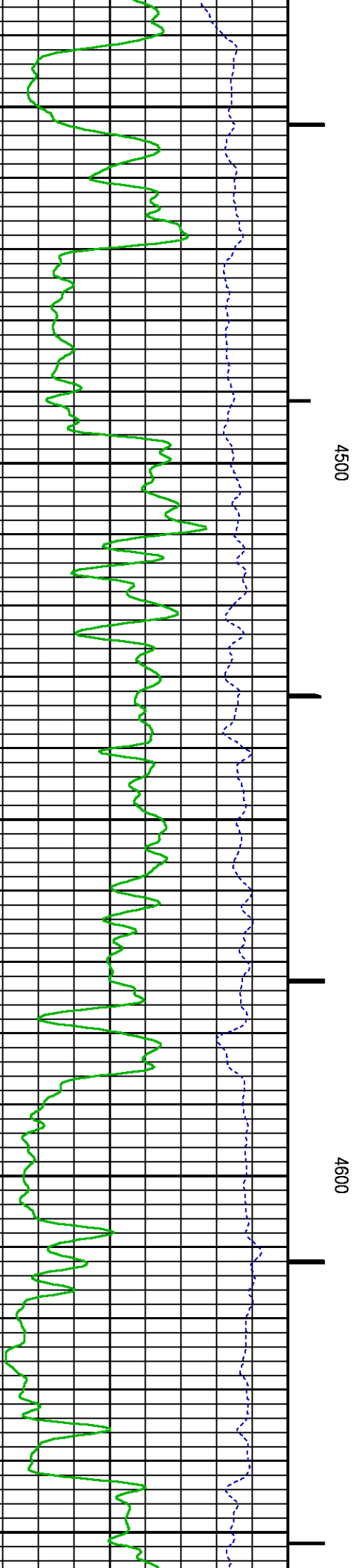
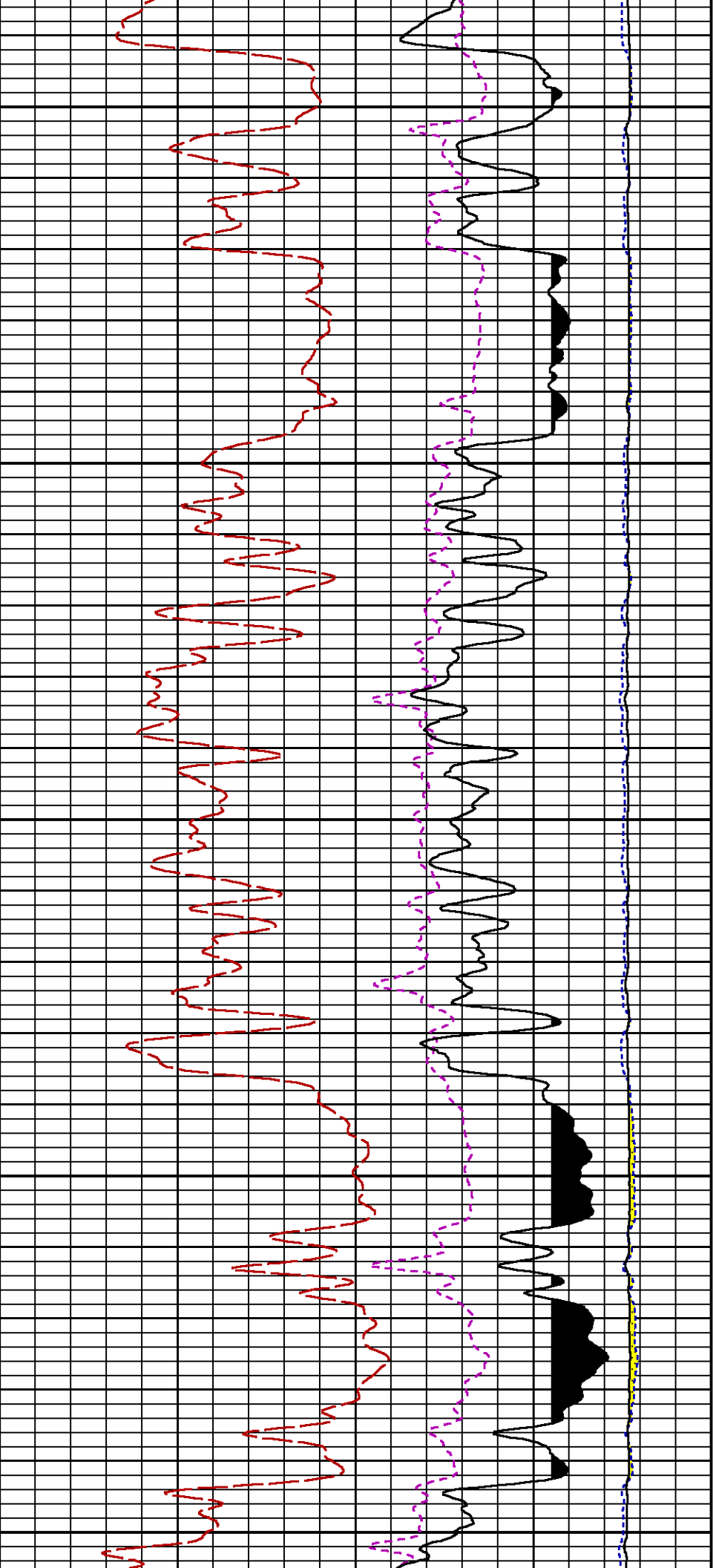
Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_03W/RPM_MAIN+01-MAIN-MAINRPM-5.fvpdf [5"/100' Scale]
 Plot Interval : 3850 - 7412.5 Feet

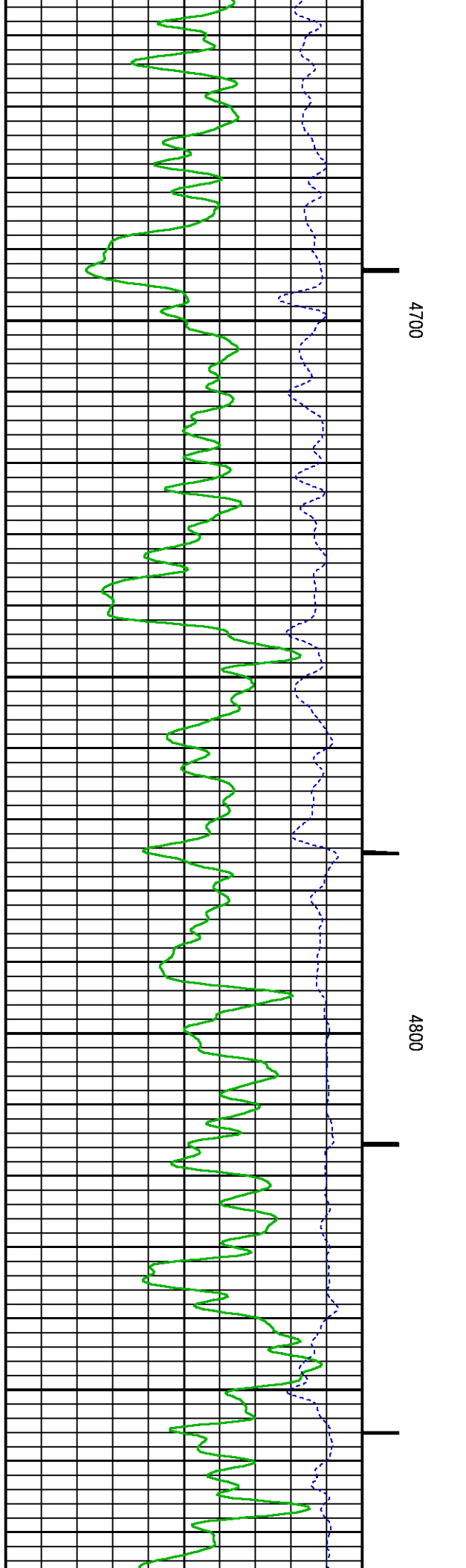
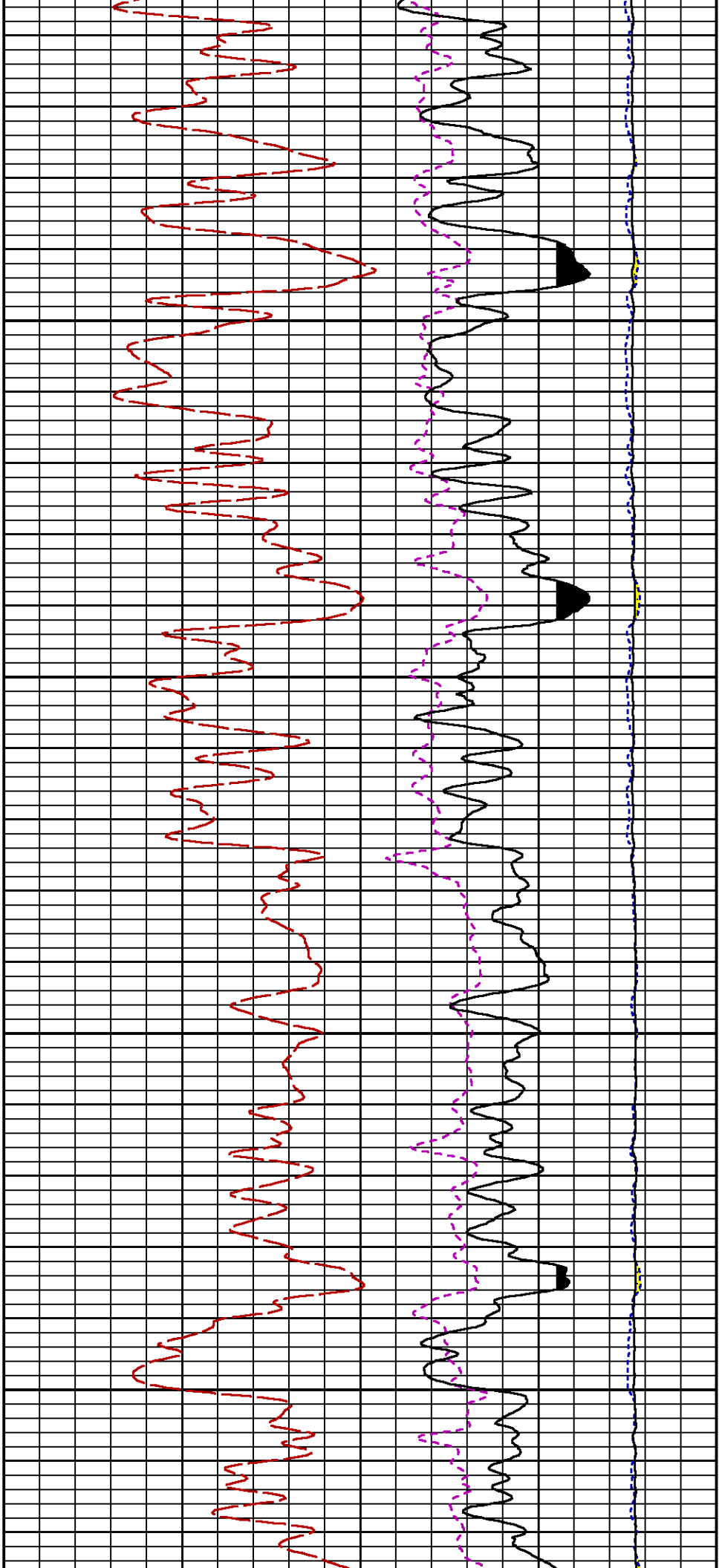
Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_03W/MAINRPM.xtf
 Created On : Aug 10 20:31:35 2017
 Company : LARAMIE ENERGY LLC
 Well : GUNDERSON 20-03W
 Field : MESA
 File Interval : 3825.5 - 7421.25 Feet
 OCT : RPM_PNC3

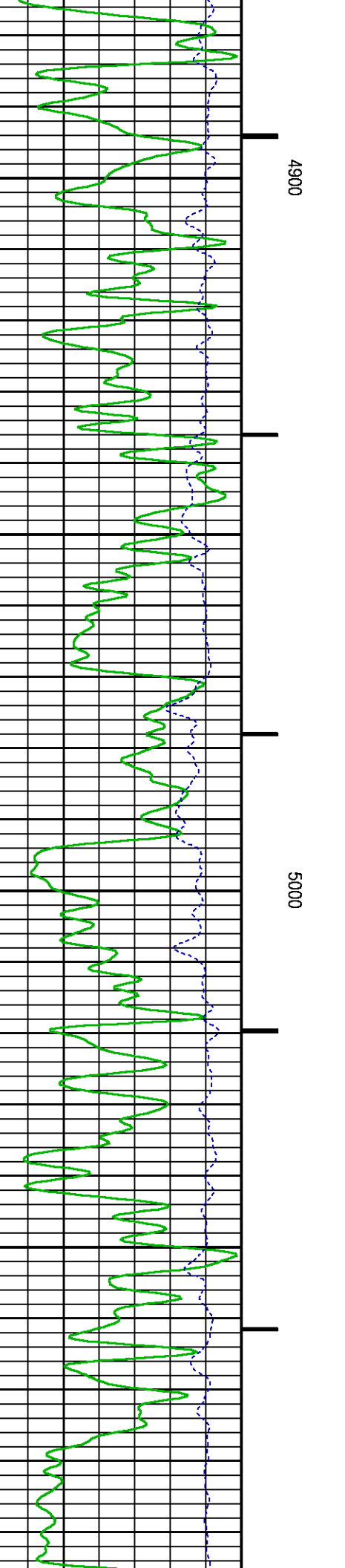
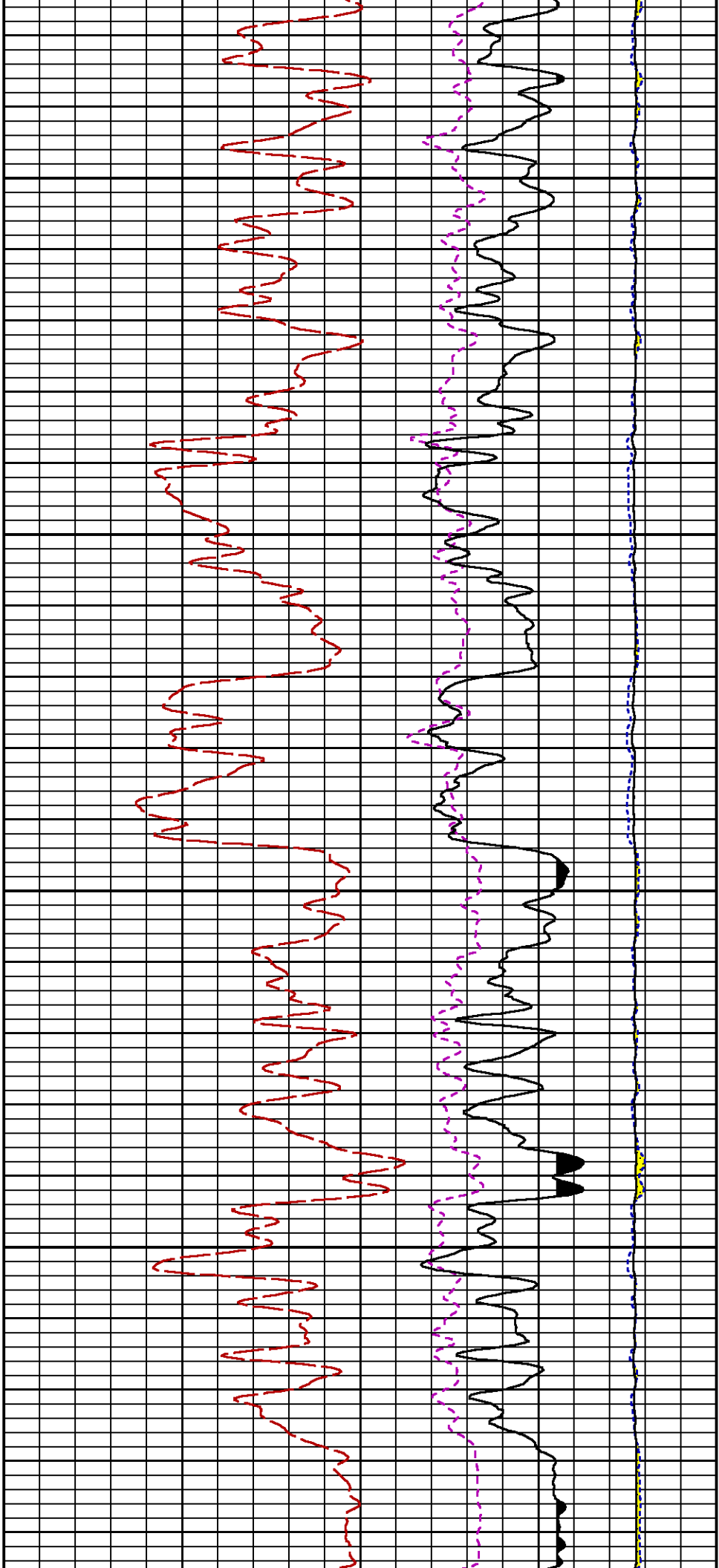


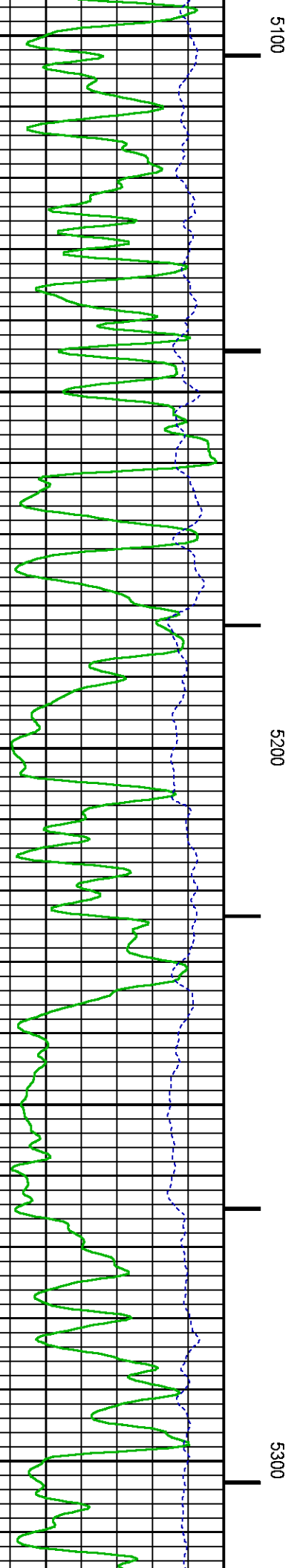
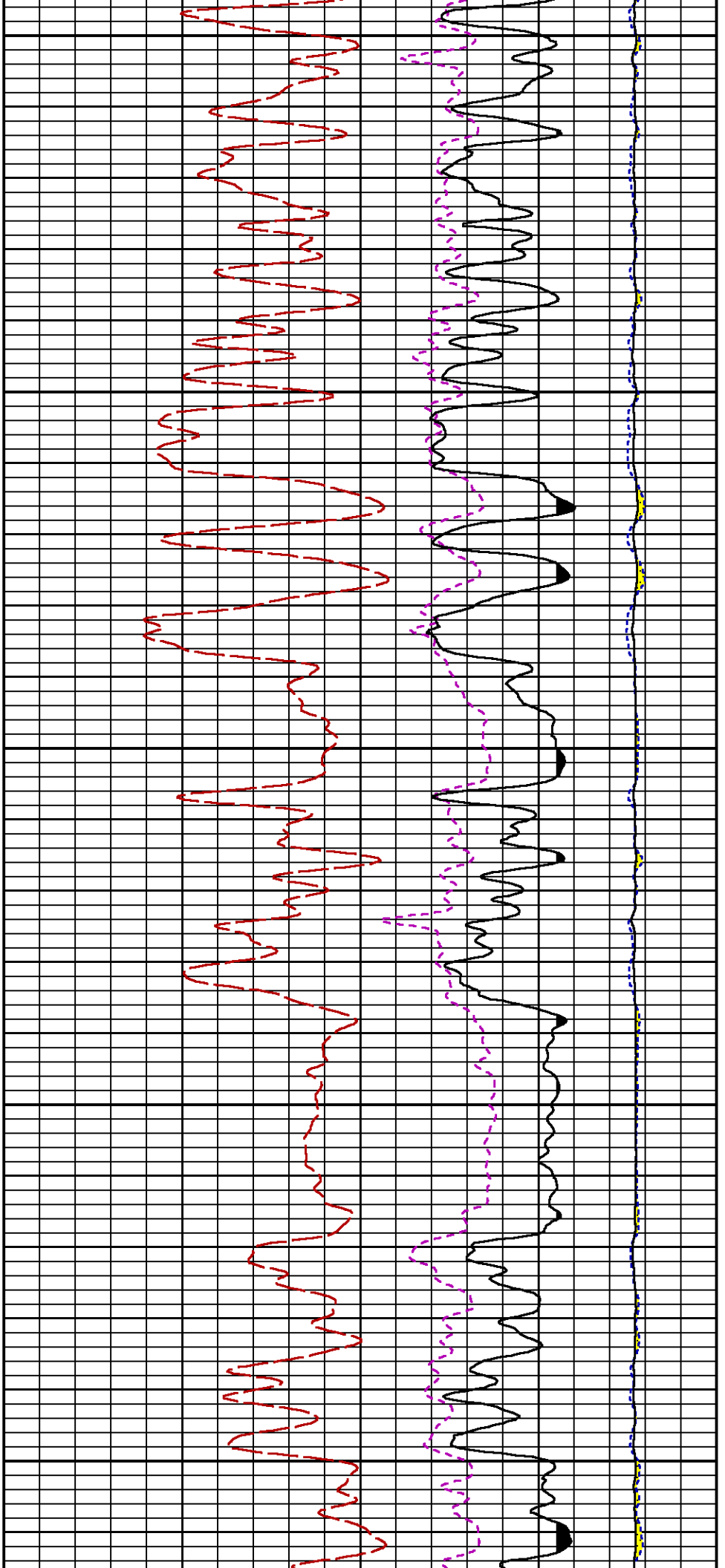


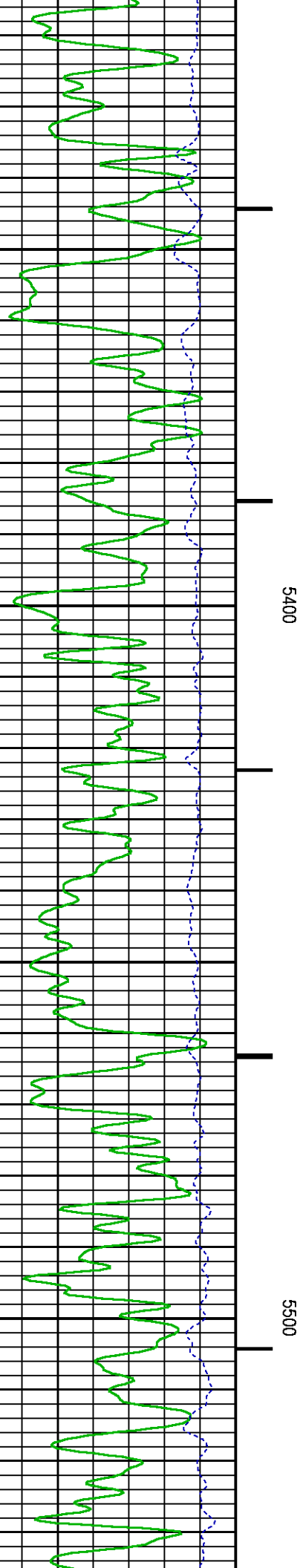
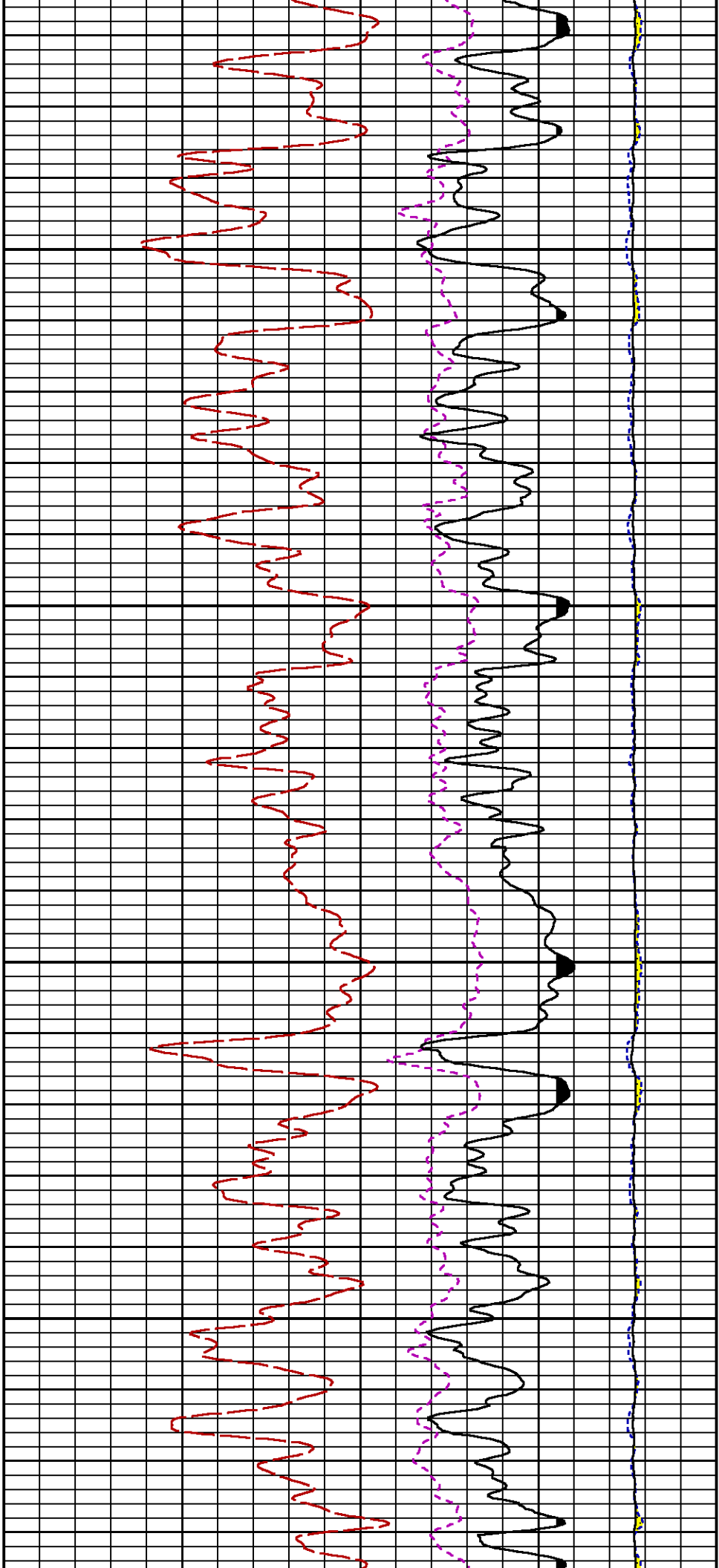


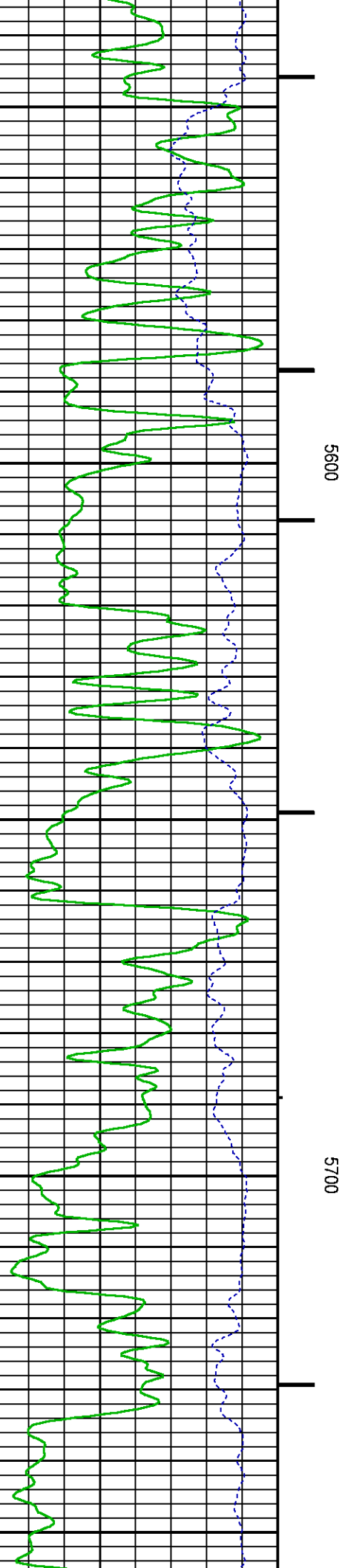
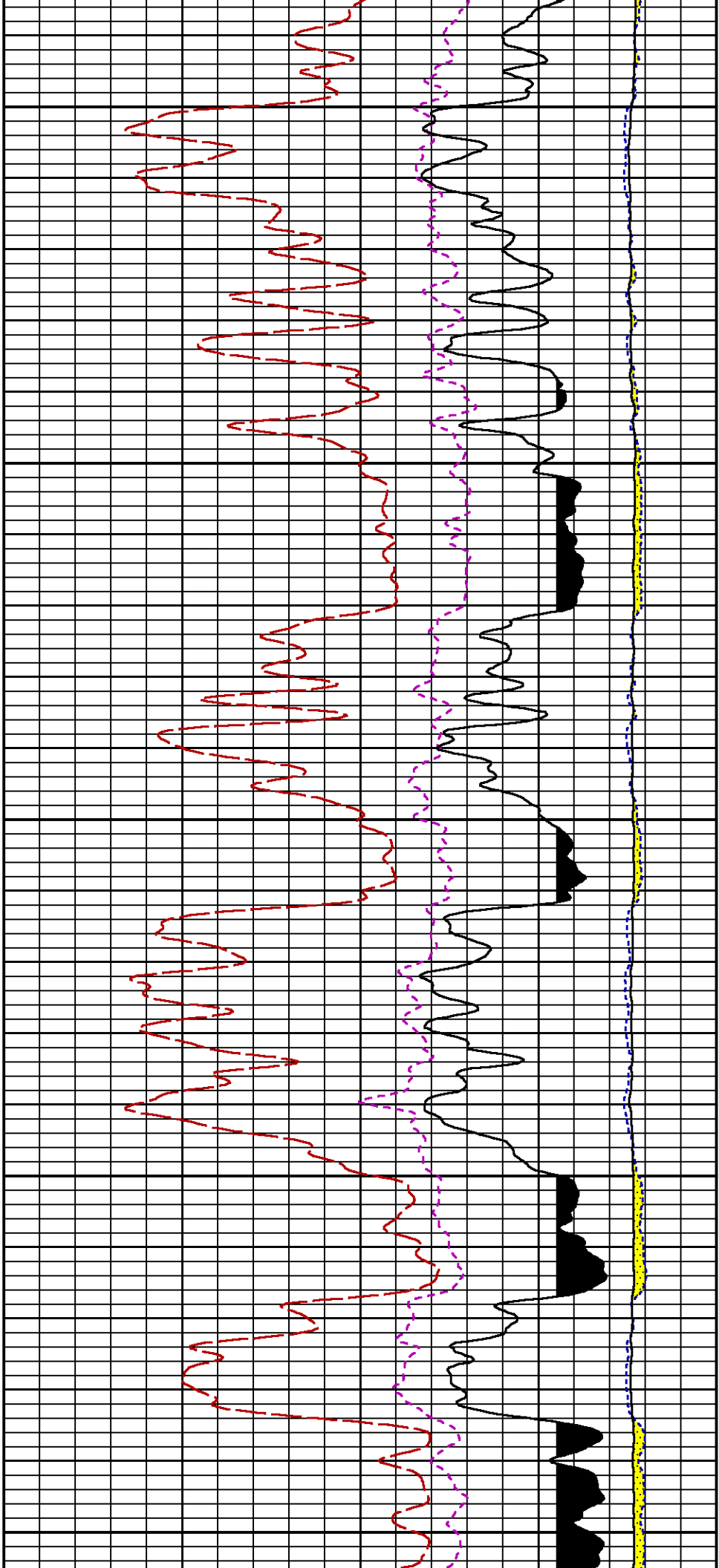


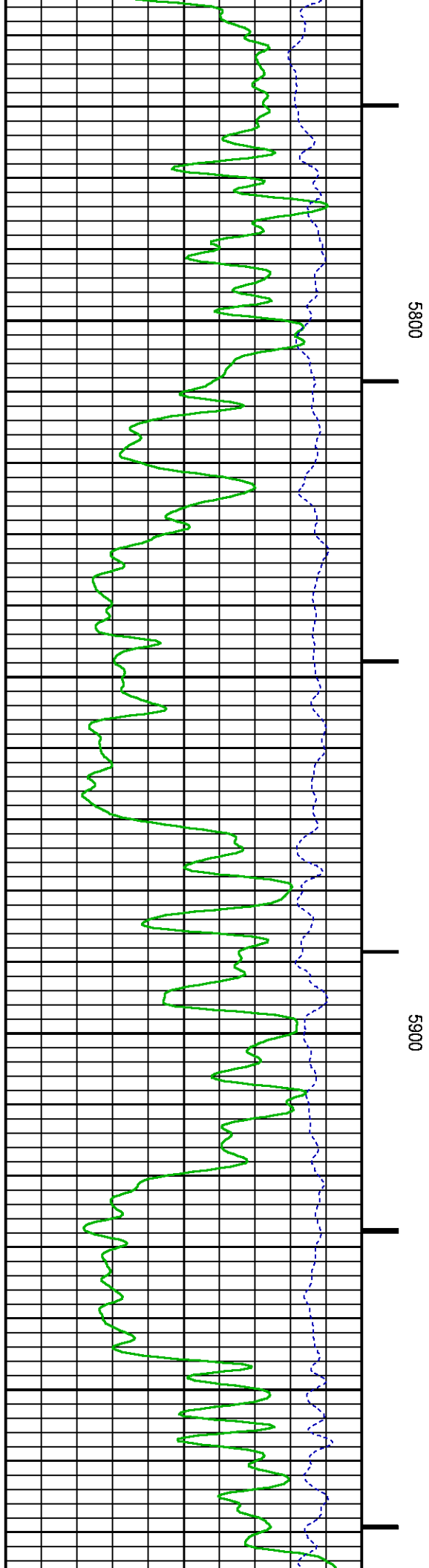
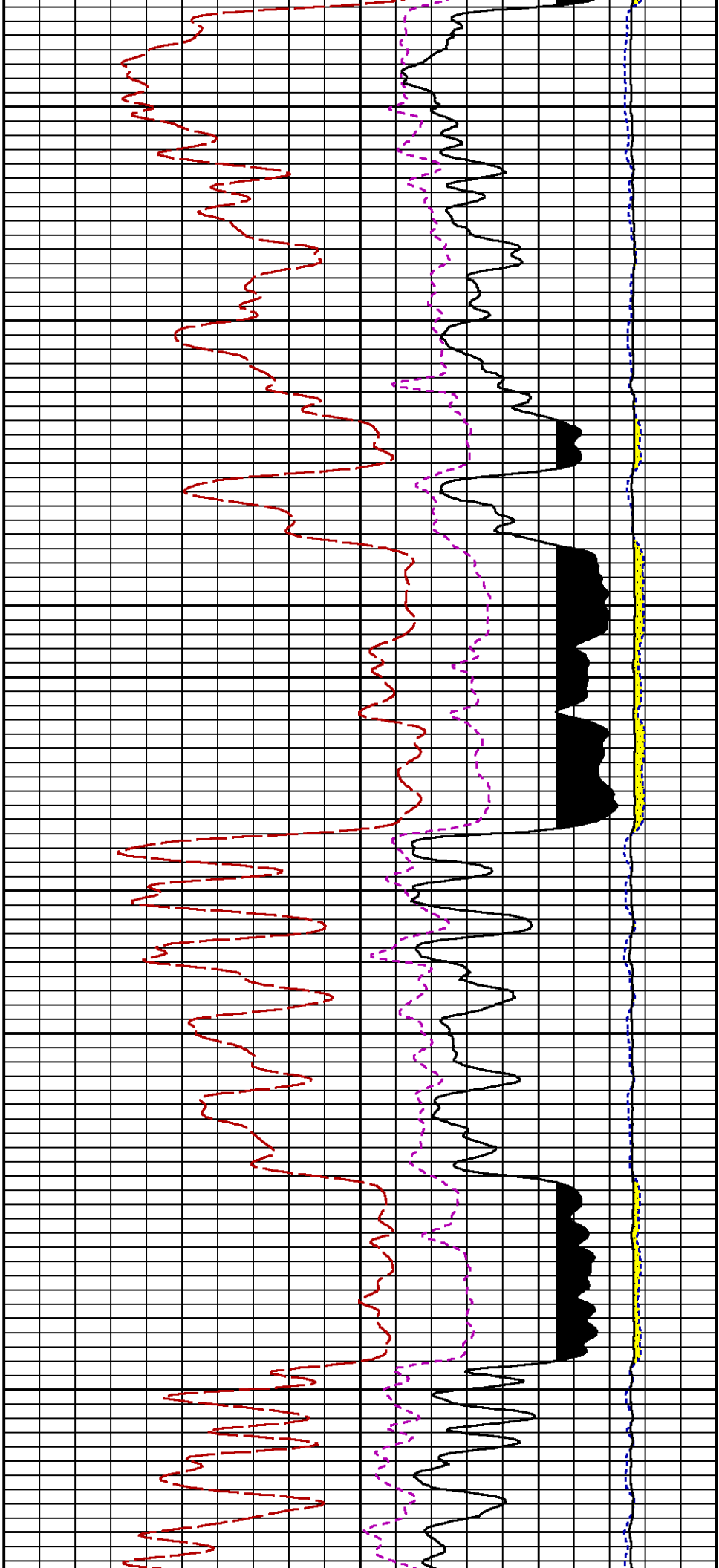


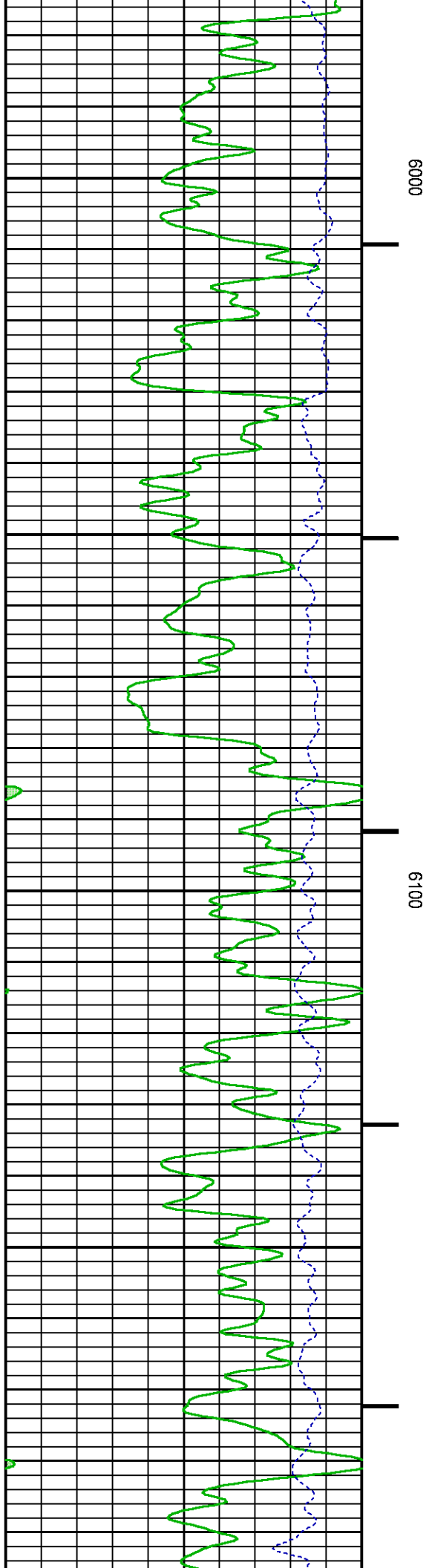
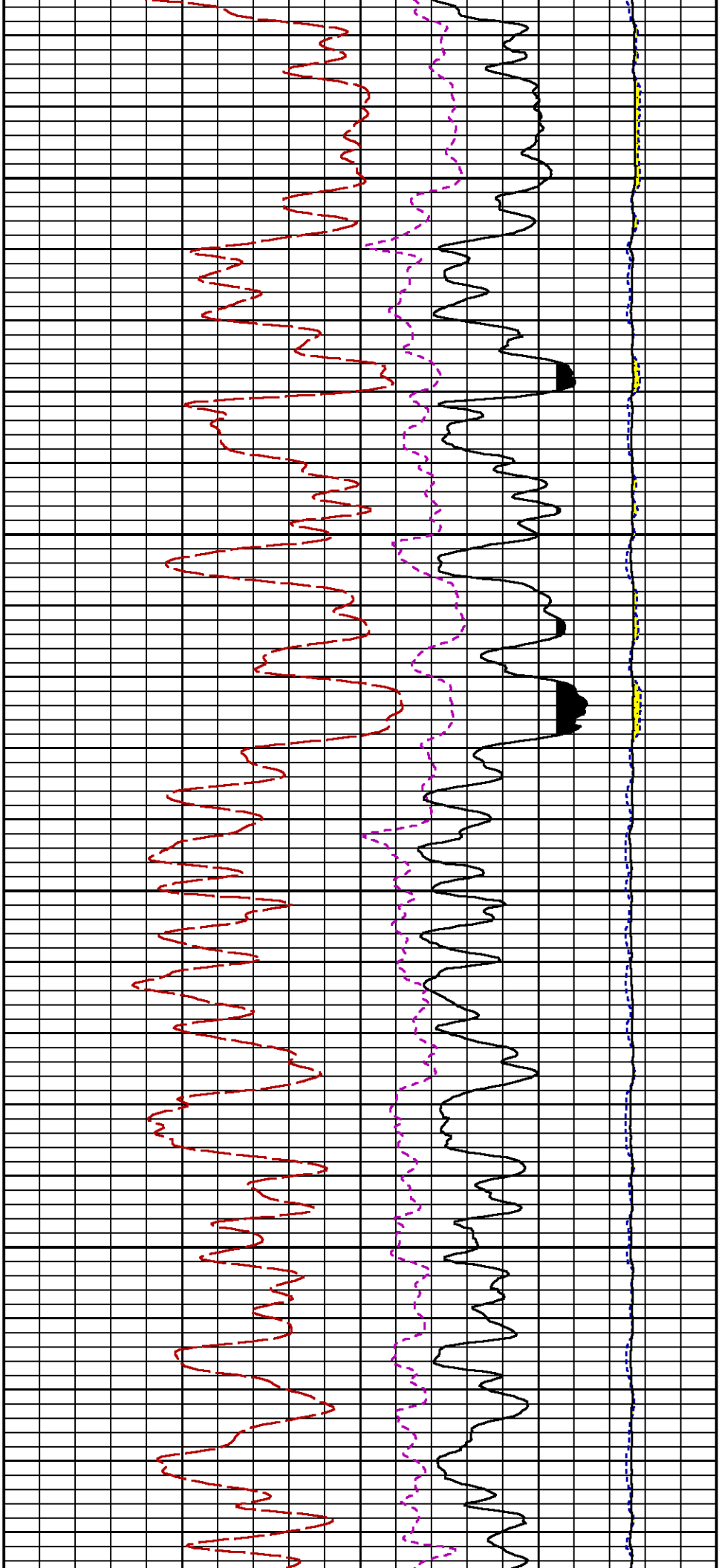


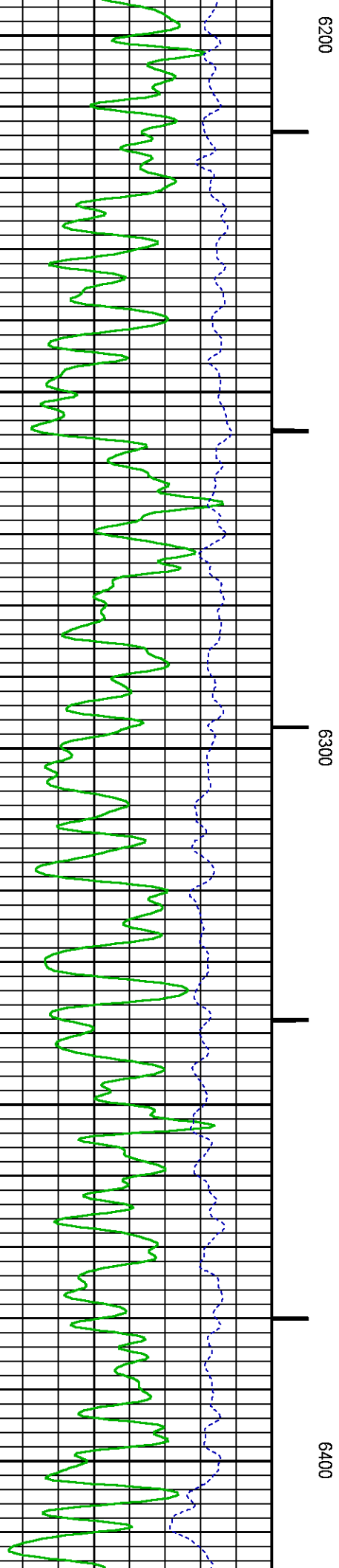
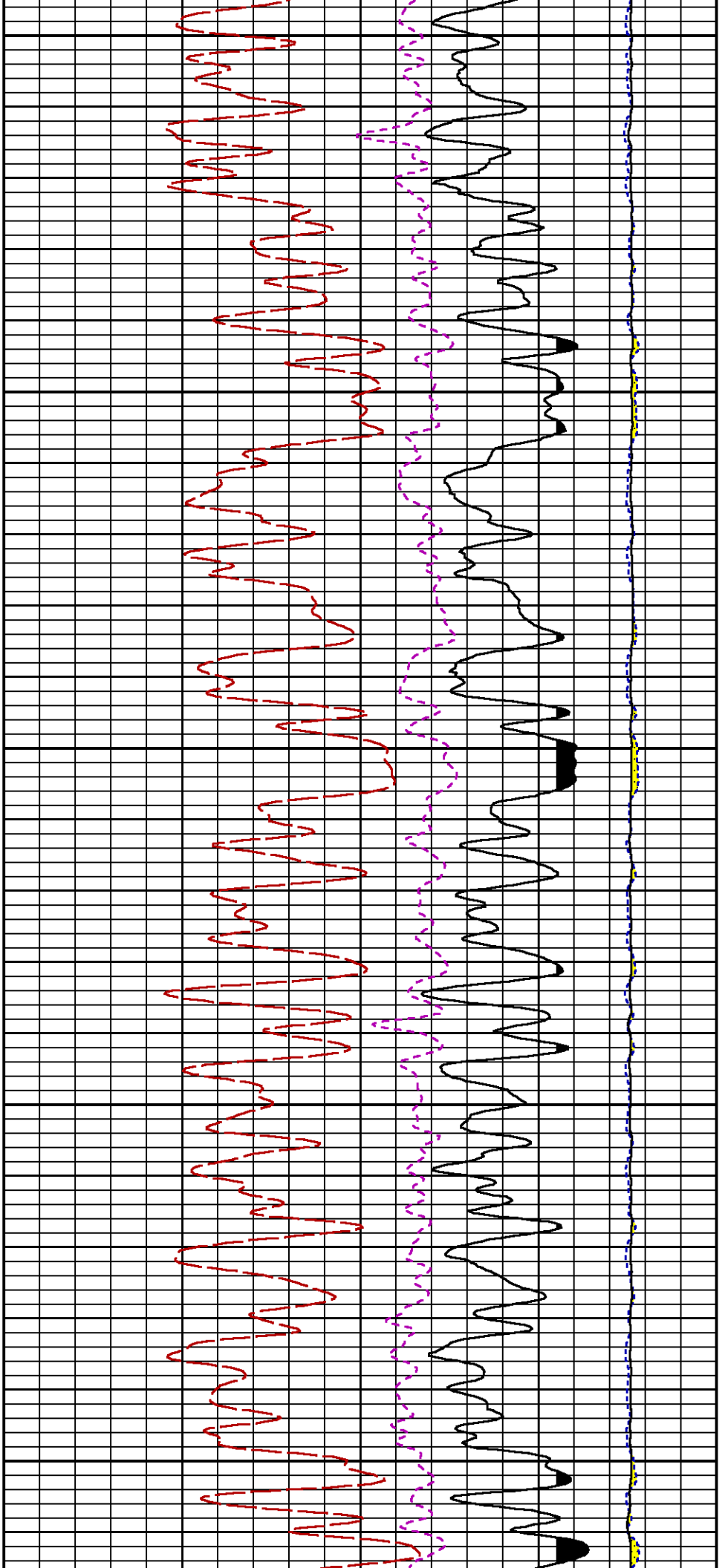


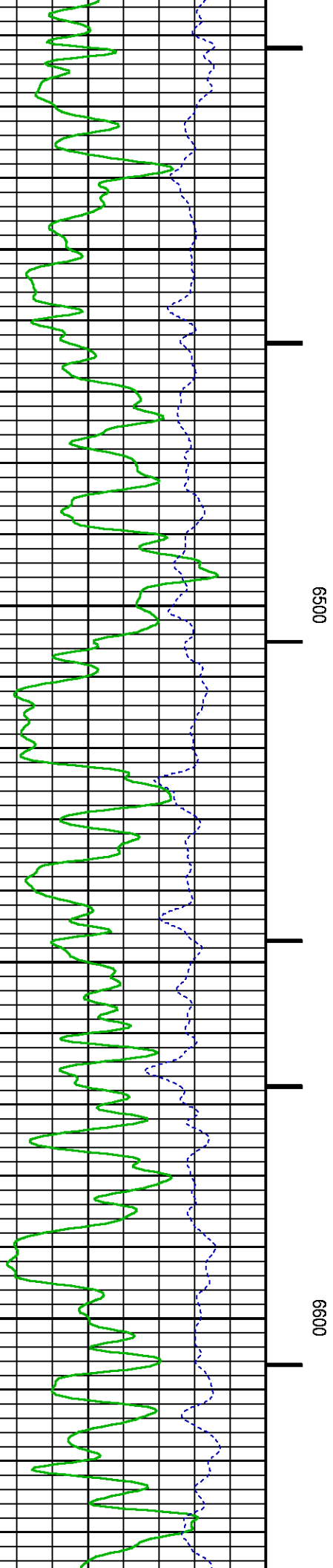
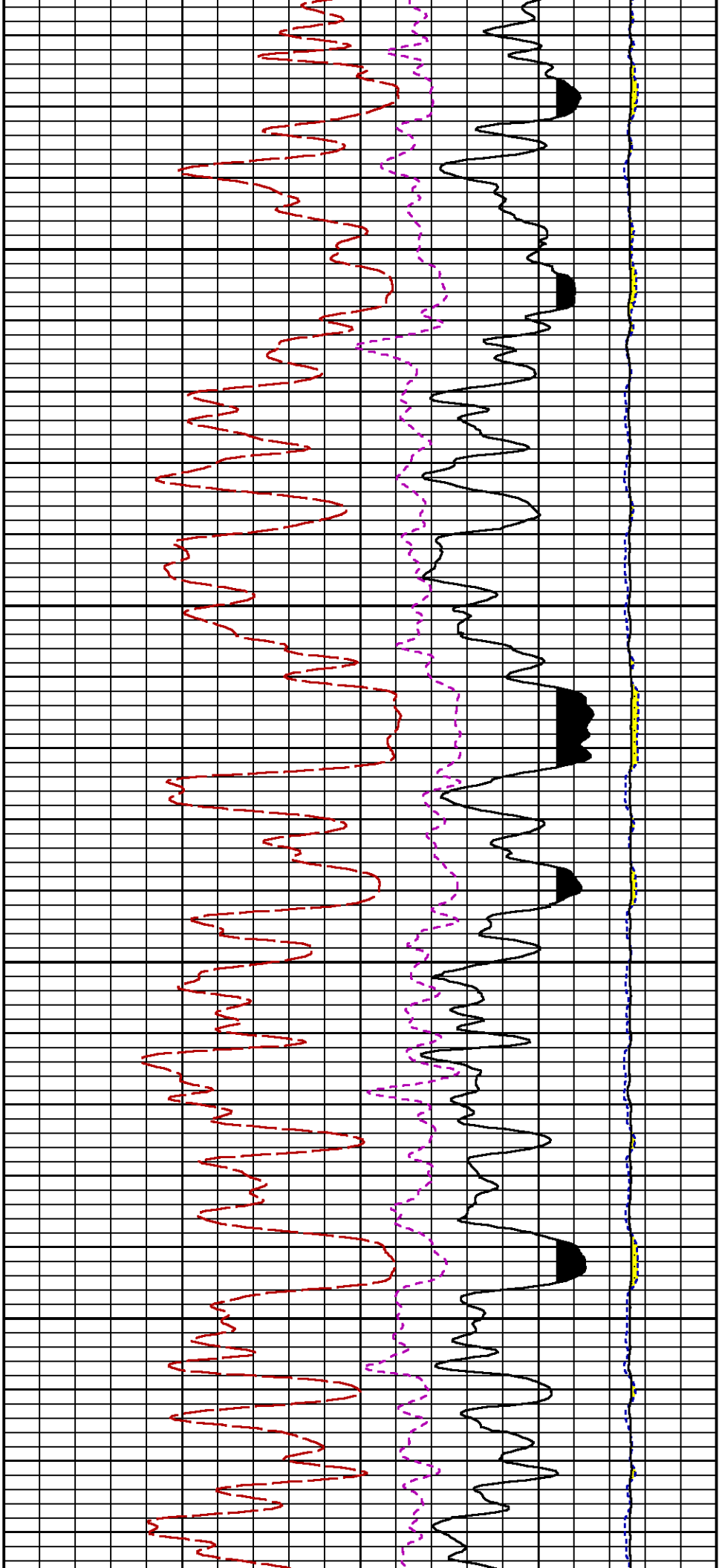


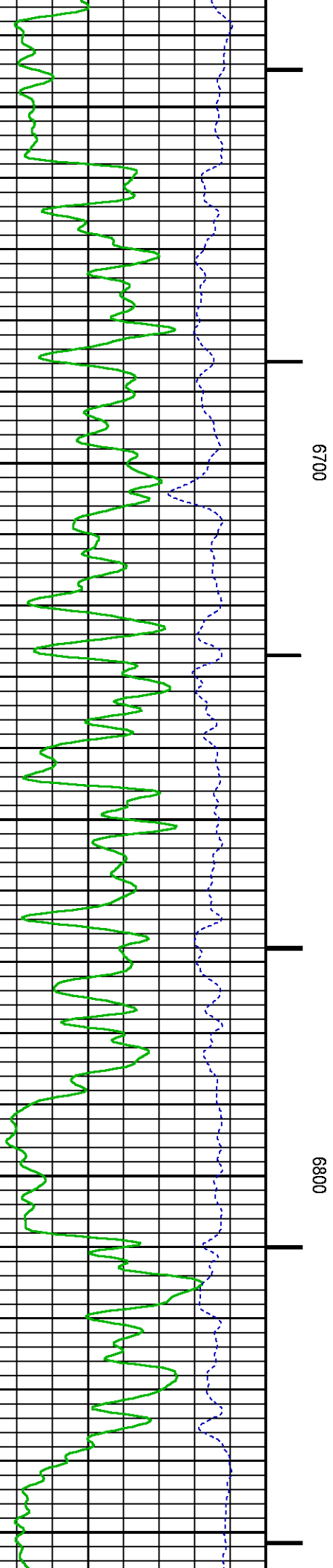
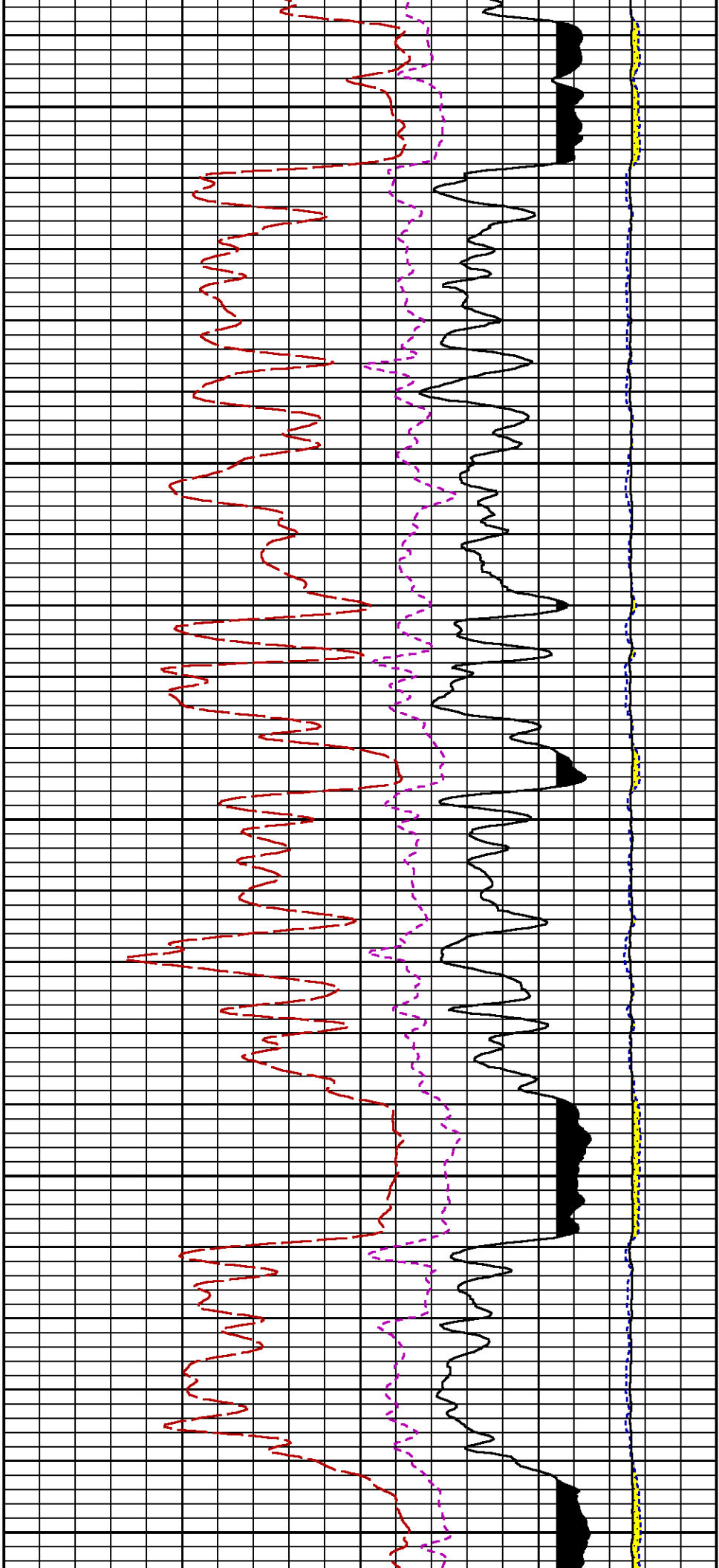


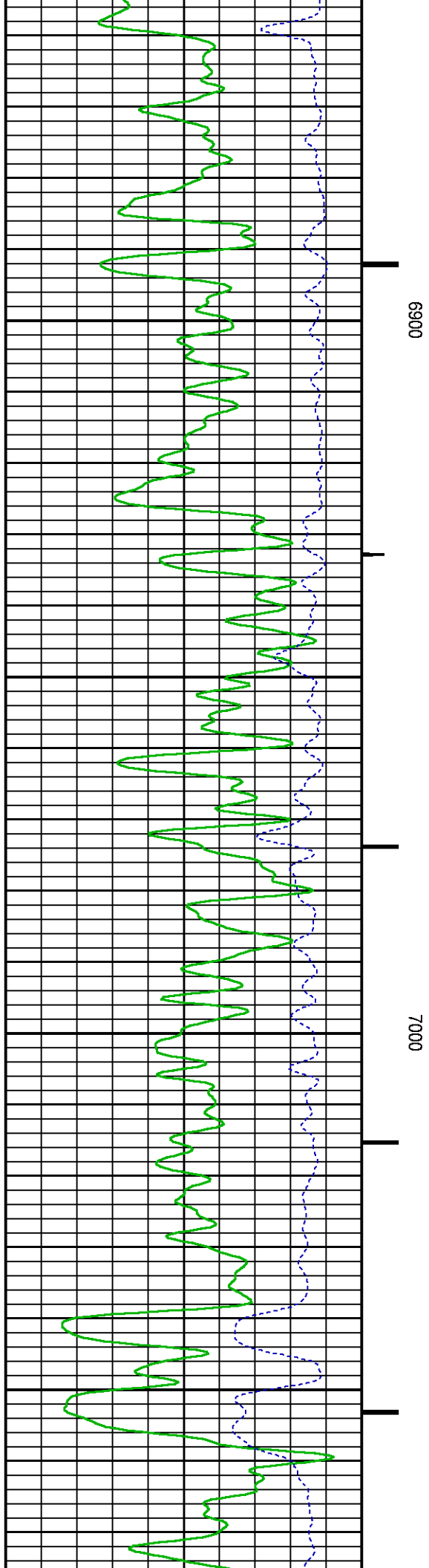
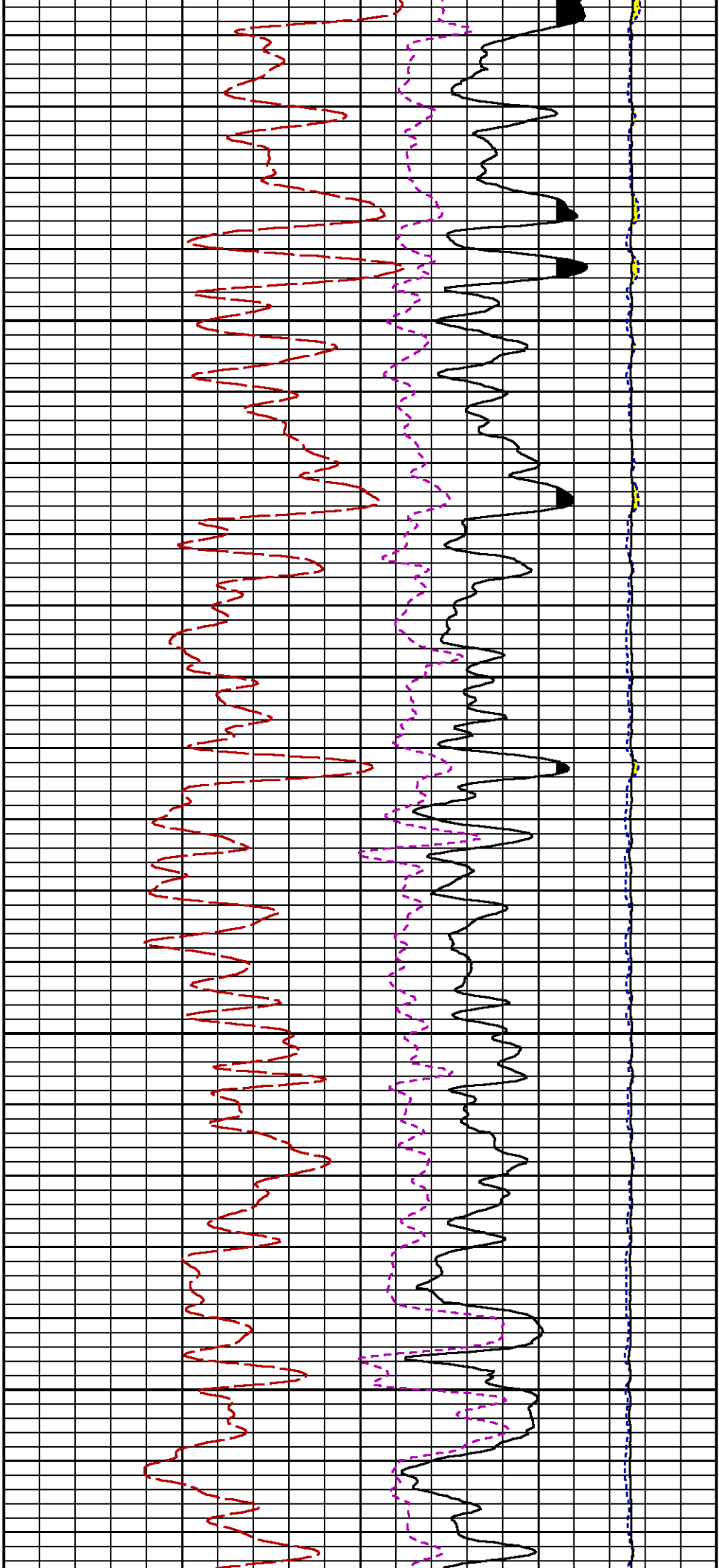


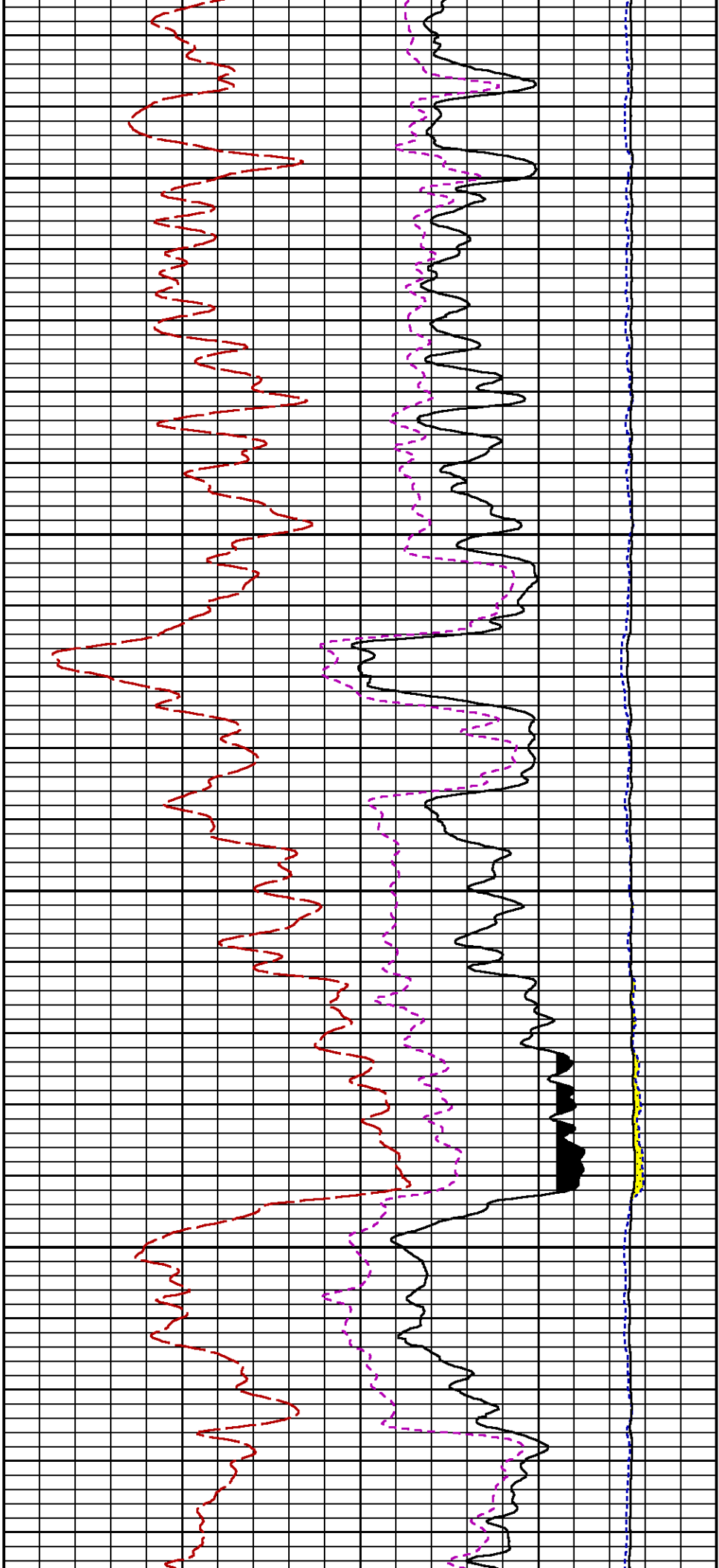






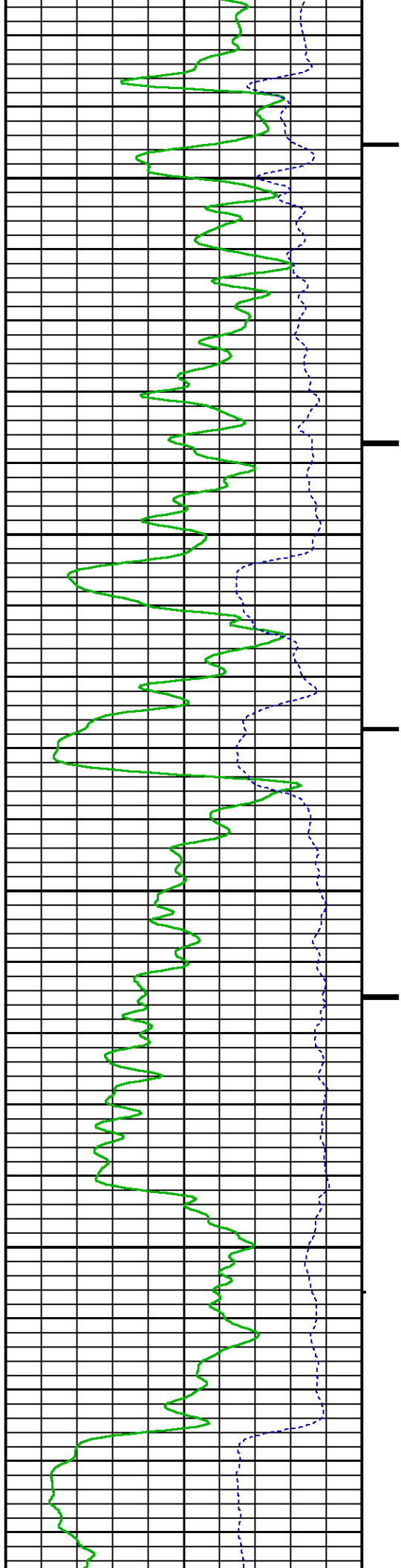


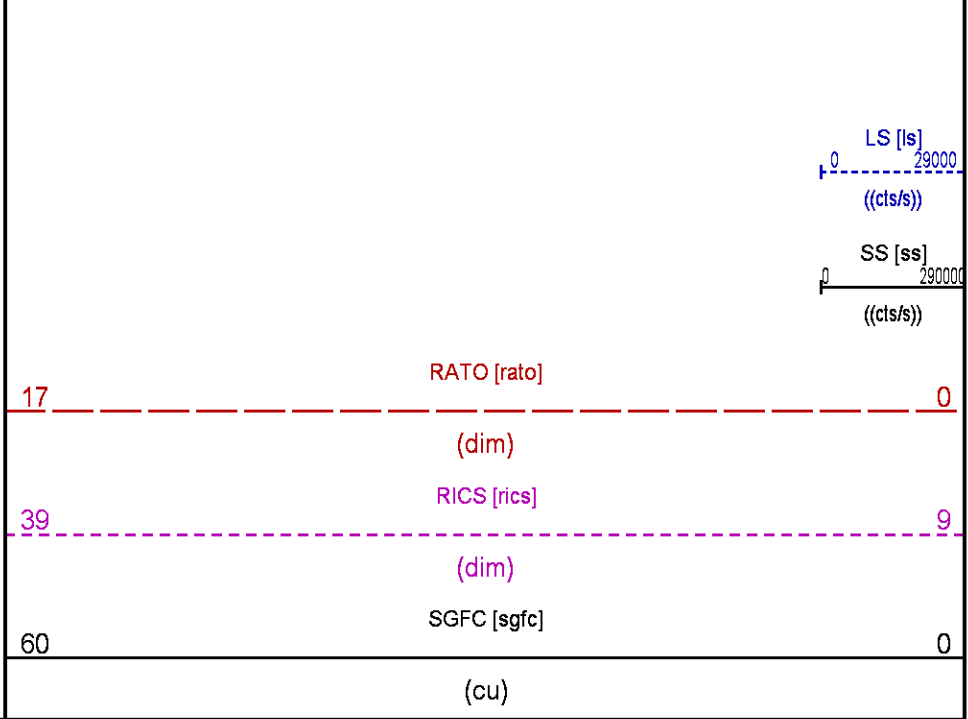
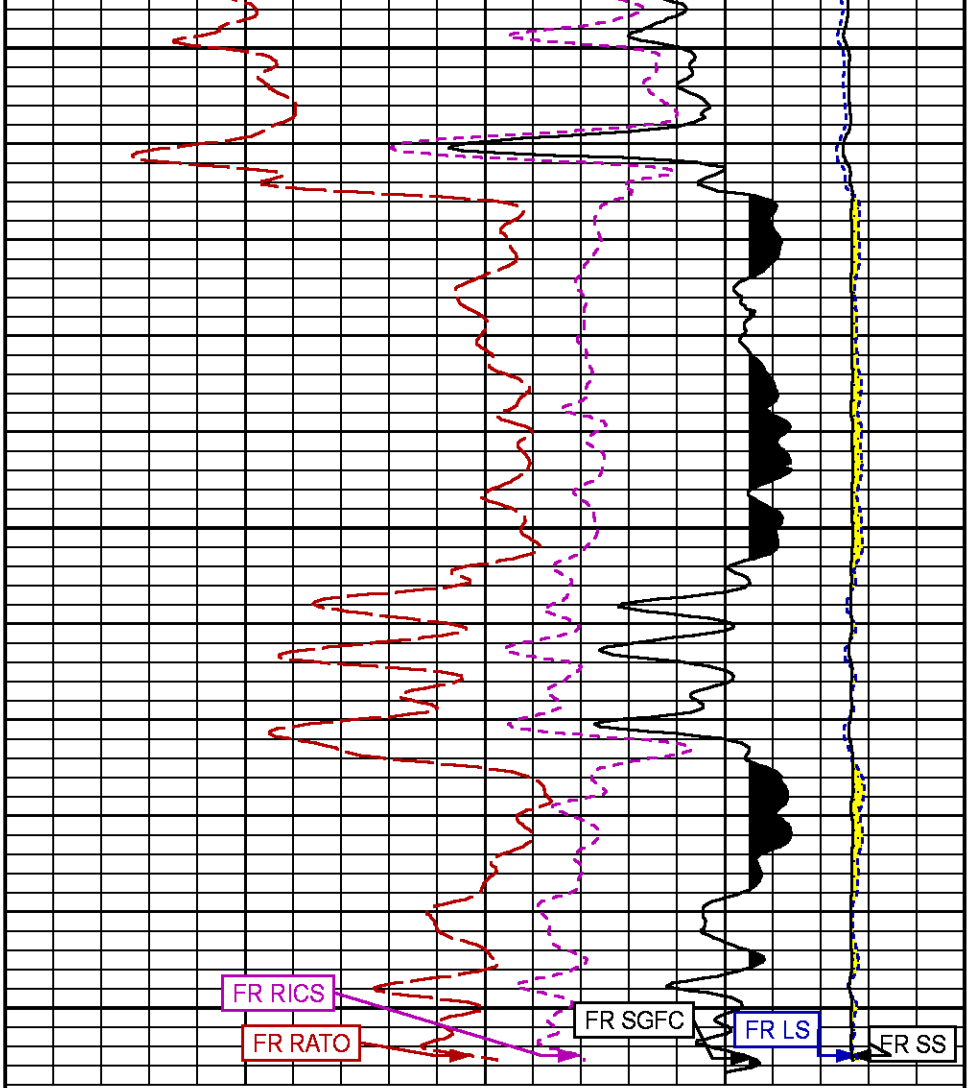
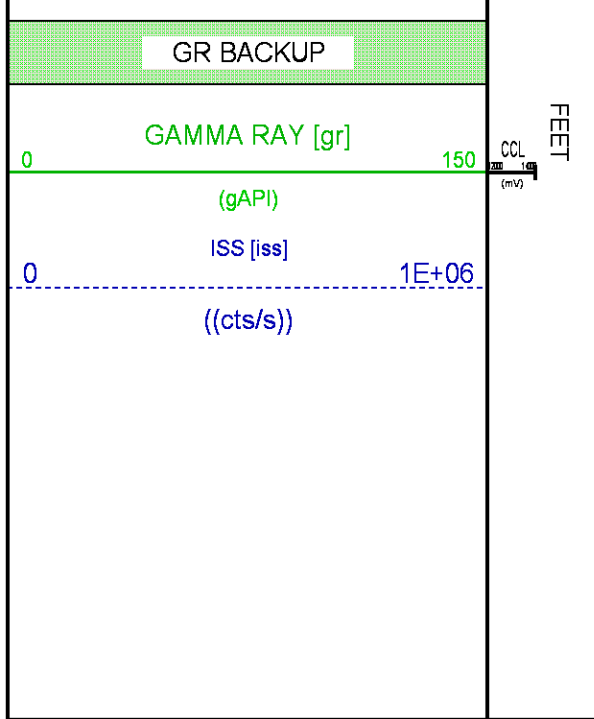
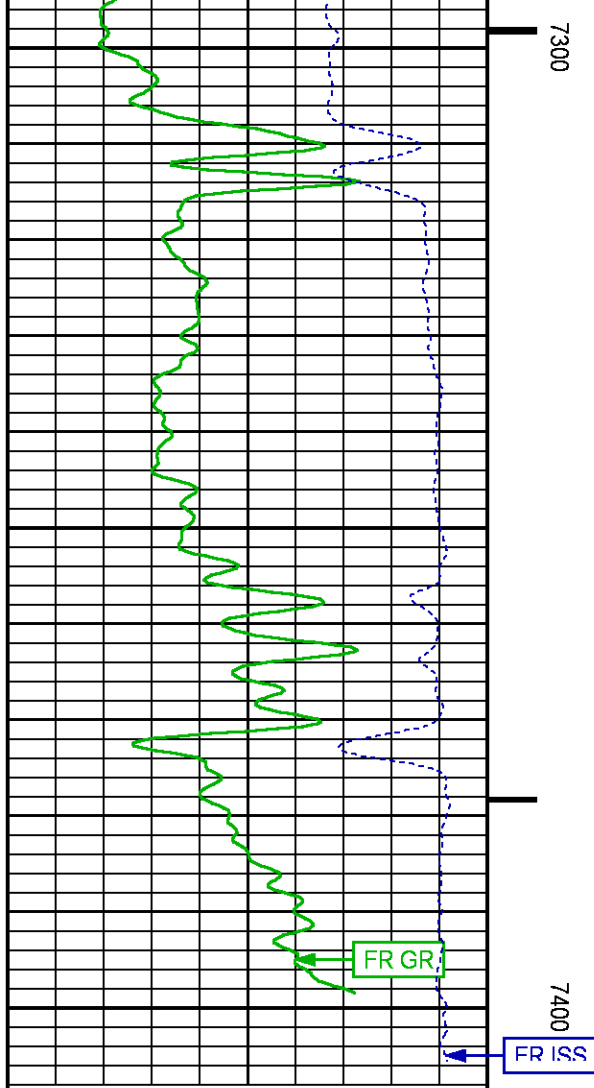




7100

7200





MAIN GSAND

Plotted: Fri Aug 11 11:55:29 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_03W/RPM_PNC3D03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2021.250 ft BOTTOM DEPTH: 2739.176 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	8.50	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

CURVE DESCRIPTION REPORT

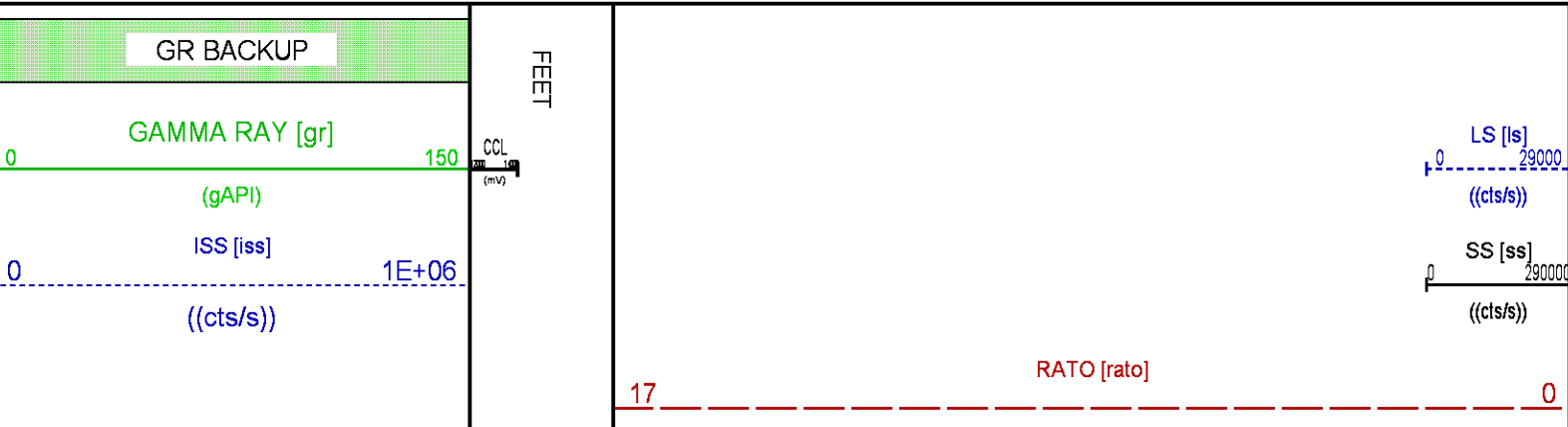
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 11 00:45:46 2017	CASING COLLAR LOCATOR
F1:GR	Aug 11 00:45:46 2017	GAMMA RAY
F1:ISS	Aug 11 00:45:46 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 11 00:45:46 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 11 00:45:46 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 11 00:45:46 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 11 00:45:46 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 11 00:45:46 2017	SHORT SPACE COUNT RATE

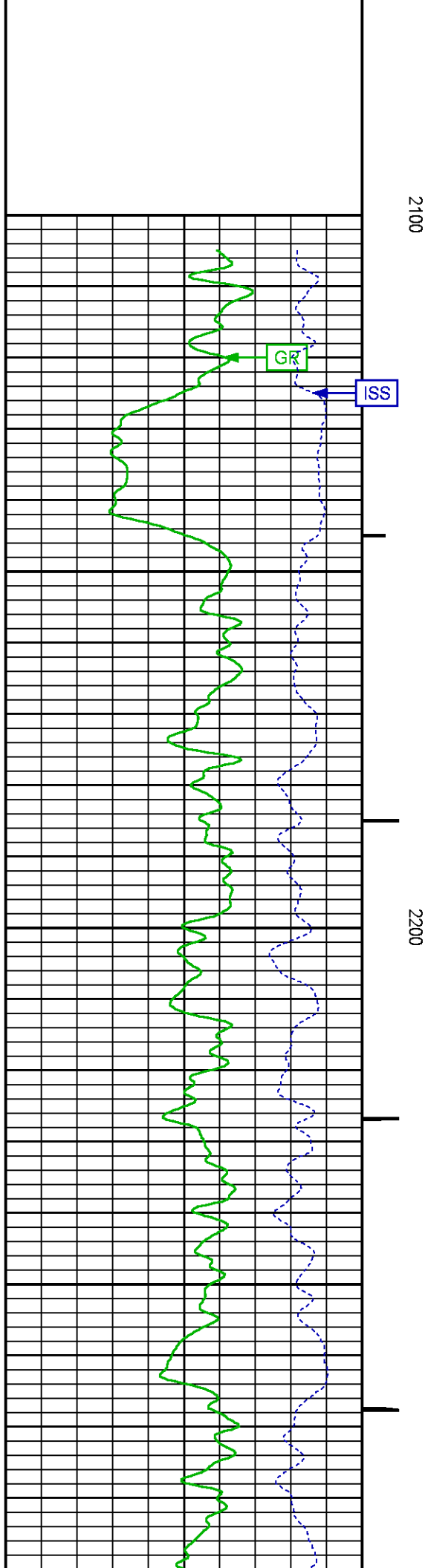
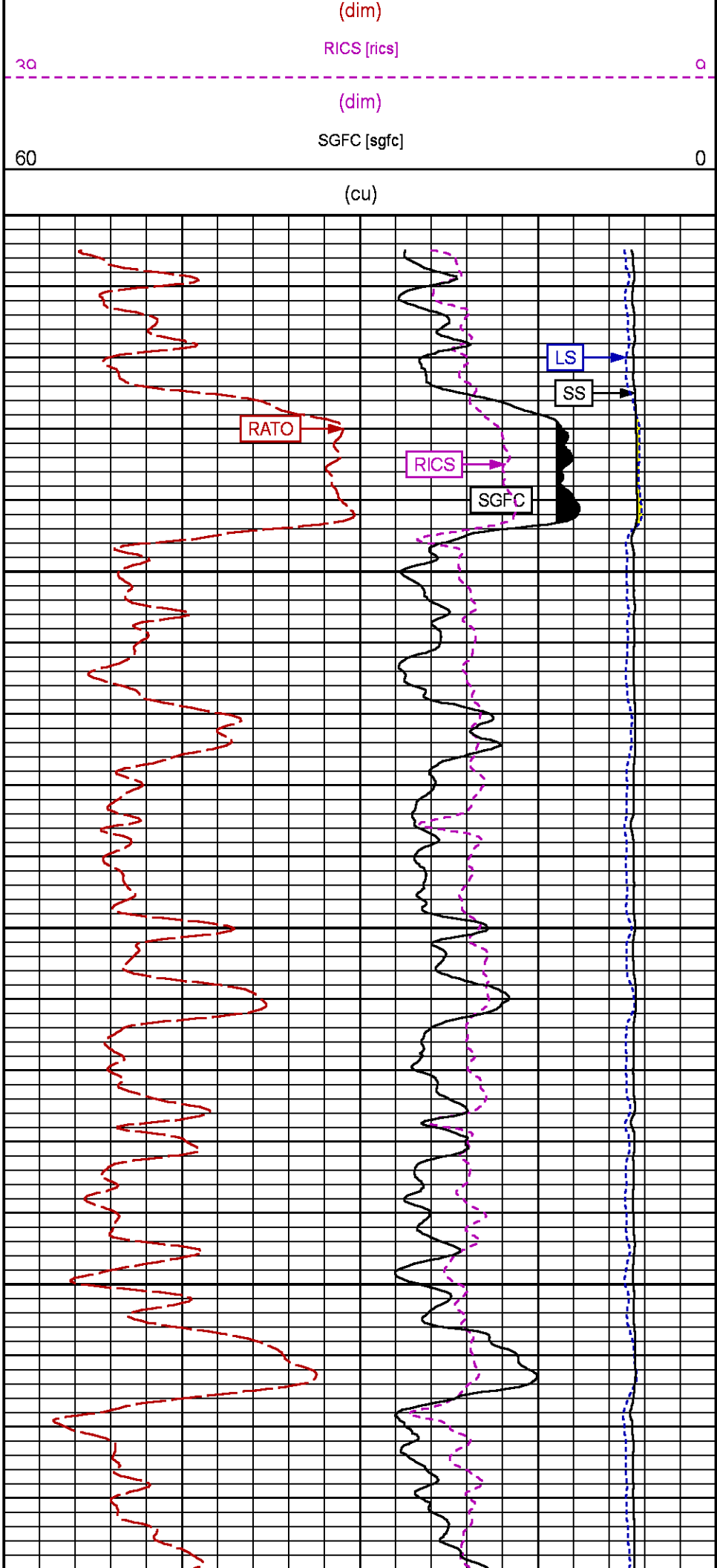
CURVE MEASURE POINT OFFSET

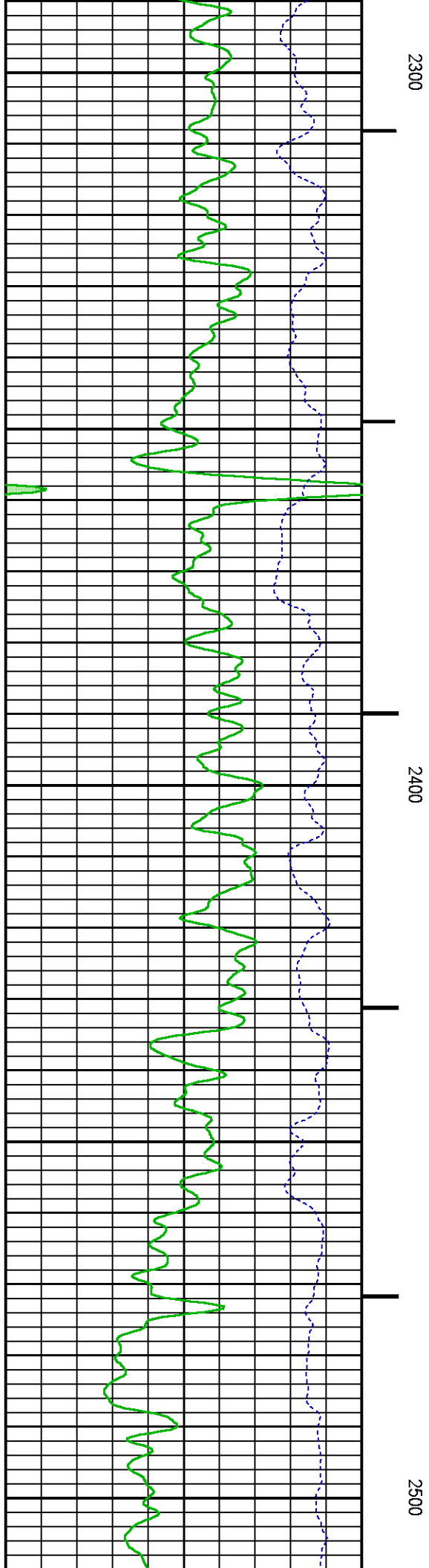
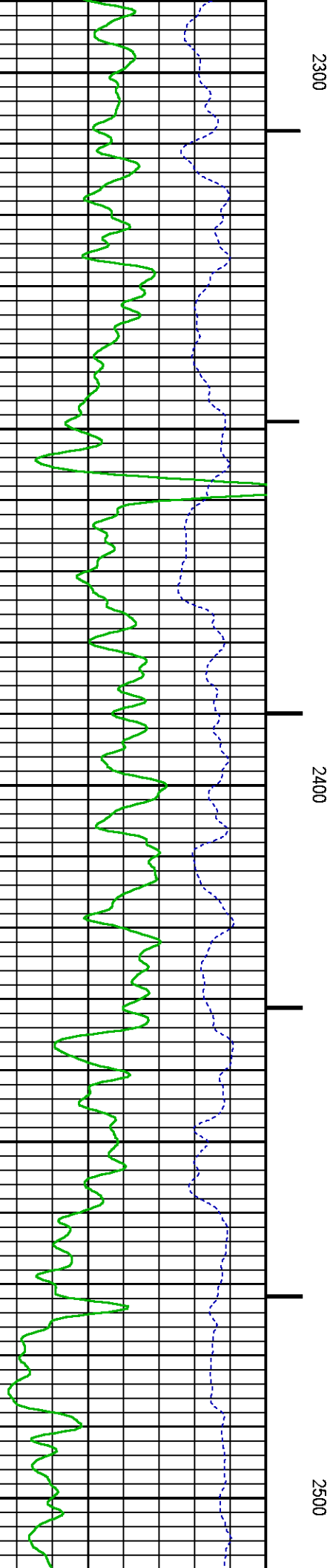
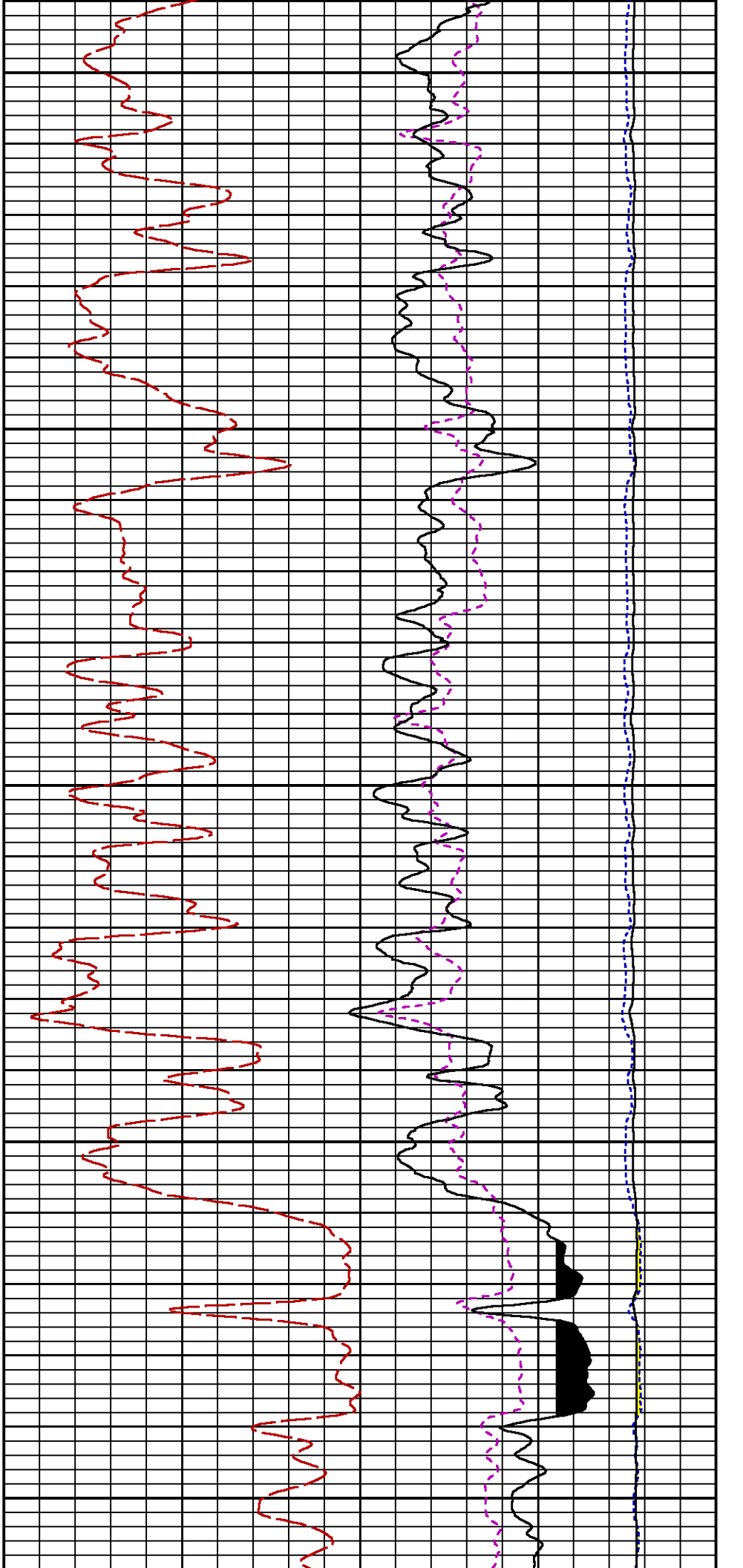
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

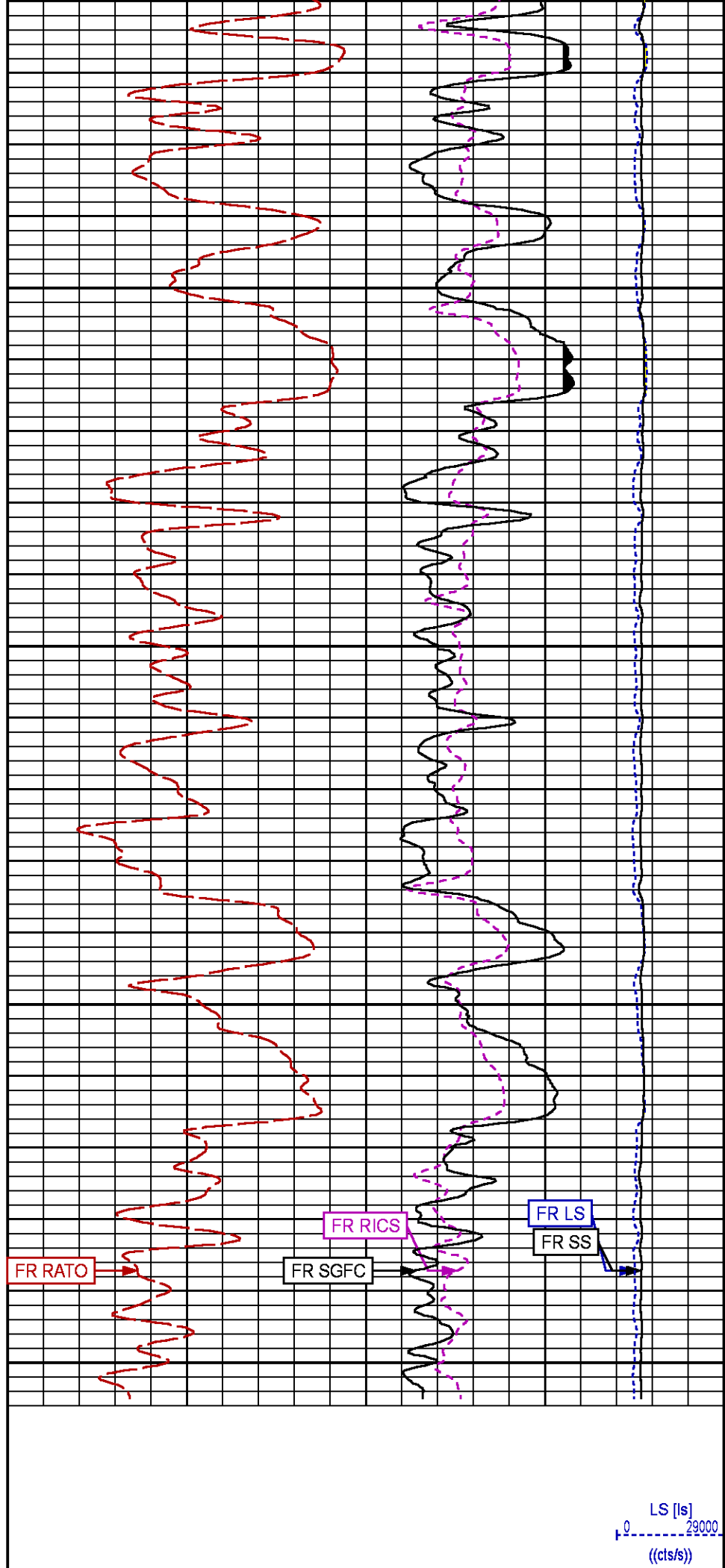
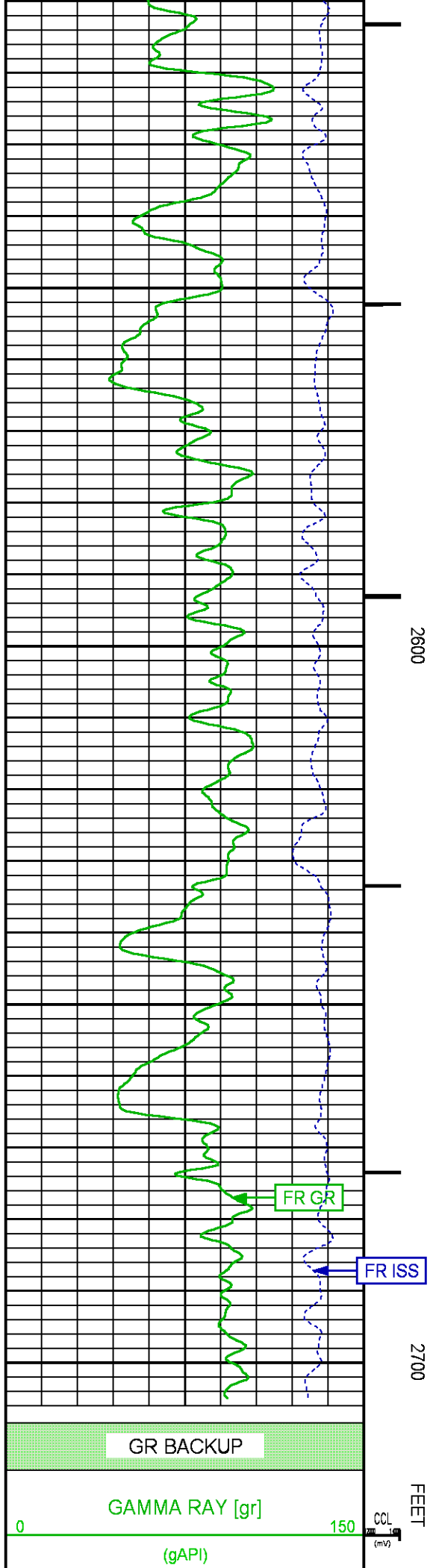
Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_03W/RPM_MAIN+01-MAIN-GSAND-5.fvpdf [5"/100' Scale]
Plot Interval : 2100 - 2705 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_03W/GSAND.xtf
Created On : Aug 11 11:52:55 2017
Company : LARAMIE ENERGY LLC
Well : GUNDERSON 20-03W
Field : MESA
File Interval : 2105 - 2705 Feet
OCT : RPM_PNC3









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graph TD
    Start([START]) --> PNC3D[REPEAT PASS PNC-3D MODE]
    PNC3D --> End([END])

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Plotted: Thu Aug 10 20:25:42 2017

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCI	26.00	ISS	12.75	RATO	12.75	SGEC	12.75

CCL	20.00	LS	12.75	RATO	12.75	SGFC	12.75
GR	23.00			RICS		SS	

Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_03W/RPM_MAIN+01-REPEAT-REPEATRPM-5.fvpdf [5"/100' Scale]

Plot Interval : 5990 - 6228.5 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_03W/REPEATRPM.xtf

Created On : Aug 10 20:01:17 2017

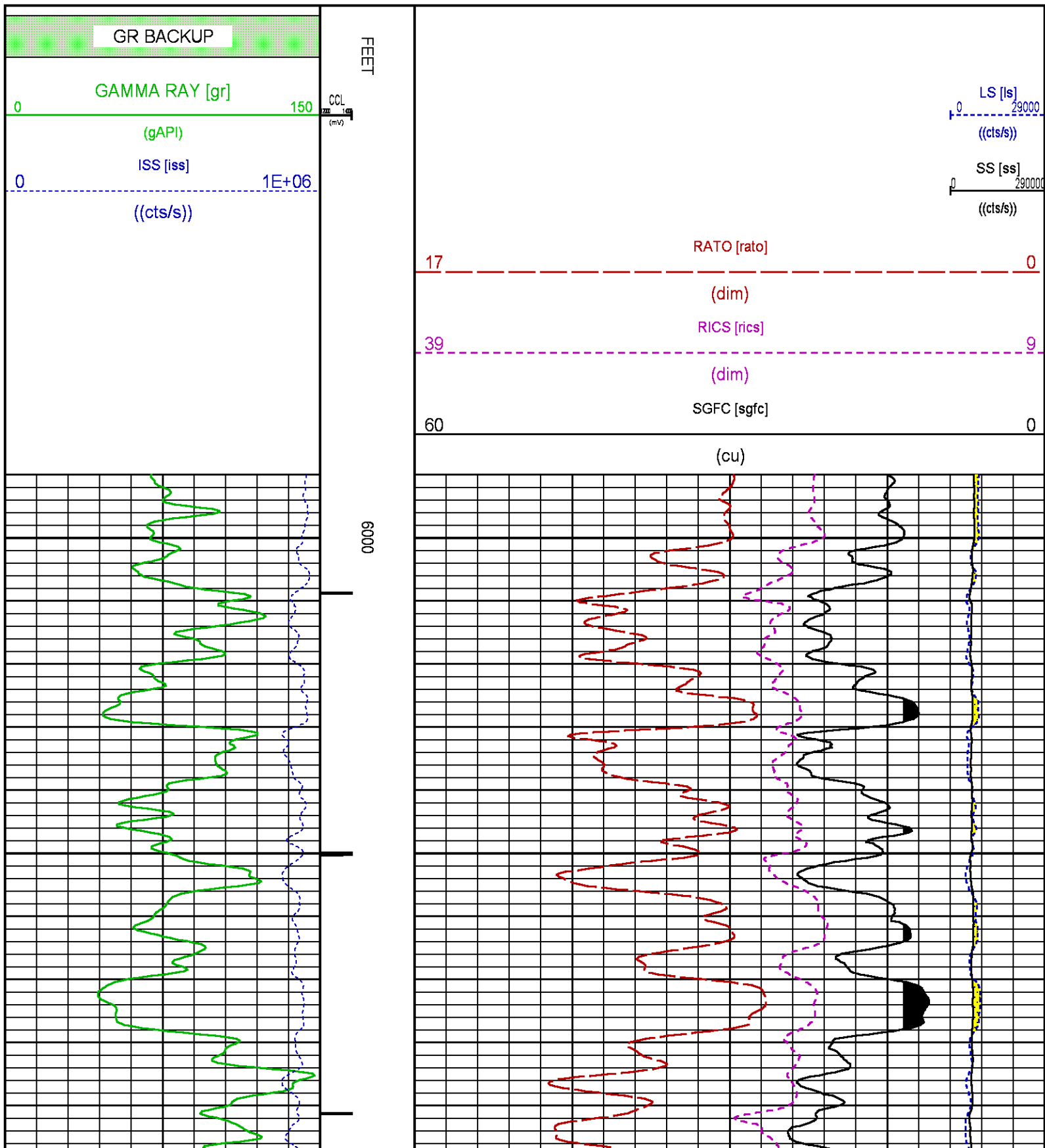
Company : LARAMIE ENERGY LLC

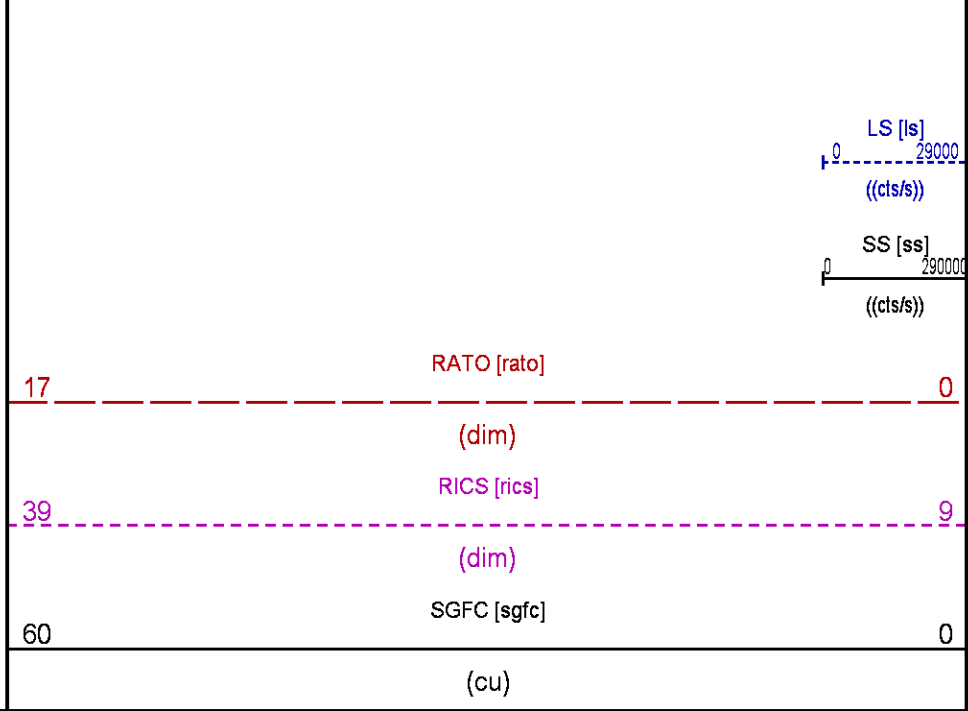
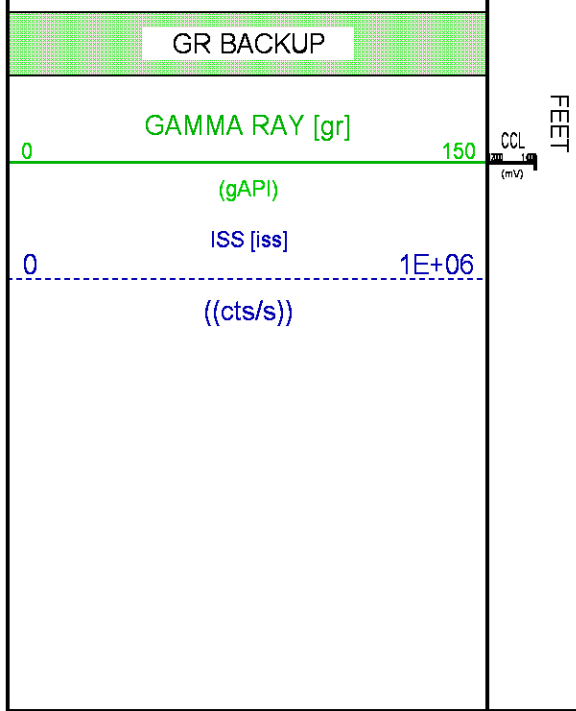
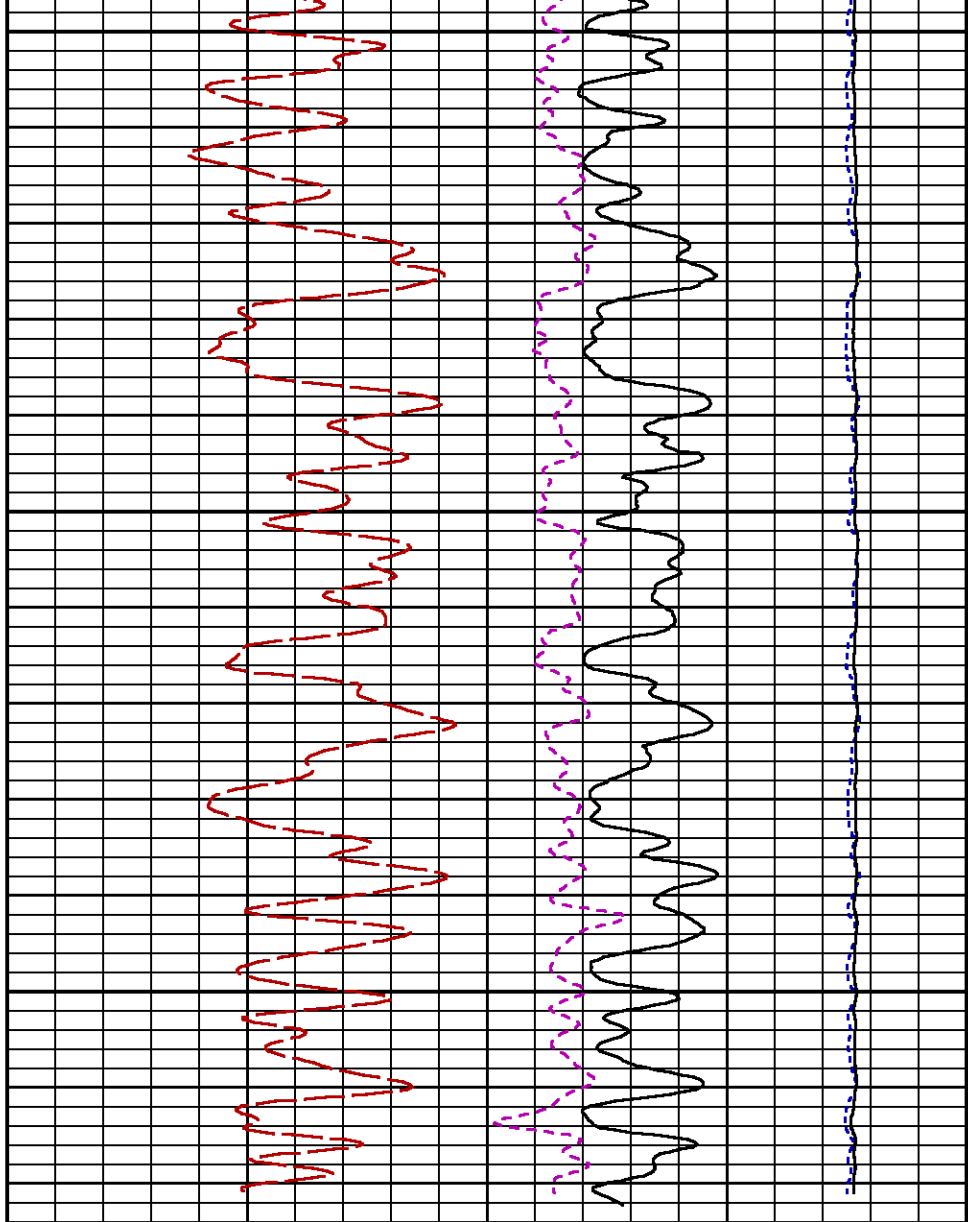
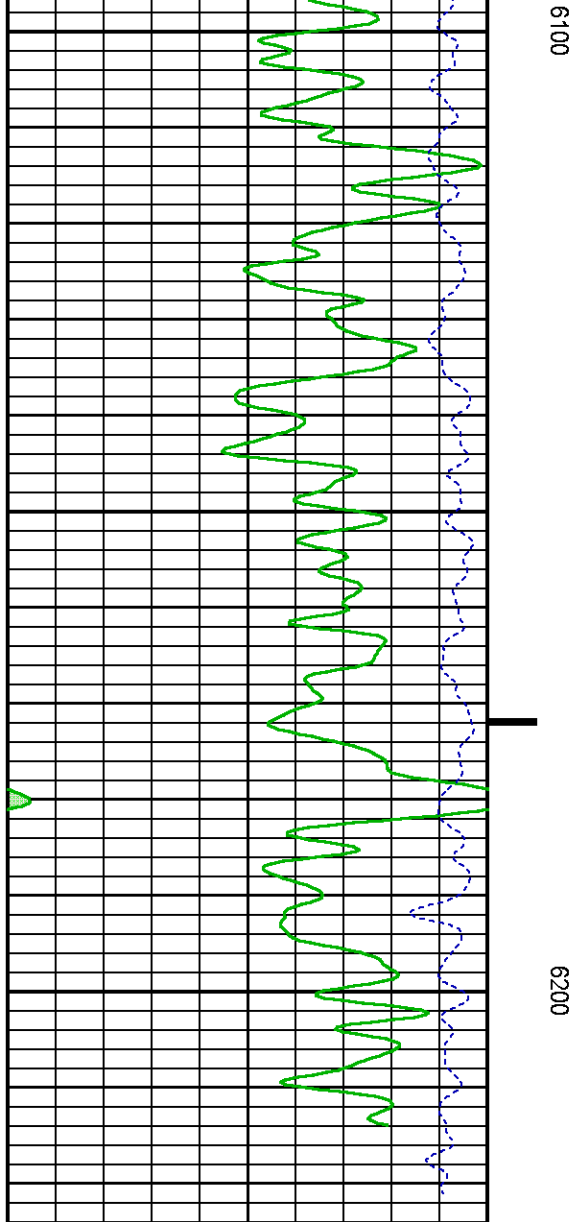
Well : GUNDERSON 20-03W

Field : MESA

File Interval : 5930 - 6237.25 Feet

OCT : RPM_PNC3





GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA10485470 DATE/TIME PERFORMED: Tue Jan 17 13:32:11 2017
UNIT #: 3882ML ML4352 CALB JIG #: 4702NK DA_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	GR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	63.76	399.13	335.4	0.552	35.17	220.17	185

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA10485470 DATE/TIME PERFORMED: Tue Jan 17 13:34:45 2017
UNIT #: 3882ML ML4352 VERI JIG #: 4702NK DA_228

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	63.44	394.18	0.552	35.00	217.44	182.44
					175.00	186.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA10184883 DATE/TIME PERFORMED: Thu Jul 13 15:06:49 2017
UNIT: 3882TD HL6728 CALIBRATOR: 2437XB120057 SOURCE: 8281AA10160595 HOURS: 8281AA228

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
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
					26.76	26.40	0.00	0.00
					23.40	24.00	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
	ISSALS	ISSAXS	ISS/CSS	SSALS	SS2LS	CSS/CLS		
Raw Data	807240	1.44	4.90	31.88	15.44	10.65	3.80	4.04
	1.42	1.45	3.95	5.92	22.20	32.10	10.96	11.10
					10.96	16.34	3.59	3.96
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	3.95	5.92	21.60	32.10	10.96
						10.96	11.10	3.59
							3.96	4.22

INSTRUMENT CONFIGURATION

A3 CABLEHEAD

PCM POWER SUPPLY
Diameter : 1.70"
Length : 9.86"
Weight : 18 lbs
Series : 8250EA
Mnemonic : PCM

TELEMETRY / CCL

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

CANHA RAY

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

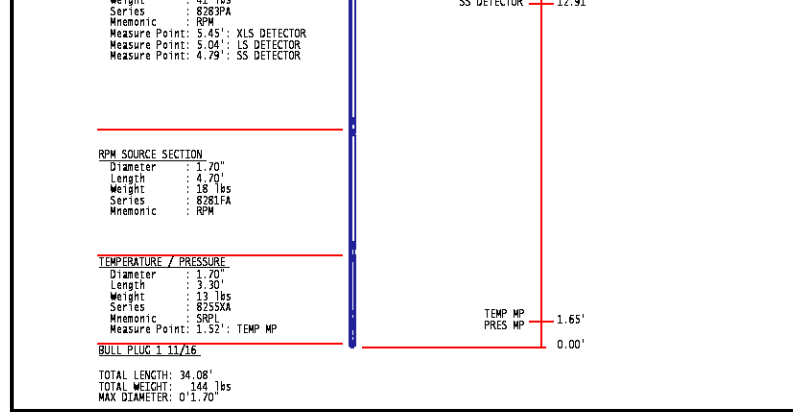
RPM ELECTRONICS


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

XLS DETECTOR : 13.58'
LS DETECTOR : 13.16'



	COMPANY	LARAMIE ENERGY		FILE NO:
	WELL	GUNDERSON 20-03W		
	FIELD	BUZZARD CREEK		API NO:
	COUNTY	MESA	STATE	COLORADO
LOCATION:		ELEVATIONS:		
SHL: LAT:39.266947N;LONG:107.795317W		KB 7174 FT		
BHL: LAT:39.267824N;LONG:107.797721W		DF 7173 FT		
SEC 20 TWP 9S RGE 93W		GL 7144 FT		
		DATE 10-AUG-2017		