



FILE NO:	COMPANY	LARAMIE ENERGY
API NO:	WELL	GUNDERSON 20-09W
05077103500000	FIELD	VEGA
	COUNTY	MESA
	STATE	COLORADO

Ver. 4.06	LOCATION:	OTHER SERVICES
	SHL: LAT:39.266700N; LONG:107.795317W	RAL
	BHL: LAT:39.263788N; LONG:107.797721W	
	SEC 20 TWP 9S RGE 93W	

PERMANENT DATUM	GL	ELEVATION	7144 FT
LOG MEASURED FROM	KB	30 FT	ABOVE P.D.
DRILL. MEAS. FROM	KB		
		ELEVATIONS:	
		KB	7176 FT
		DF	7176 FT
		GL	7146 FT

DATE	23-AUG-2017
RUN	2
TRIP	1
SERVICE ORDER	US126645
DEPTH DRILLER	7600 FT
DEPTH LOGGER	7535 FT
BOTTOM LOGGED INTERVAL	7535 FT
TOP LOGGED INTERVAL	2189 FT
TIME STARTED	20:30
TIME FINISHED	3:00
OPERATOR RIG TIME	6.5 HRS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	53 FT
LOGGED CEMENT TOP	1563 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	15 FMN
MAX. RECORDED TEMP.	243 DEGF
REFERENCE LOG	BAKER RALGR
REFERENCE LOG DATE	23-AUG-2017
EQUIP. NO.	HL-6670
LOCATION	WOODWARD
RECORDED BY	LSINICKI
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/TEMP RUN IN COMBINATION

LOGGED WITH 0 PSI ON WELLHEAD

SJ: 5734' - 5754'

SJ: 6727' - 6746'

CREW: J.PENA, G.SUAREZ

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	TELEMETRY	8250EA/8248EA	10185091/10323398	FREE
2	1	GAMMA RAY	8262XA	10485470	FREE
2	1	RPM	8281EA	10387162	FREE
2	1	RPM	8283PA	10184883	FREE
2	1	RPM	8281FA	10315572	FREE
2	1	TEMP	8255XA	120516	FREE

G SAND 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: Thu Aug 24 10:31:18 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_09W/RPM3DR03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 2084.250 ft BOTTOM DEPTH: 2854.250 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 24 10:12:21 2017	CASING COLLAR LOCATOR
F1:GR	Aug 24 10:12:21 2017	GAMMA RAY
F1:ISS	Aug 24 10:12:21 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 24 10:12:21 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 24 10:12:21 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 24 10:12:21 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 24 10:12:21 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 24 10:12:21 2017	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

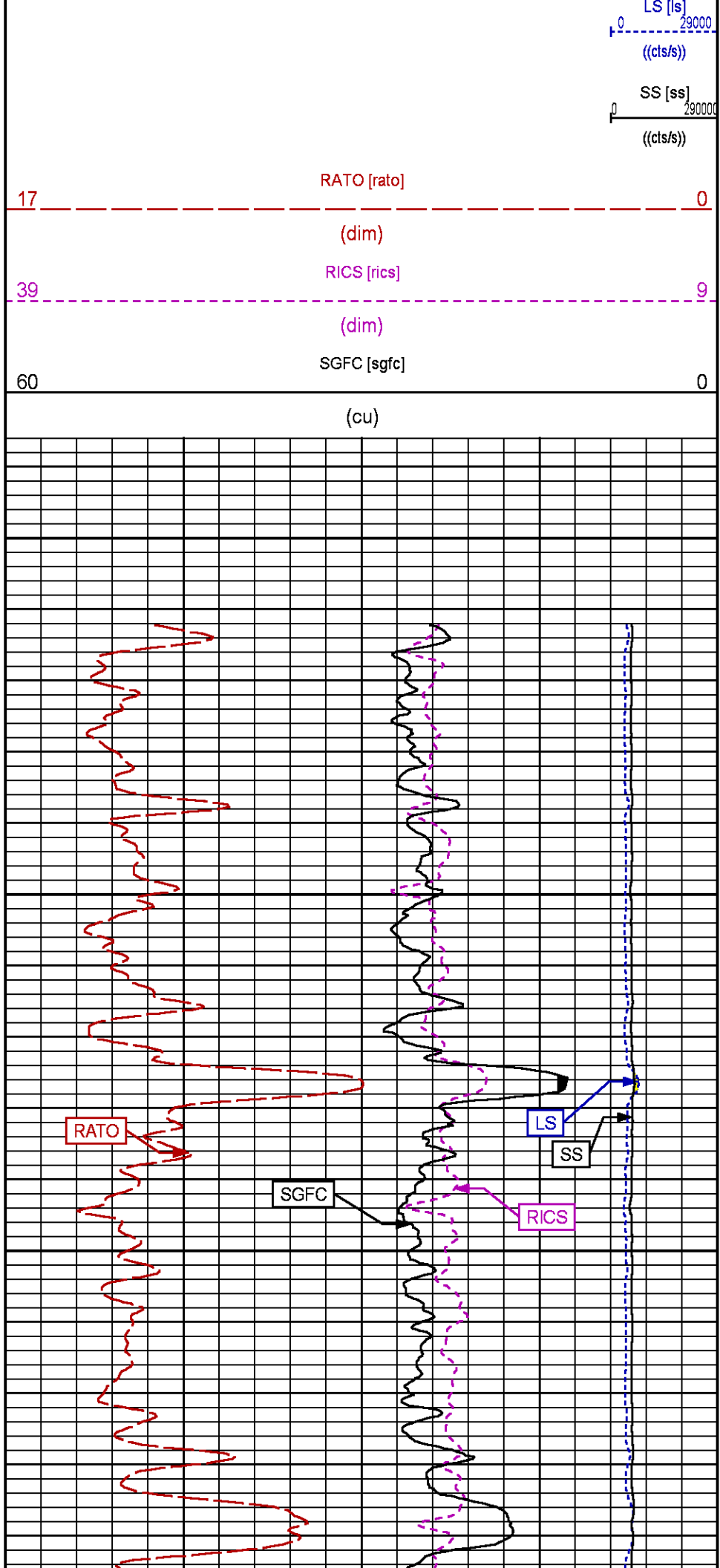
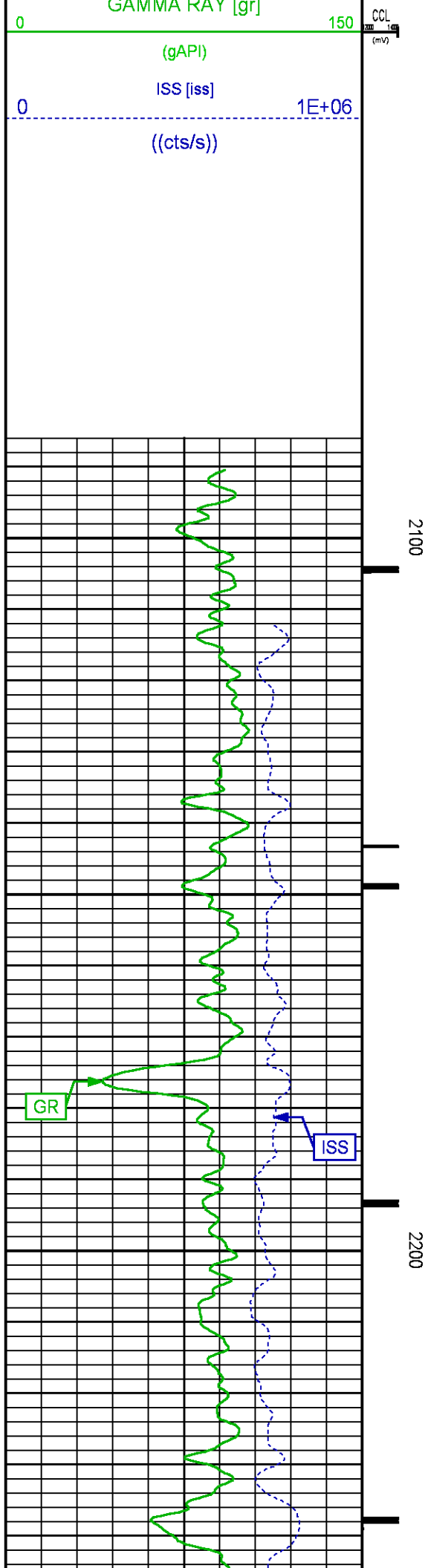
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

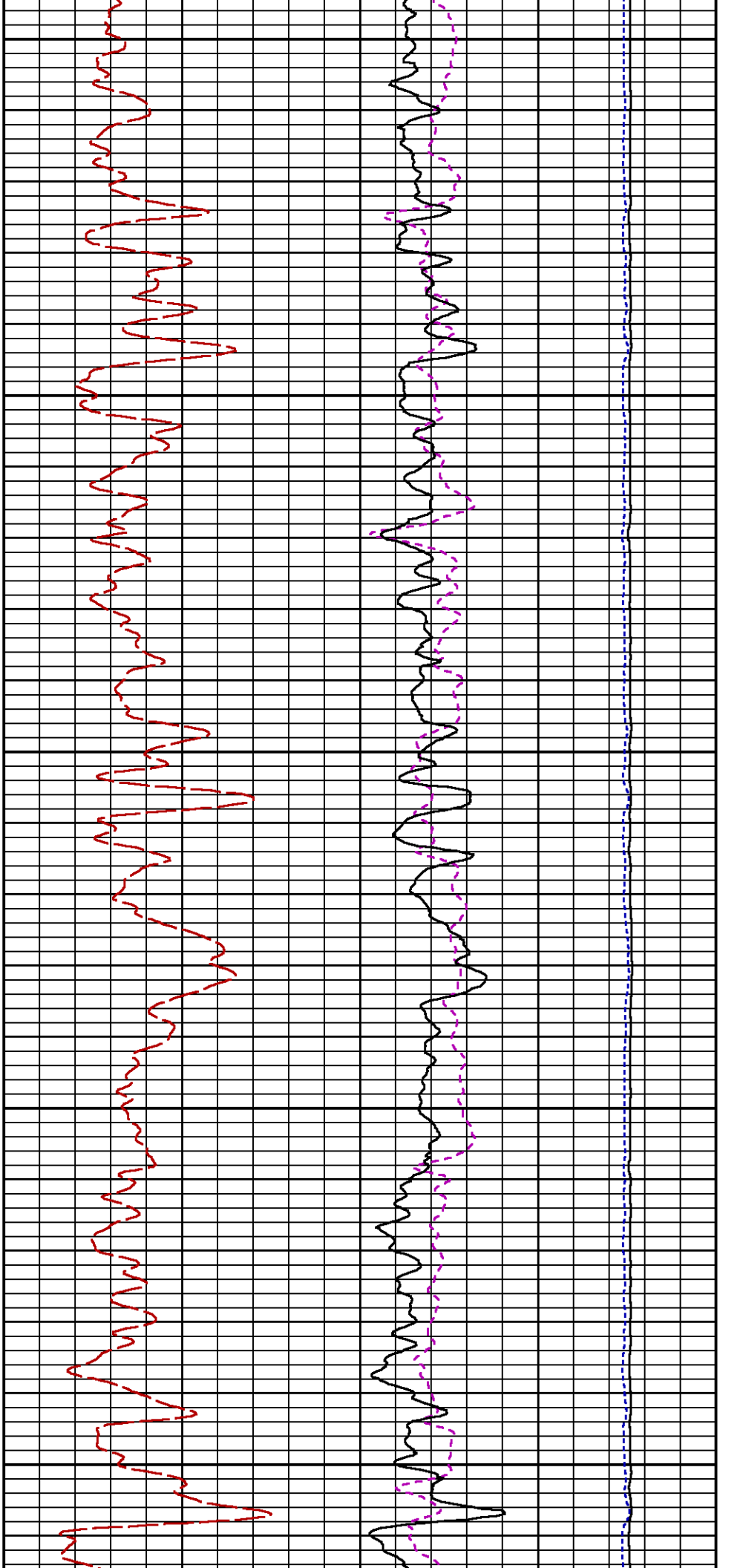
Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_09W/RPM_GSAND.fvpdf [5"/100' Scale]
Plot Interval : 2086.25 - 2872.25 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_09W/GUNDERSON_20_09W_RPM_GSAND.xtf
Created On : Aug 24 10:12:21 2017
Company : LARAMIE ENERGY
Well : GUNDERSON 20-09W
Field : VEGA
File Interval : 2085.5 - 2881 Feet
OCT : RPM3D

GR BACKUP

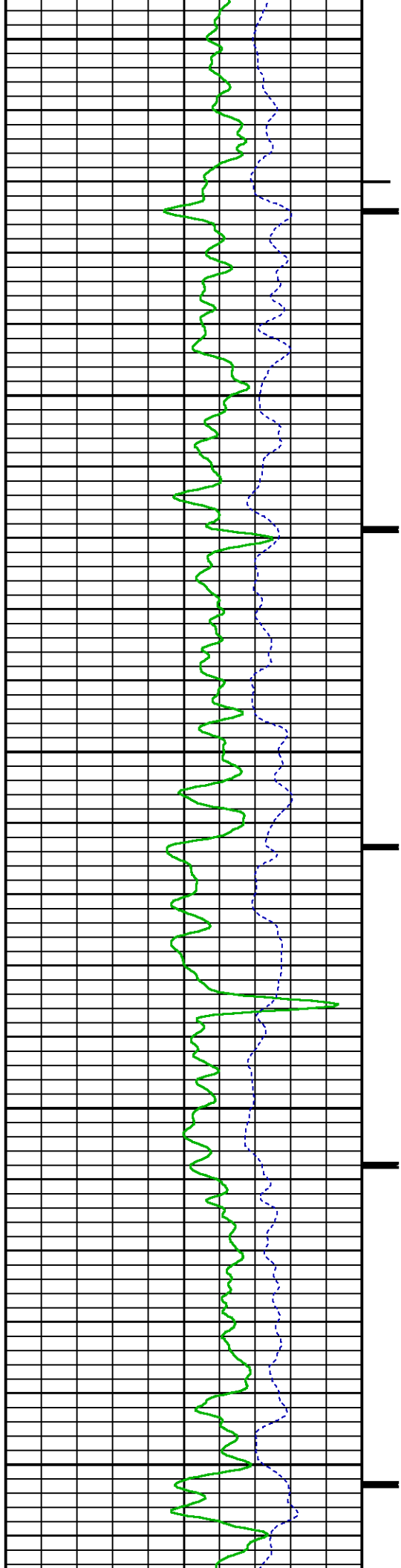
FEET

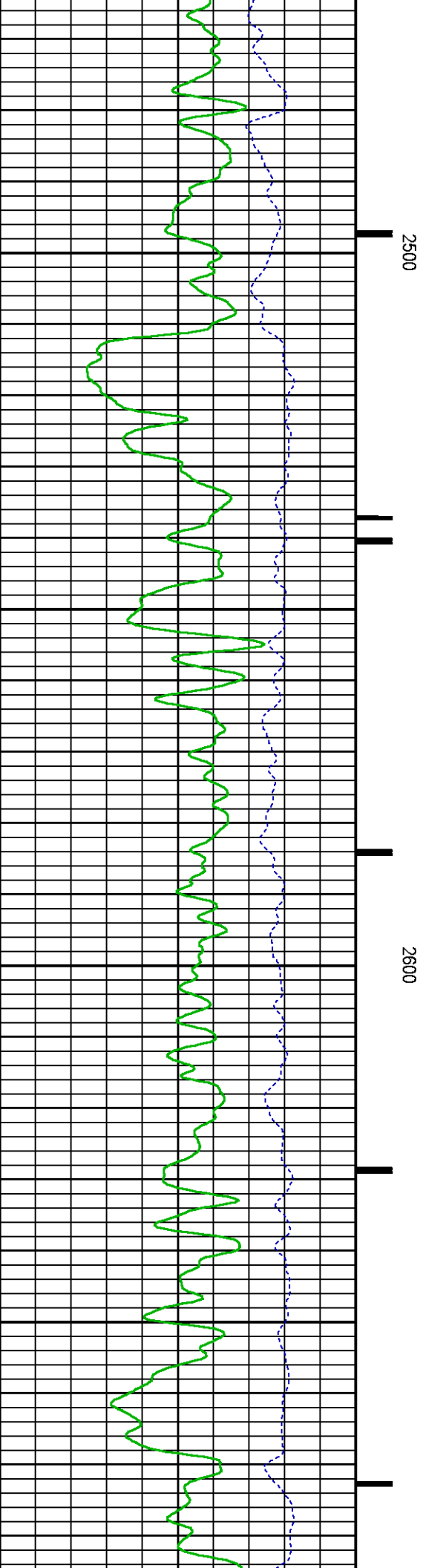
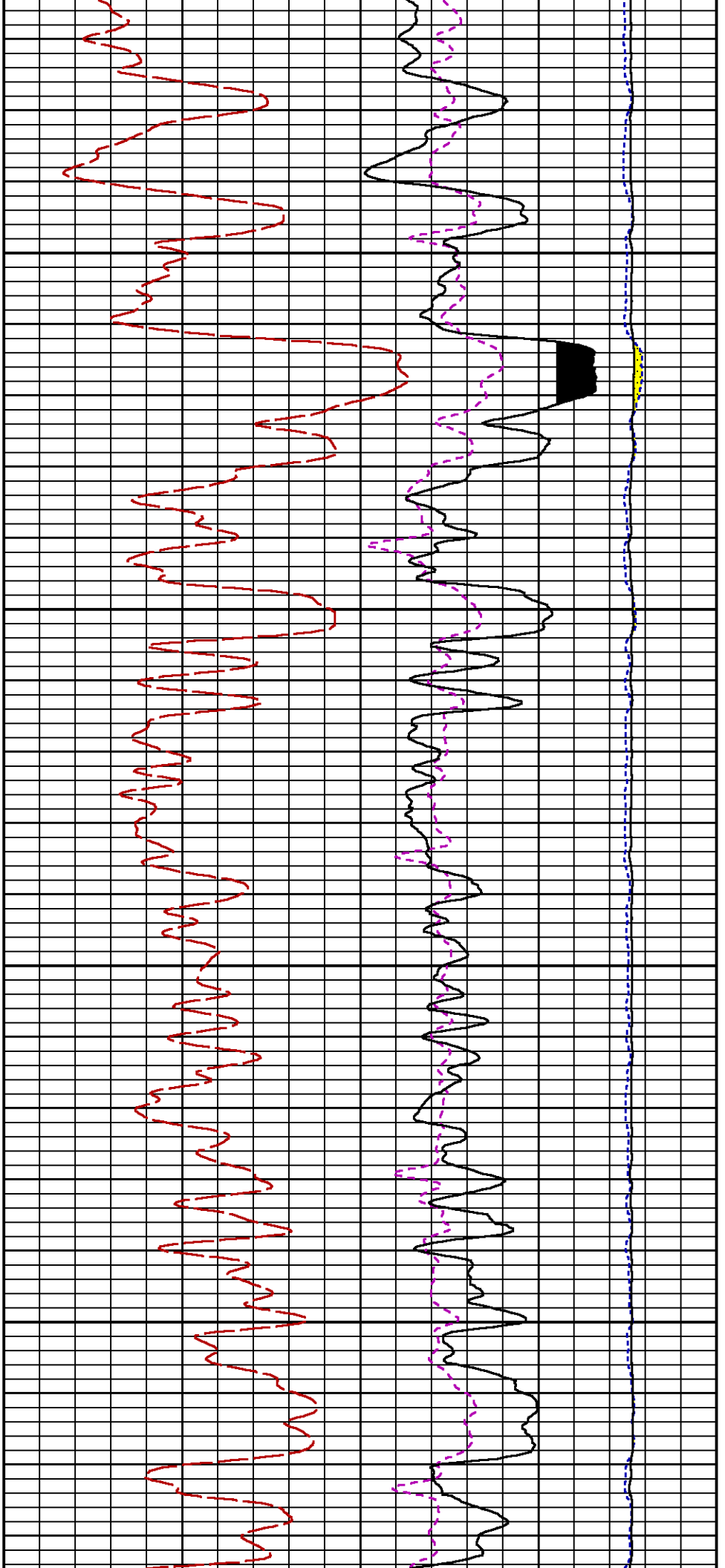


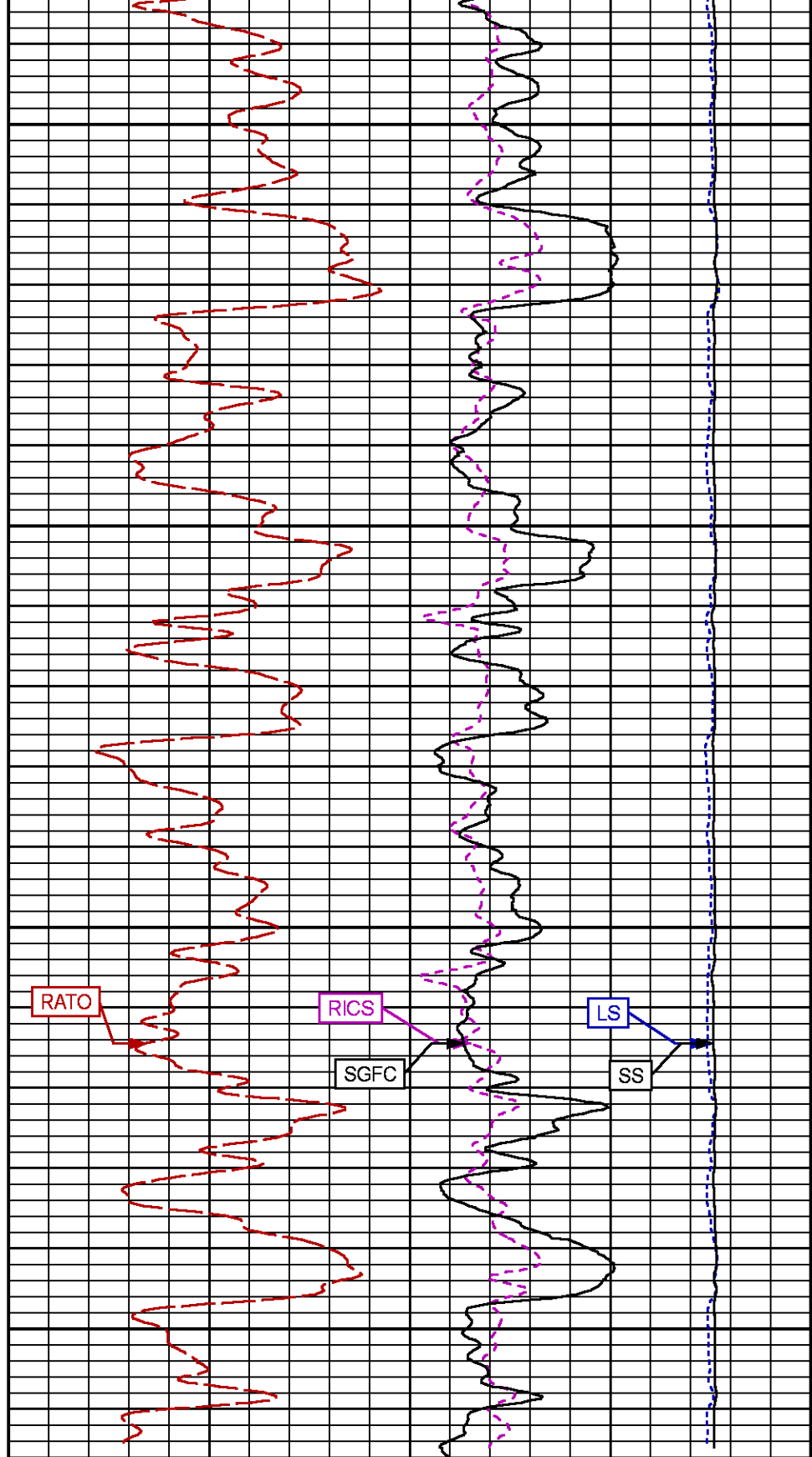
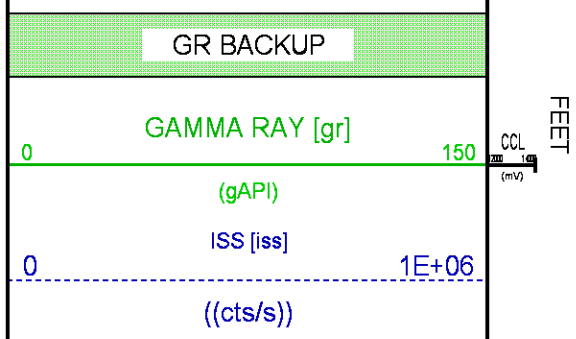
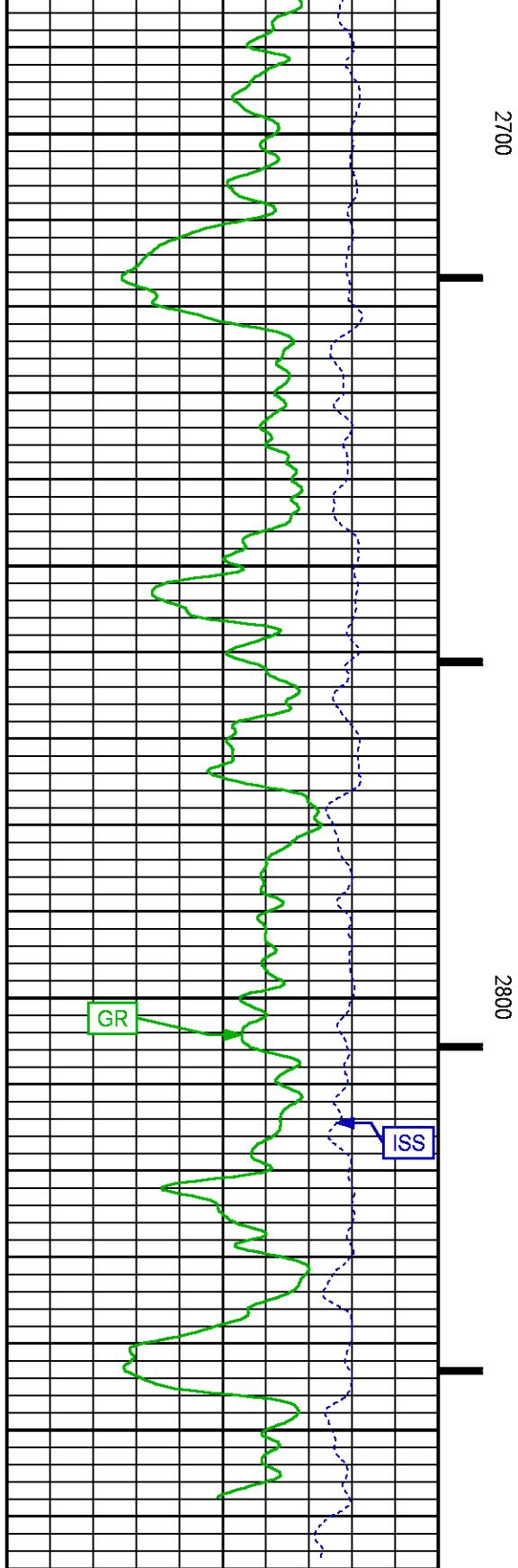


2300

2400







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

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: Thu Aug 24 10:35:23 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_09W/RPM3DR02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 3840.500 ft BOTTOM DEPTH: 7516.250 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

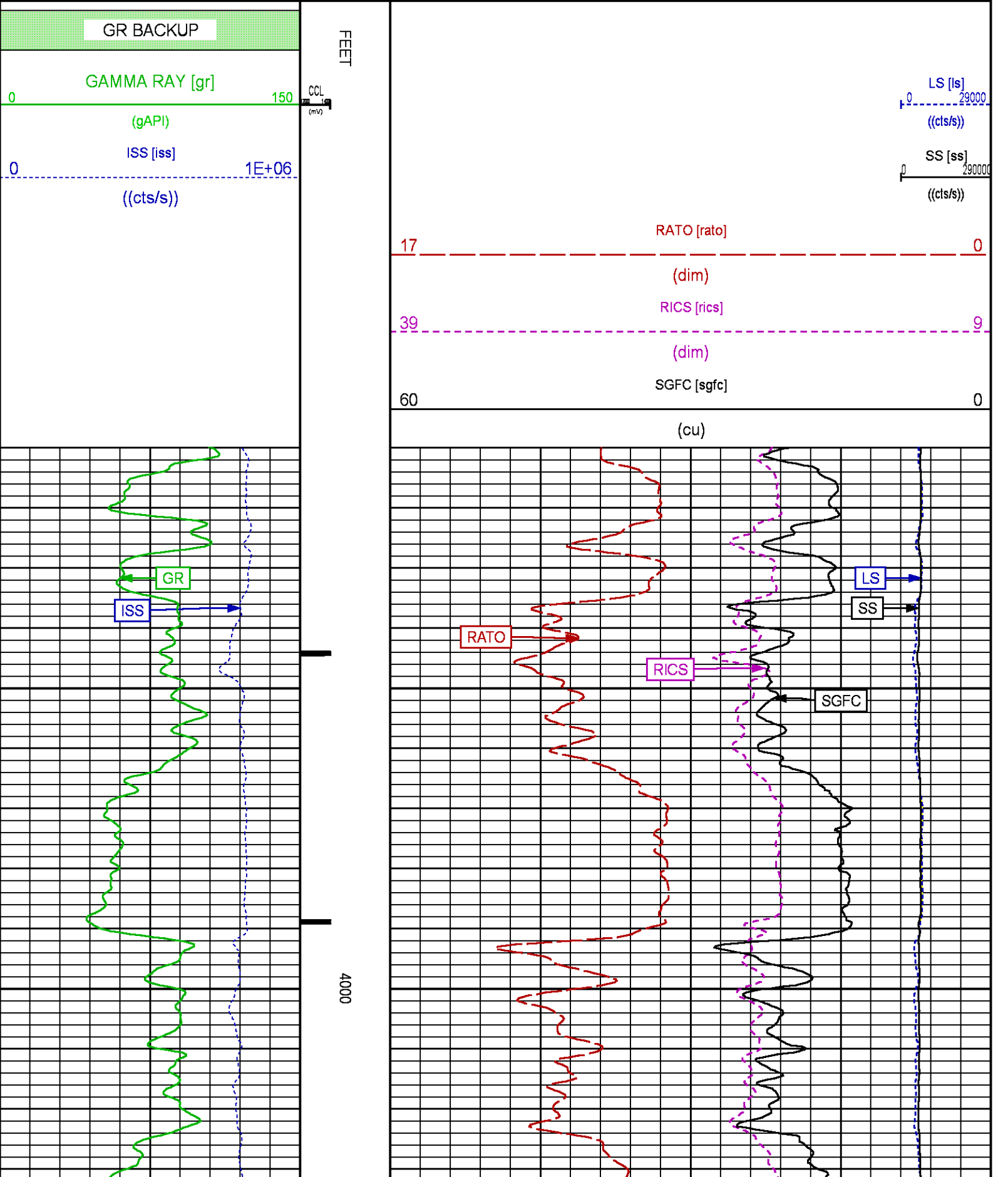
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Aug 24 10:06:47 2017	CASING COLLAR LOCATOR
F1:GR	Aug 24 10:06:47 2017	GAMMA RAY
F1:ISS	Aug 24 10:06:47 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 24 10:06:47 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 24 10:06:47 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 24 10:06:47 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 24 10:06:47 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 24 10:06:47 2017	SHORT SPACE COUNT RATE

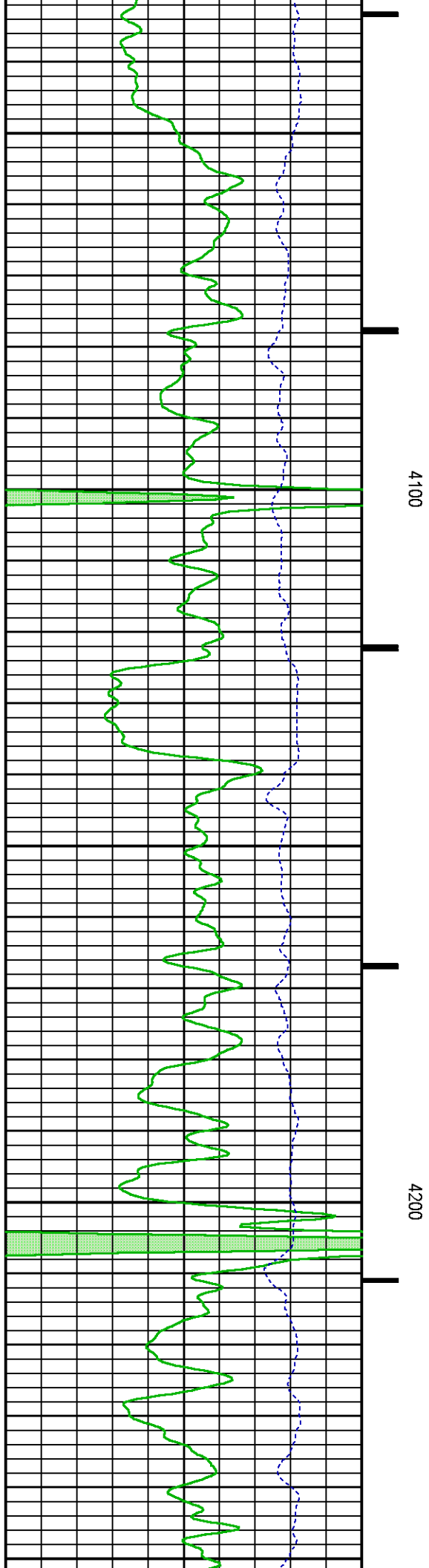
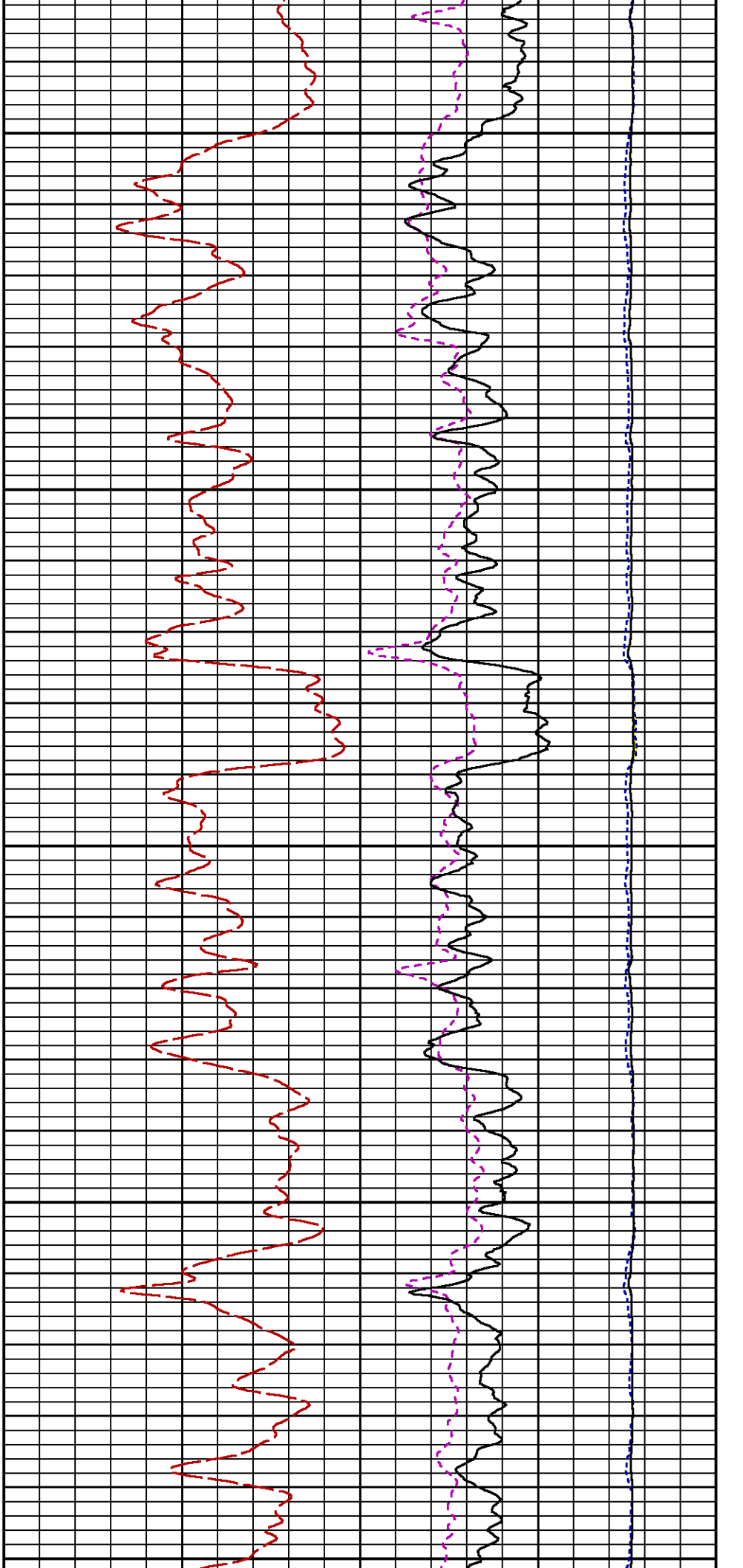
CURVE MEASURE POINT OFFSET

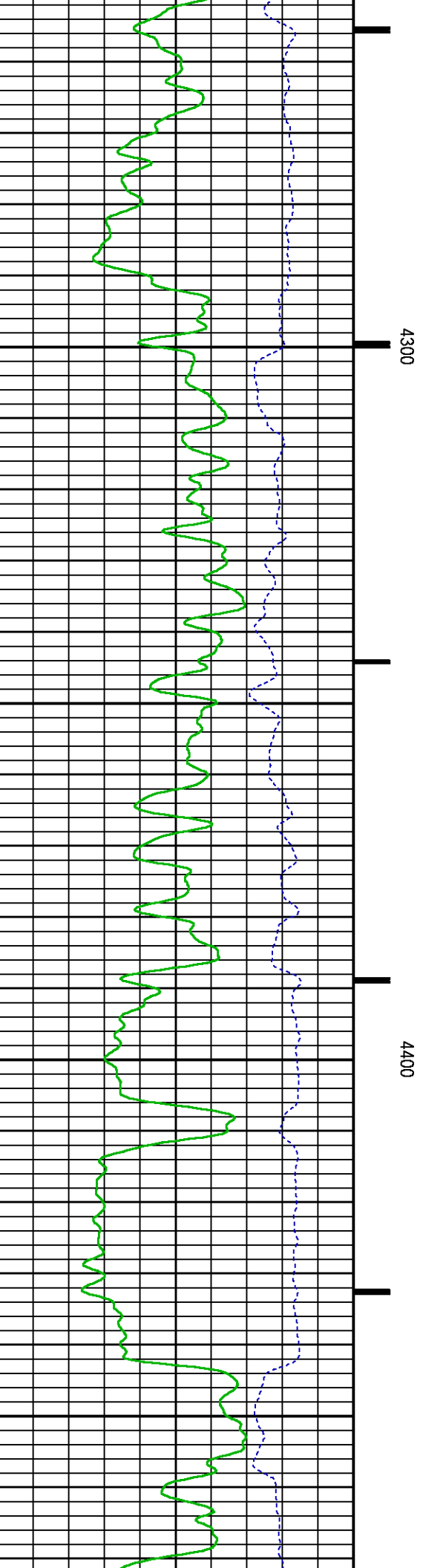
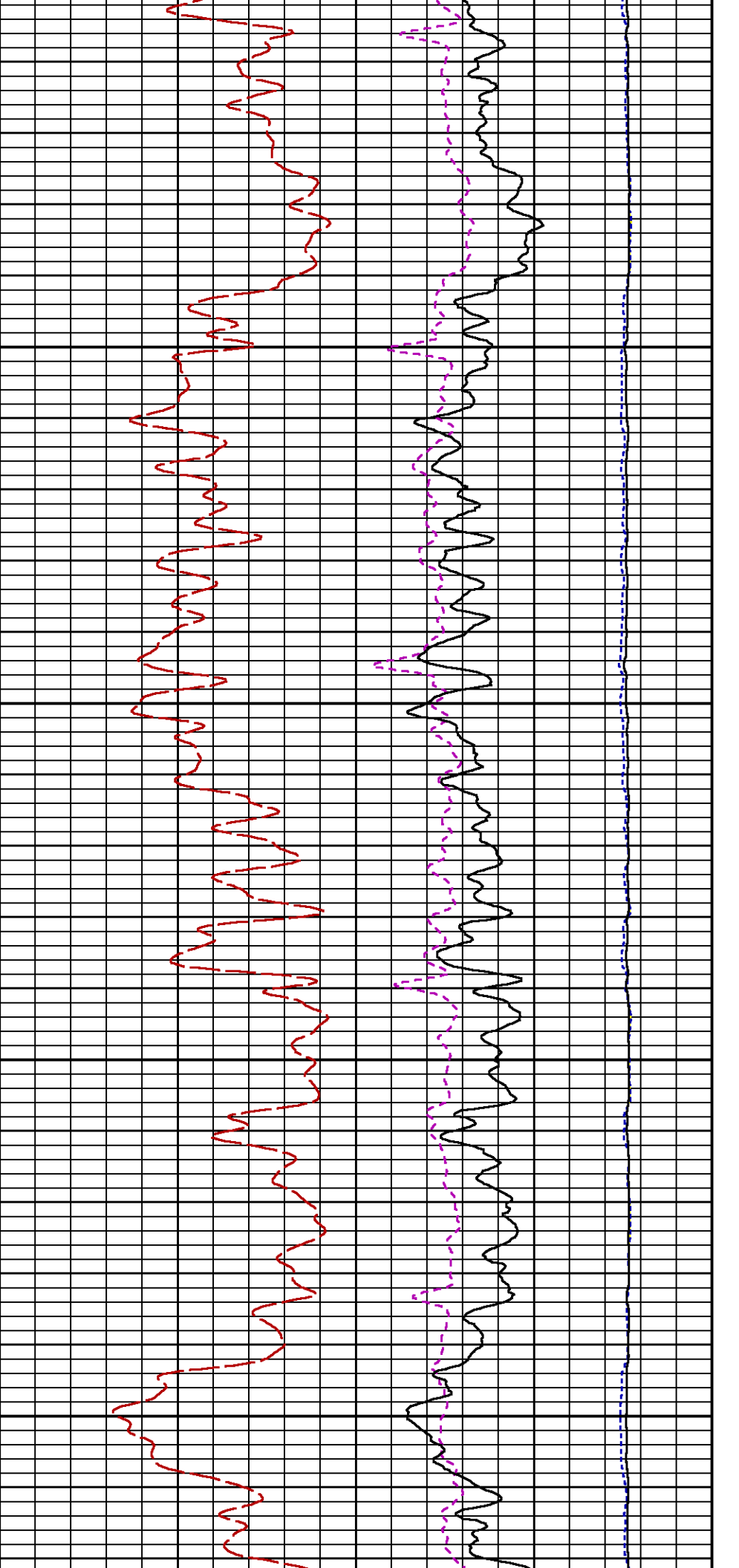
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

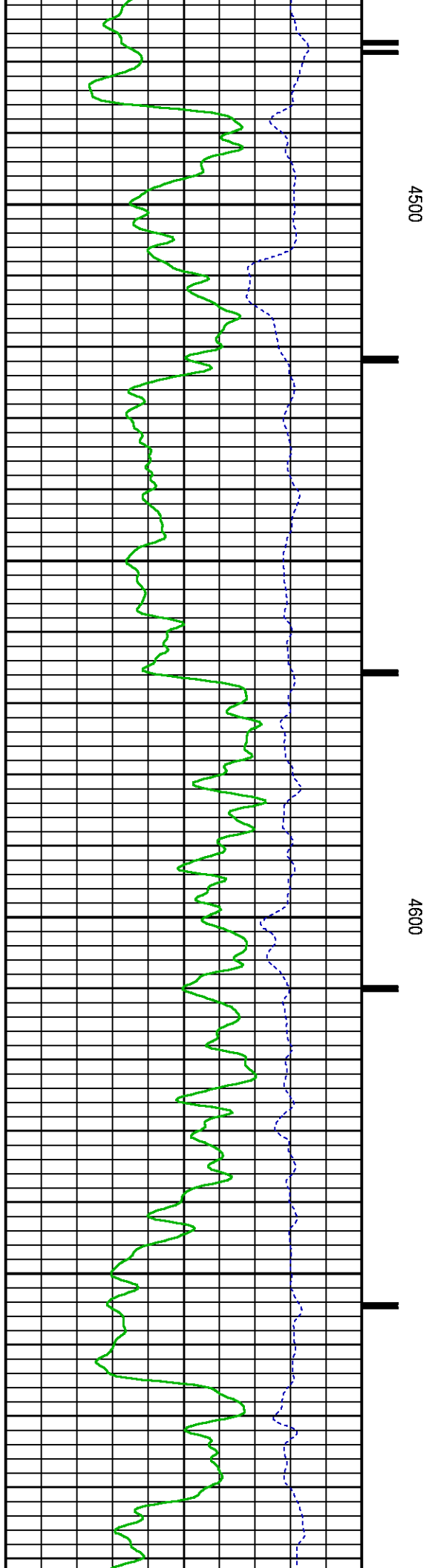
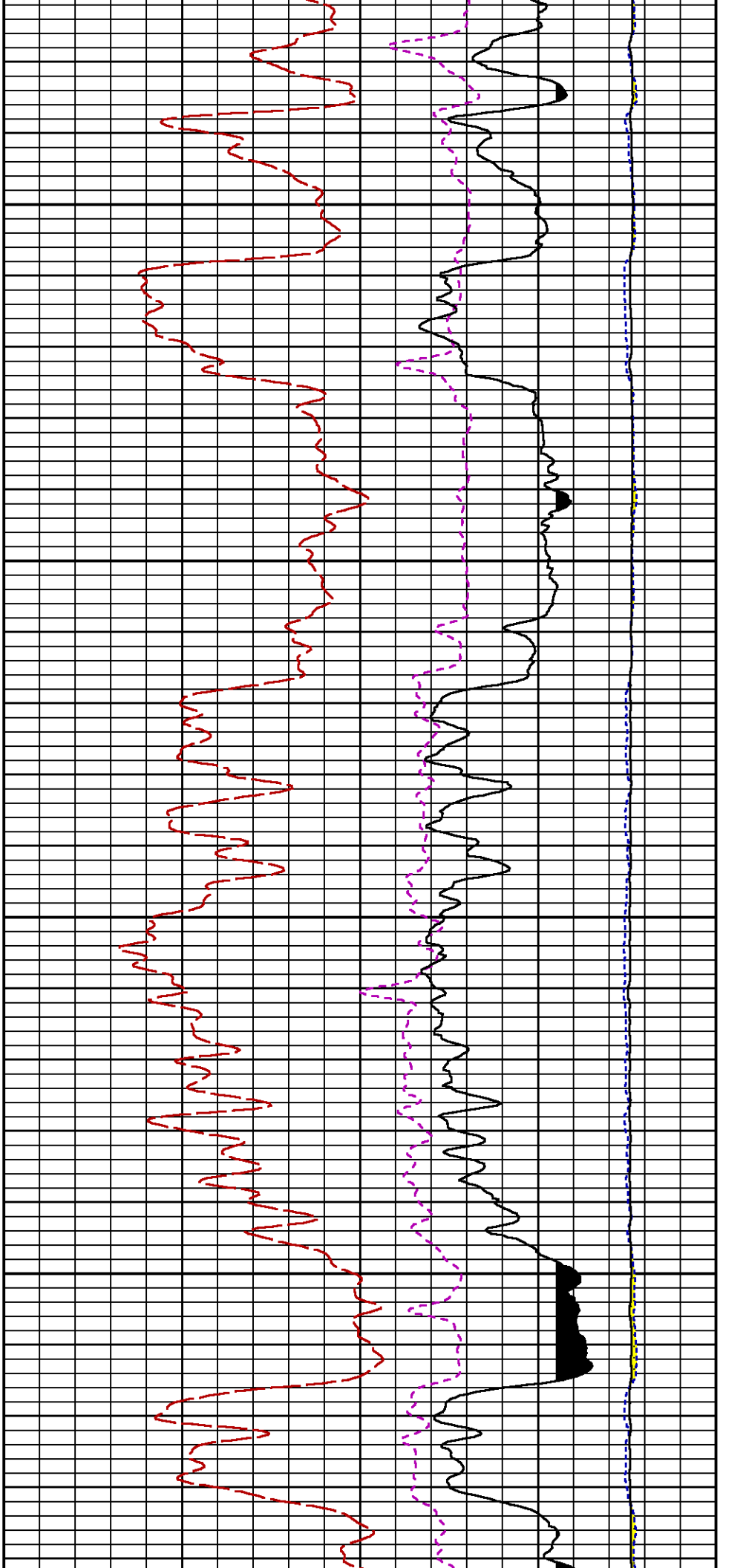
Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_09W/RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 3910 - 7534 Feet

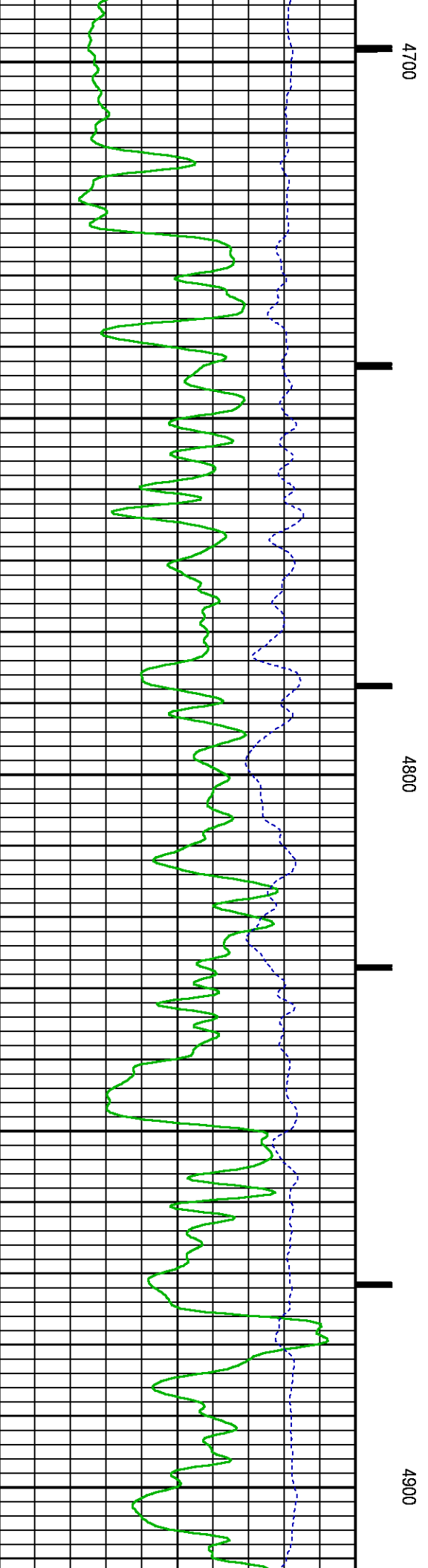
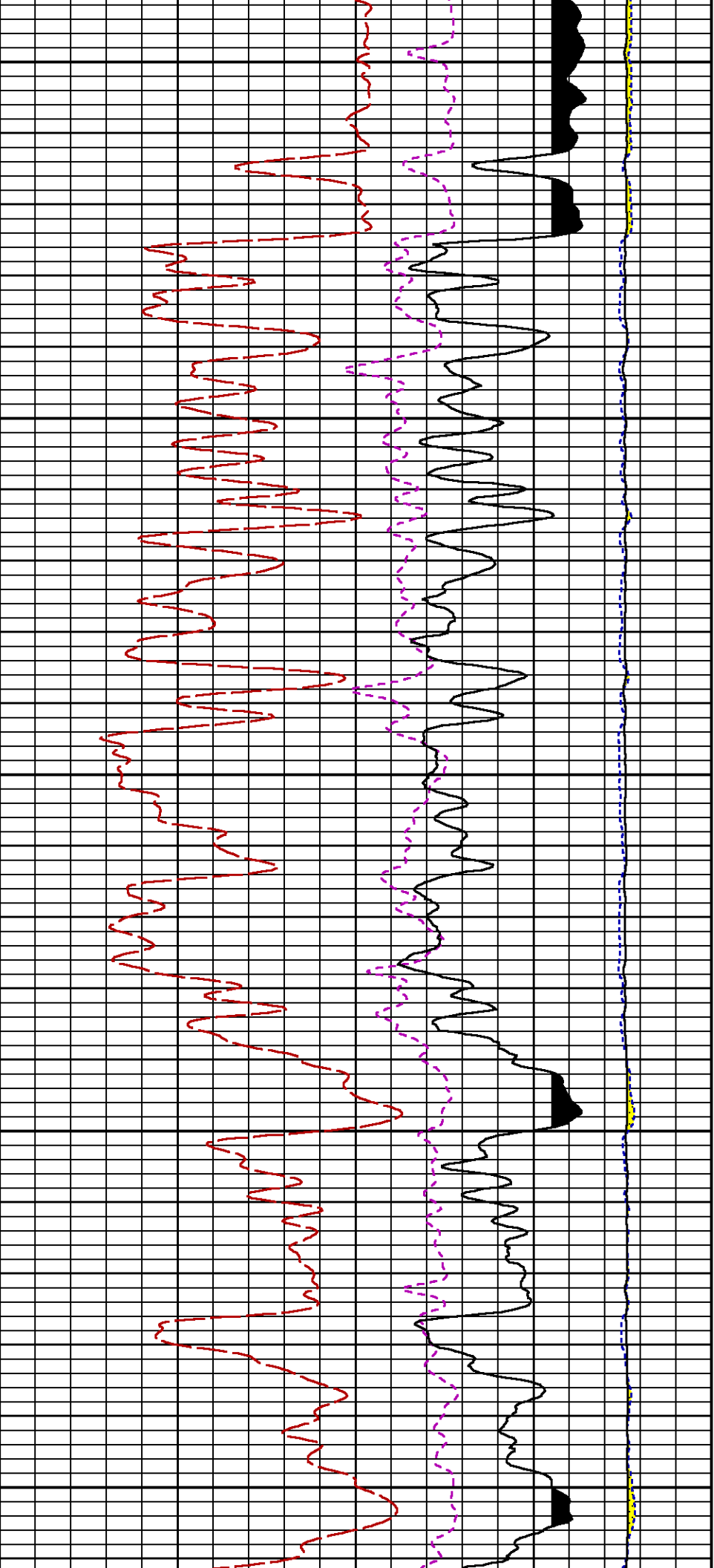
Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_09W/GUNDERSON_20_09W_RPM_MAIN.xtf
Created On : Aug 24 10:06:47 2017
Company : LARAMIE ENERGY
Well : GUNDERSON 20-09W
Field : VEGA
File Interval : 3841.25 - 7542.75 Feet
OCT : RPM3D

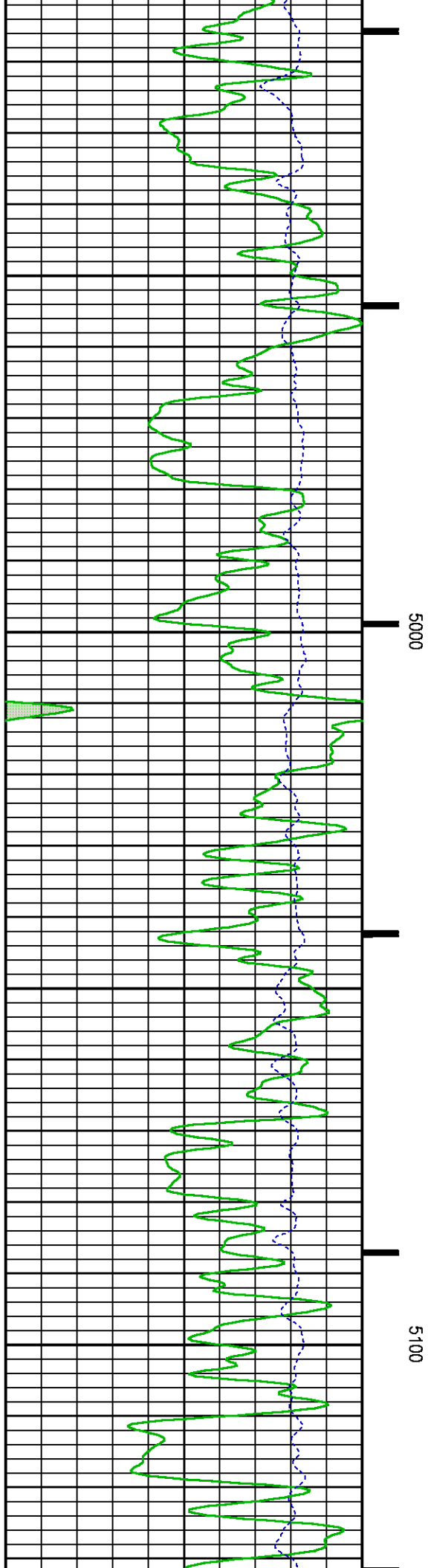
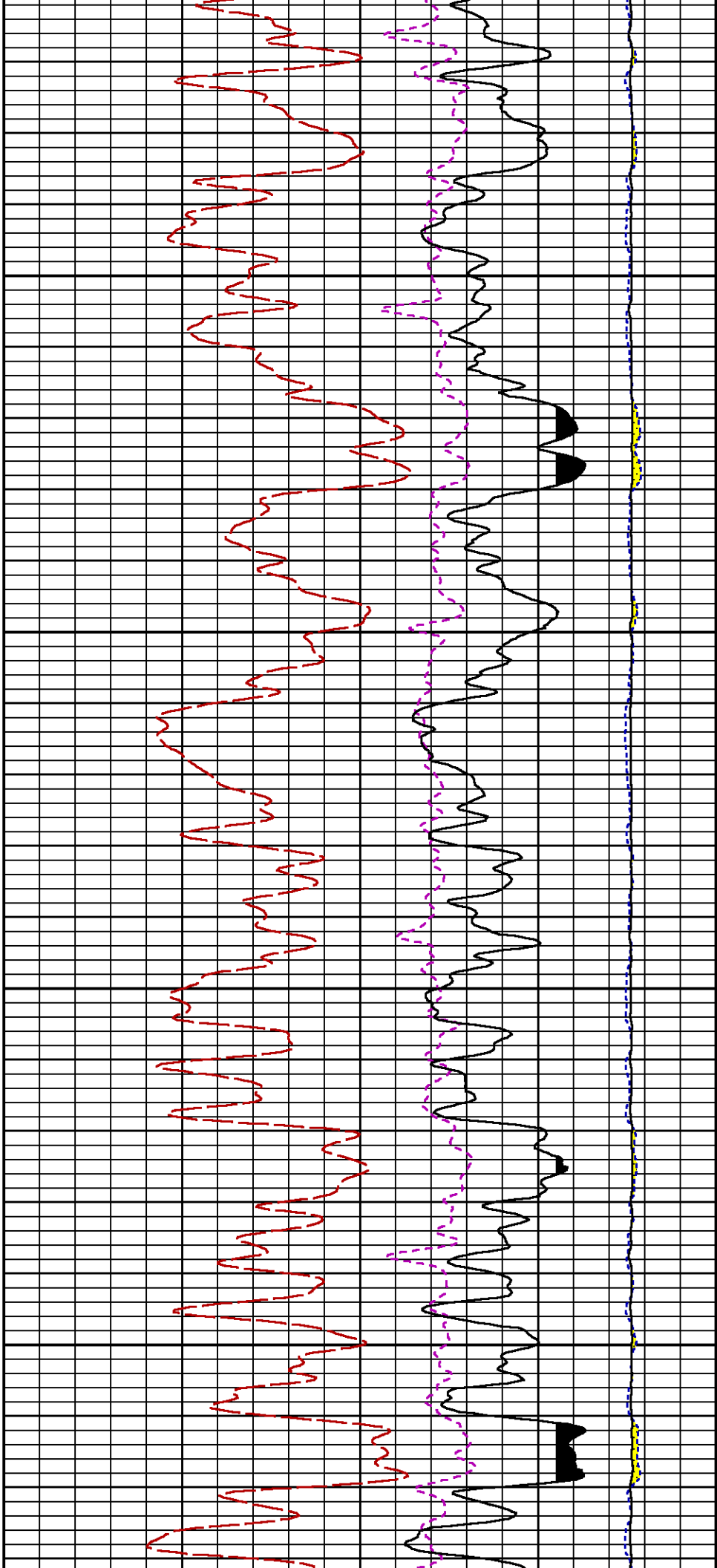


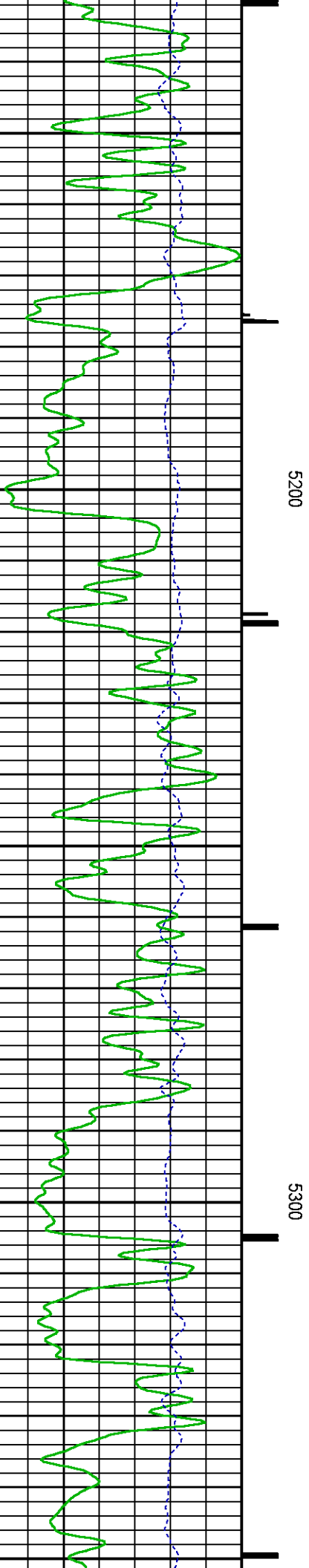
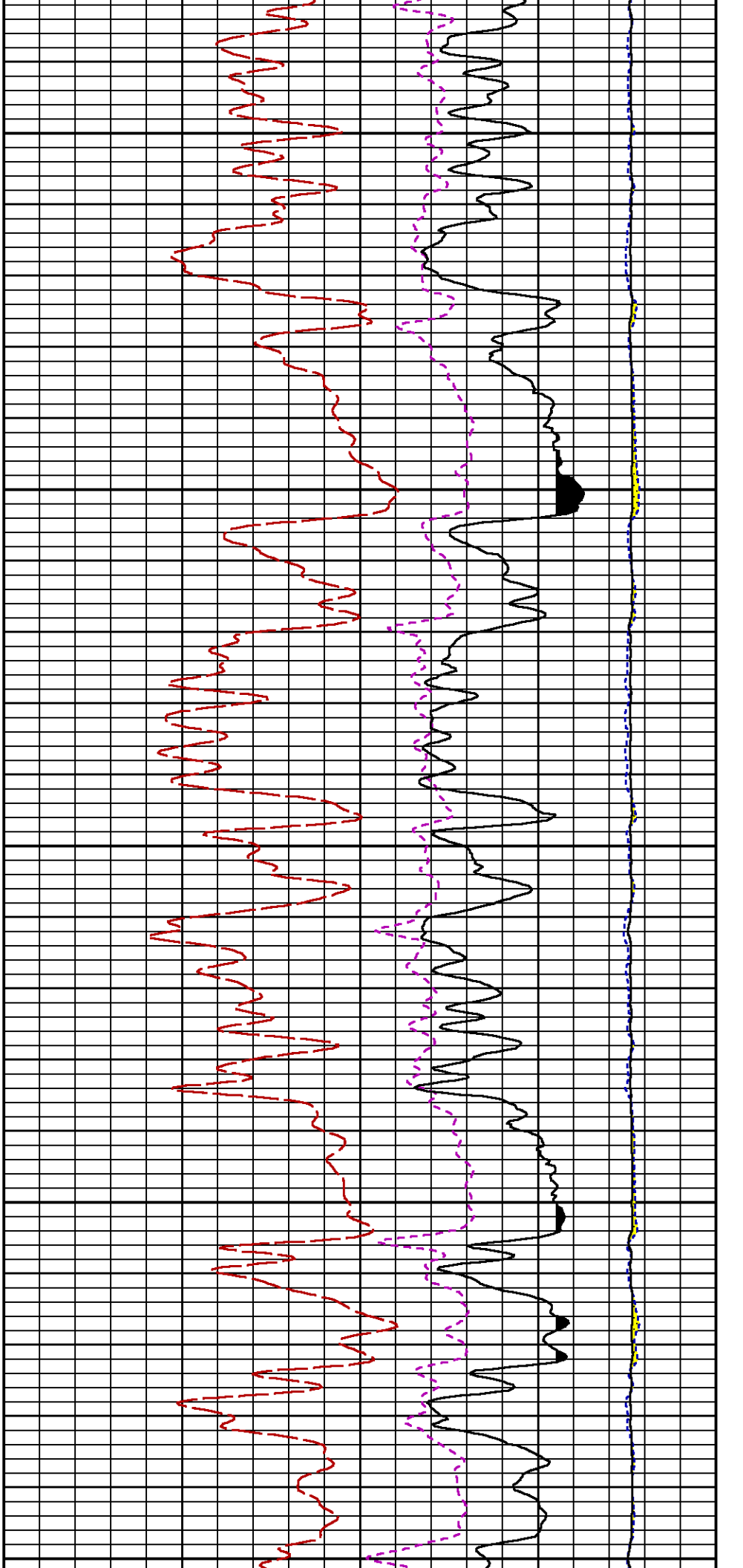


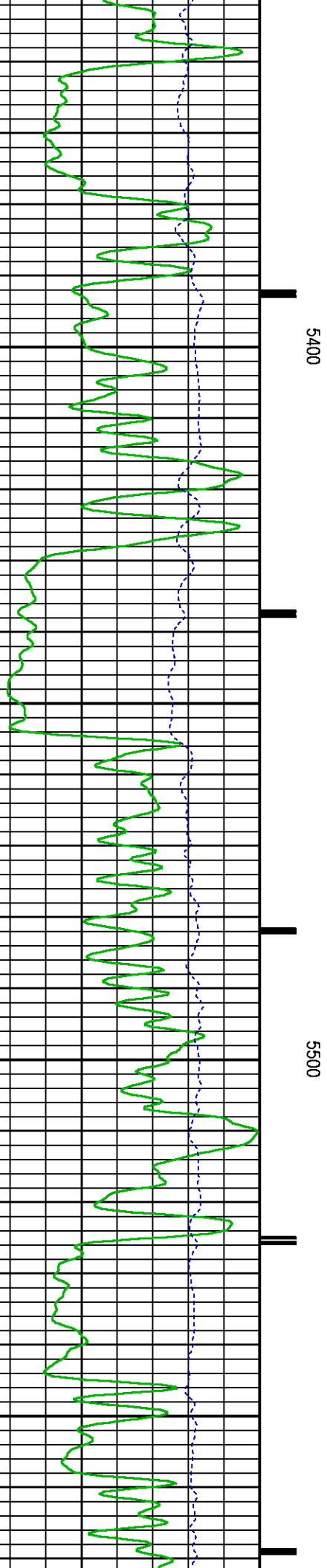
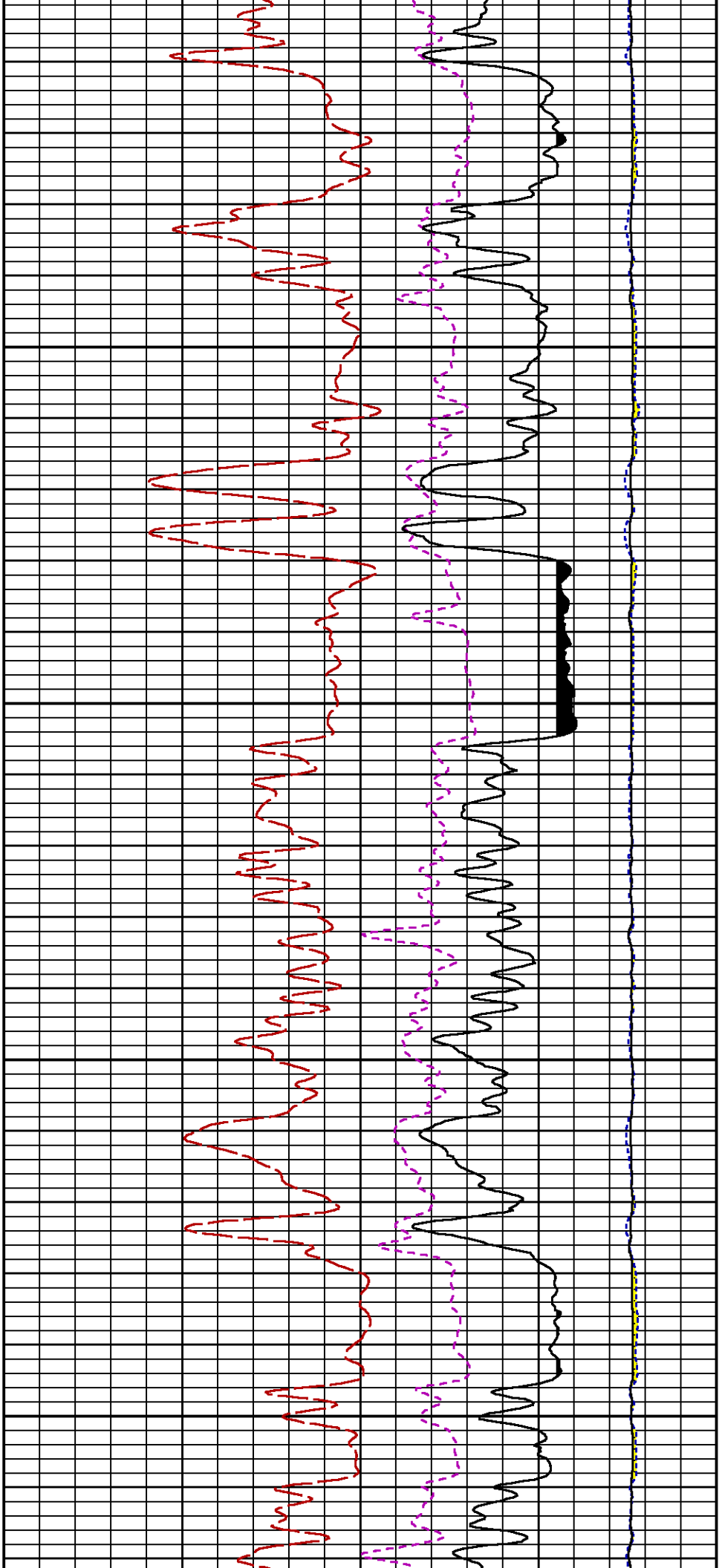


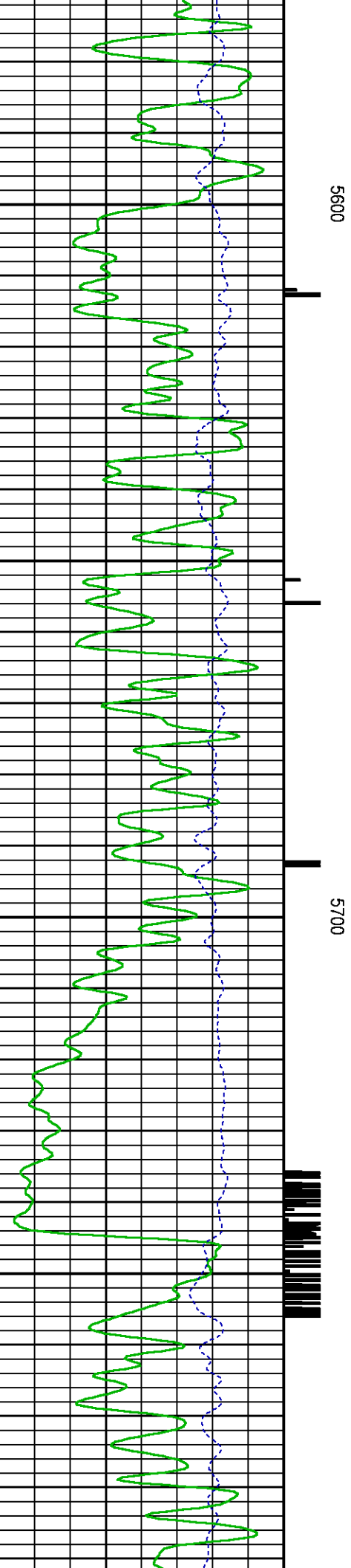
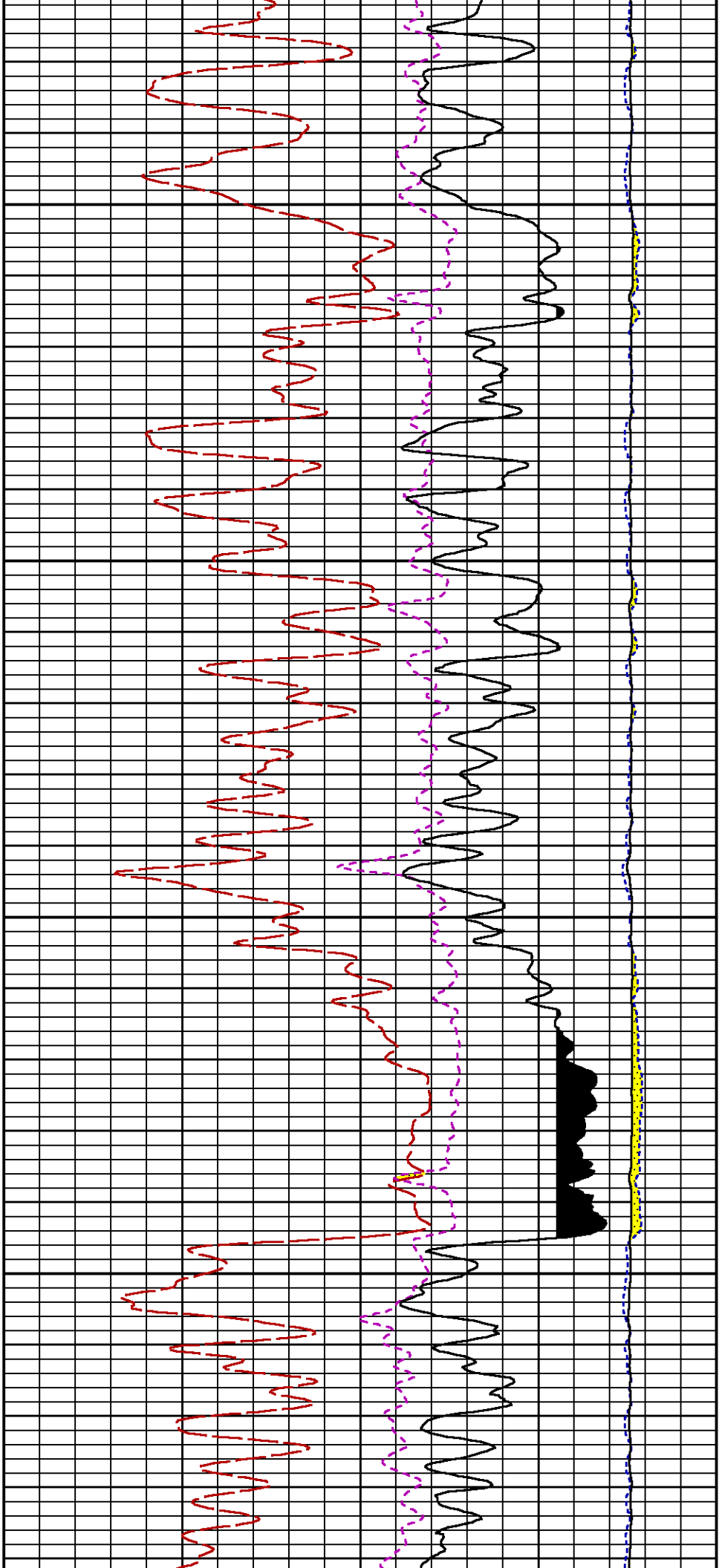


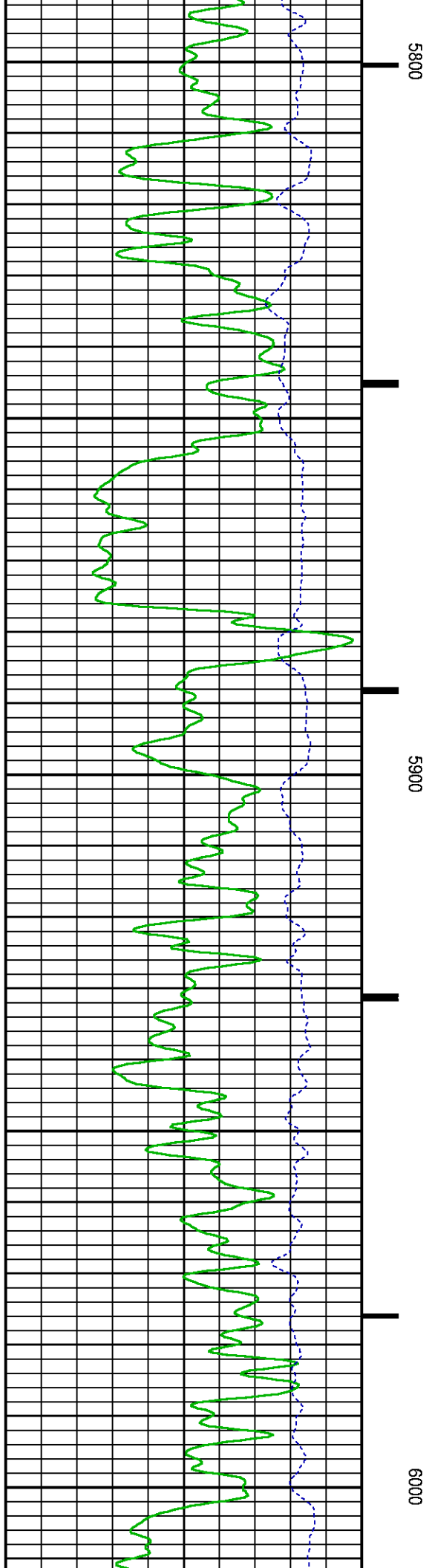
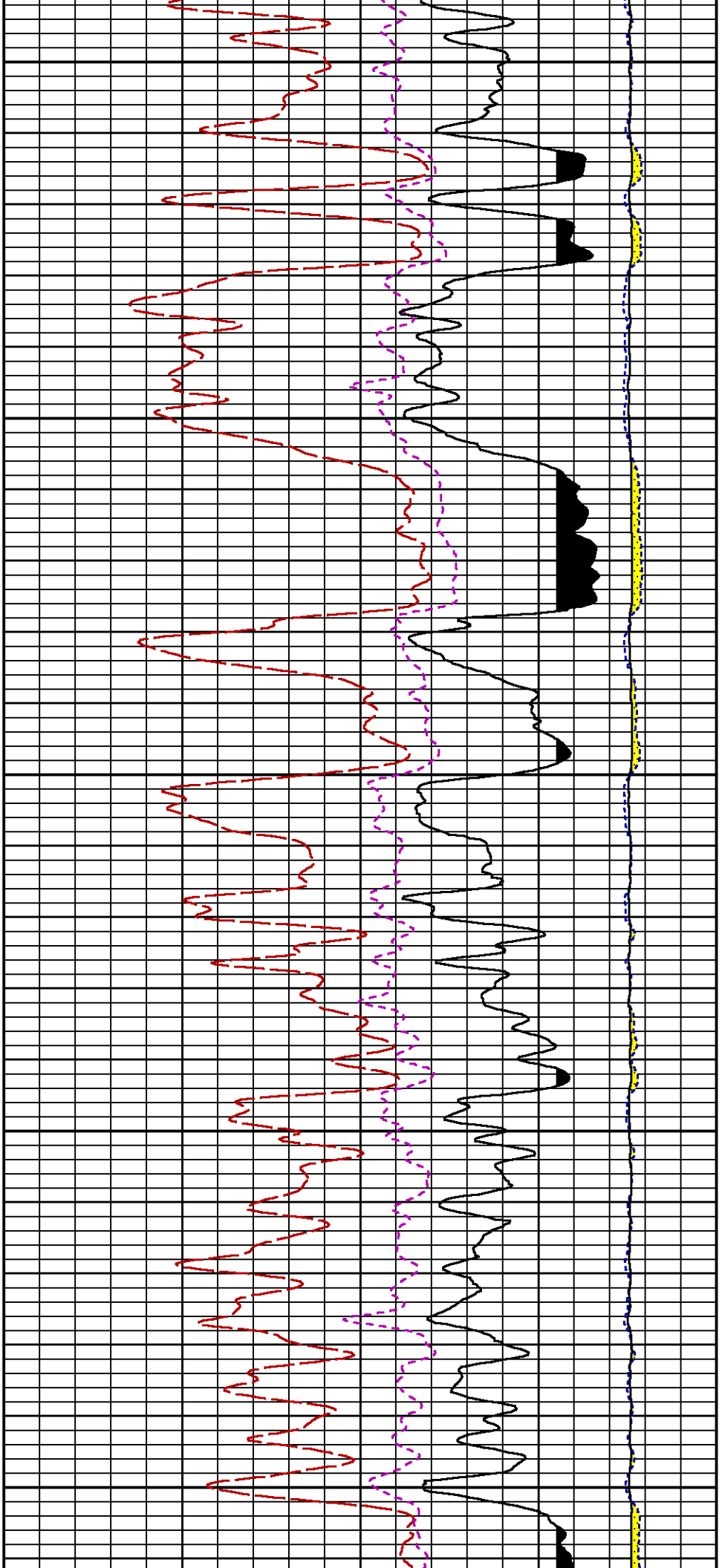


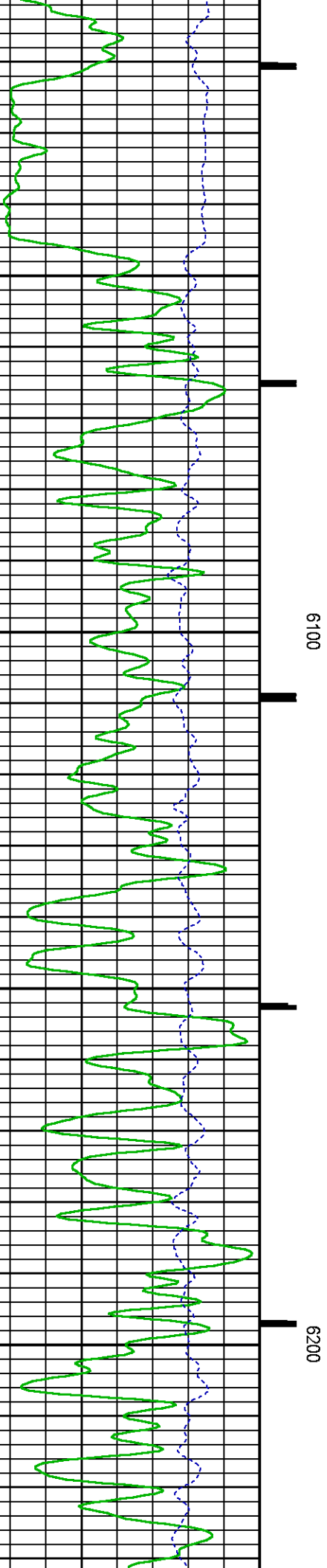
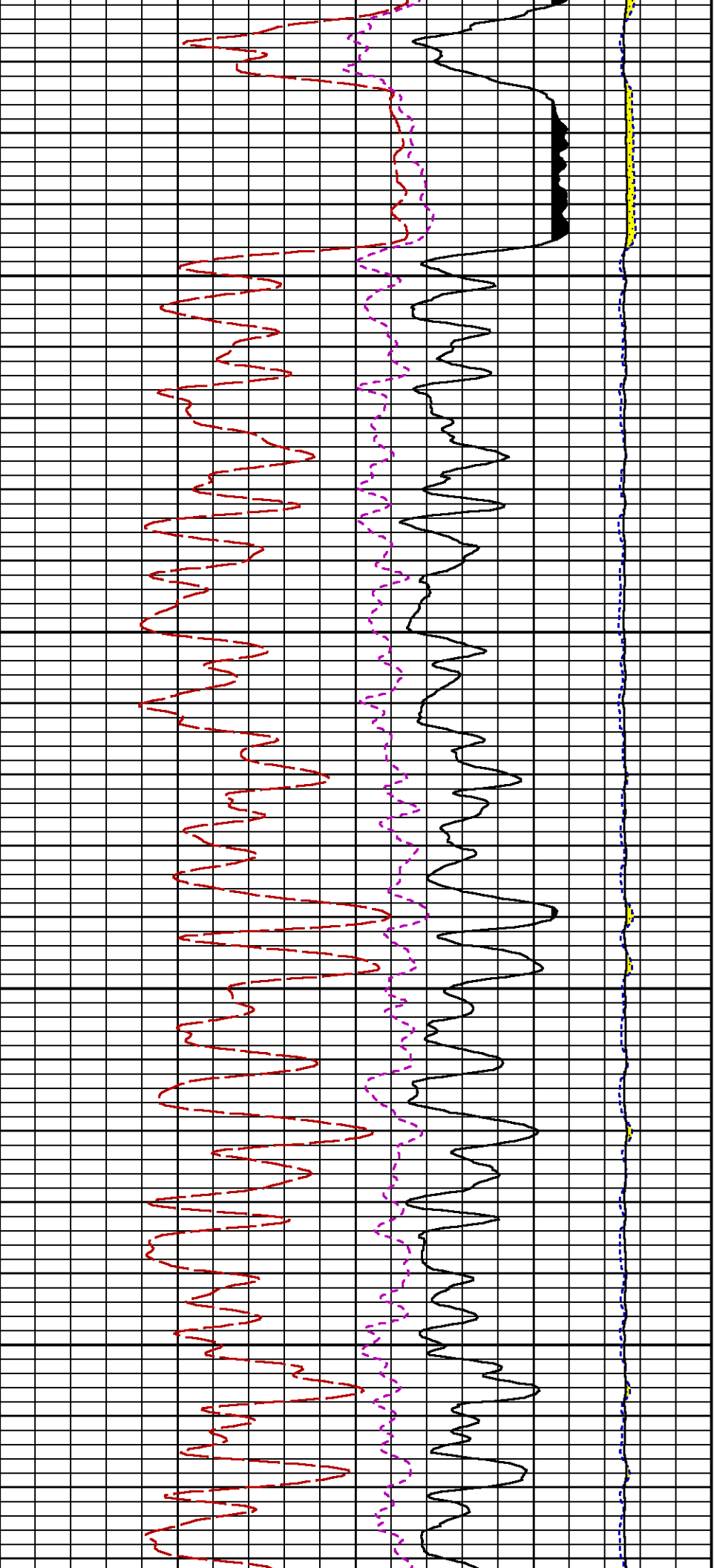


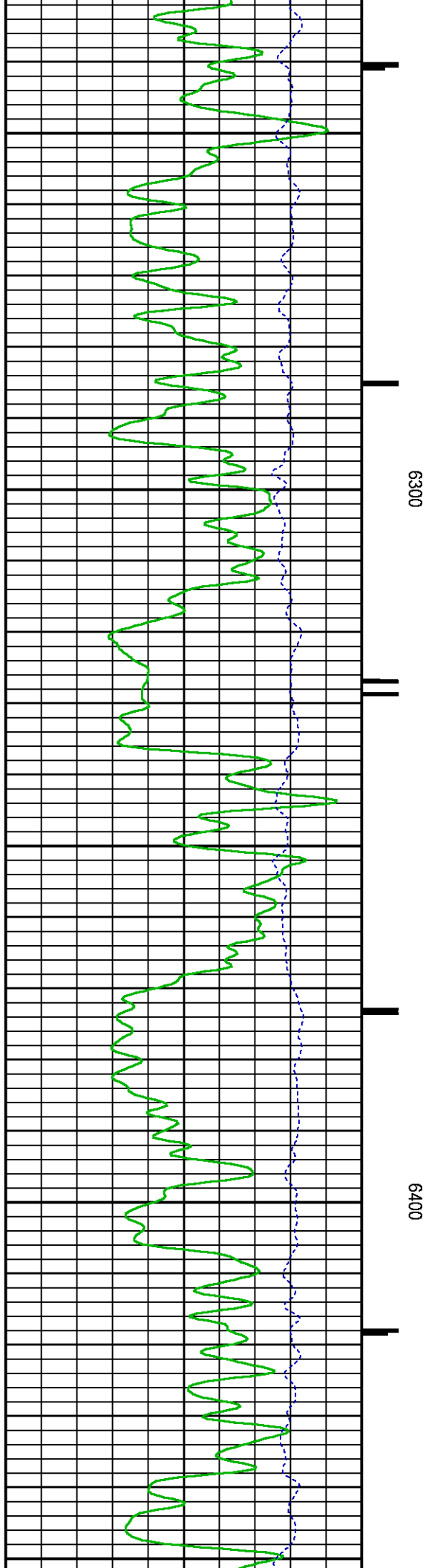
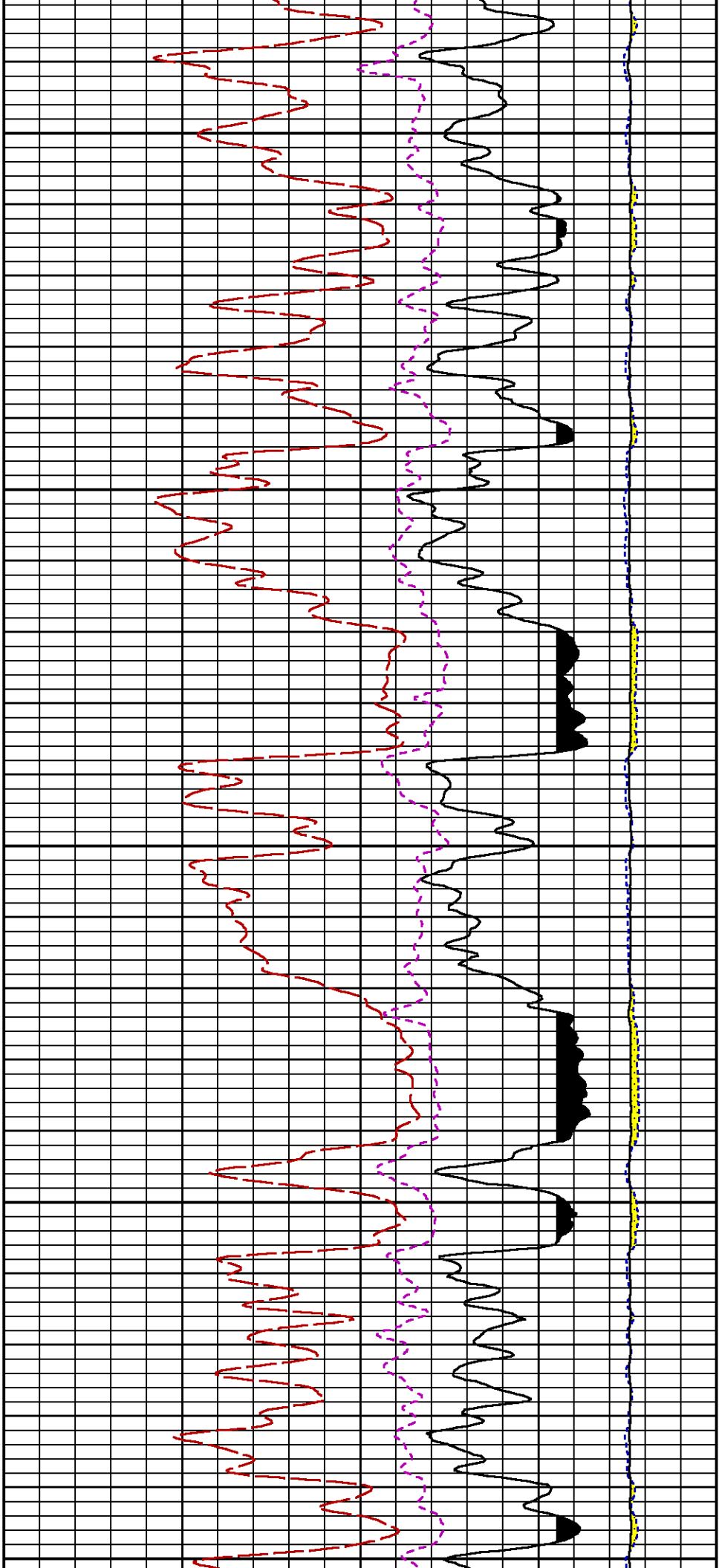


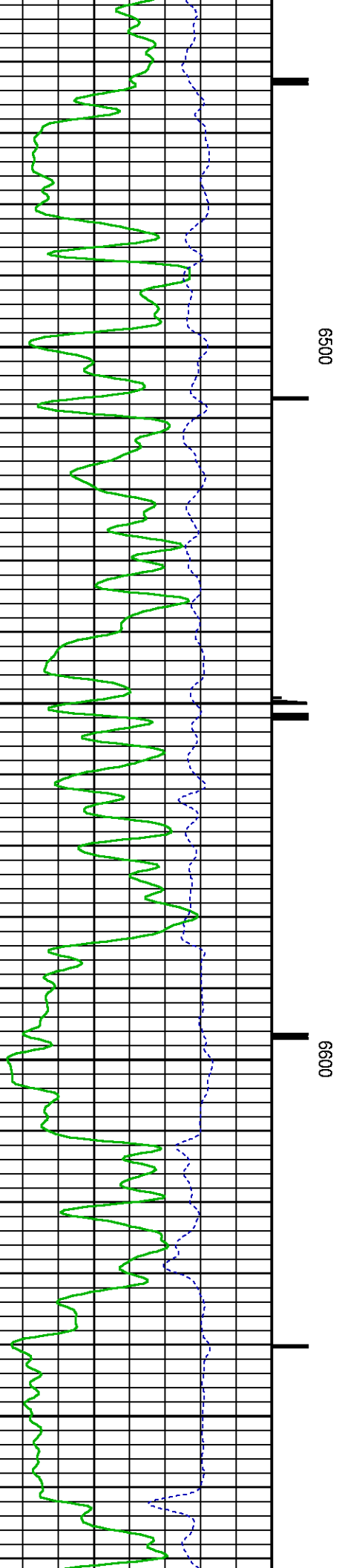
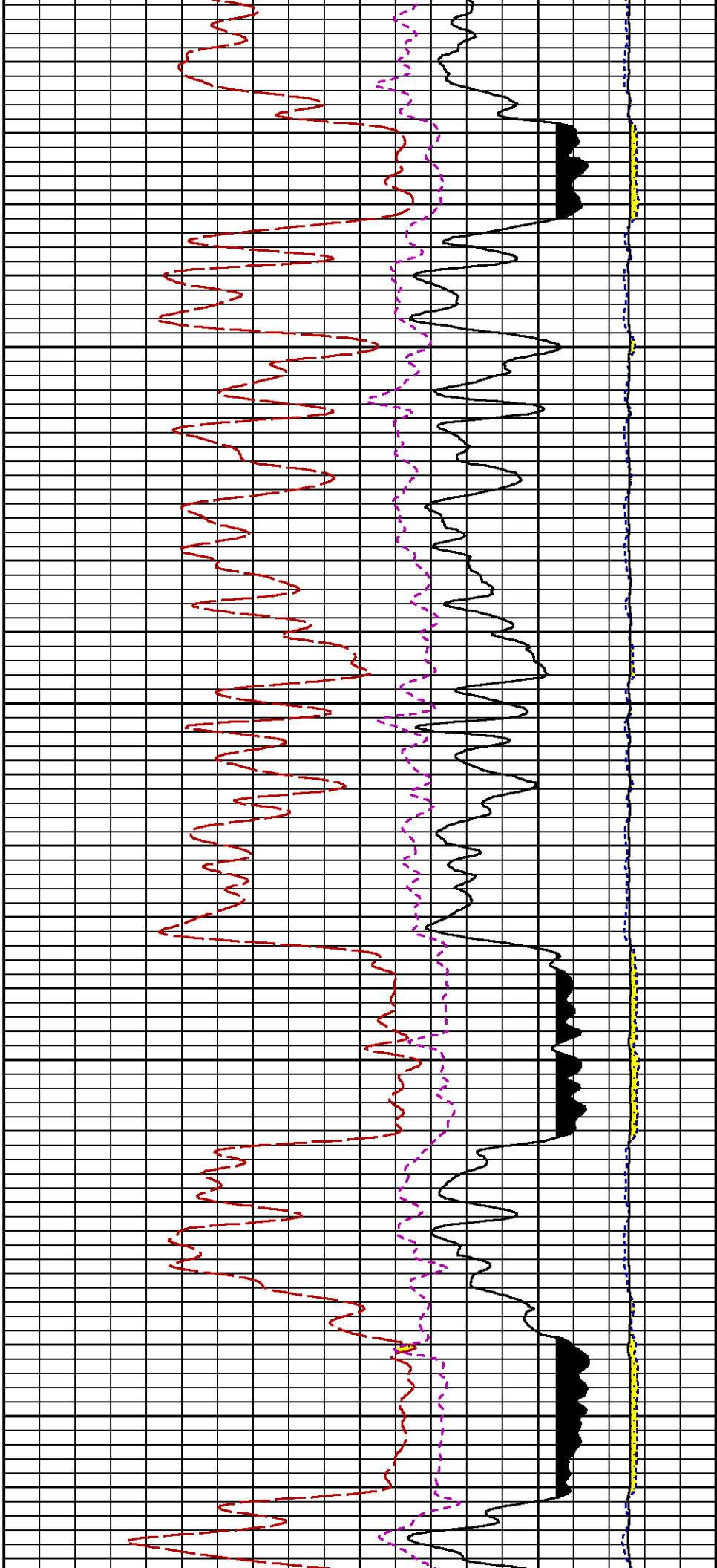


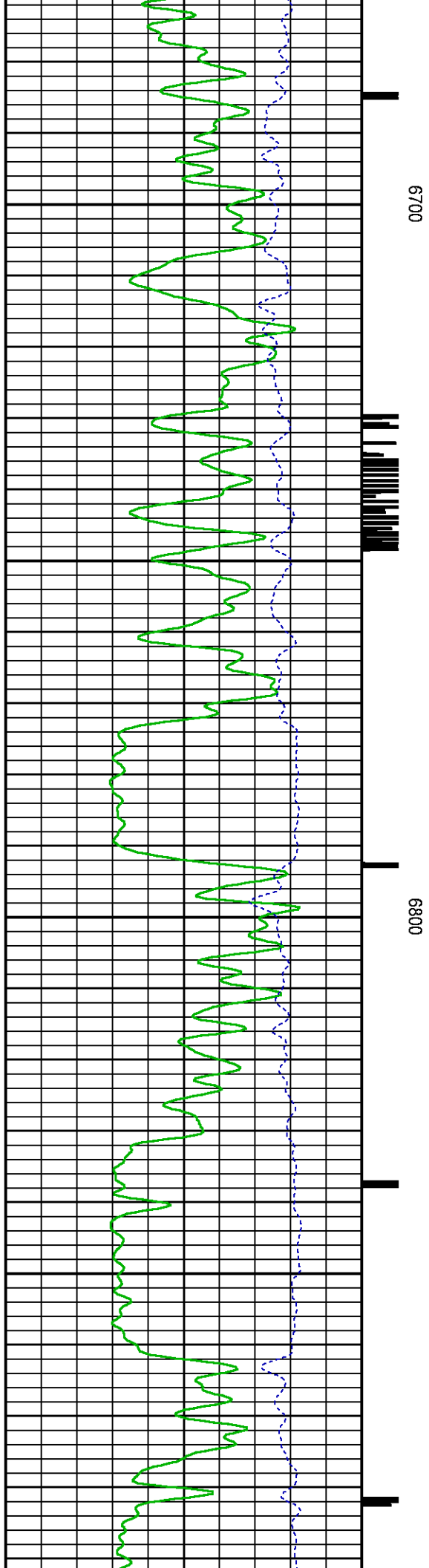
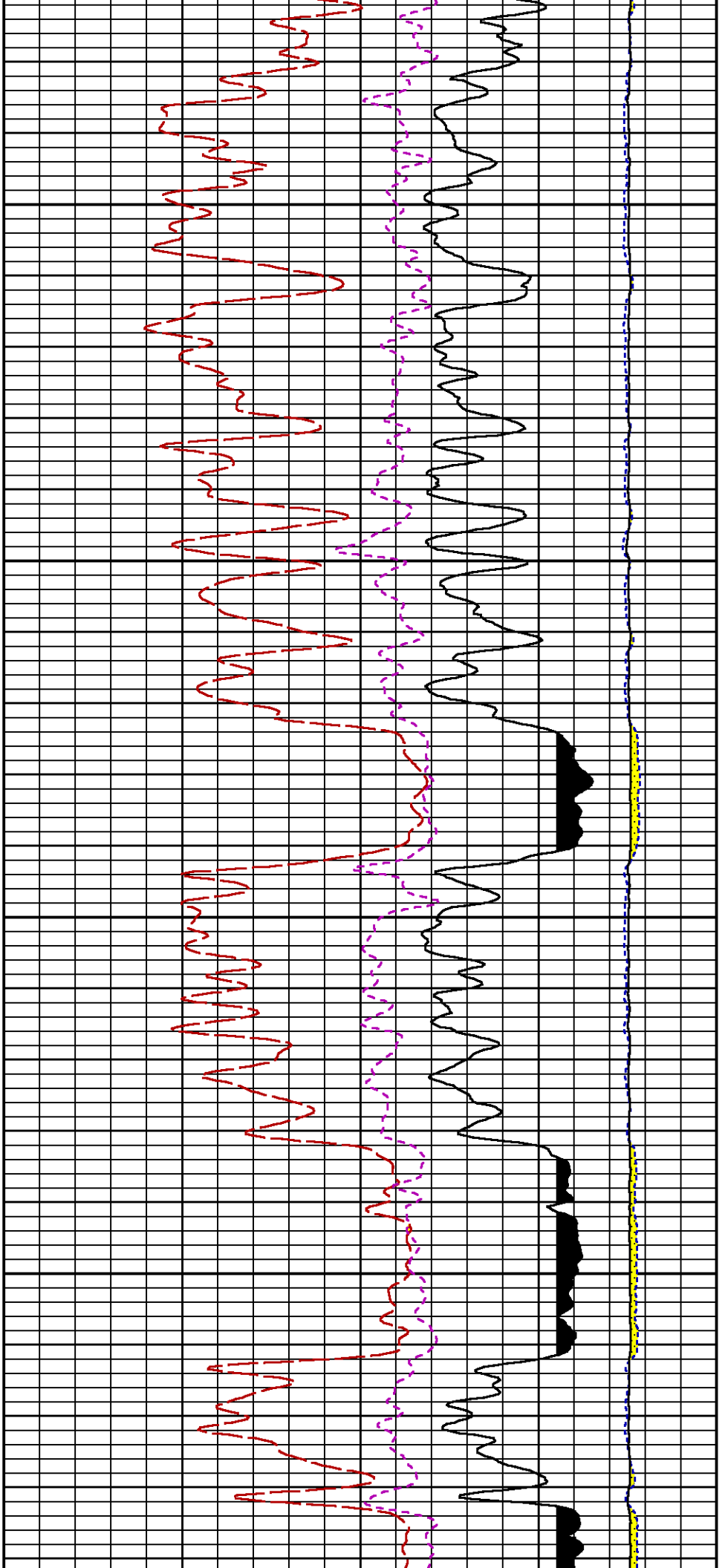


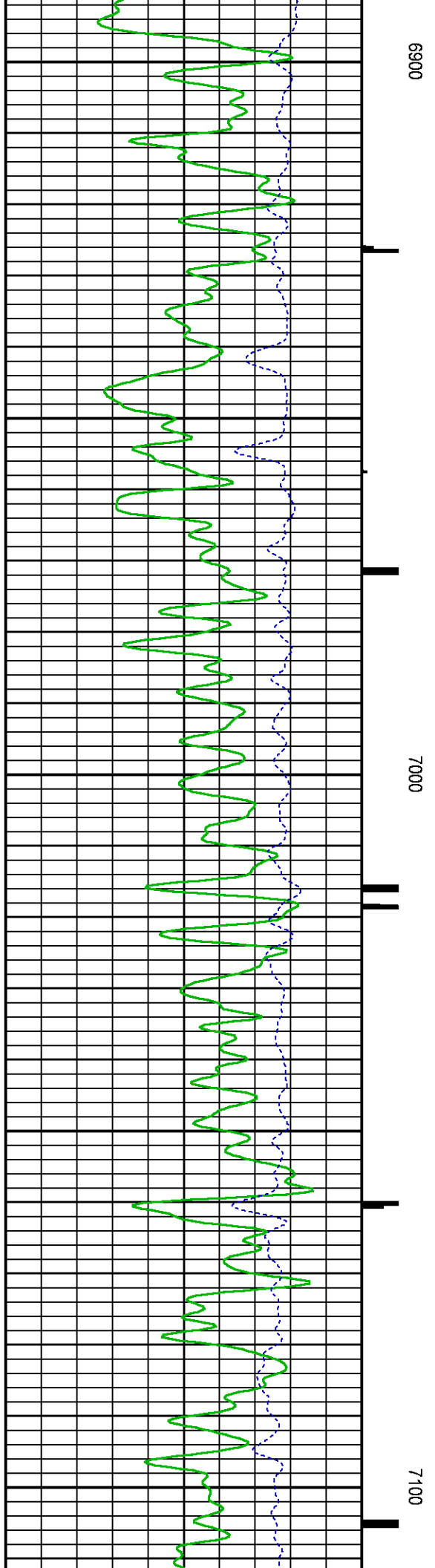
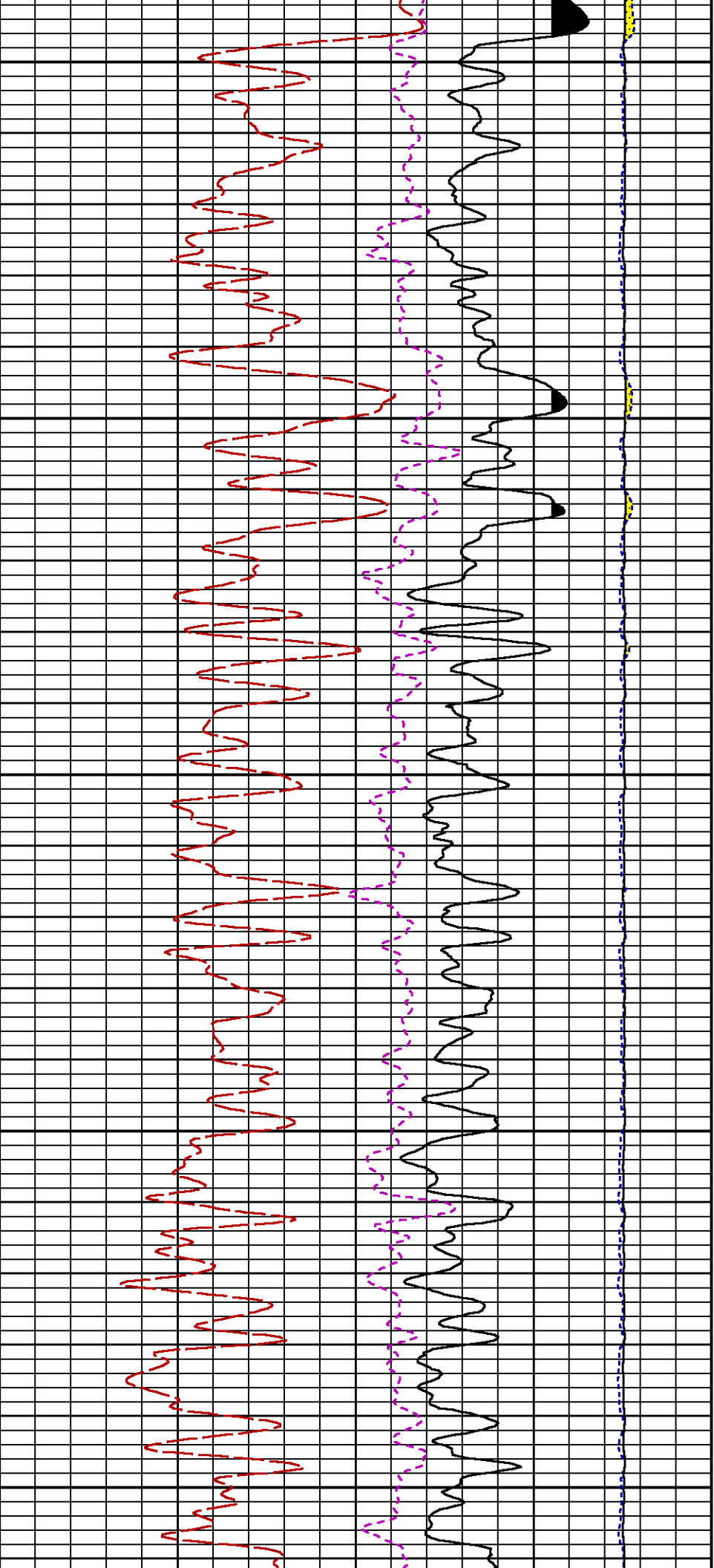


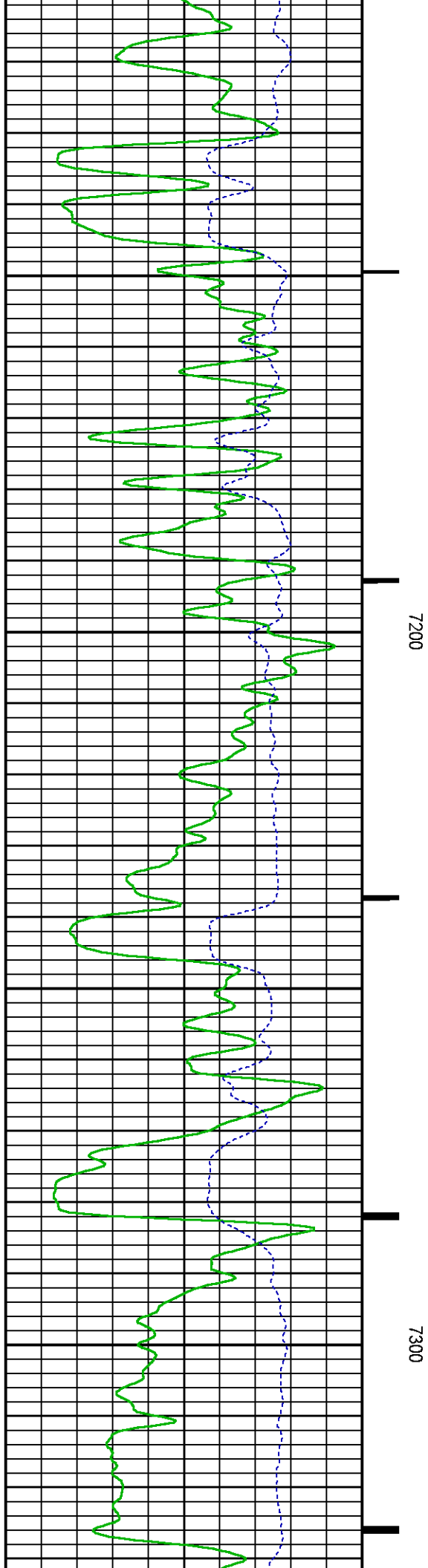
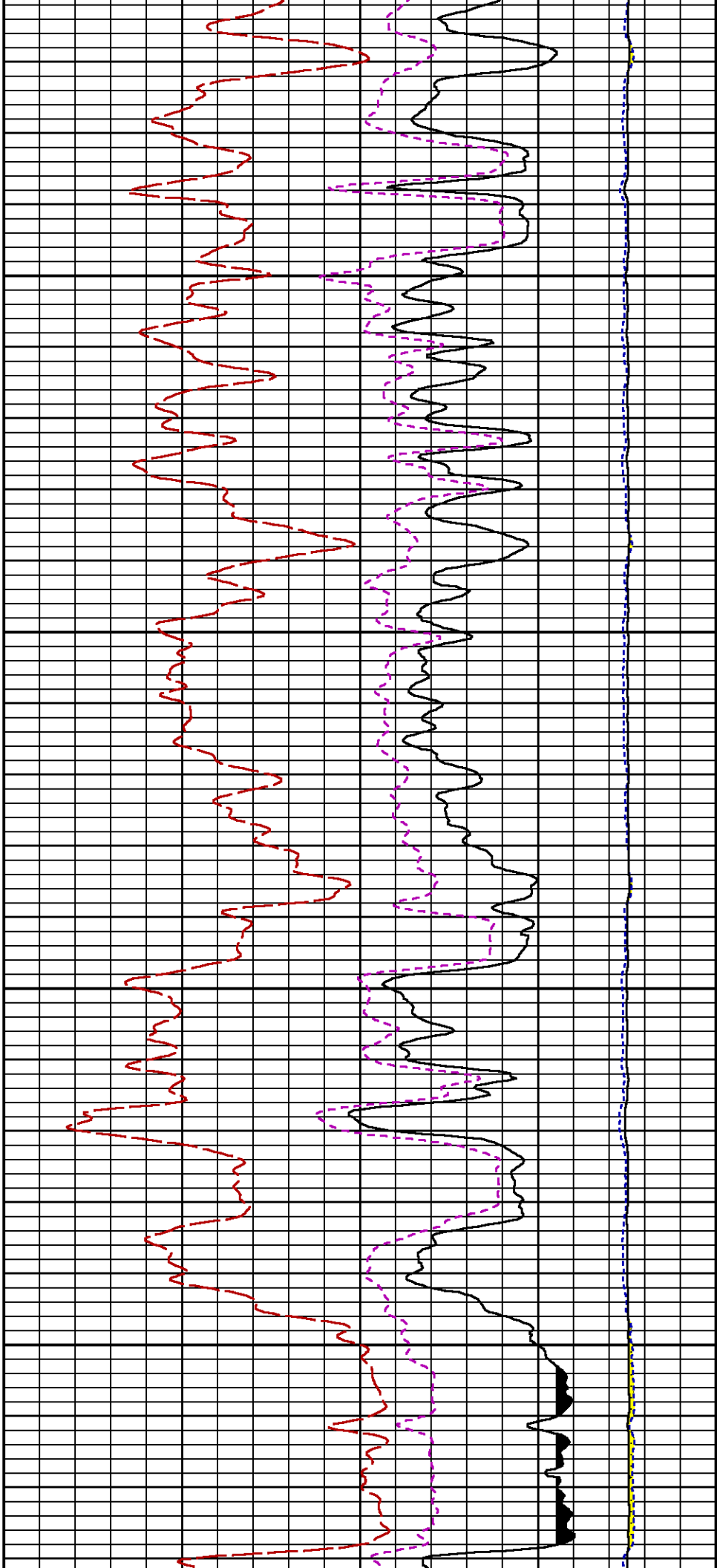


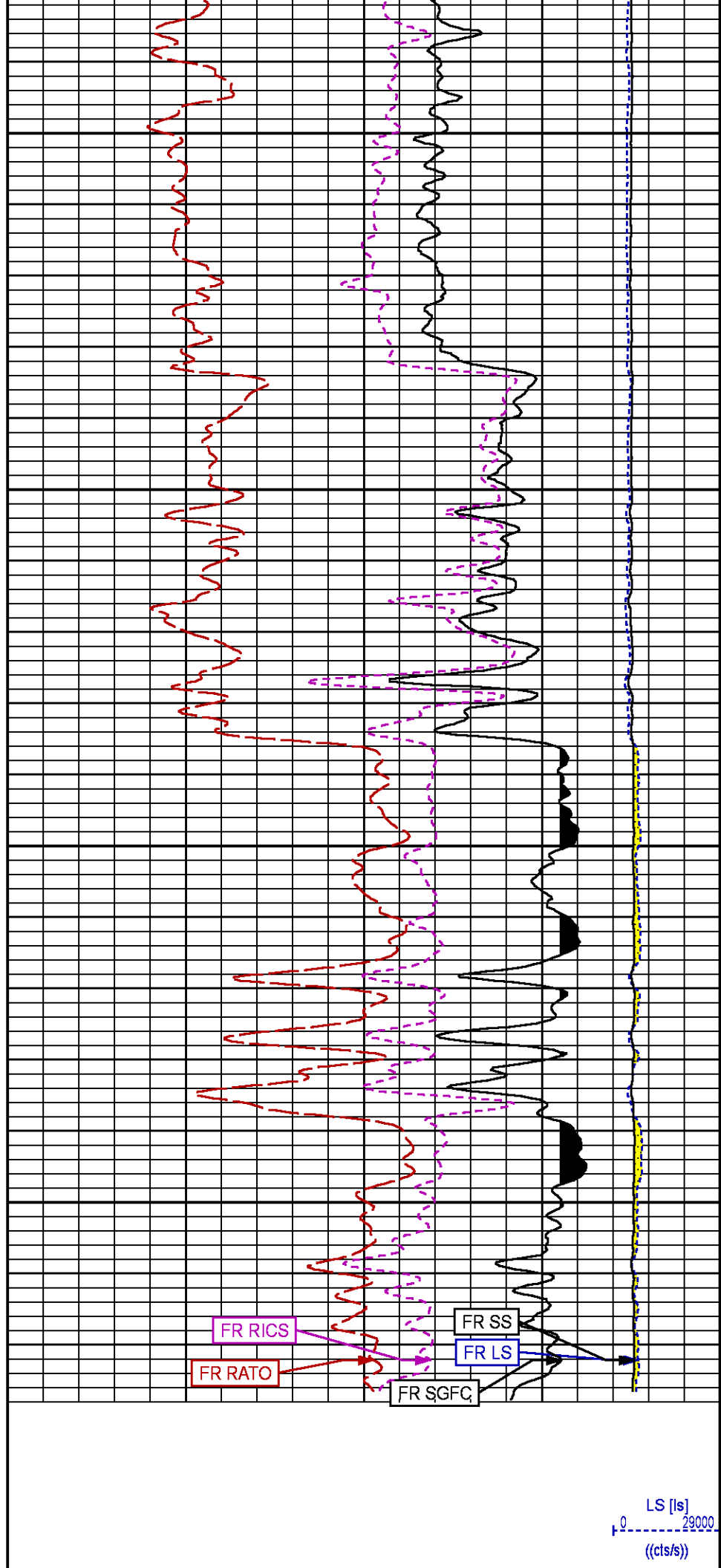
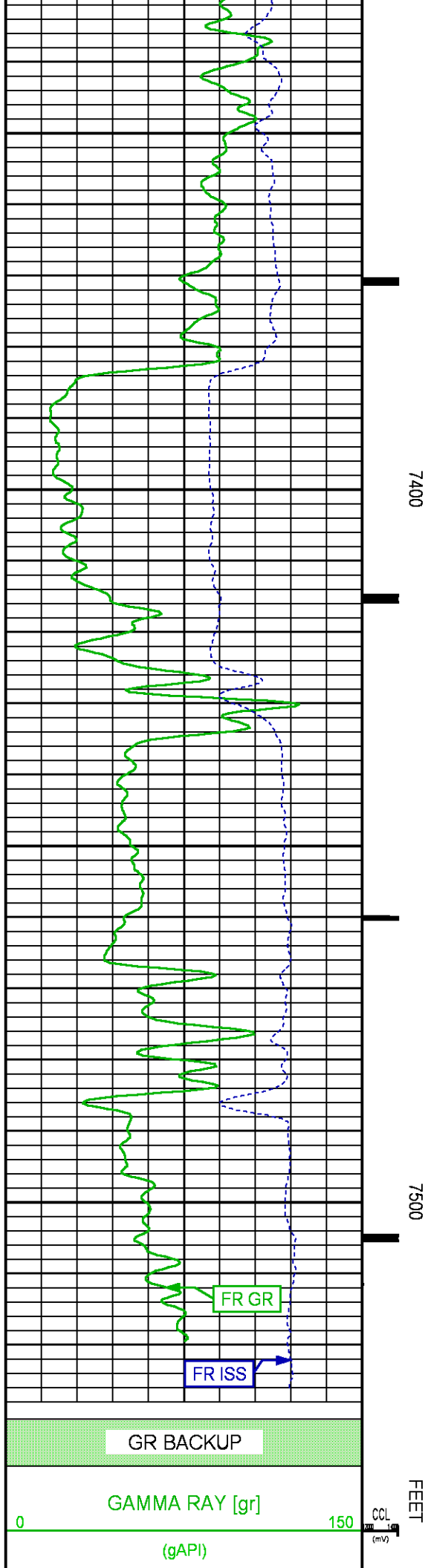












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	((cts/s))				((cts/s))	
			17	RATO [rato]		0
				(dim)		
			39	RICS [rics]		9
				(dim)		
			60	SGFC [sgfc]		0
				(cu)		

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: Thu Aug 24 10:35:54 2017

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_20_09W/RPM3DR01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4724.500 ft BOTTOM DEPTH: 5067.000 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 24 10:06:06 2017	CASING COLLAR LOCATOR
F1:GR	Aug 24 10:06:06 2017	GAMMA RAY
F1:ISS	Aug 24 10:06:06 2017	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Aug 24 10:06:06 2017	LONG SPACE COUNT RATE
F1:RATO	Aug 24 10:06:06 2017	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Aug 24 10:06:06 2017	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Aug 24 10:06:06 2017	CORRECTED FORMATION SIGMA
F1:SS	Aug 24 10:06:06 2017	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

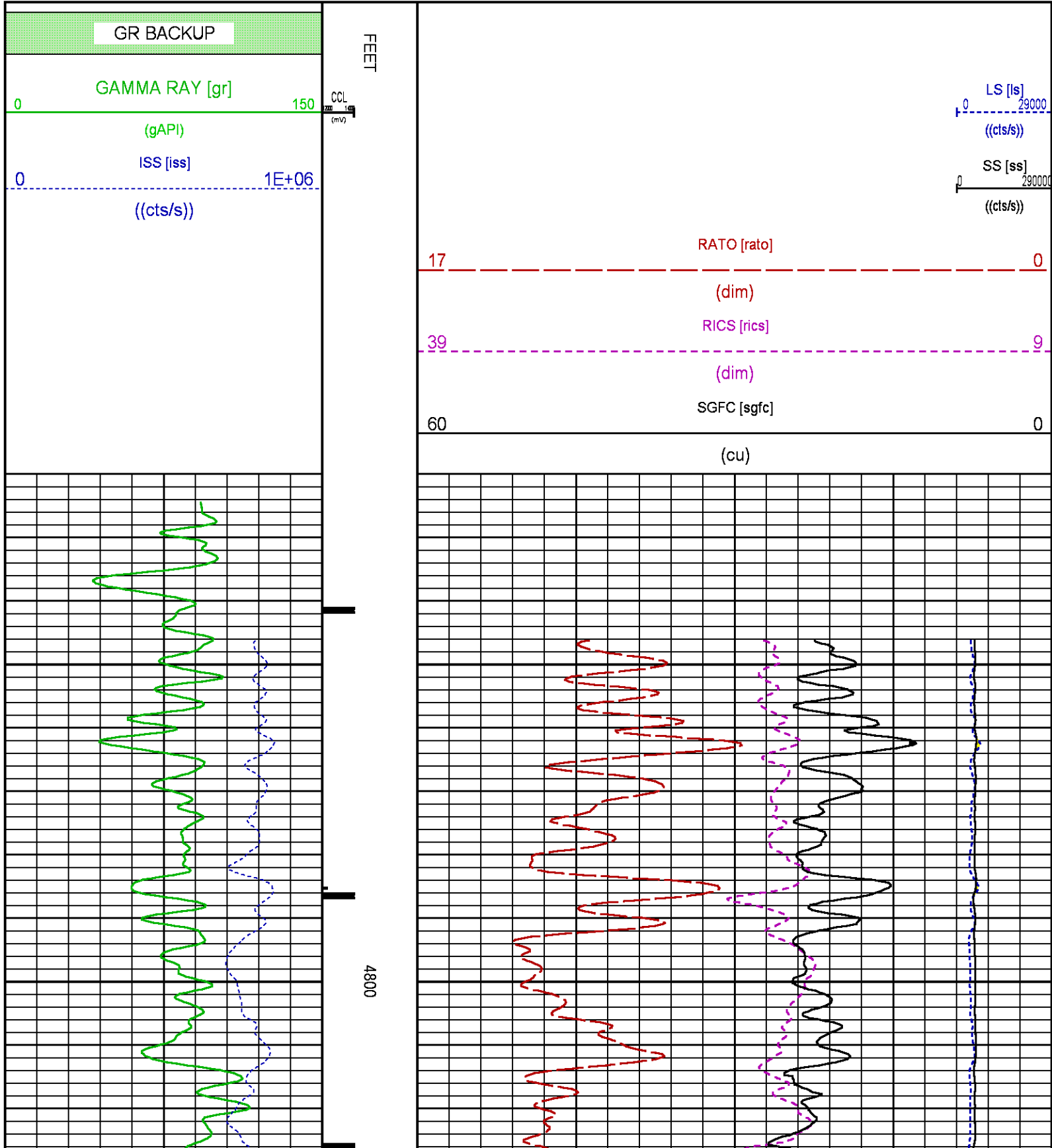
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
-------	-------------	-------	-------------	-------	-------------	-------	-------------

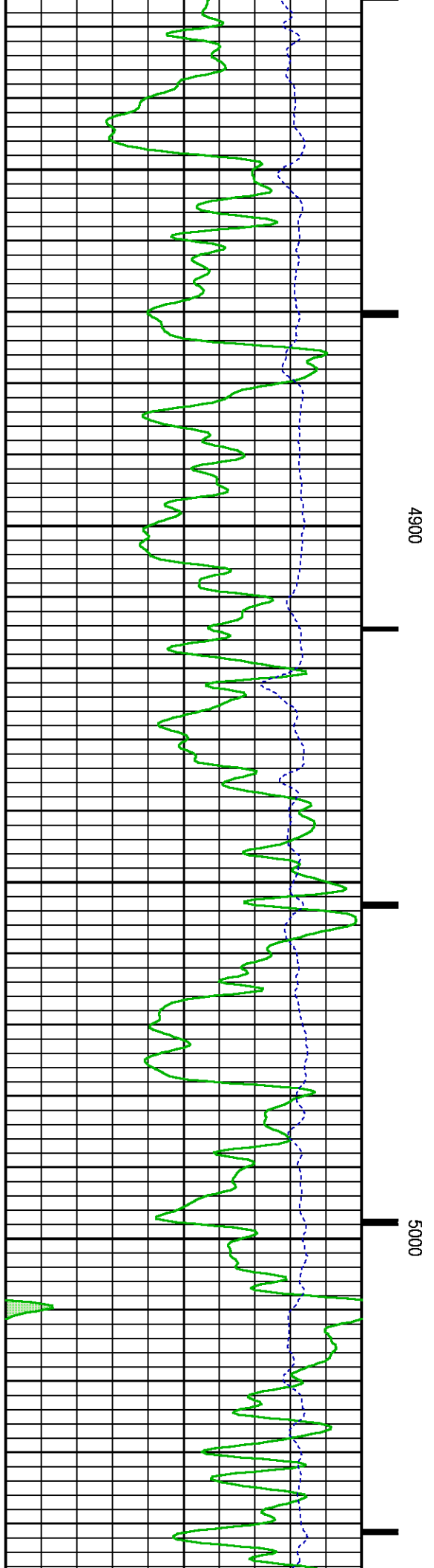
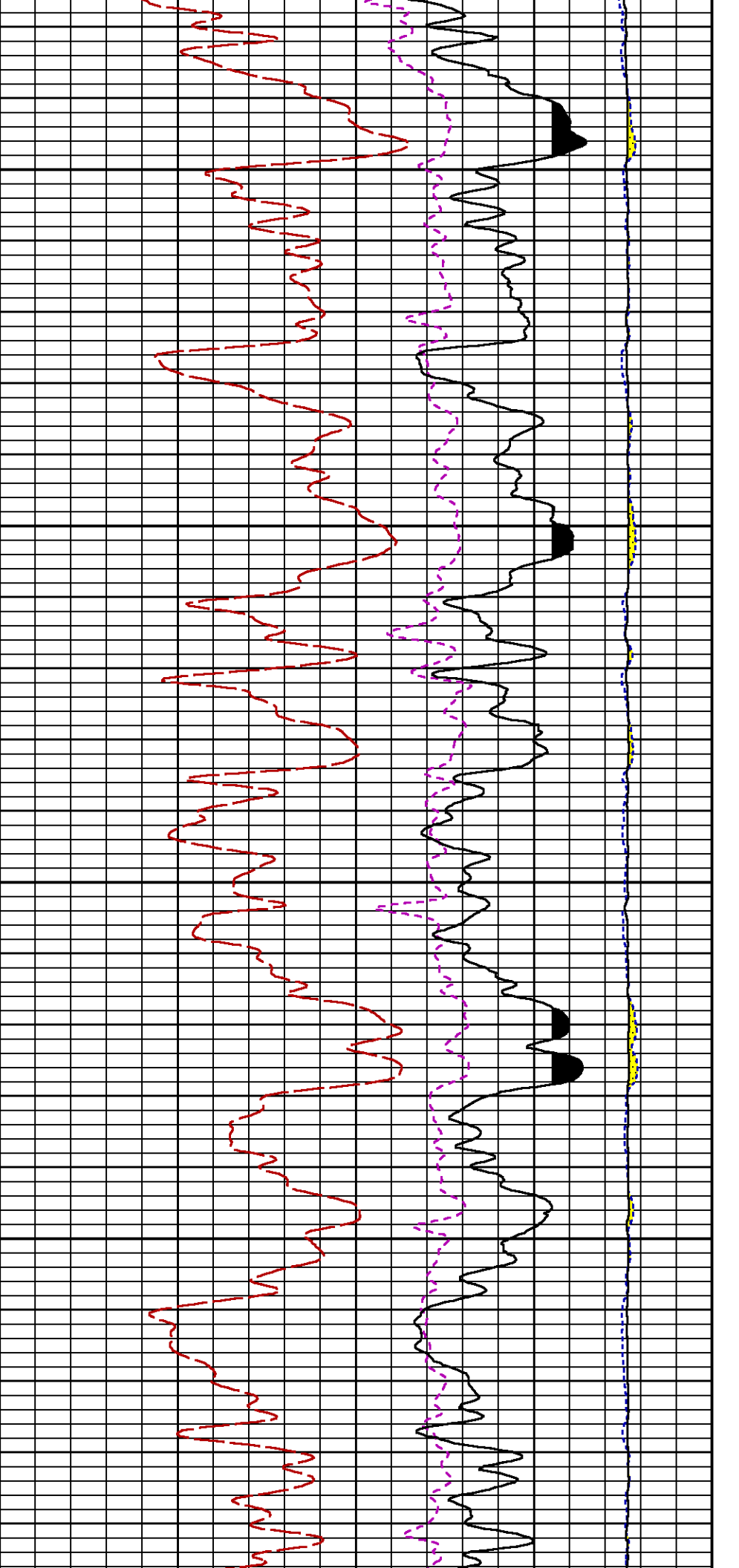
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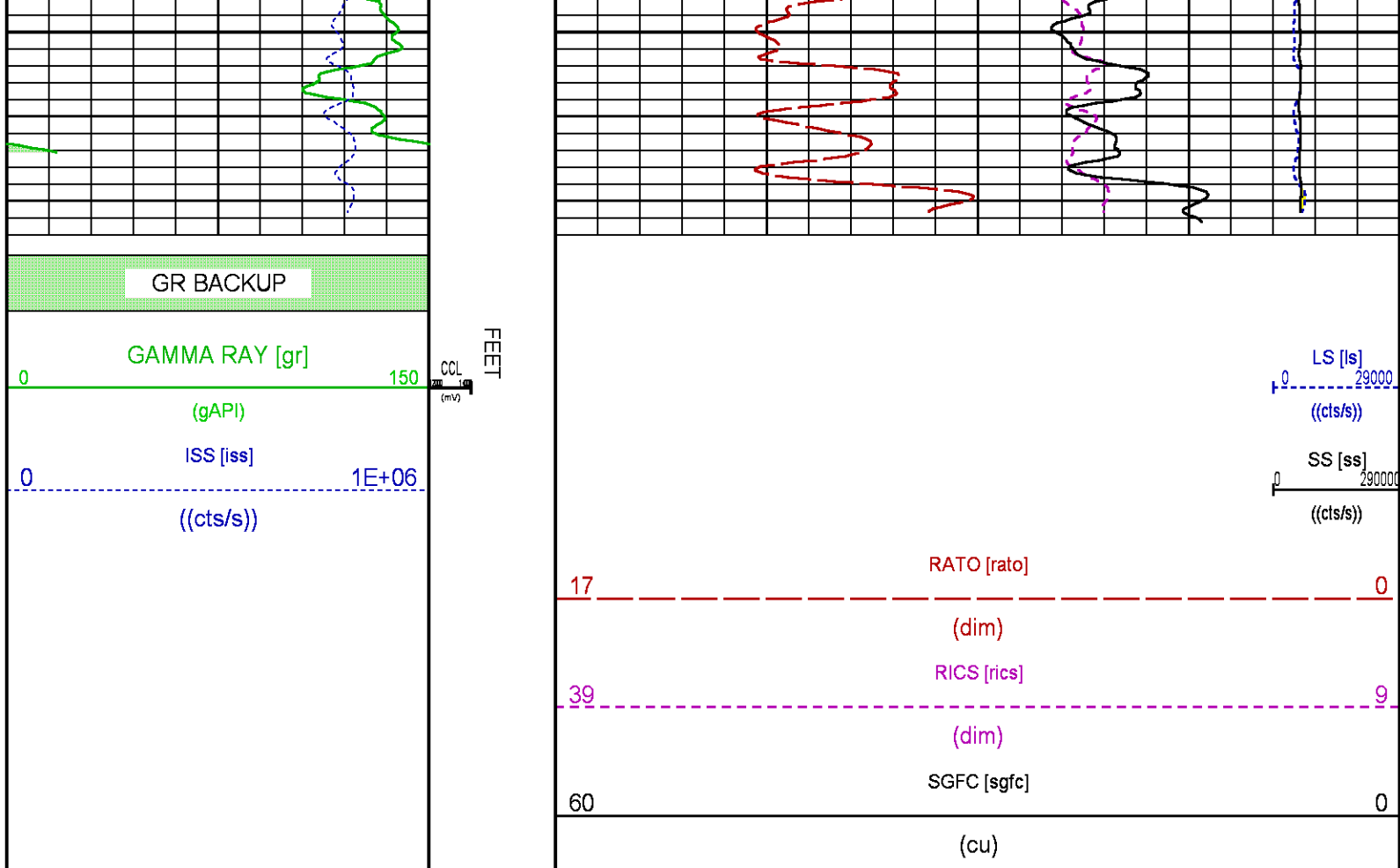
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

Presentation : cpu100:/dat1a/LARAMIE_GUNDERSON_20_09W/RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 4720.25 - 5078.75 Feet

Data File 1 : F1 : cpu100:/dat1a/LARAMIE_GUNDERSON_20_09W/GUNDERSON_20_09W_RPM_RPT.xtf
Created On : Aug 24 10:06:06 2017
Company : LARAMIE ENERGY
Well : GUNDERSON 20-09W
Field : VEGA
File Interval : 4719.5 - 5087.5 Feet
OCT : RPM3D







CALIBRATION / VERIFICATION SUMMARY

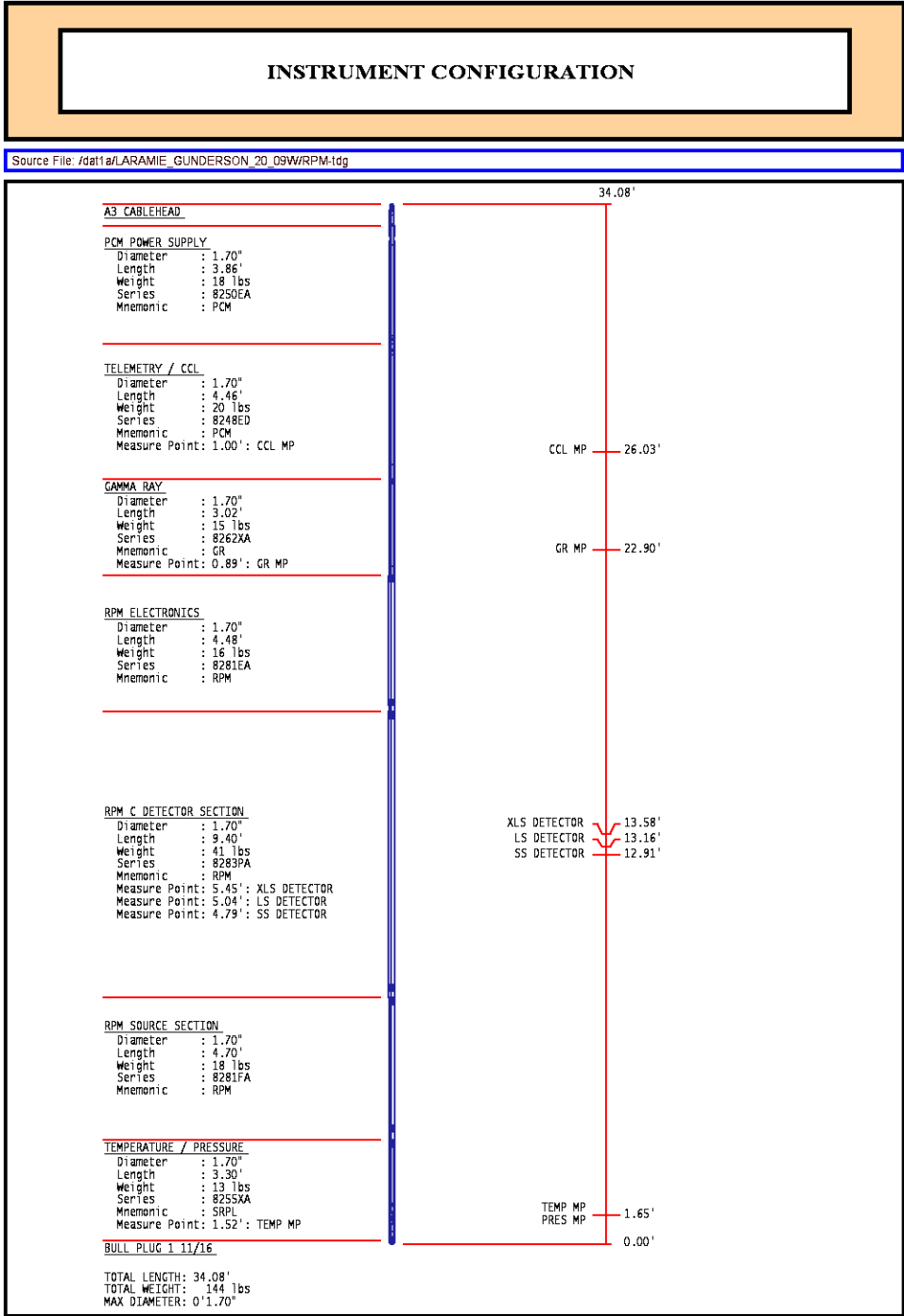
Source File: /data1a/LARAMIE_GUNDERSON_20_09W/RPM3D.tpt


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)		(gAPI)	(gAPI)	(gAPI)		
GR		63.44	394.18	0.552	35.00	217.44	182.44		
							175.00 185.00		

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 Vits	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	
					25.95	26.40	0.00	0.20	29.60
							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	1.46	3.55	5.52	22.20	32.70	10.66	16.34
						10.08	11.10	3.57	3.66
								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	1.46	4.33	5.52	27.60	32.70	13.70	16.34
						10.08	11.10	3.57	3.66
								3.76	4.22



	COMPANY	LARAMIE ENERGY		FILE NO:
	WELL	GUNDERSON 20-09W		
	FIELD	VEGA		API NO:
	COUNTY	MESA	STATE	COLORADO
LOCATION:		ELEVATIONS:		
SHL: LAT:39.266700N;LONG:107.795317W		KB 7176 FT		
BHL: LAT:39.263788N;LONG:107.797721W		DF 7176 FT		
GL 7146 FT		DATE		23-AUG-2017
SEC 20 TWP 9S RGE 93W				