



FILE NO: CH136906	COMPANY LARAMIE ENERGY LLC
API NO: 05077105470000	WELL GUNDERSON 0994-13-17W
	FIELD VEGA
	COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 1208' FSL & 1617' FWL BHL: 1208' FSL & 1617' FWL SEC <u>13</u> TWP <u>9S</u> RGE <u>94W</u>	OTHER SERVICES RAL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL ELEVATION 7272 FT 30 FT ABOVE P.D. KB 7272 FT	ELEVATIONS: KB 7302 FT DF GL 7272 FT
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DATE	22-Jun-2018	
RUN	1	1
SERVICE ORDER	US136906	
DEPTH DRILLER	7501 FT	
DEPTH LOGGER	7462 FT	
BOTTOM LOGGED INTERVAL	7462 FT	
TOP LOGGED INTERVAL	2234 FT	
TIME STARTED	09:00	
TIME FINISHED	15:00	
OPERATOR RIG TIME	6 HOURS	
TYPE OF FLUID IN HOLE	WATER	
FLUID DENSITY	NA	
FLUID SALINITY	NA	
FLUID LEVEL	66 FT	
LOGGED CEMENT TOP	1100 FT	
WELLHEAD PRESSURE	0 PSI	
MAXIMUM HOLE DEVIATION	NA	
NOMINAL LOGGING SPEED	10 FMIN	
MAX. RECORDED TEMP.	231 DEGF	
REFERENCE LOG	BAKER HUGHES RAL	
REFERENCE LOG DATE	20-Jun-2018	
EQUIP. NO.	ML-4268	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 RUN IN THE WELL

OPERATION 1: RAL/GR/CCL RUN CENTRALIZED

OPERATION 2: RPM/GR/CCL RUN IN PNC-3D MODE

SJ: 5671' - 5693'

SJ: 6895' - 6917'

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11902197	FREE
1	1	TEL/CCL	8248ED	10407093	FREE
1	1	GR	2812LB	11621284	FREE
1	1	RPM	8281EA	10294755	FREE
1	1	RPM	8283PA	10066991	FREE
1	1	RPM	8281FA	10066992	FREE
1	1	TEMP	8255XXA	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: 4

Plotted: Fri Jun 22 16:49:46 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-17W/p354h03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2211.000 ft BOTTOM DEPTH: 2861.156 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	7.78	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:GR2	N/A	GAMMA RAY 2
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	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-17W/17W_RPM_GS.fvpdf [5"/100' Scale]
Plot Interval : 2230 - 2840 Feet

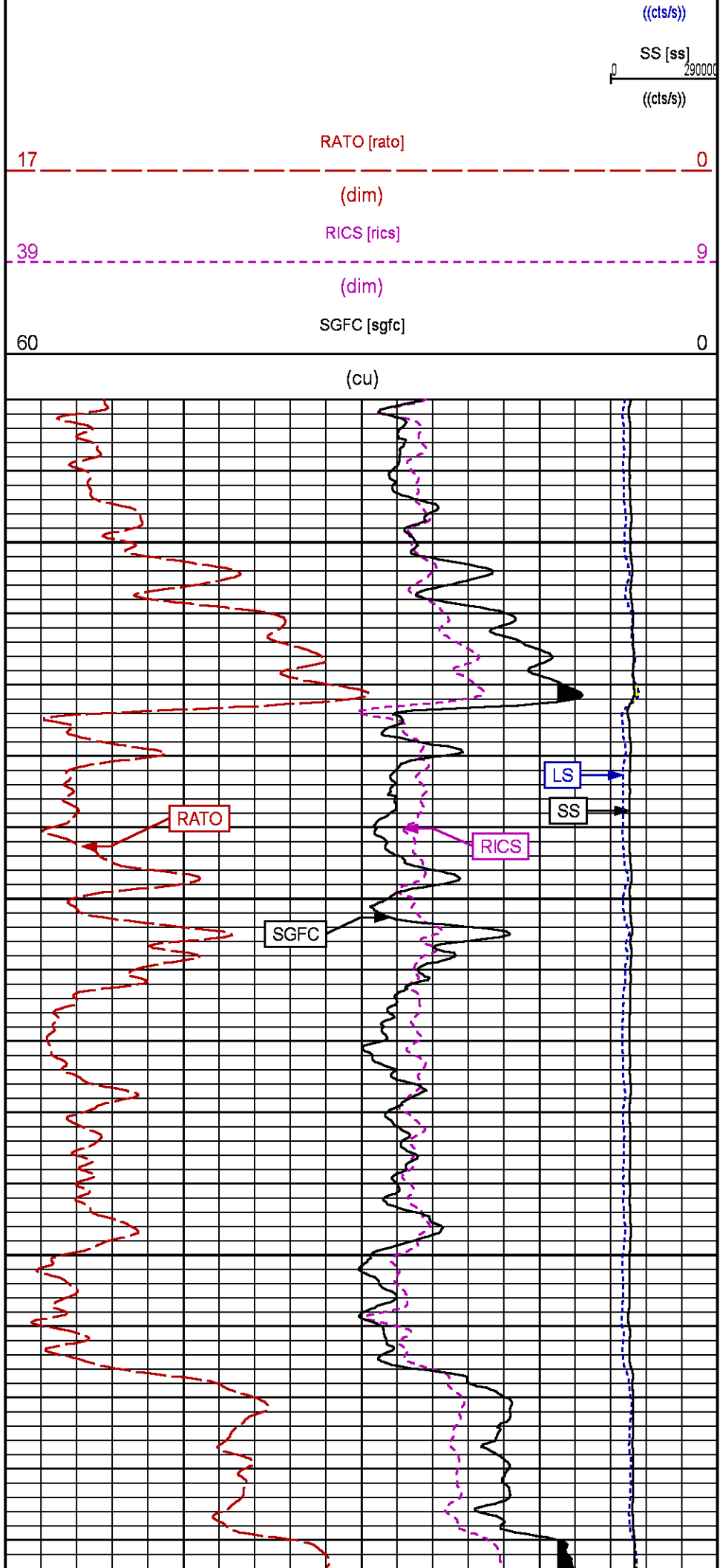
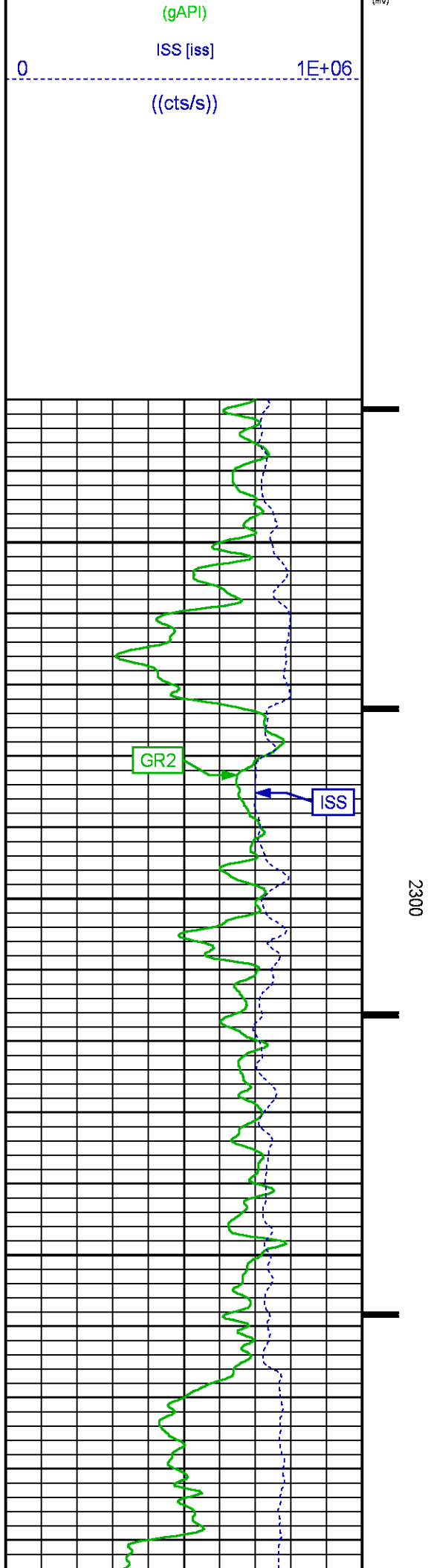
Data File 1 : F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-17W/17W_RPM_GS.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : GUNDERSON 0994_13_17W
Field : VEGA-
File Interval : 2192 - 2859.75 Feet
OCT : p354h

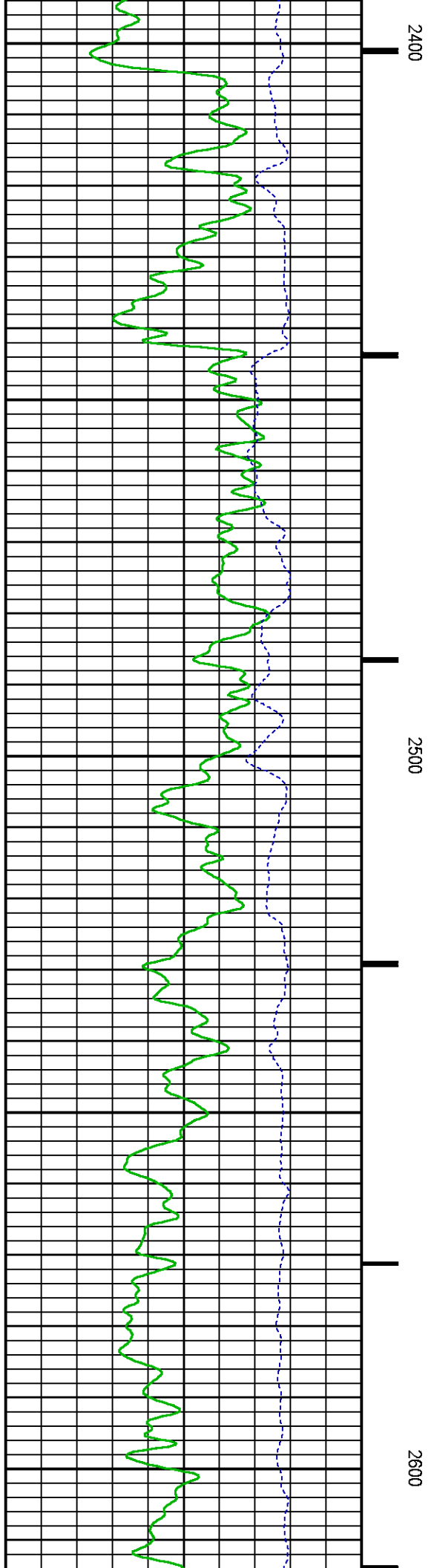
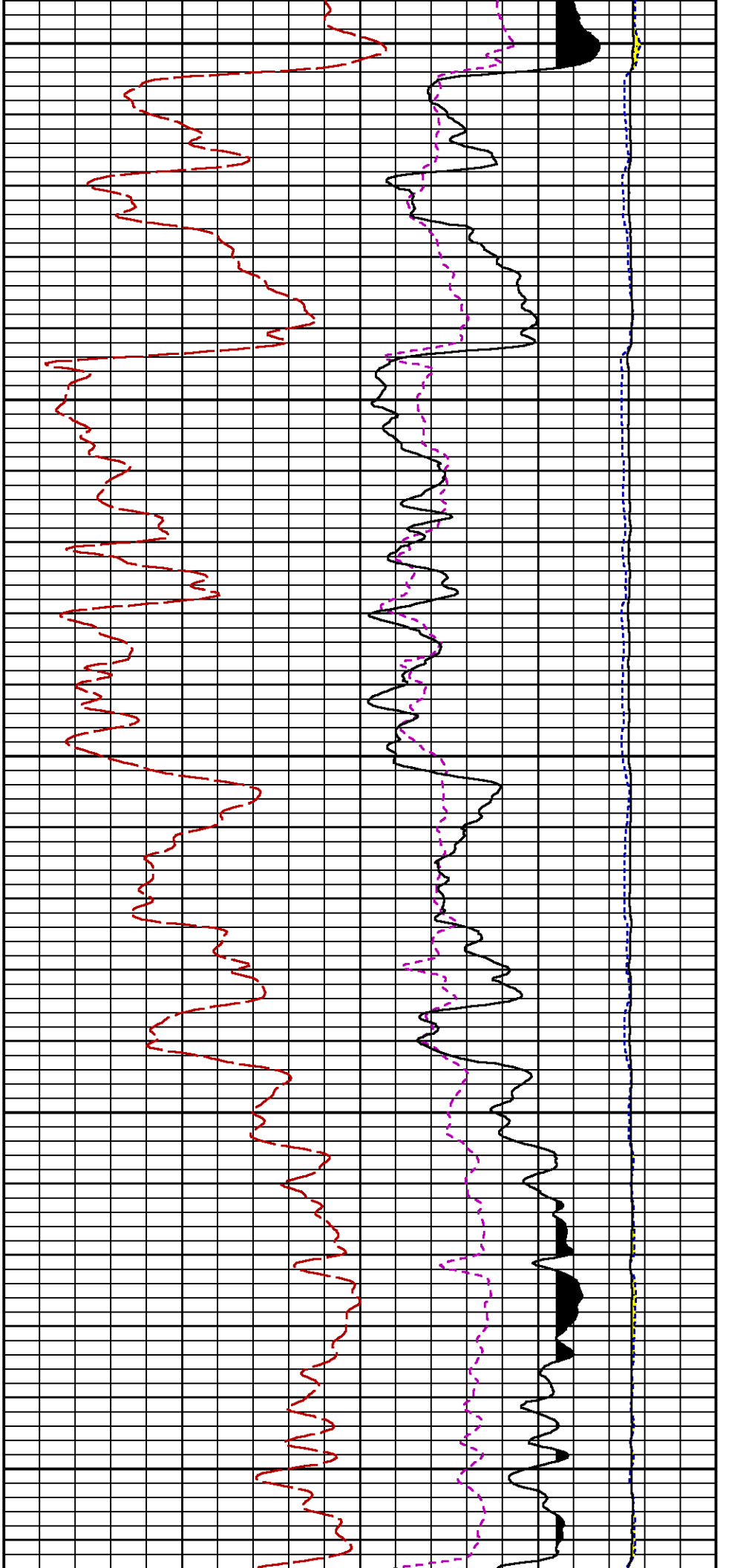
GR BACKUP

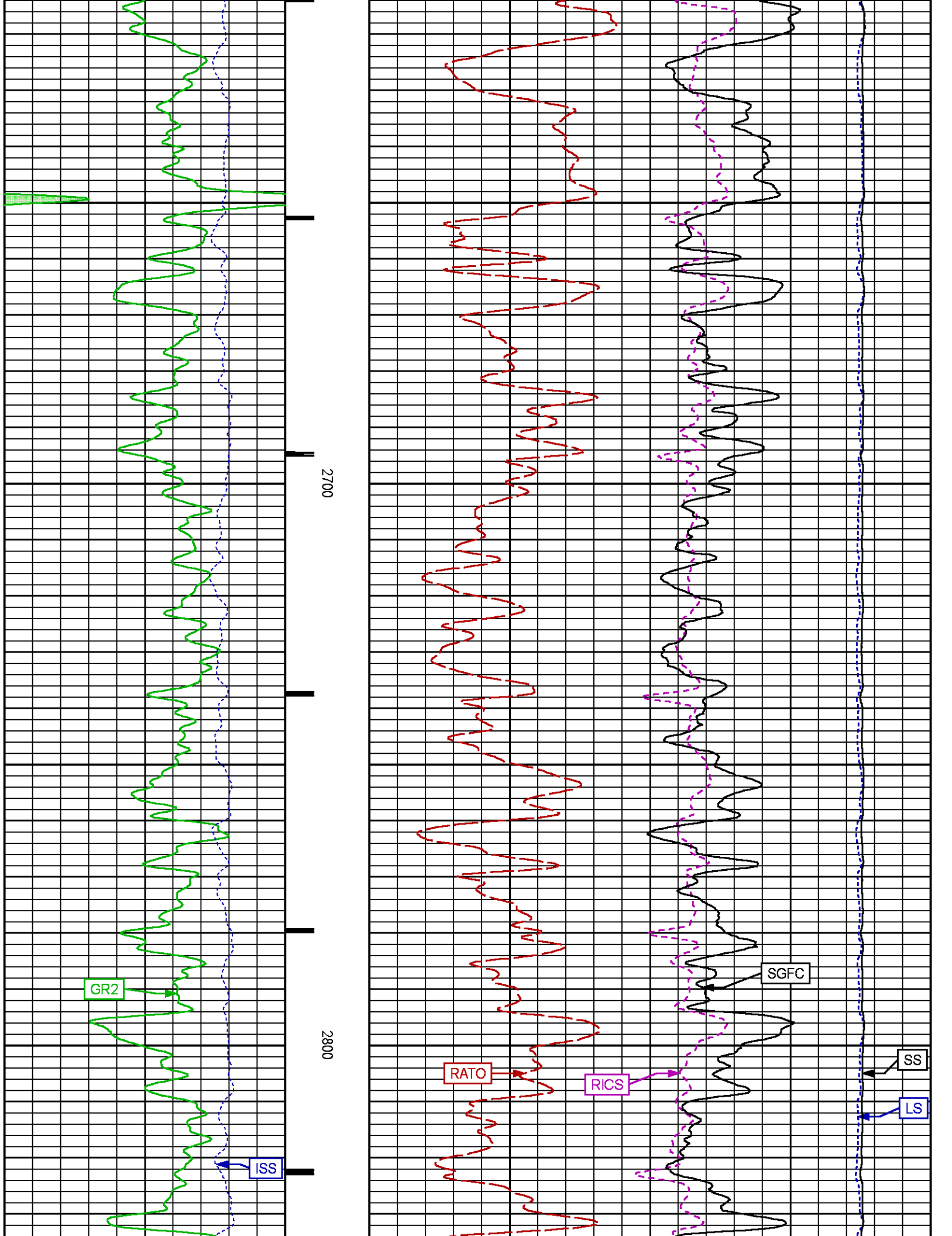
GAMMA RAY [gr2]

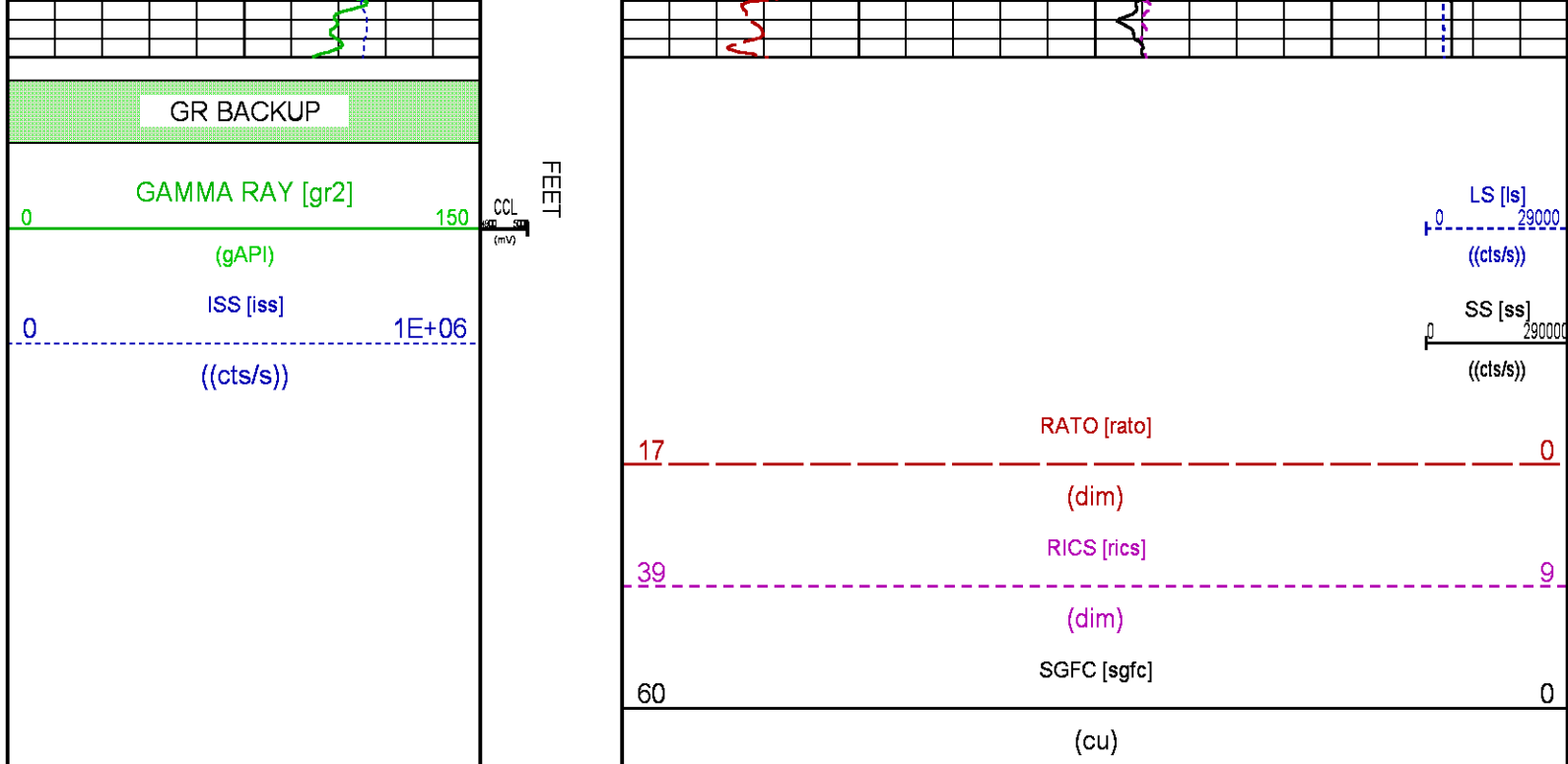
FEET

LS [ls]
0 29000









RPM MAIN PASS WILLIAMS FORK

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Patches: 4

Plotted: Fri Jun 22 16:50:40 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-17W/p354h02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4322.496 ft BOTTOM DEPTH: 7468.796 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	7.78	in	" "
	LARGEST CASING OD	4.50	in	" "
	MATRIX	SANDSTONE		" "

CURVE DESCRIPTION REPORT

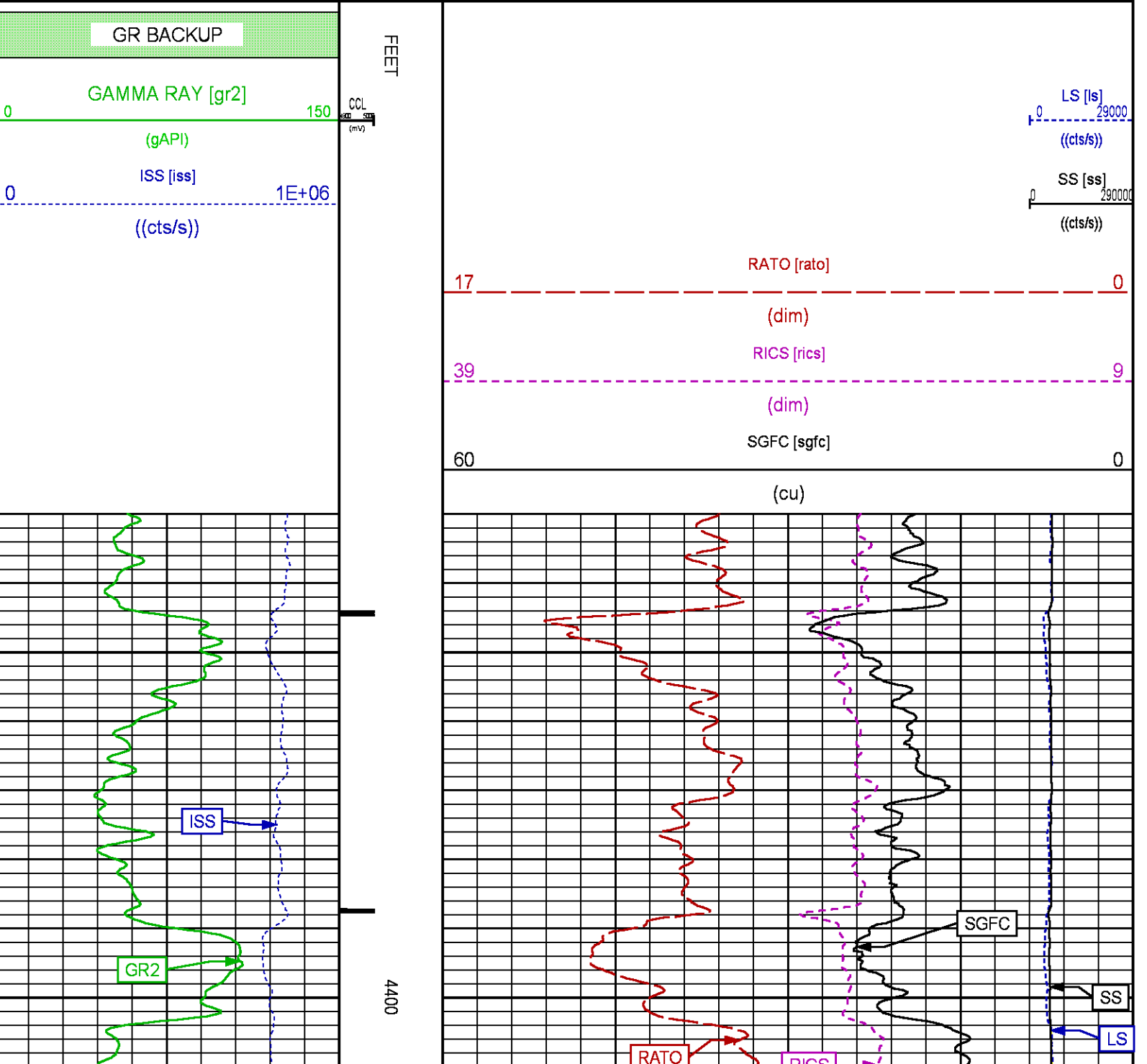
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO

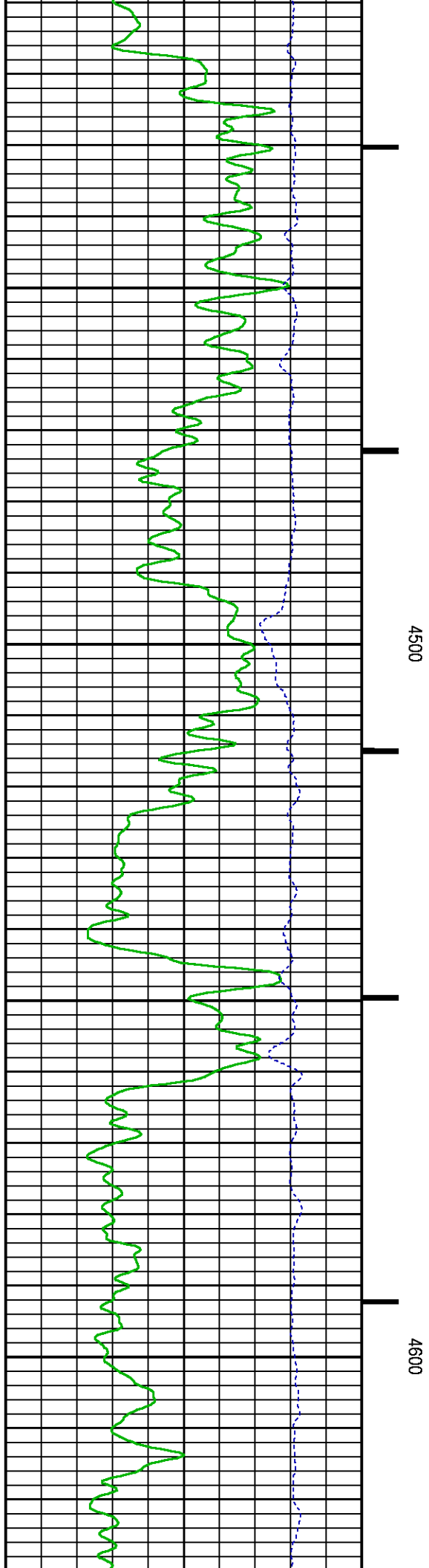
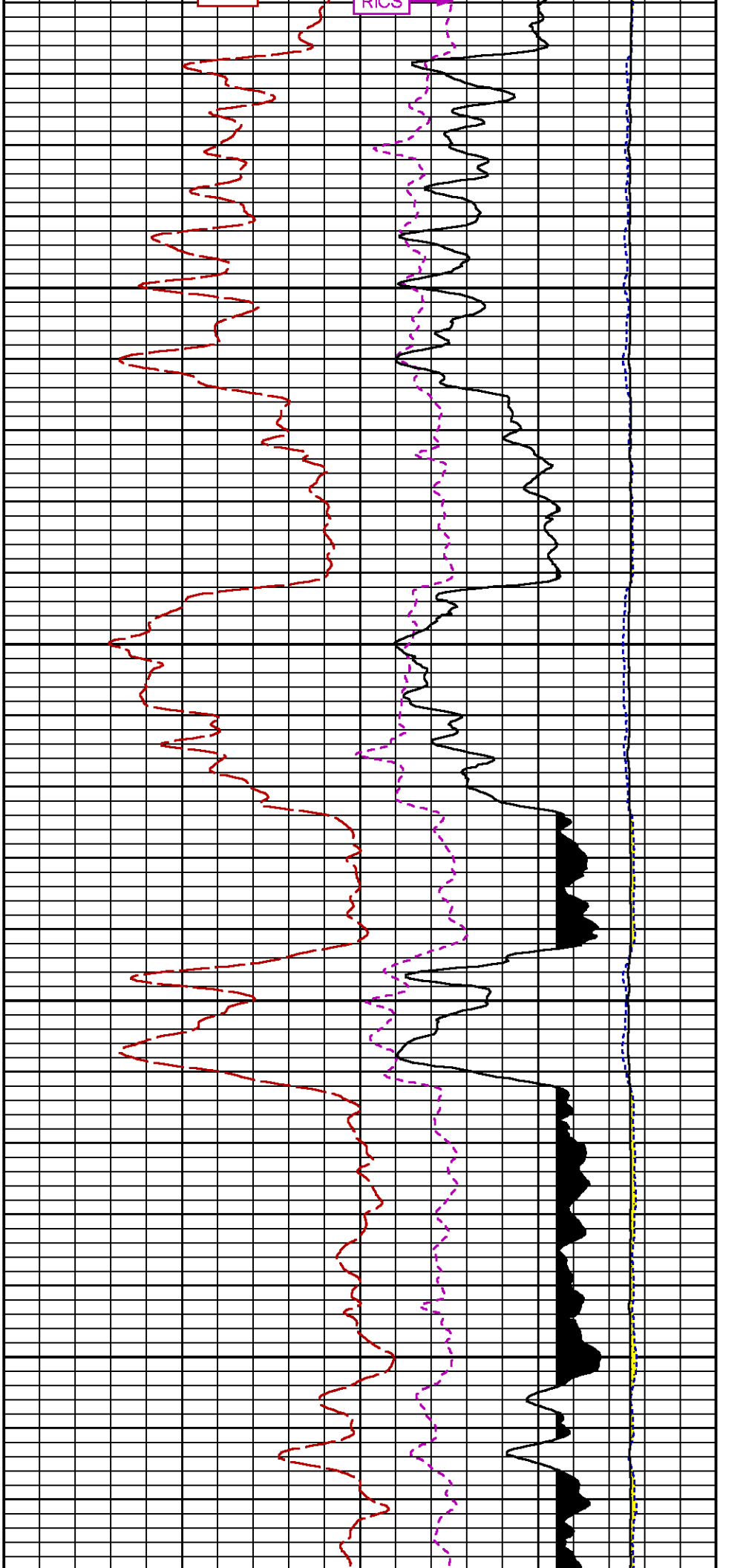
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

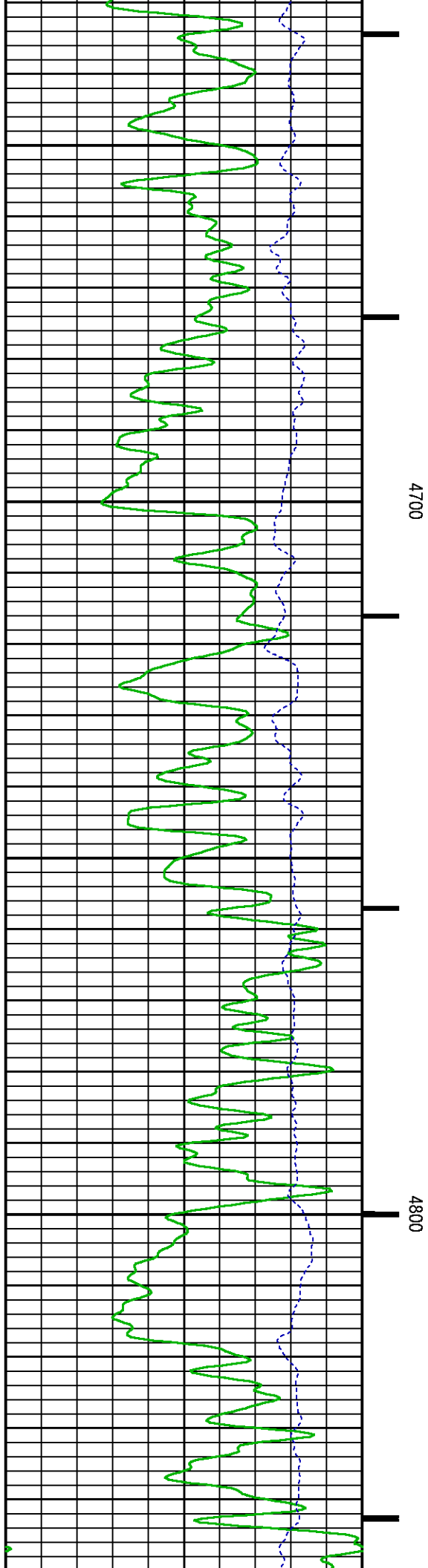
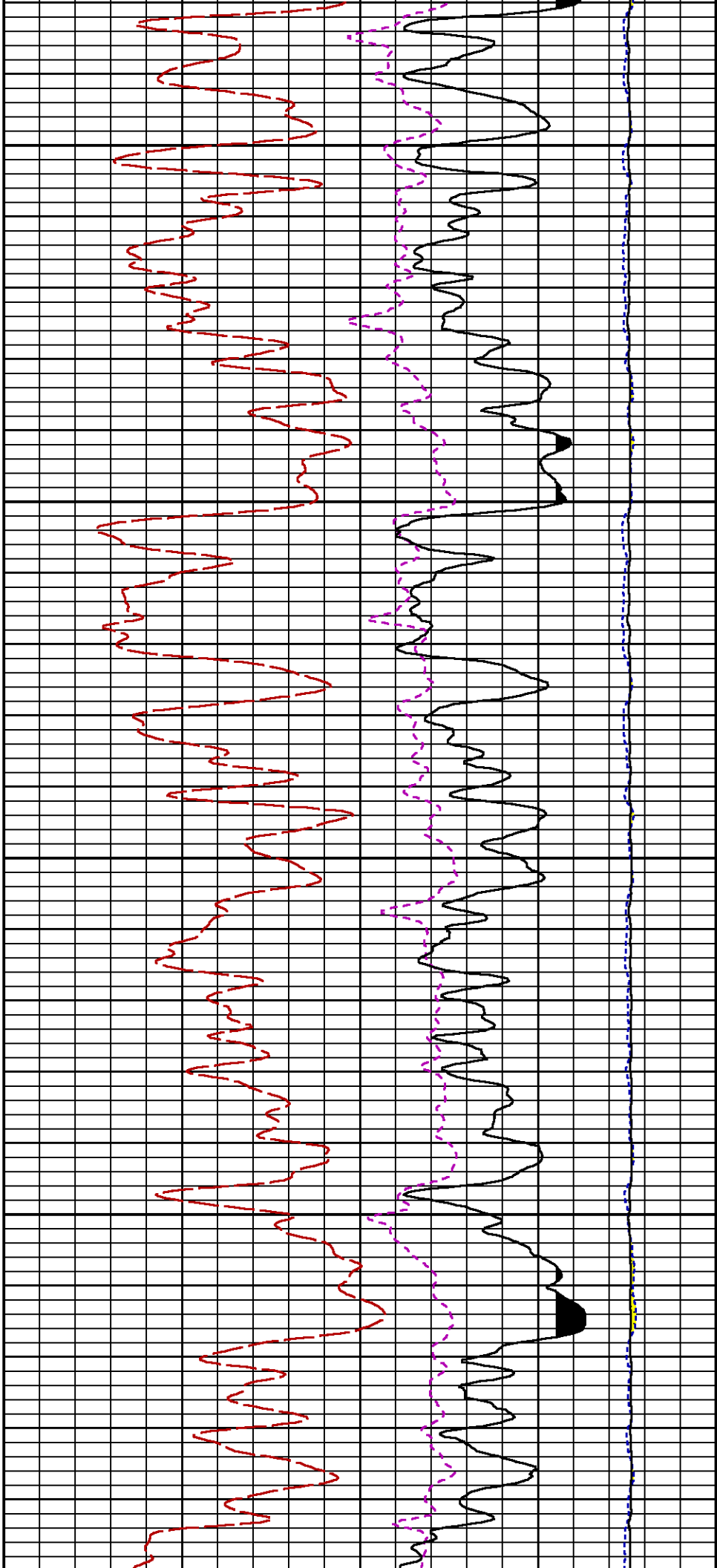
CURVE MEASURE POINT OFFSET

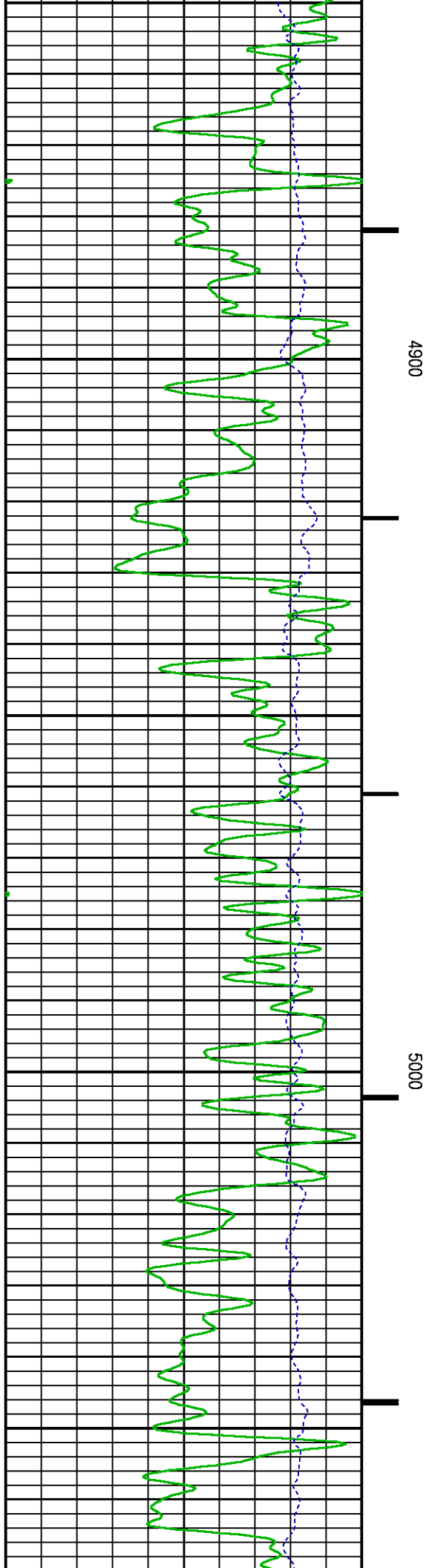
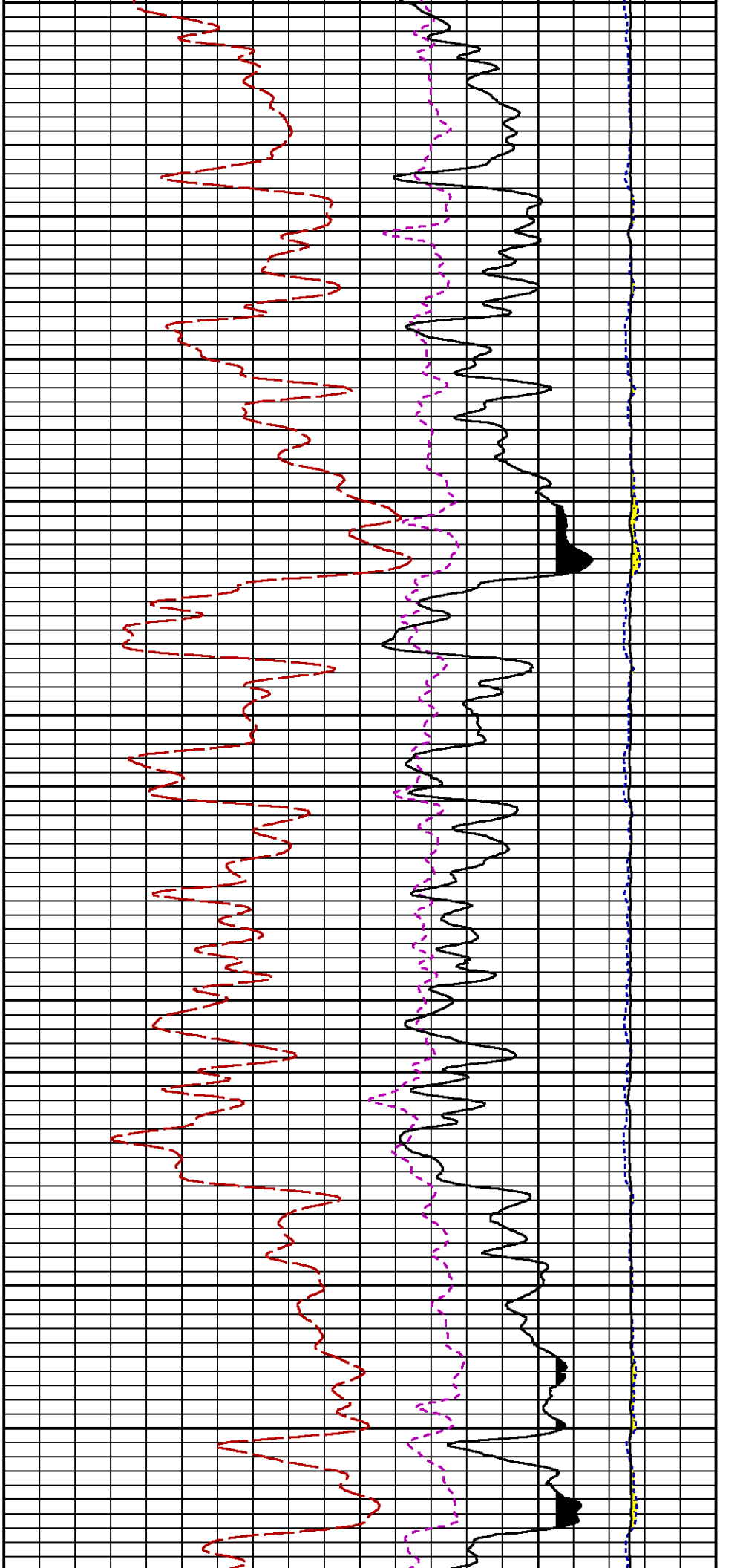
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

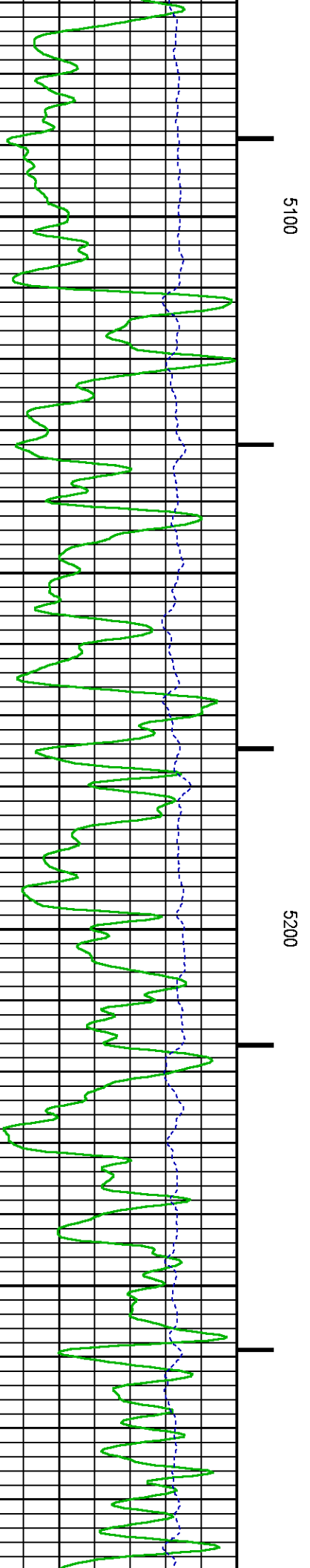
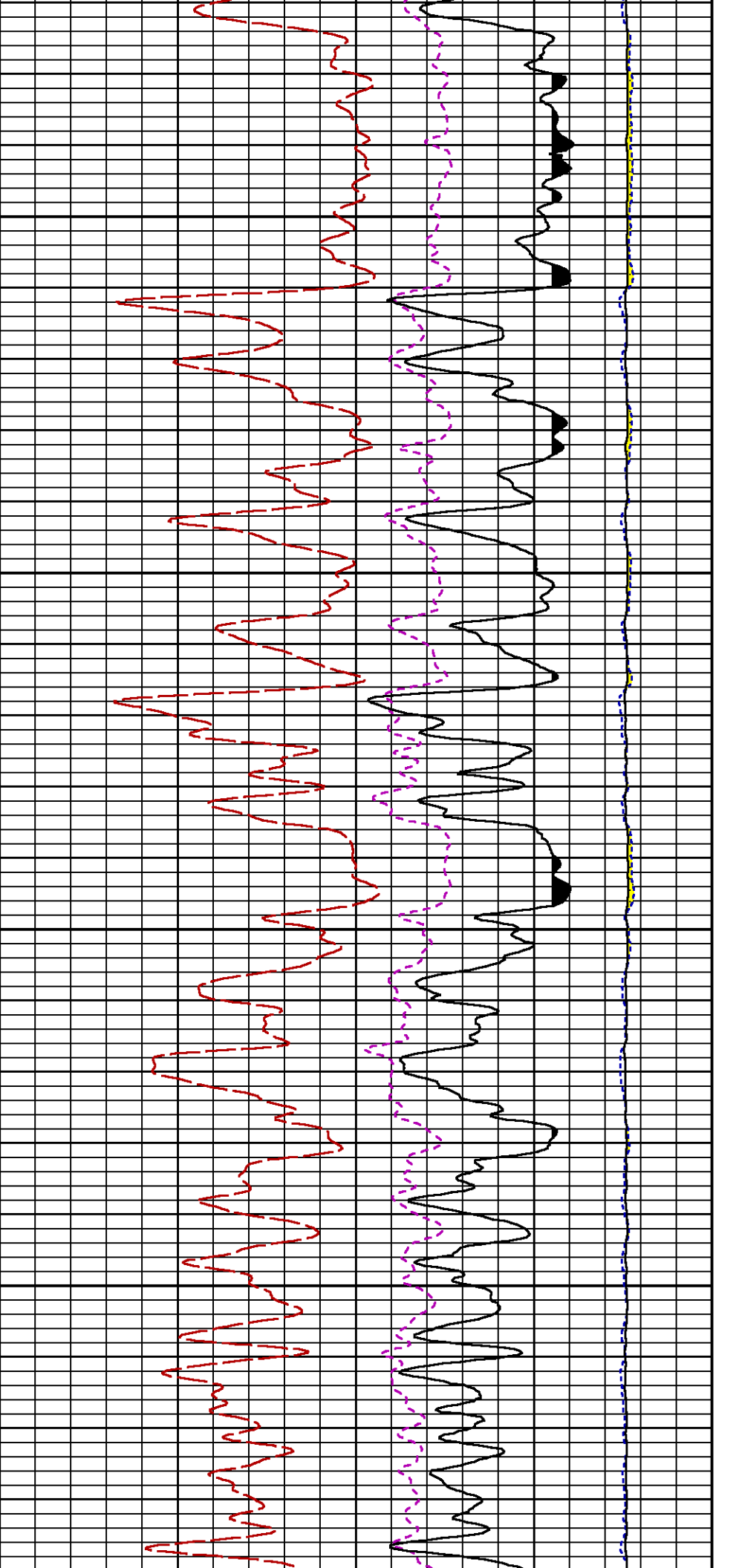
Presentation	: SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-17W/17W_RPM_WF.fvpdf [5"/100' Scale]
Plot Interval	: 4330 - 7475 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-17W/17W_RPM_WF.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: GUNDERSON 0994_13_17W
Field	: VEGA-
File Interval	: 4304 - 7470 Feet
OCT	: p354h

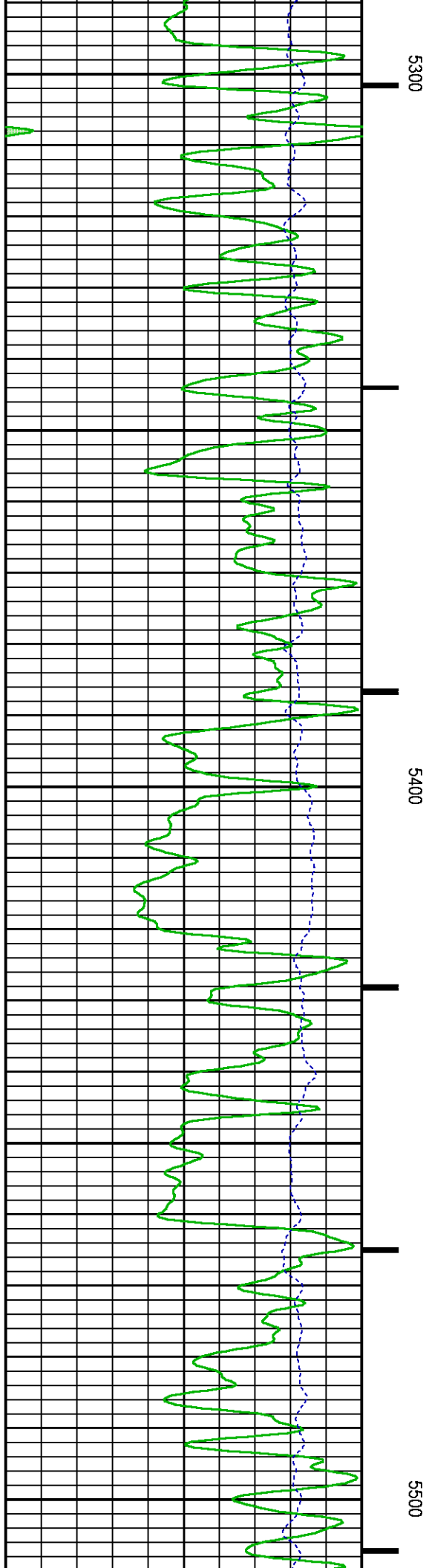
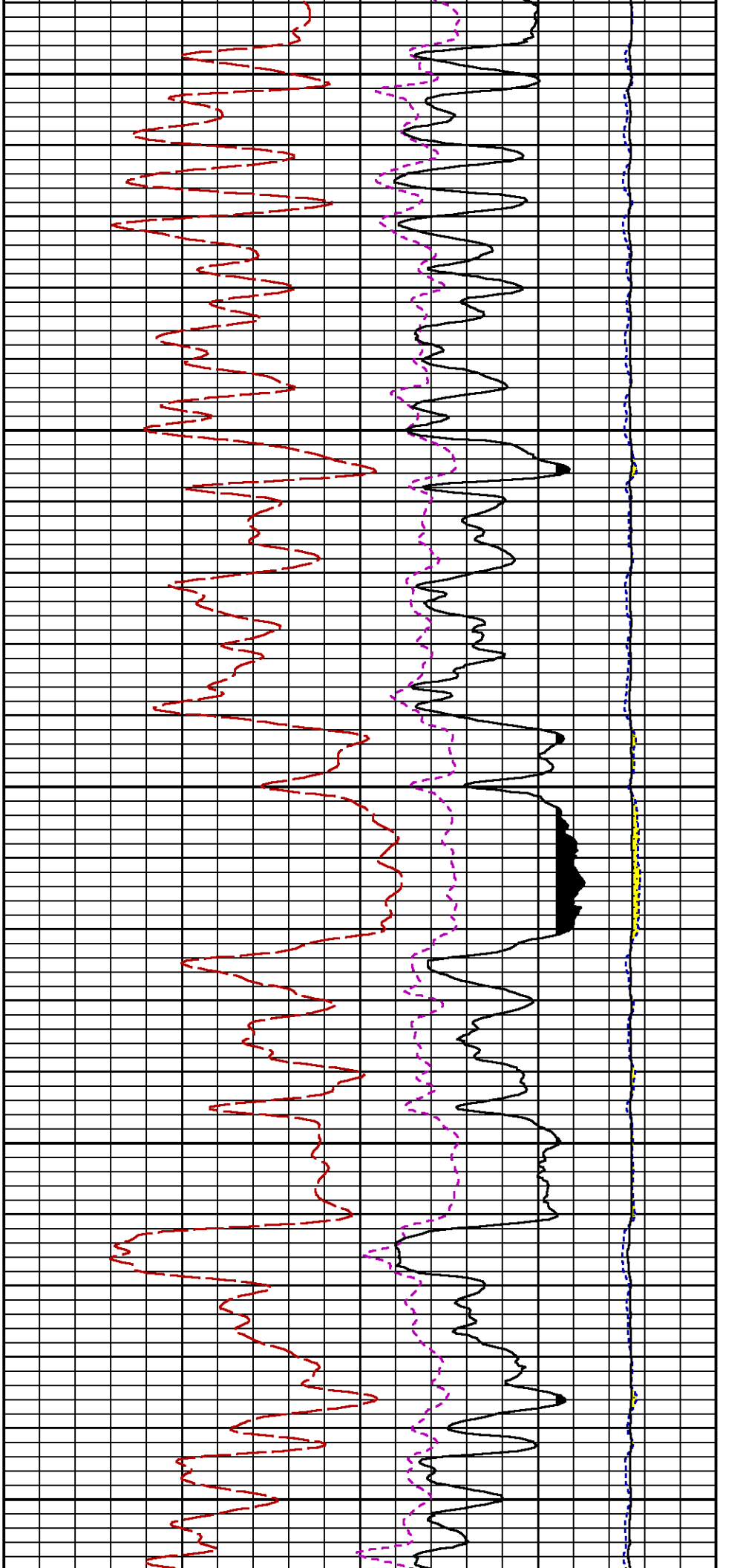


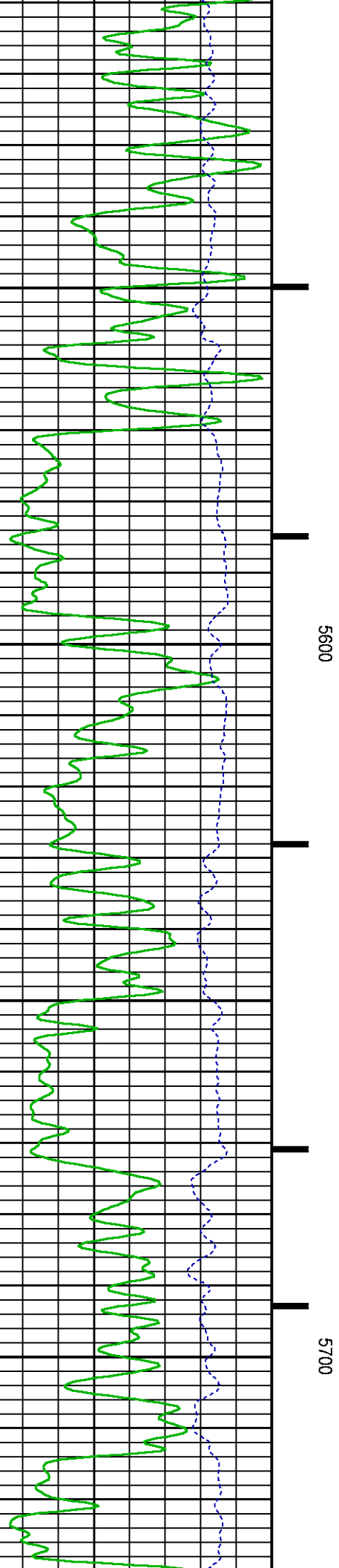
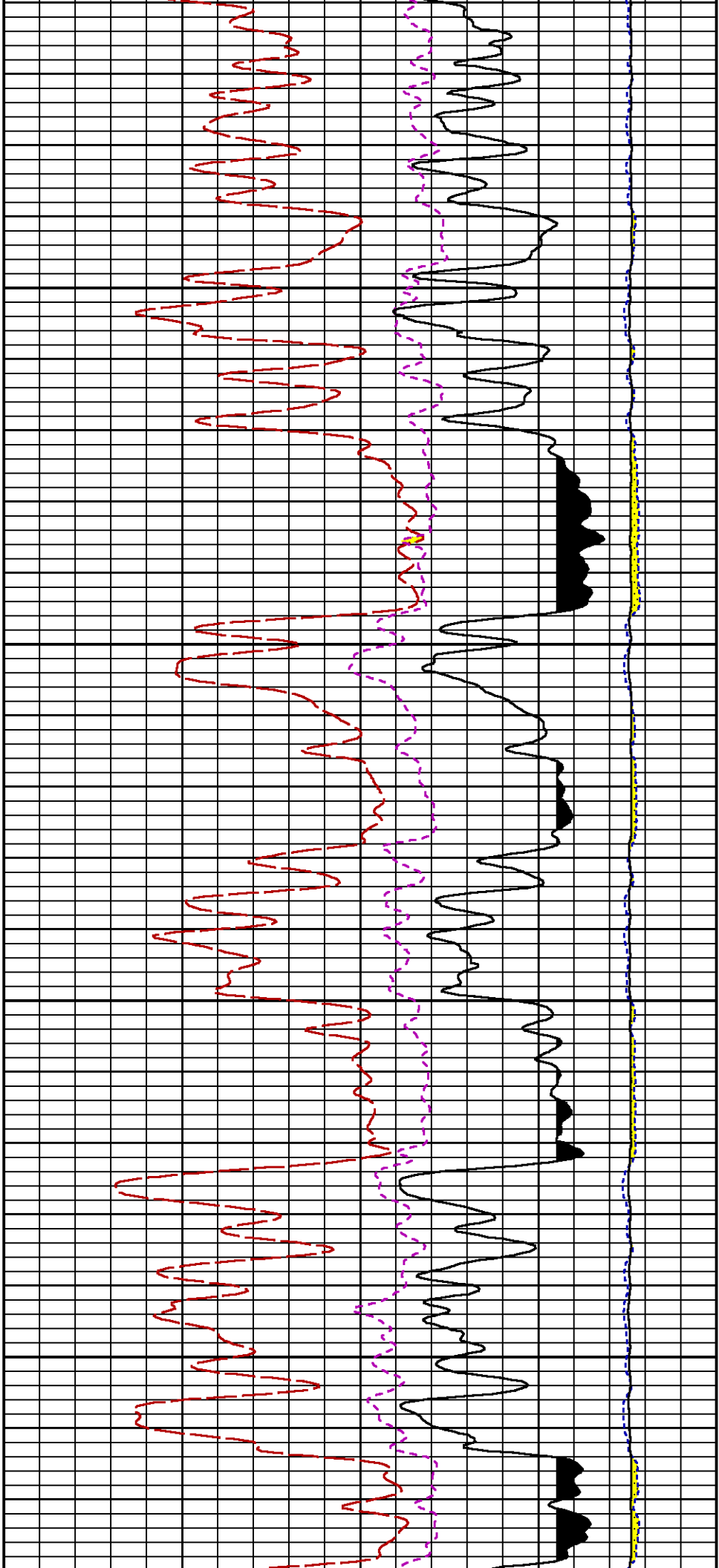


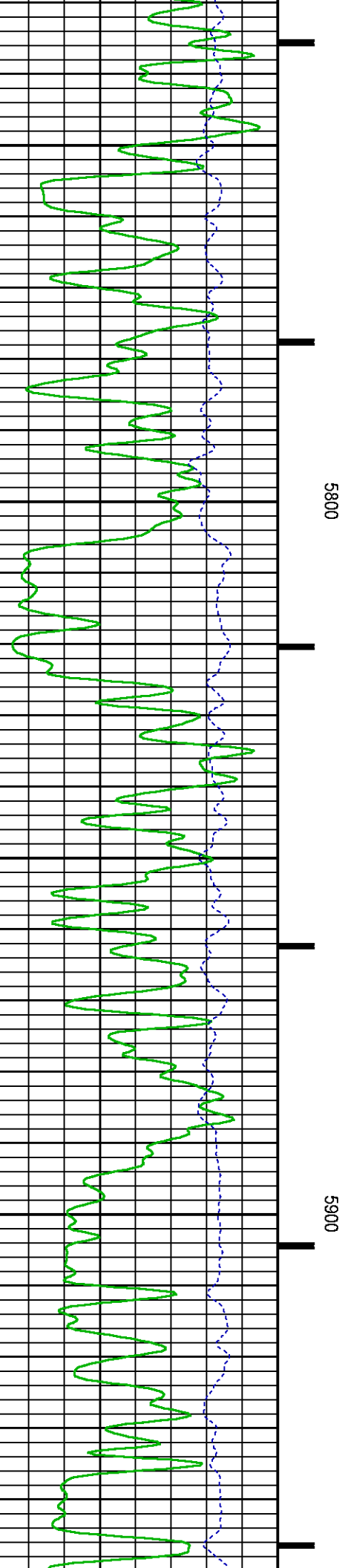
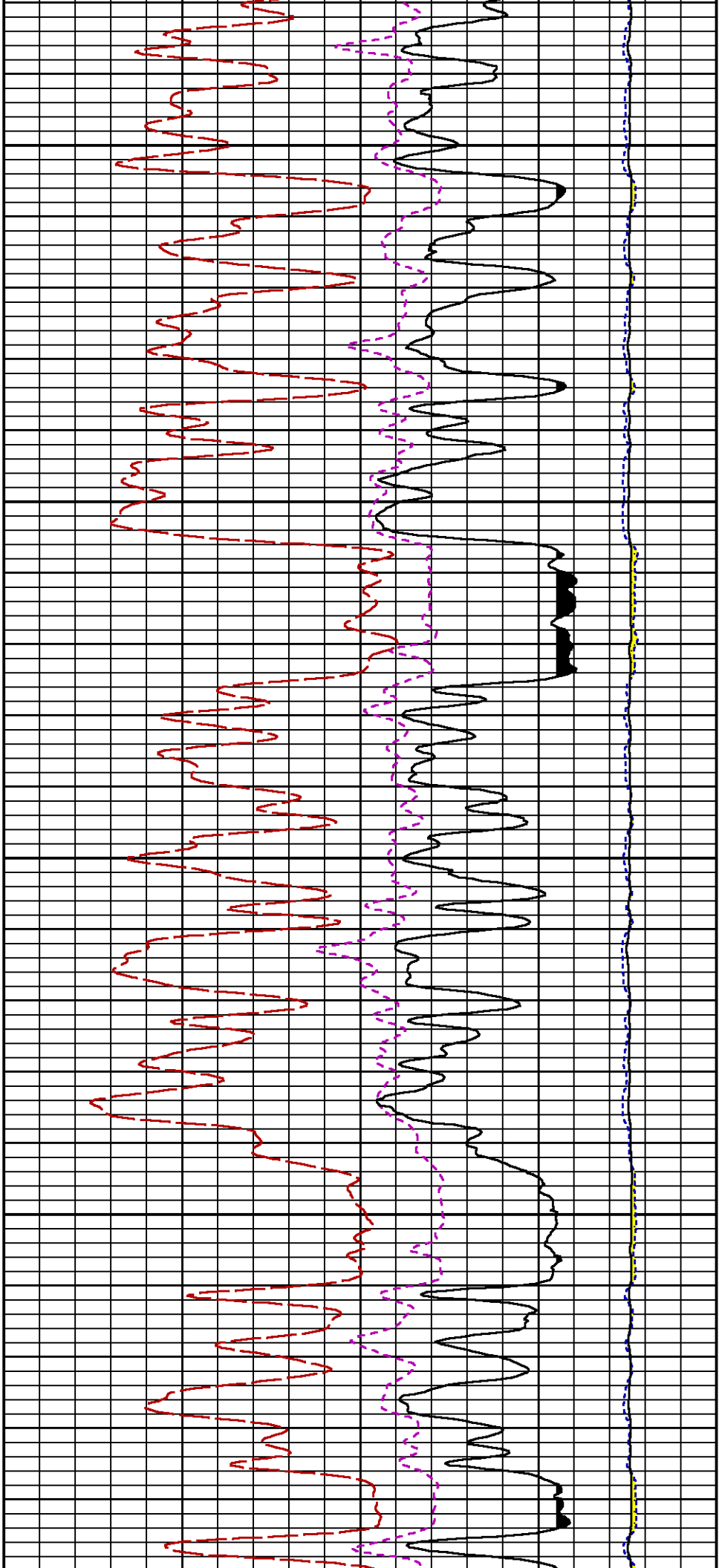


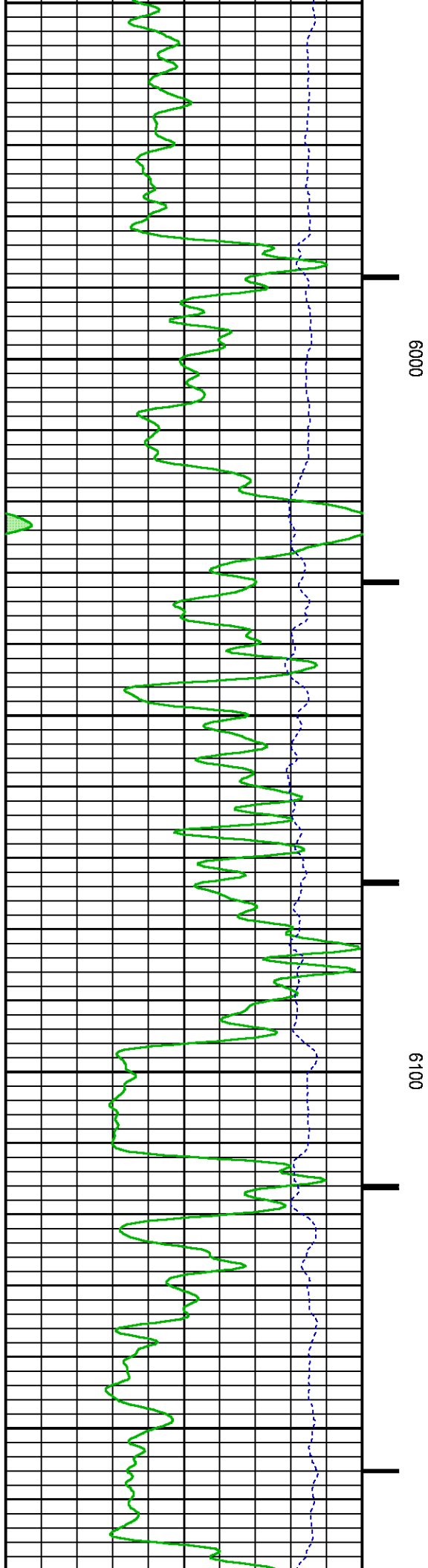
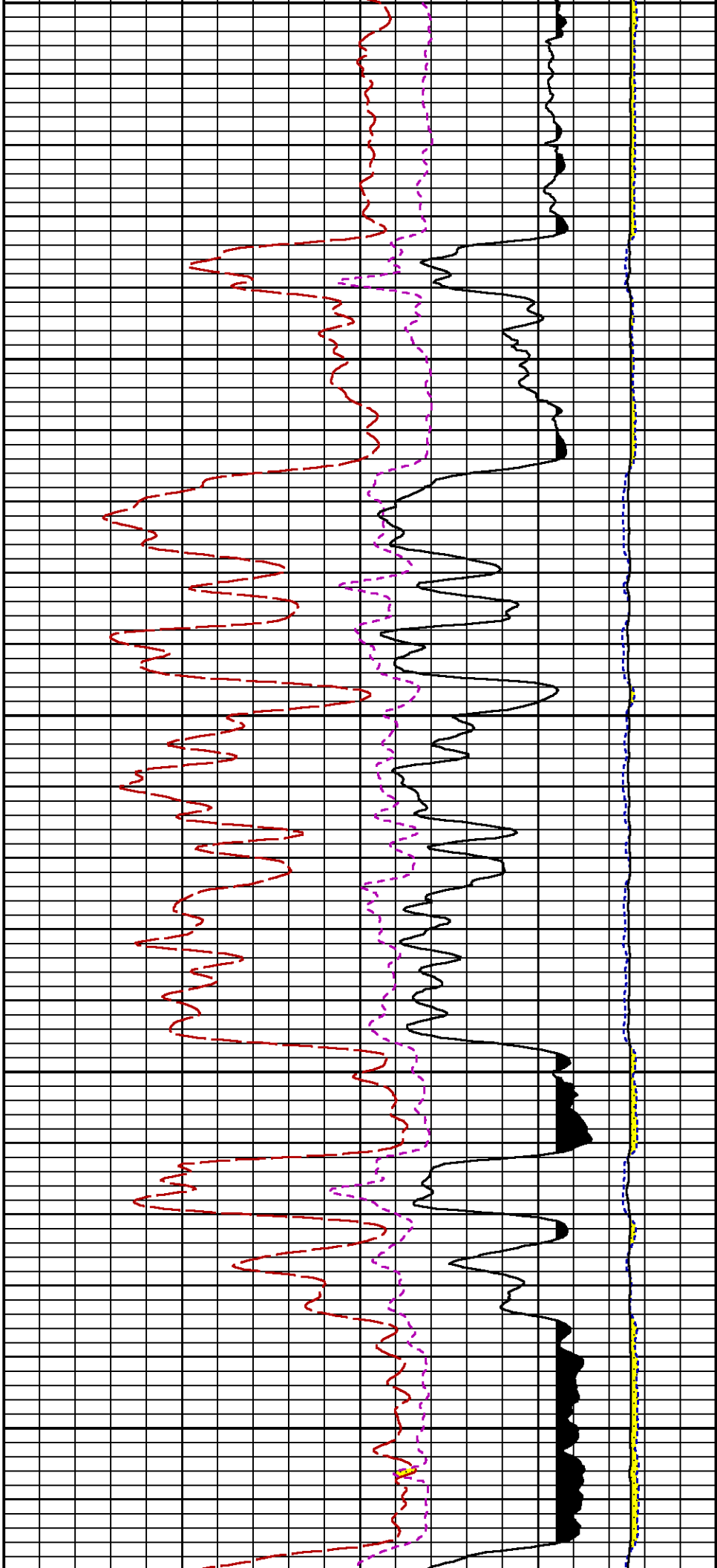


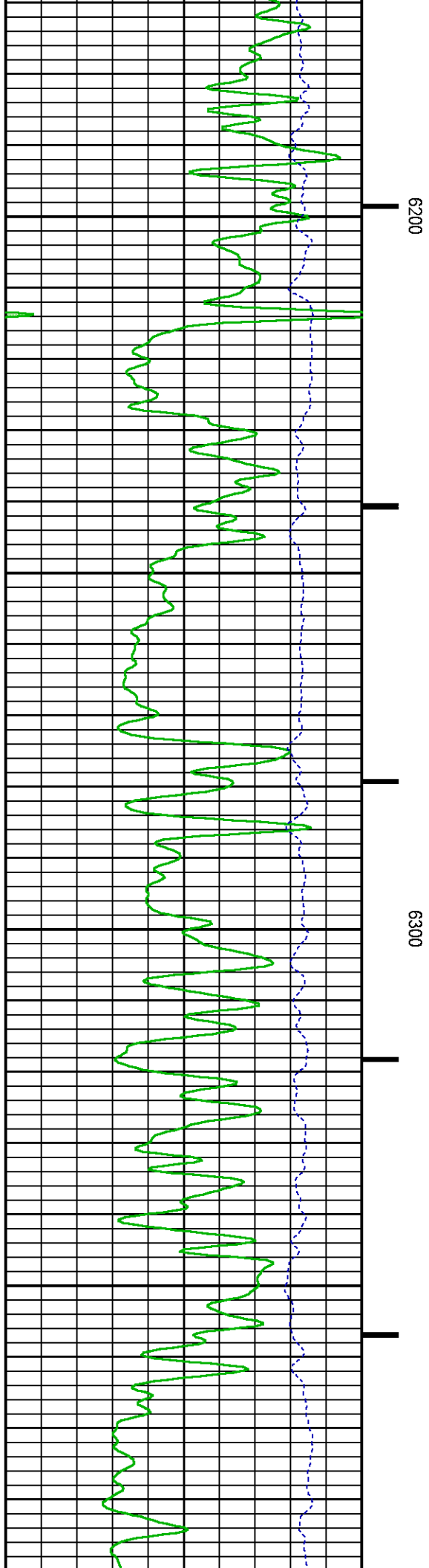
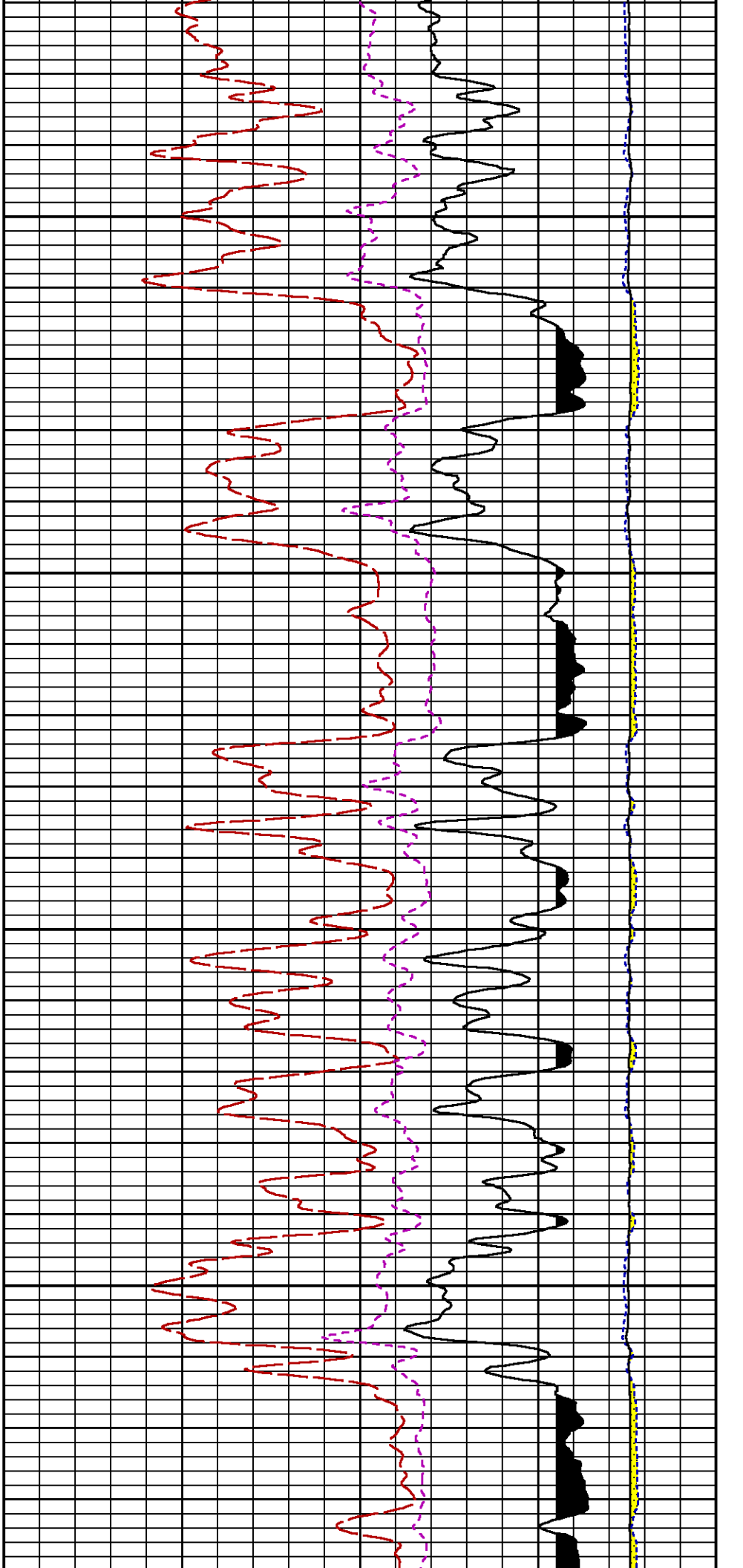


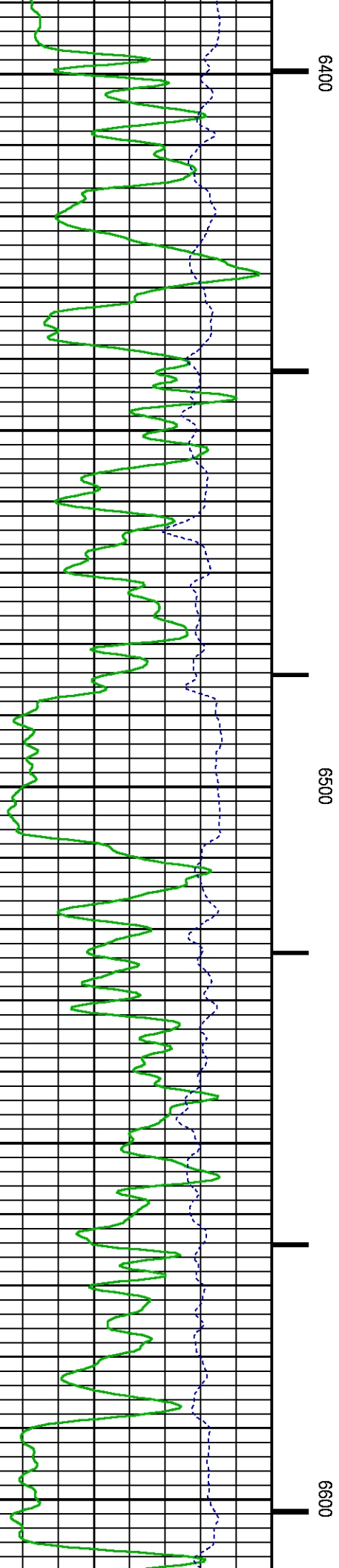
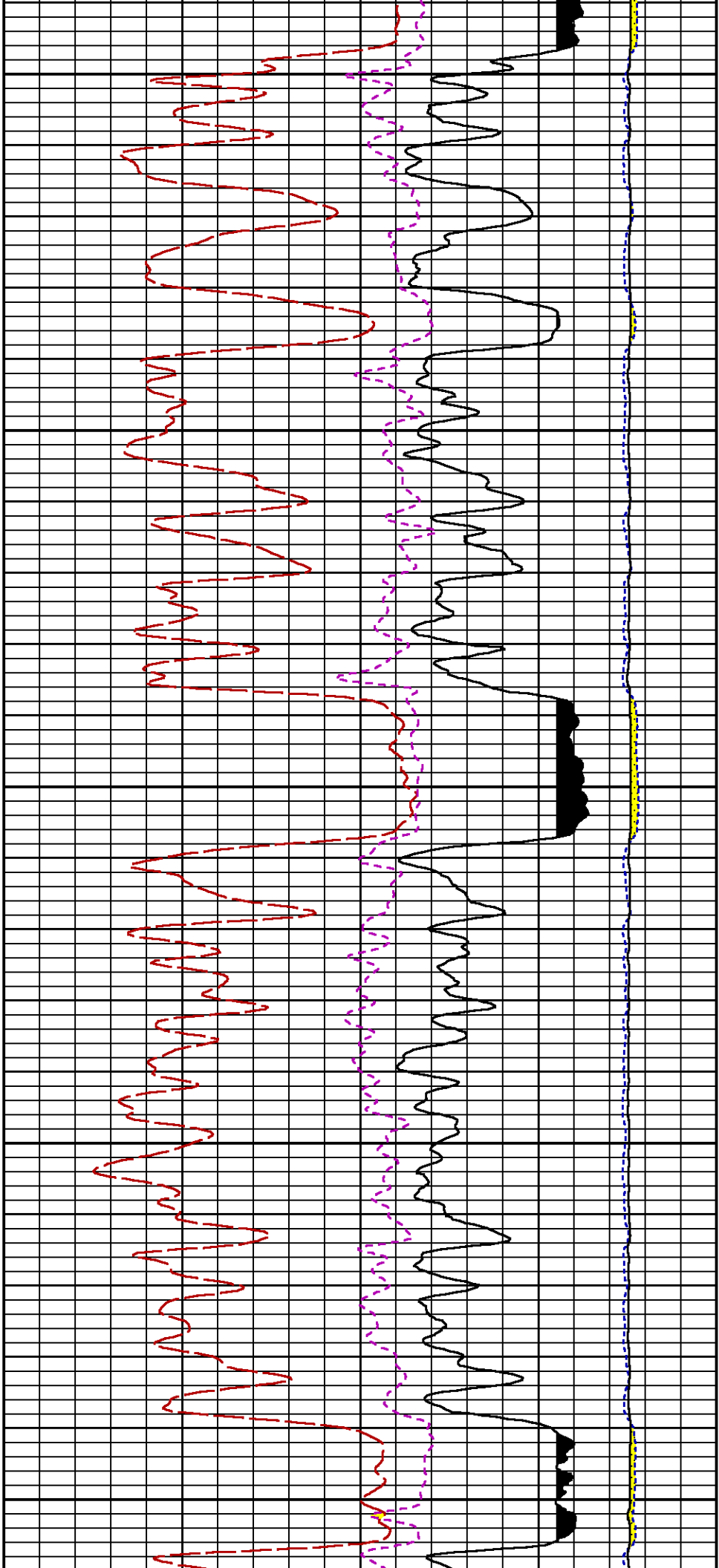


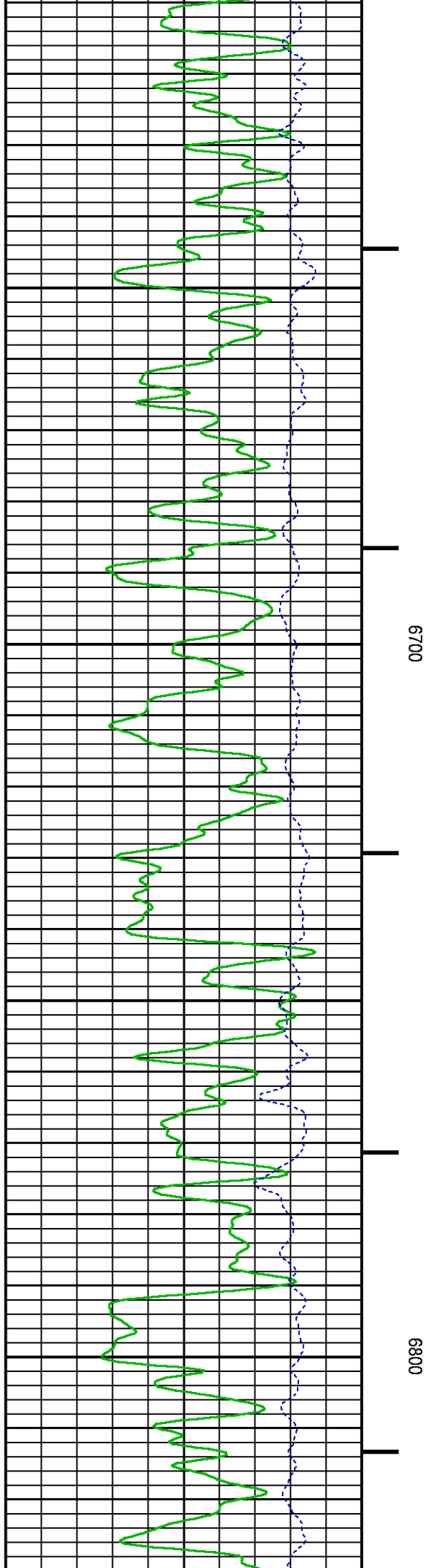
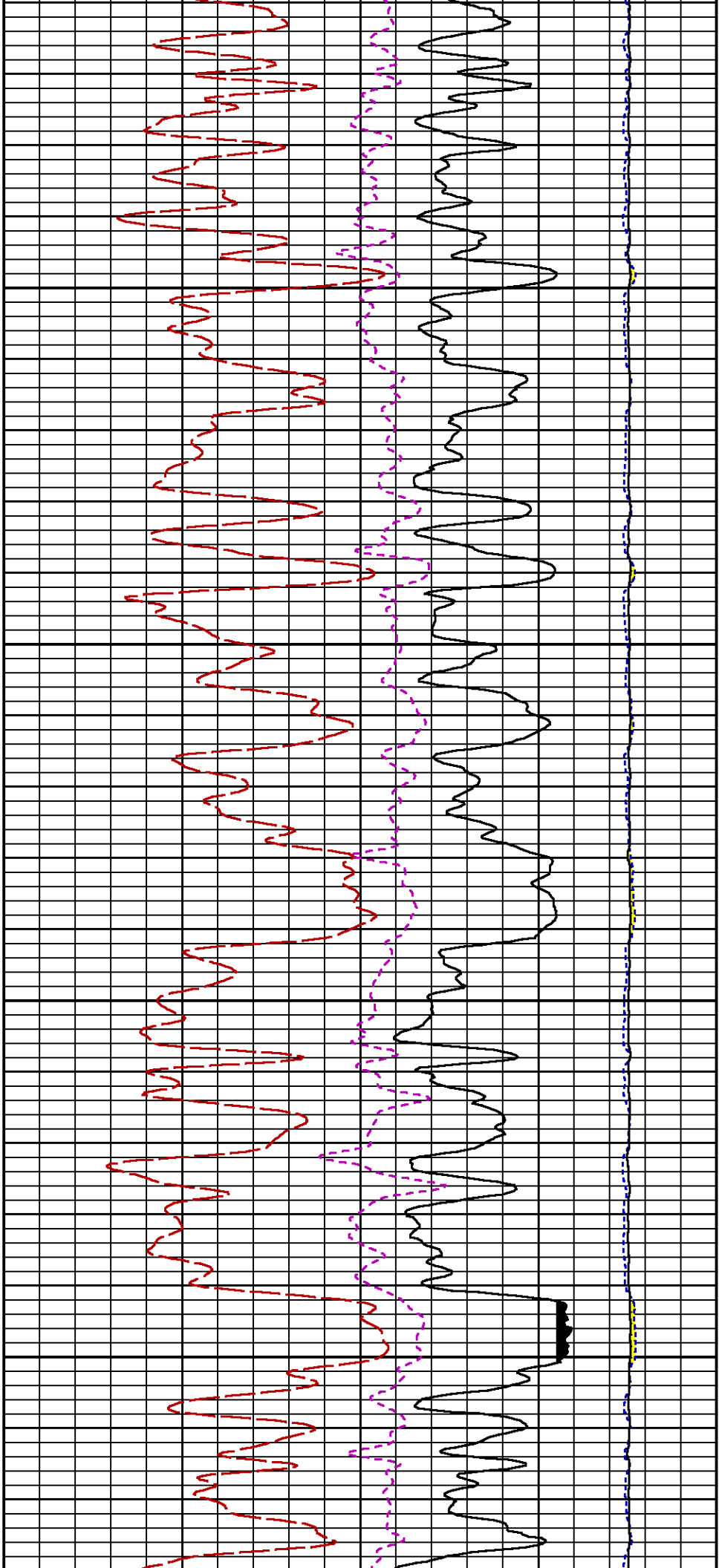


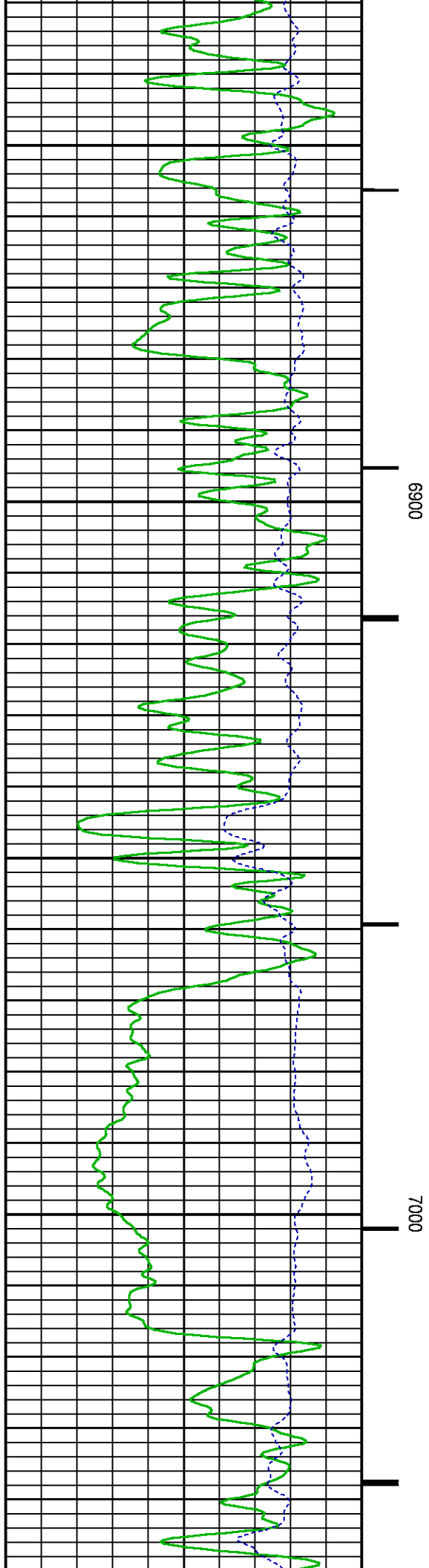
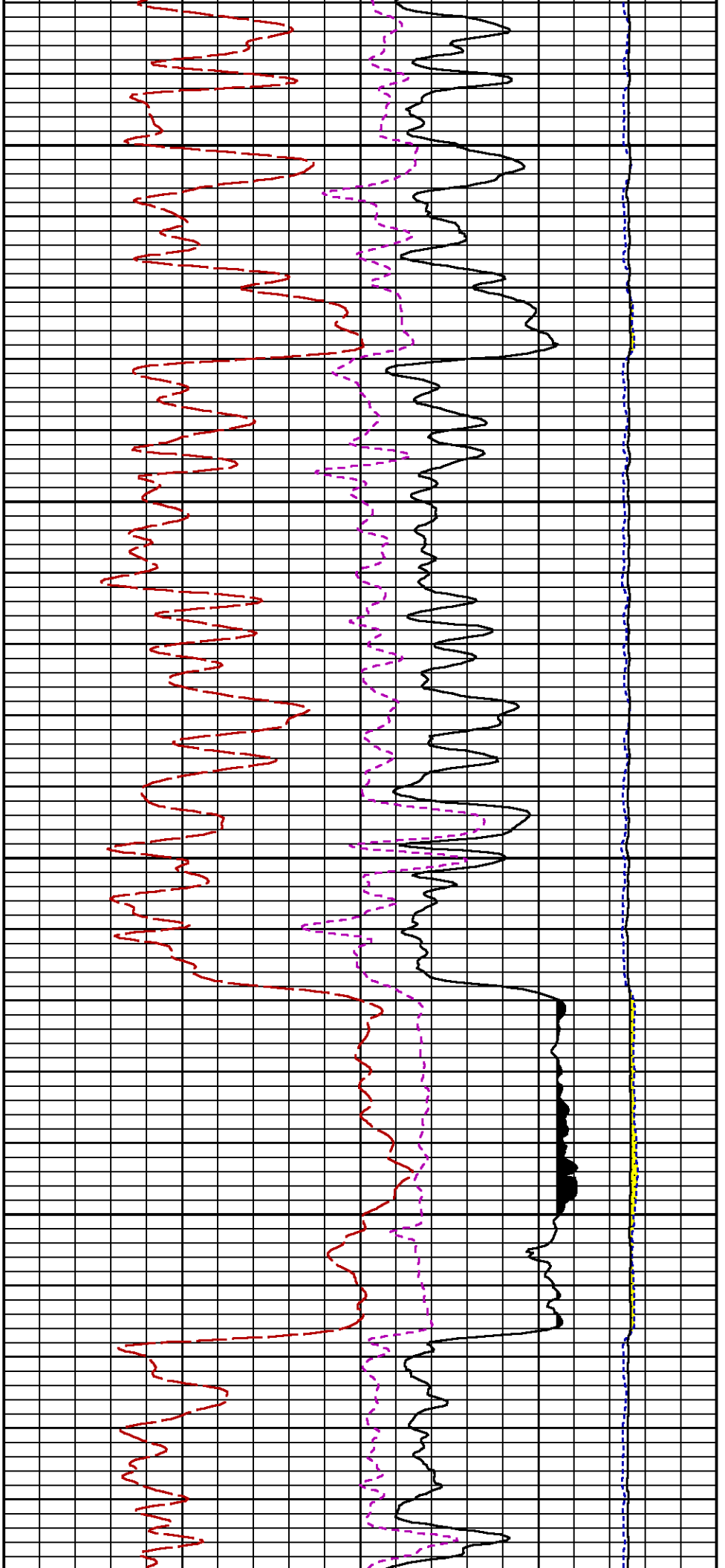


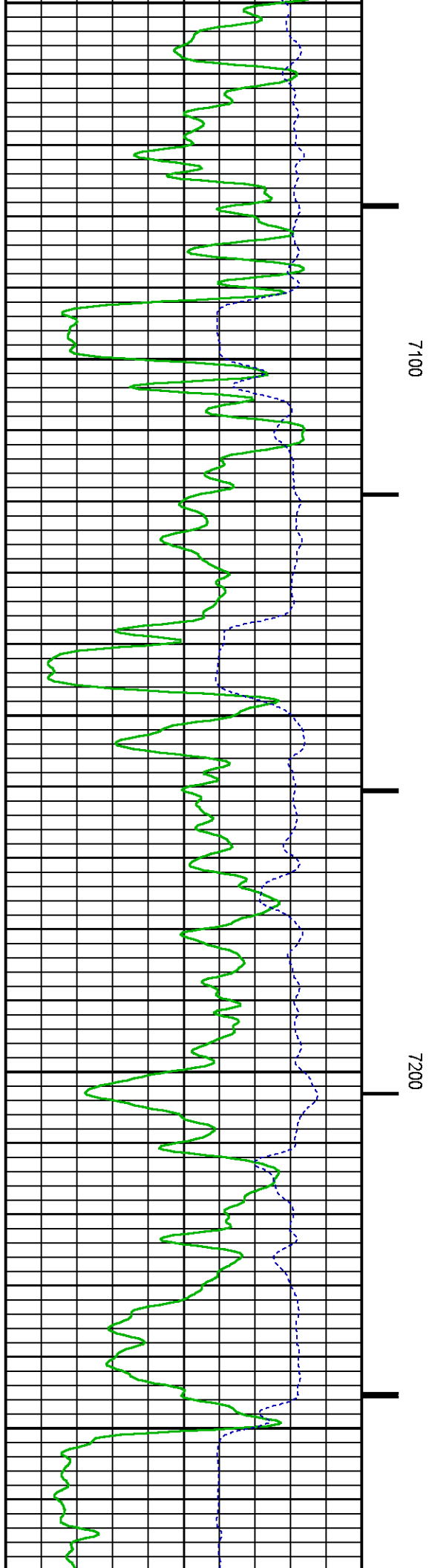
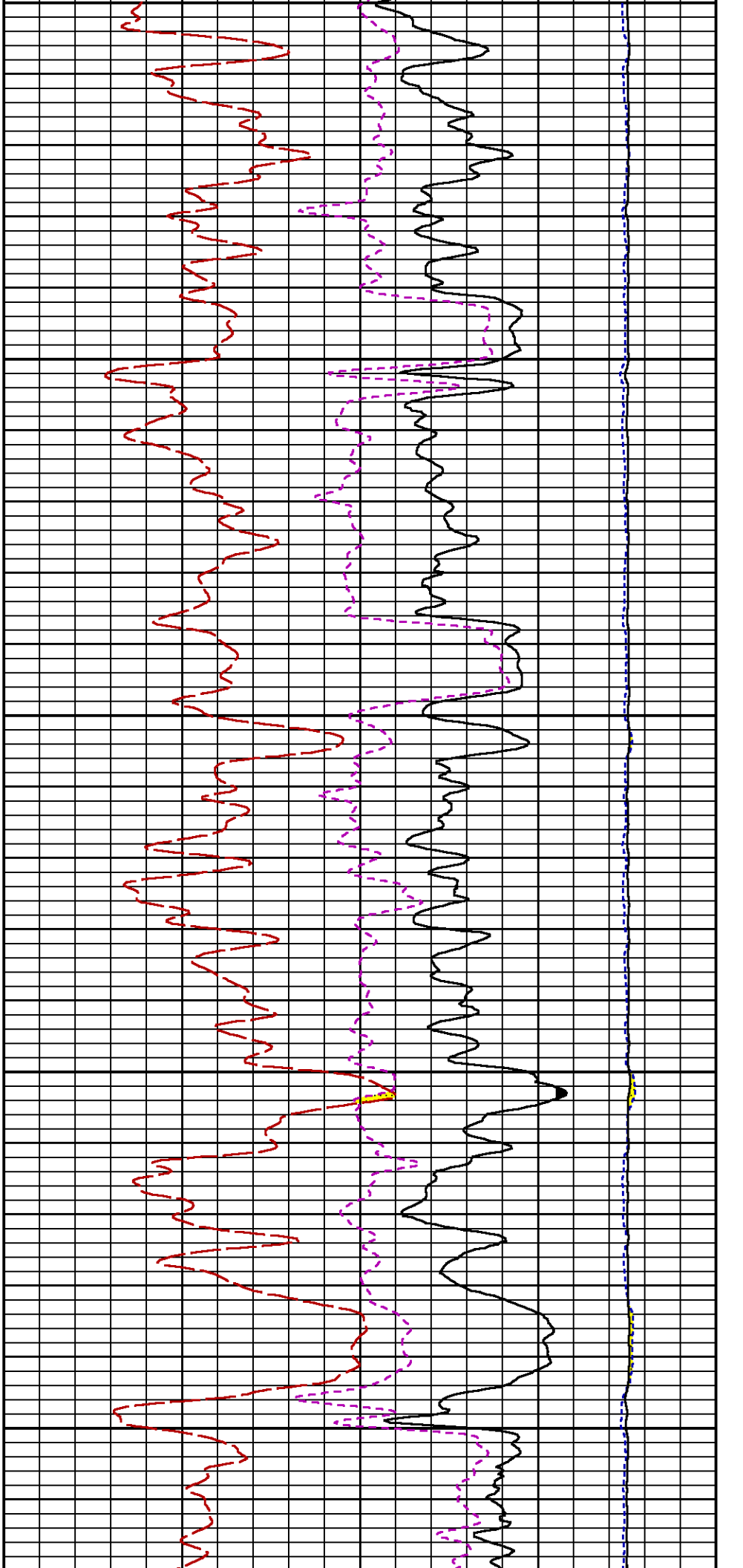


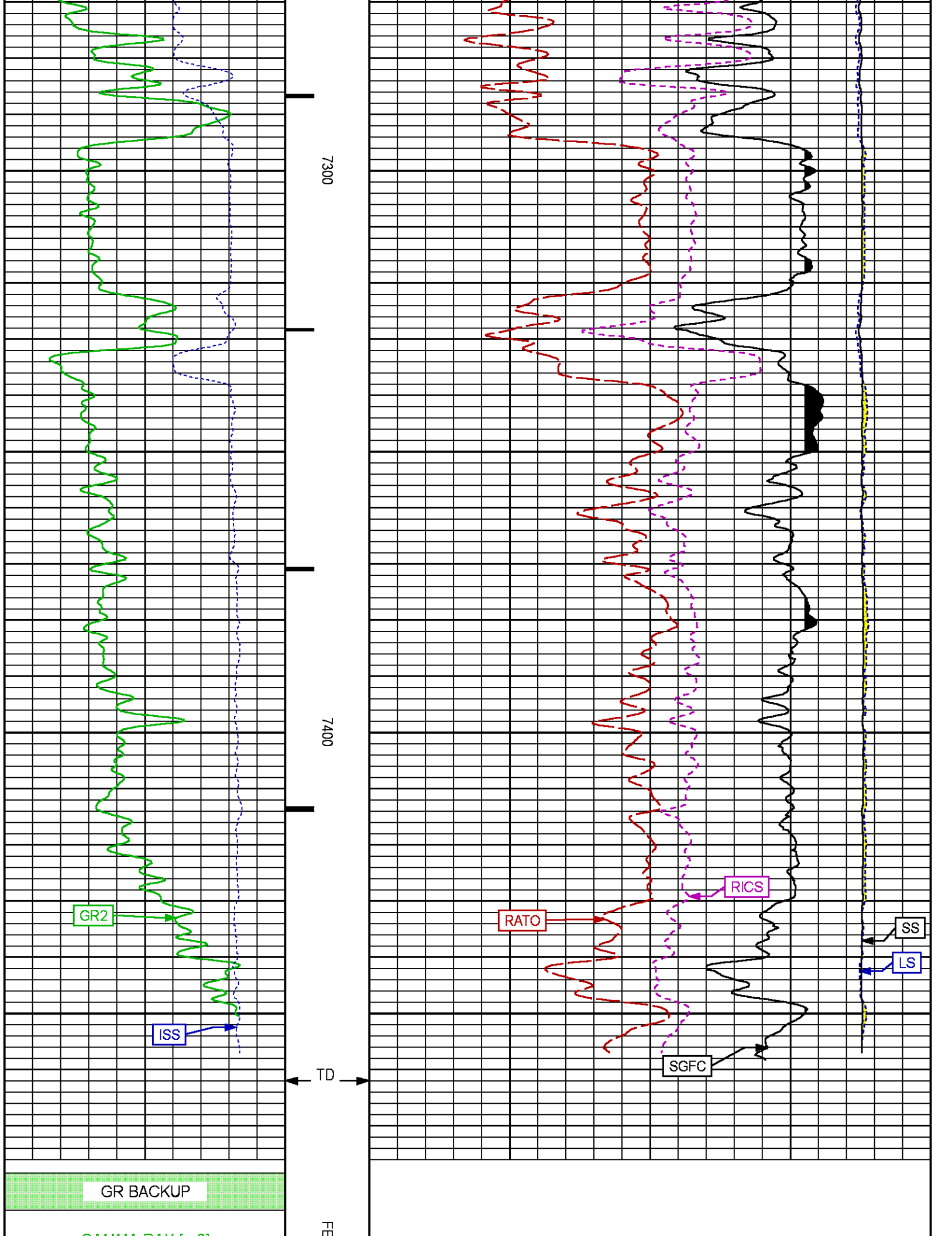


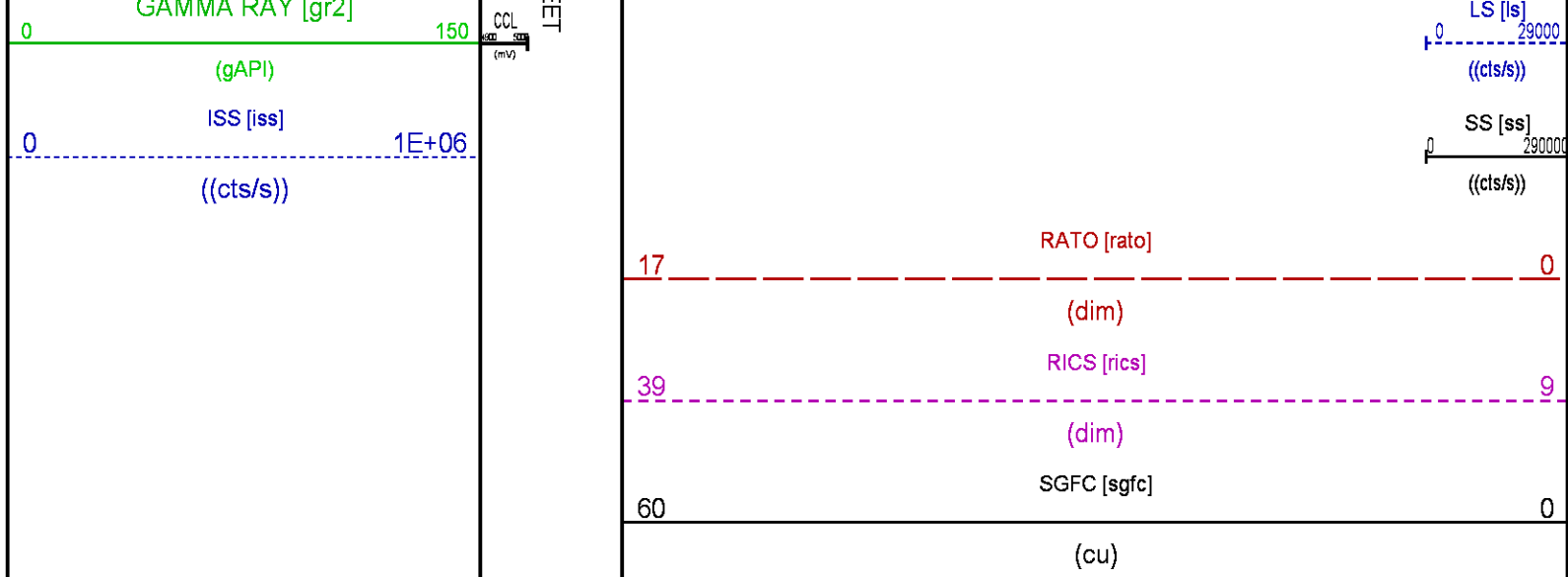












REPEAT PASS

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Patches: 4

Plotted: Fri Jun 22 12:49:14 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-13-17W/p354h01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 5266.830 ft BOTTOM DEPTH: 5496.240 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	7.78	in	" "
	LARGEST CASING OD	4.50	in	" "
	MATRIX	SANDSTONE		" "

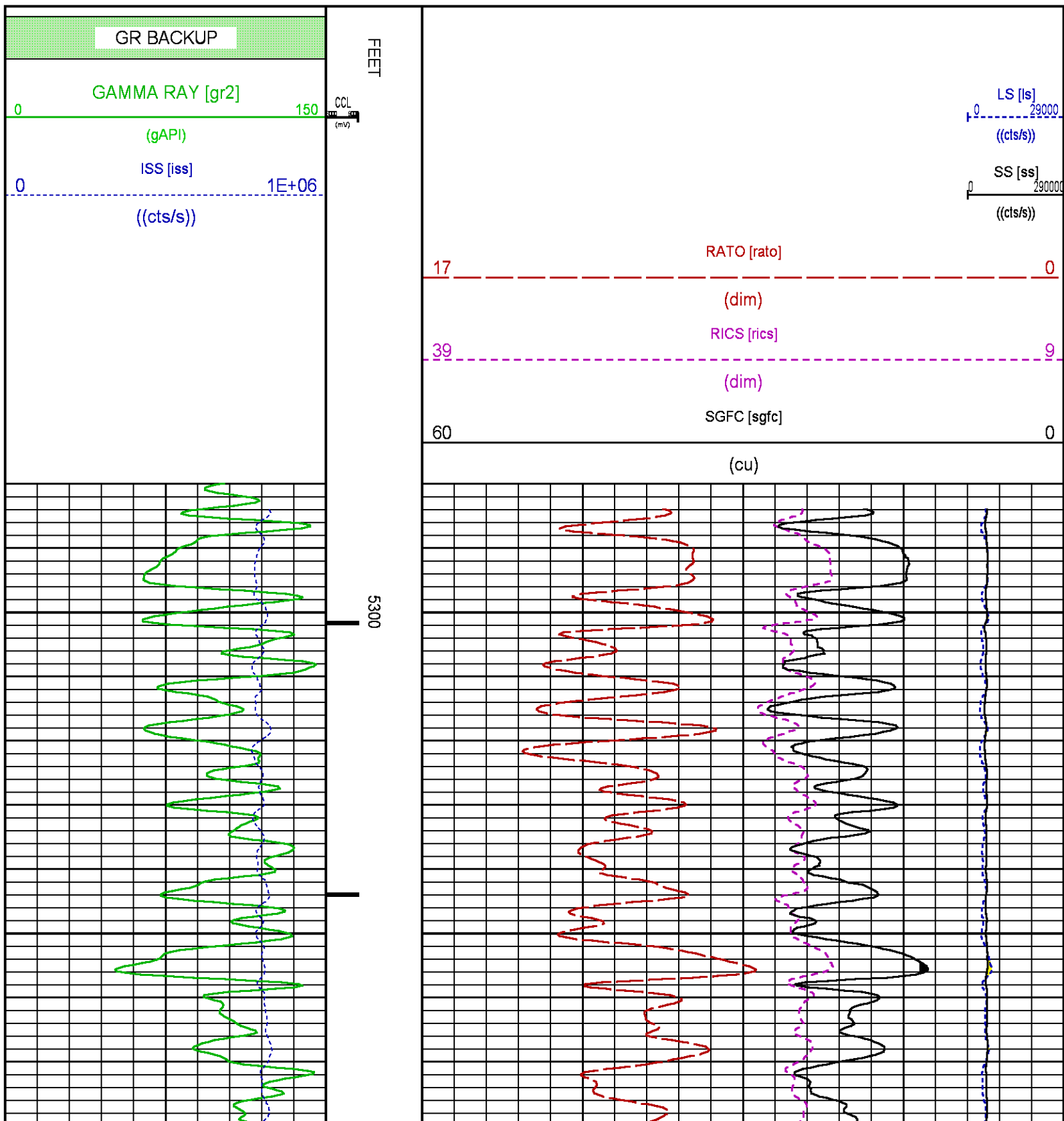
CURVE DESCRIPTION REPORT

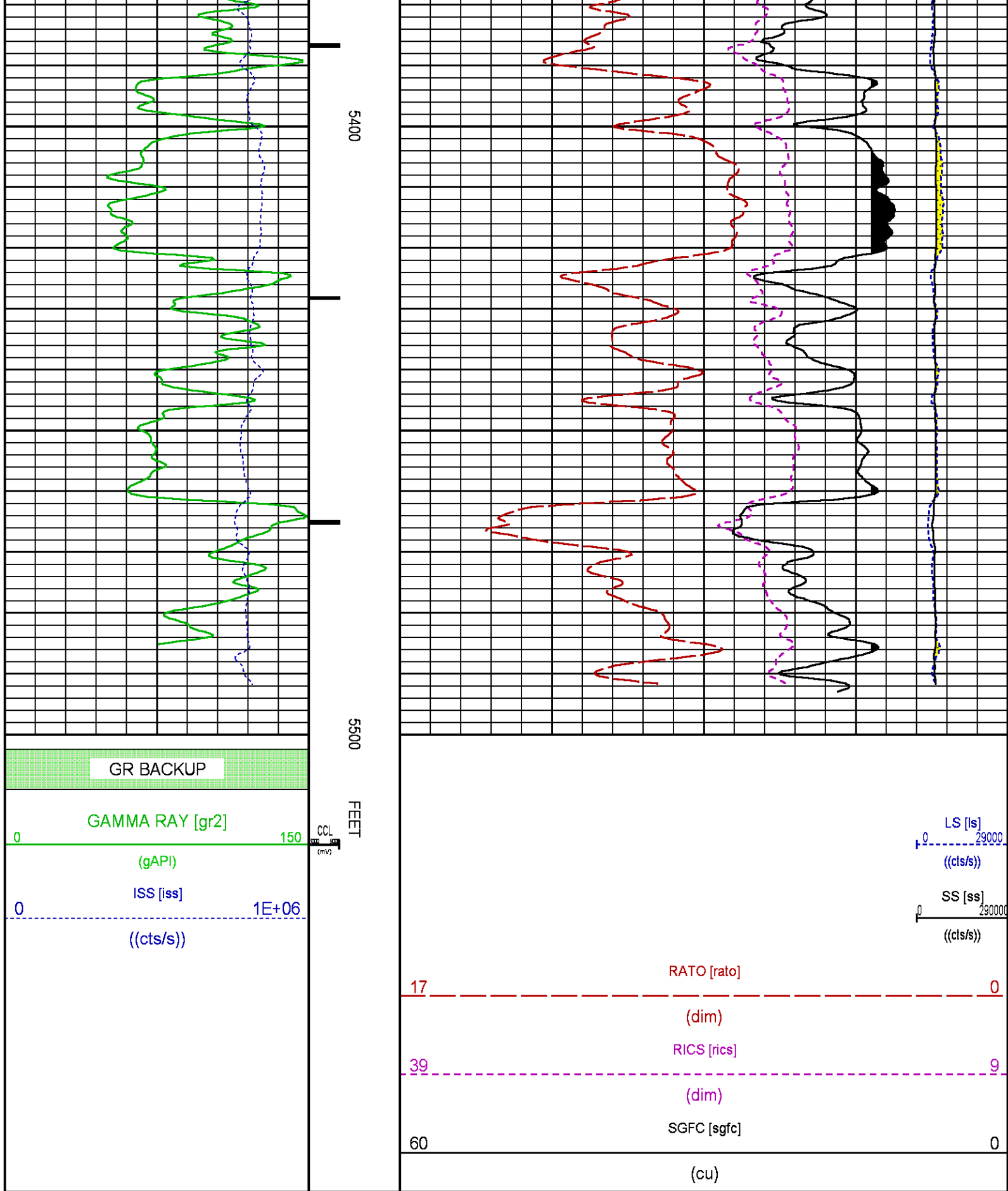
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	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	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation	: SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-17W/17W_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 5280 - 5500 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-13-17W/17W_RPM_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: GUNDERSON 0994_13_17W
Field	: VEGA-
File Interval	: 5258.25 - 5504.75 Feet
OCT	: p354h





GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LB 11621284 DATE/TIME PERFORMED: Fri May 11 07:38:13 2018

UNIT #: 3885TD SHAFT1 CALB JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	63.62	275.42	211.8	0.992	63.08	273.08	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LB 11621284 DATE/TIME PERFORMED: Fri May 11 07:40:26 2018

UNIT #: 3885TD SHAFT1 VERI JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	58.89	276.18	0.992	58.39	273.83	215.44
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 1006991 DATE/TIME PERFORMED: Mon May 7 15:09:32 2018

UNIT: 5753XD 111111 CALIBRATOR: 2437XB 112674 SOURCE: 8281AA 10430258 HOURS: 8281AA 88

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	794247	124	2139	2383	2237	120	8.0	1.0374
Interpolated	1300000	145	2128	2374	2232			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794247	6835	1065	142	25.87	0.15	24.10	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	794247	178007	27088	88699	31638	8729	53712	13968
Fit Quality %		0.926	0.946	0.726	0.765	0.956	0.682	0.966

	ISS	RBOR	RIN ISS/LS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	794247	1.43	4.46	29.33	14.79	10.16	3.63	3.85
		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 %		0.119	0.323	0.318	0.028	0.337	0.297	0.353
Reduced	1412538	1.43	4.47	29.36	14.77	10.20	3.64	3.86
		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

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 : 4.48'
Weight : 20 lbs
Series : 8248ED
Mnemonic : PCM
Measure Point: 1.00' CCL MP

GAMMA RAY, 1 11/16"

Diameter : 1.89"
Length : 2.17'
Weight : 10 lbs
Series : 2812LA
Mnemonic : GR

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

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

BULL PLUG 1 11/16"

TOTAL LENGTH: 33.24'
TOTAL WEIGHT: 140 lbs
MAX DIAMETER: 0" 1.70"

33.24'

CCL MP 25.19'

GR MP 22.64'

XLS MP 13.58'
LS MP 13.16'
SS MP 12.91'

TEMP MP 1.65'
PRES MP

0.00'

**BAKER
HUGHES**
a GE company



ECLIPS

COMPANY

LARAMIE ENERGY LLC

WELL

GUNDERSON 0994-13-17W

FIELD

VEGA

COUNTY

MESA

STATE

COLORADO

FILE NO:

CH136906

API NO:

05077105470000

LOCATION:

SHL: 1208' FSL & 1617' FWL

BHL: 1208' FSL & 1617' FWL

SEC 13

TWP 9S

RGE 94W

ELEVATIONS:

KB 7302 FT

DF

GL 7272 FT

DATE

22-Jun-2018