



FILE NO: CH137653	COMPANY LARAMIE ENERGY LLC
API NO: 05077103910000	WELL NICHOLS 0994-24-18W
	FIELD VEGA
	COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 2308' FNL & 2781' FWL BHL: 912' FSL & 1549' FWL SEC <u>24</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 KB KB	ELEVATION 24 FT ABOVE P.D.	ELEVATIONS: KB 7236 FT DF GL 7212 FT
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DATE	03-Jul-2018
RUN	1
TRIP	1
SERVICE ORDER	US137653
DEPTH DRILLER	7779 FT
DEPTH LOGGER	7730 FT
BOTTOM LOGGED INTERVAL	7730 FT
TOP LOGGED INTERVAL	2187 FT
TIME STARTED	10:00
TIME FINISHED	15:30
OPERATOR RIG TIME	5.5 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	72 FT
LOGGED CEMENT TOP	1040 FT
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	225 DEGF
REFERENCE LOG	BAKER HUGHES RAL
REFERENCE LOG DATE	24-Jun-2018
EQUIP. NO.	ML-4268
LOCATION	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: 6102' - 6122'

SJ: 6957' - 6978'

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11908682	FREE
1	1	TEL/CCL	8248ED	10460602	FREE
1	1	GR	2812LB	11621284	FREE
1	1	RPM	8281EA	10190985	FREE
1	1	RPM	8283PA	10068031	FREE
1	1	RPM	8281FA	10076673	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: Tue Jul 3 17:02:01 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-18W/p354h03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2157.993 ft BOTTOM DEPTH: 2807.912 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	"	"
	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_NICHOLS_0994-24-18W/18W_RPM_GS.fvpdf [5"/100' Scale]
Plot Interval : 2180 - 2821.5 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-18W/18W_RPM_GS.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : NICHOLS 0994-24-18W
Field : VEGA
File Interval : 2153.25 - 2821.75 Feet
OCT : p354h

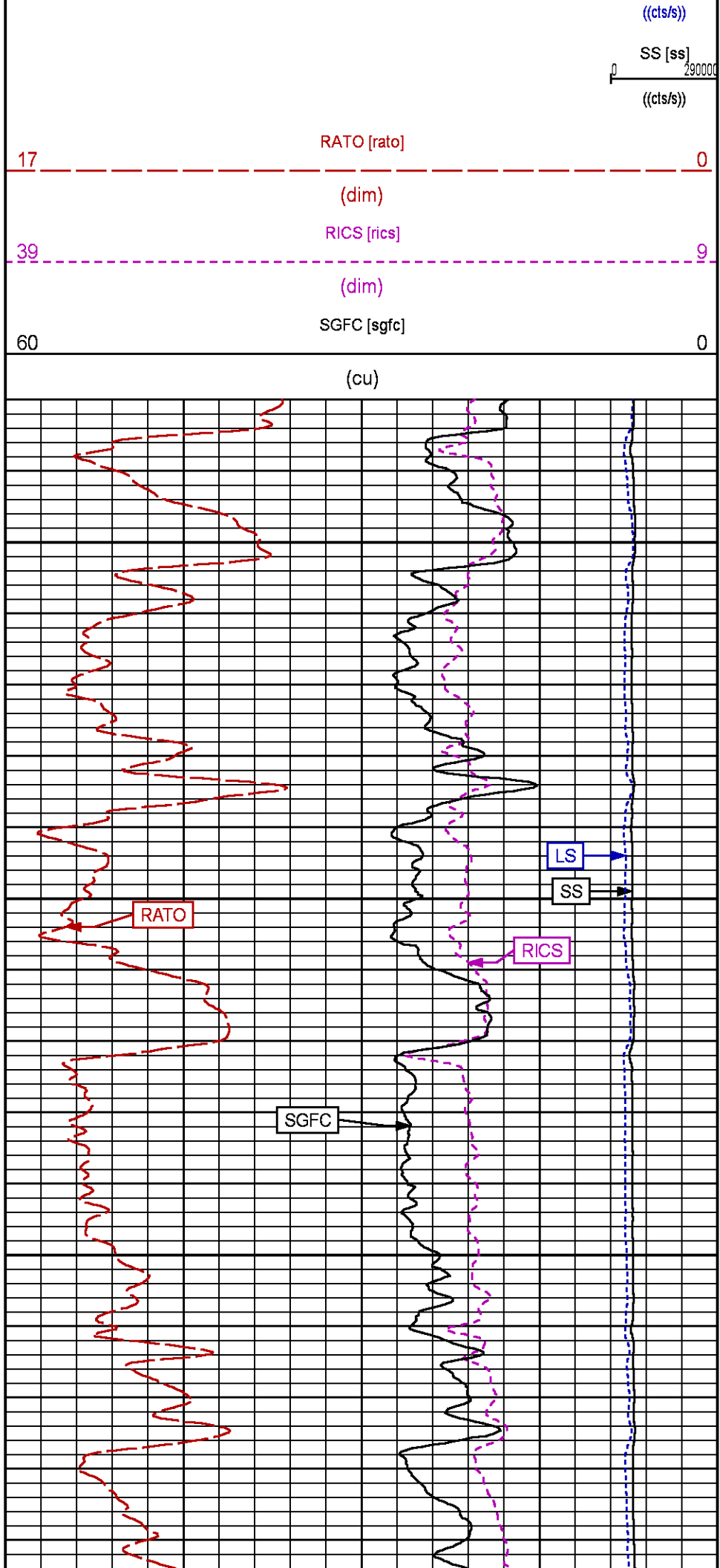
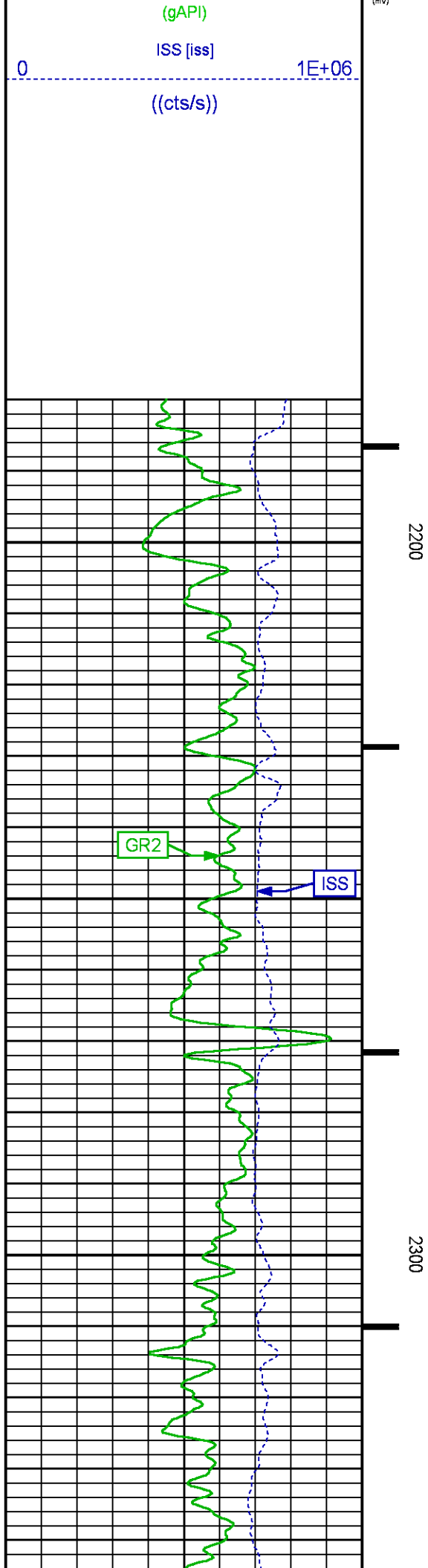
GR BACKUP

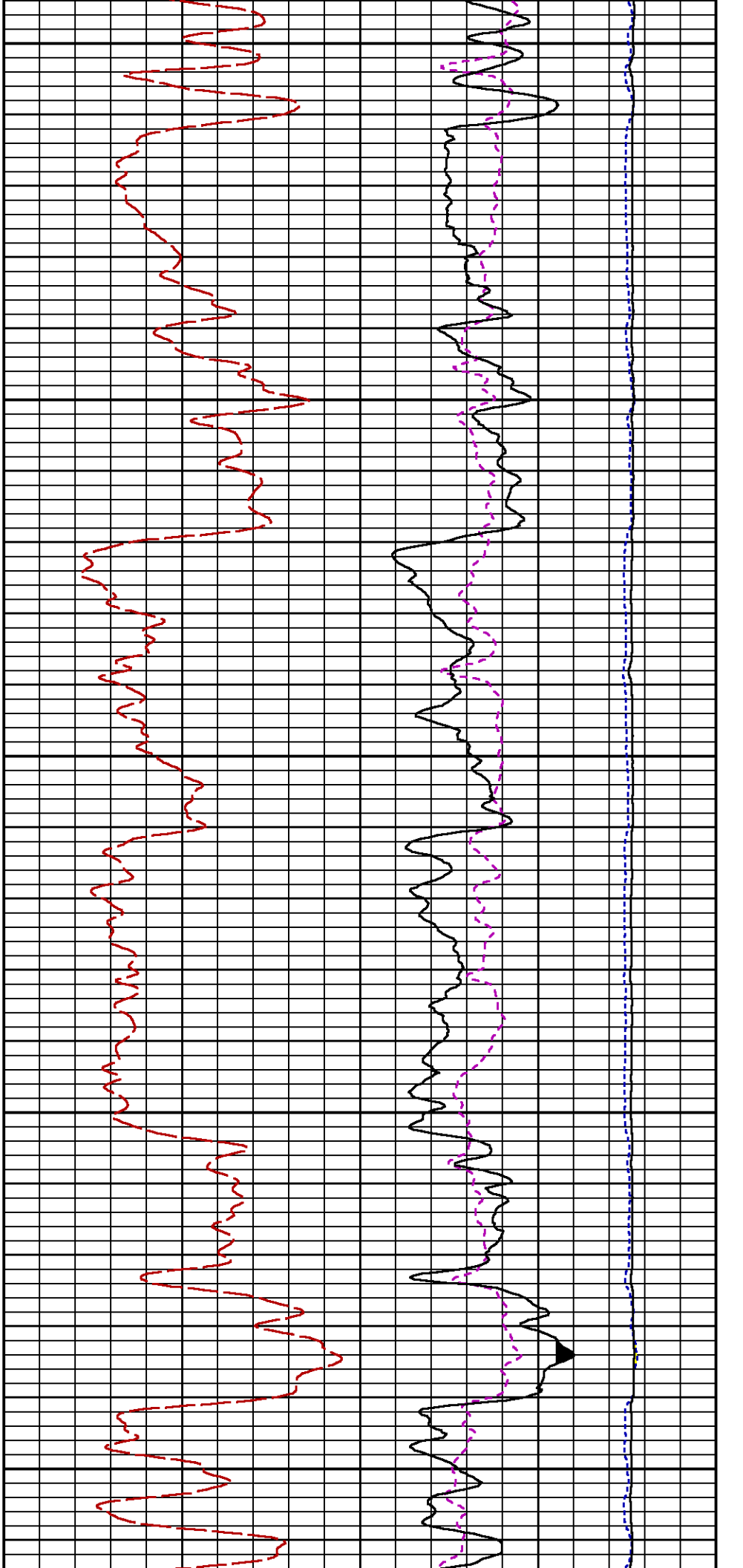
GAMMA RAY [gr2]

FEET

LS [ls]

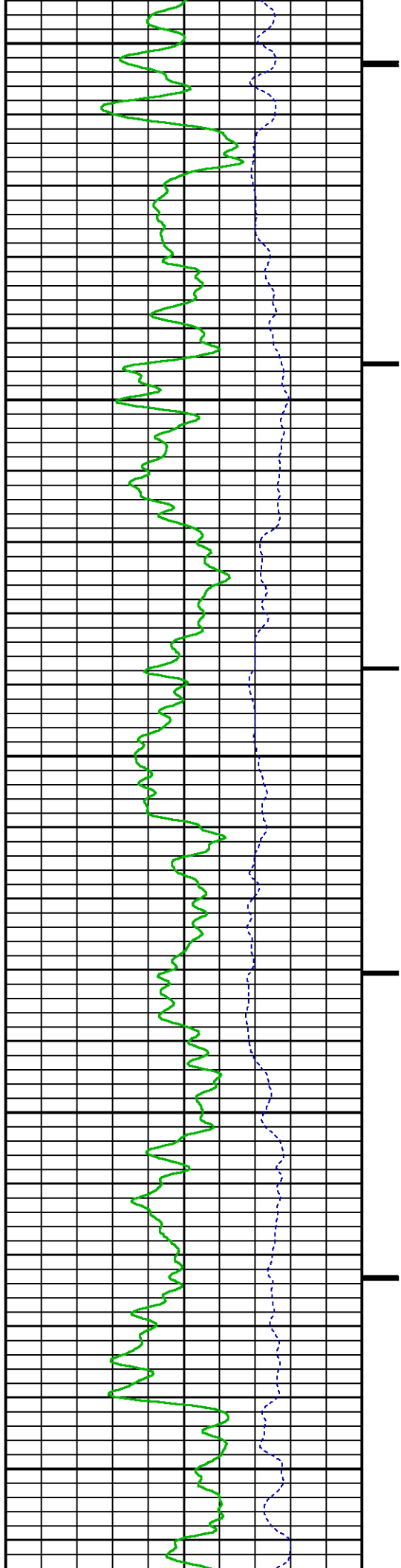
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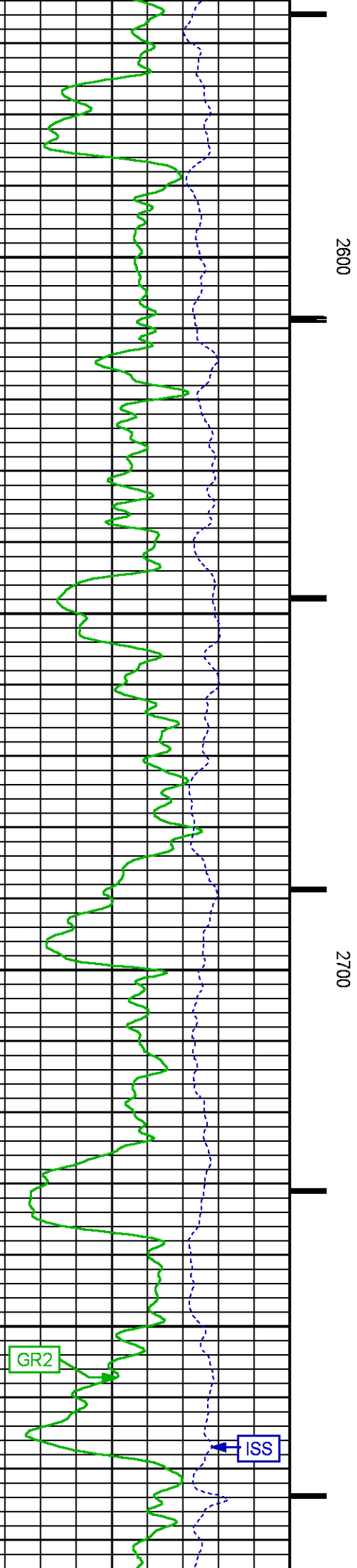
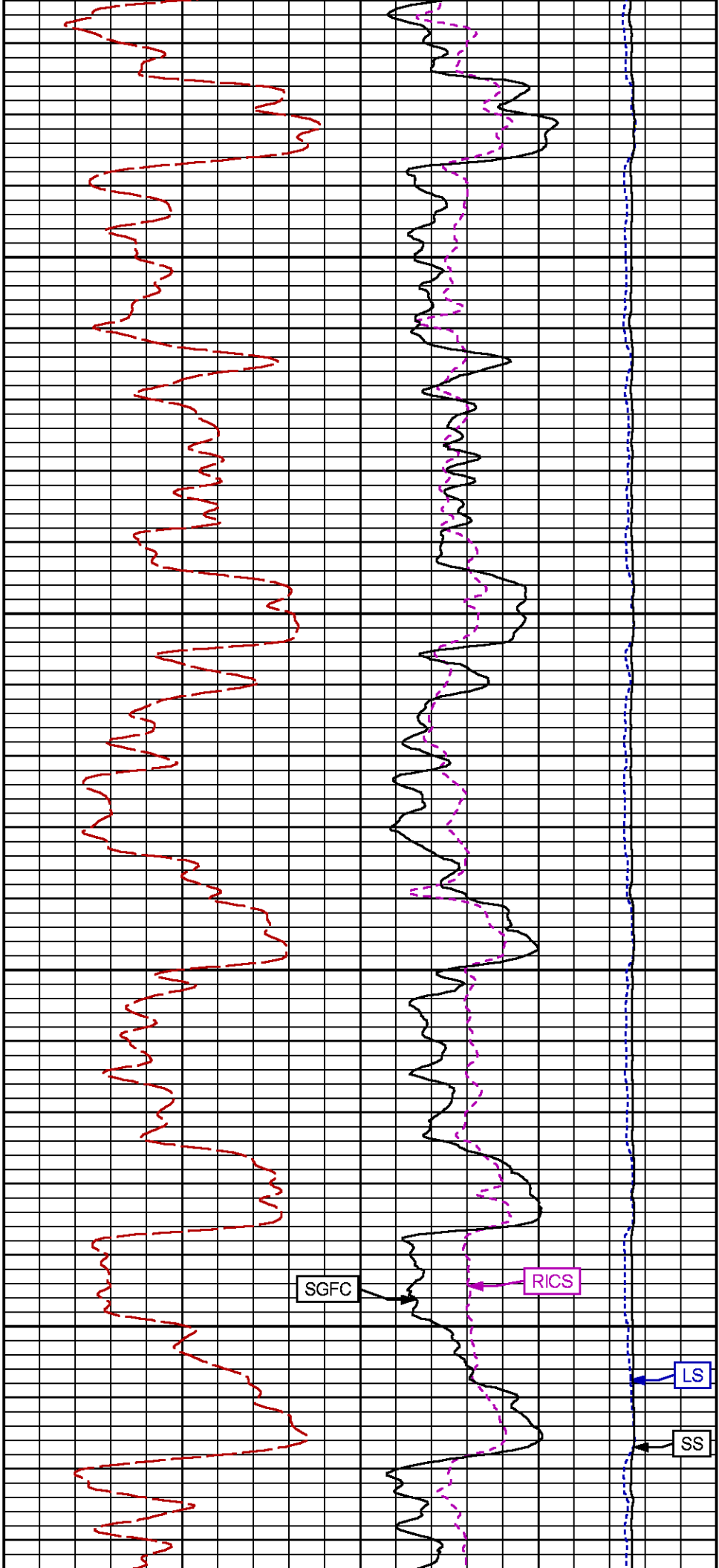


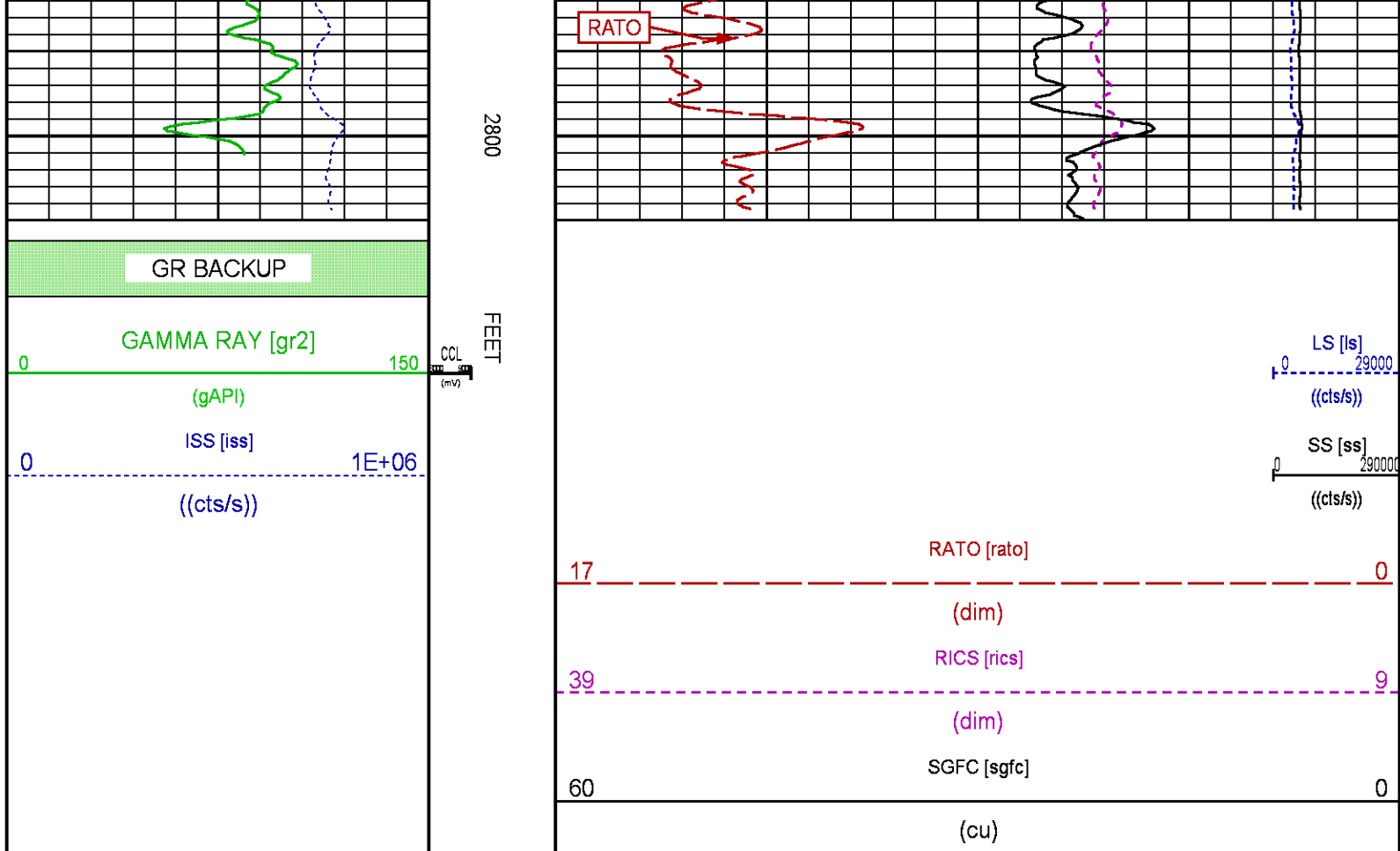


2400

2500







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: Tue Jul 3 17:07:40 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-18W/p354h02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4436.388 ft BOTTOM DEPTH: 7727.752 ft

SYMMETRIC FILTER

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

RPM PROCESSING

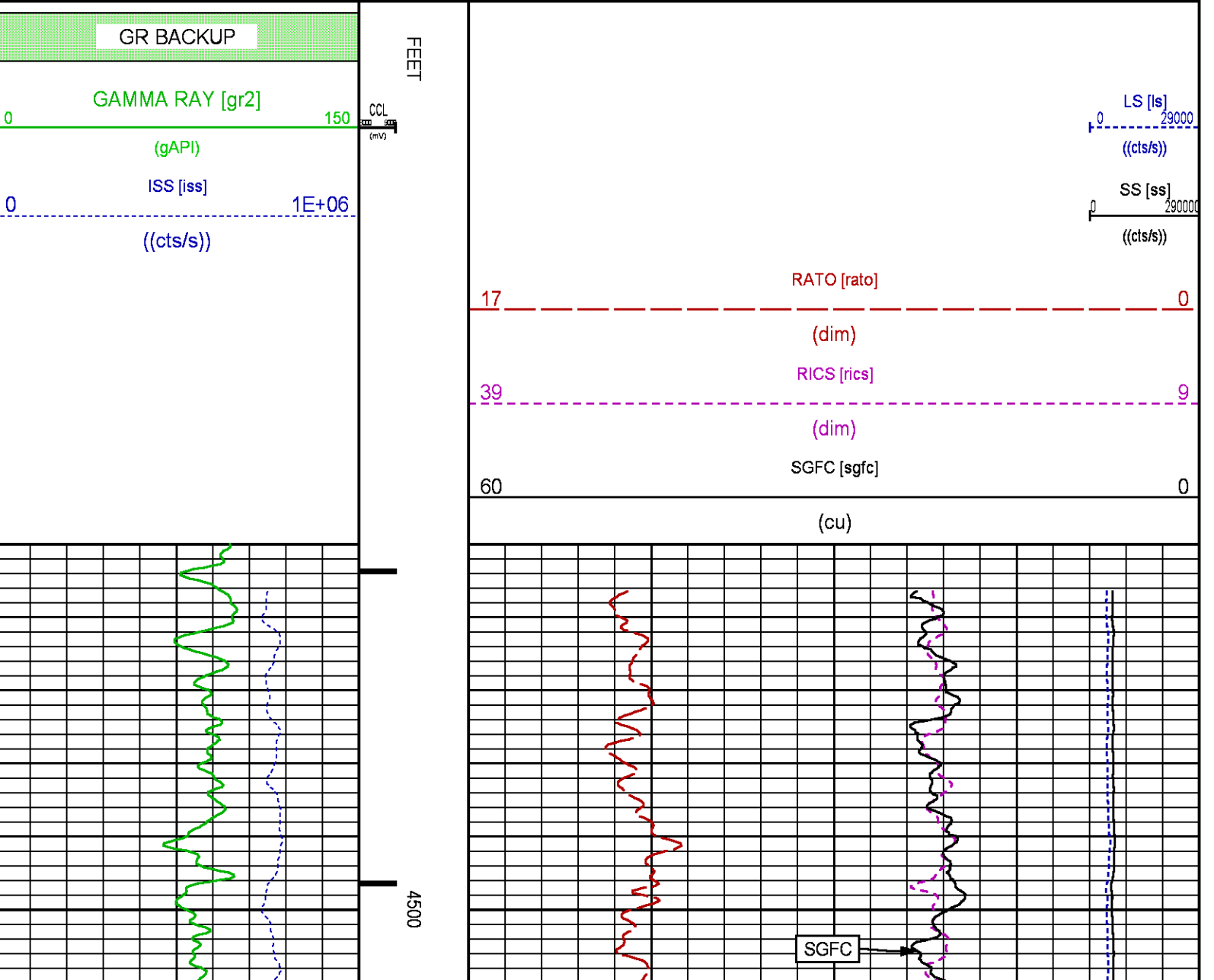
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP BOTTOM
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	7.88	in	" "
	LARGEST CASING OD	4.50	in	" "
	MATRIX	SANDSTONE		" "

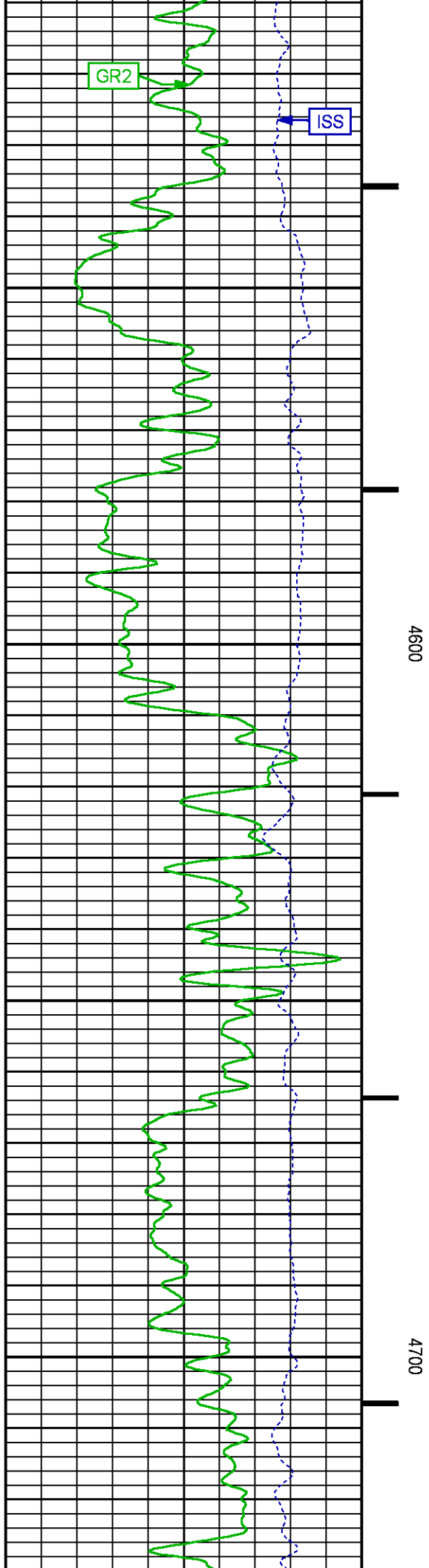
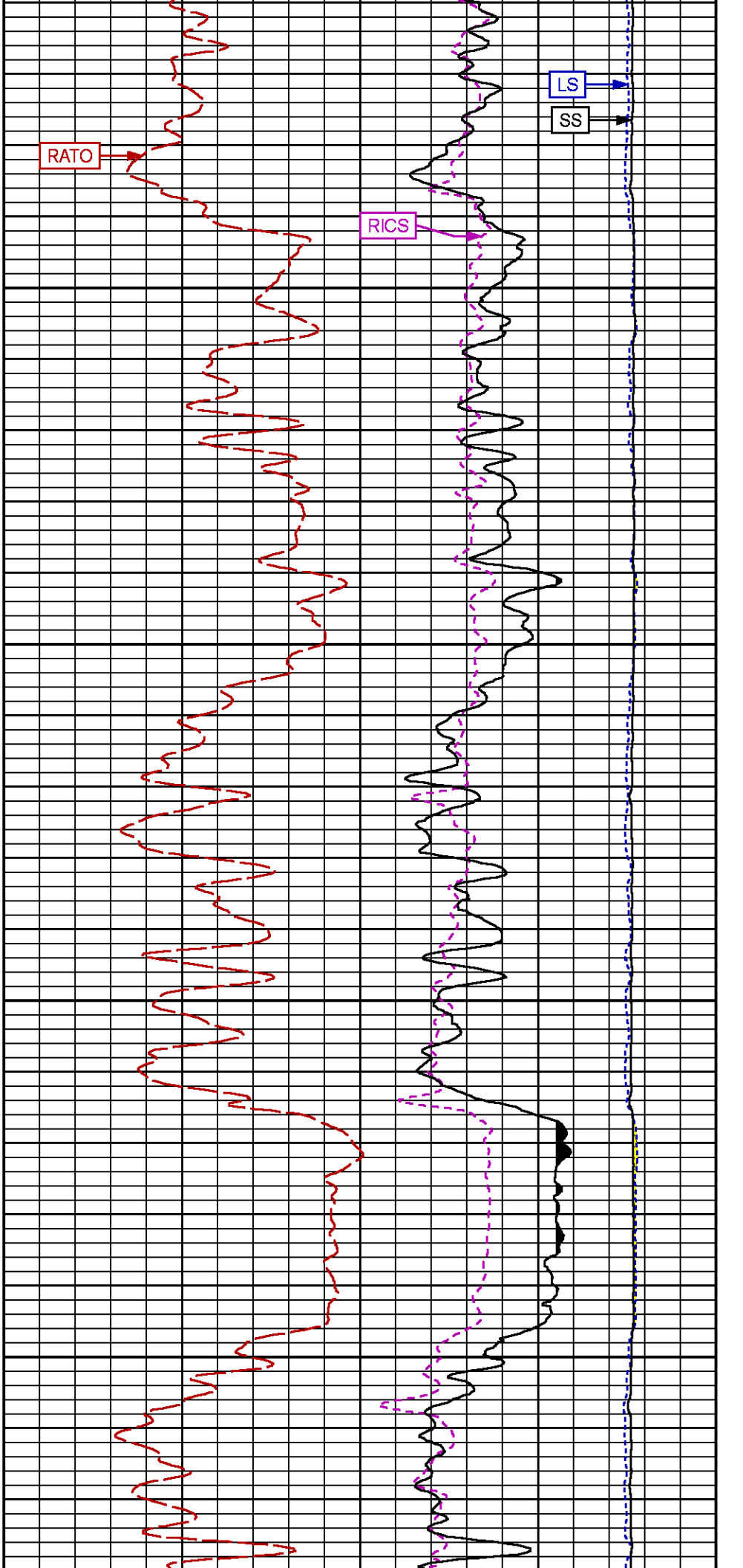
CURVE DESCRIPTION REPORT

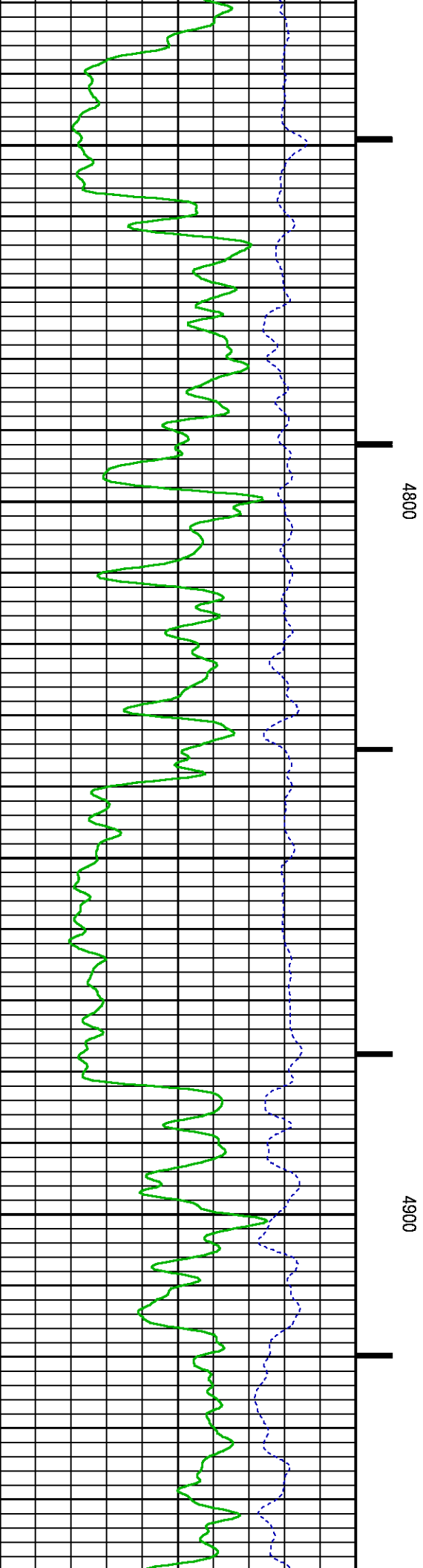
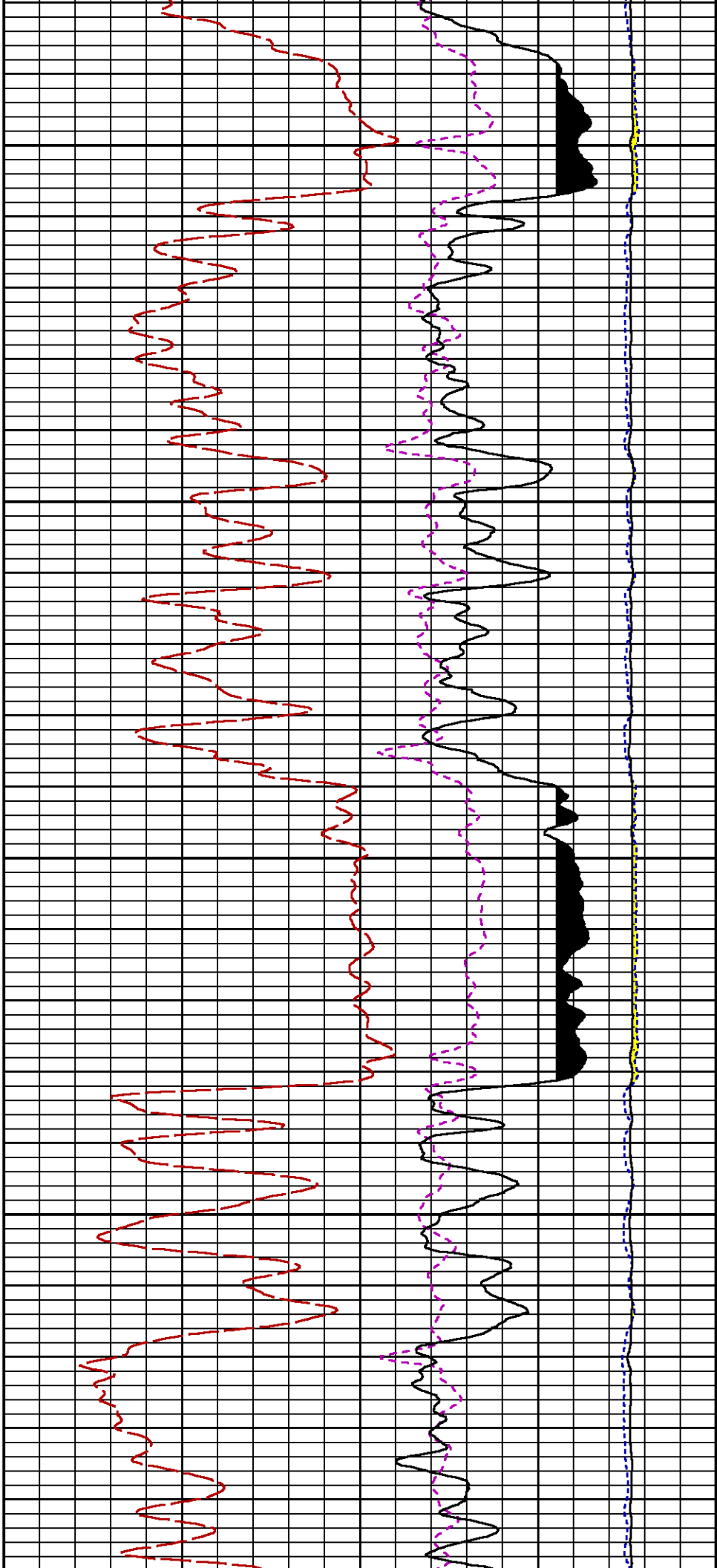
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC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

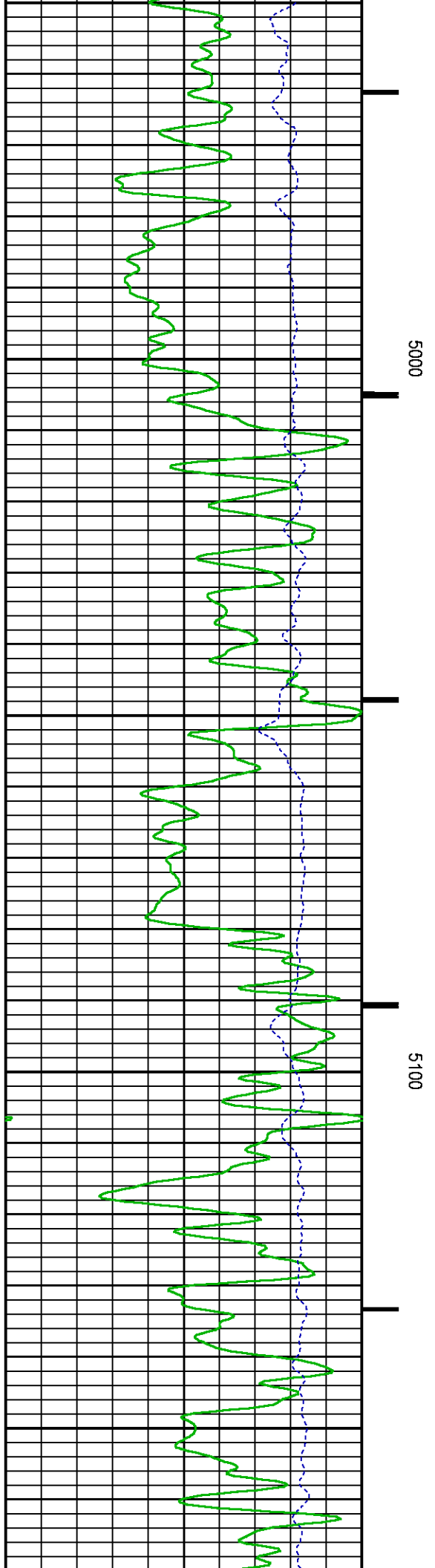
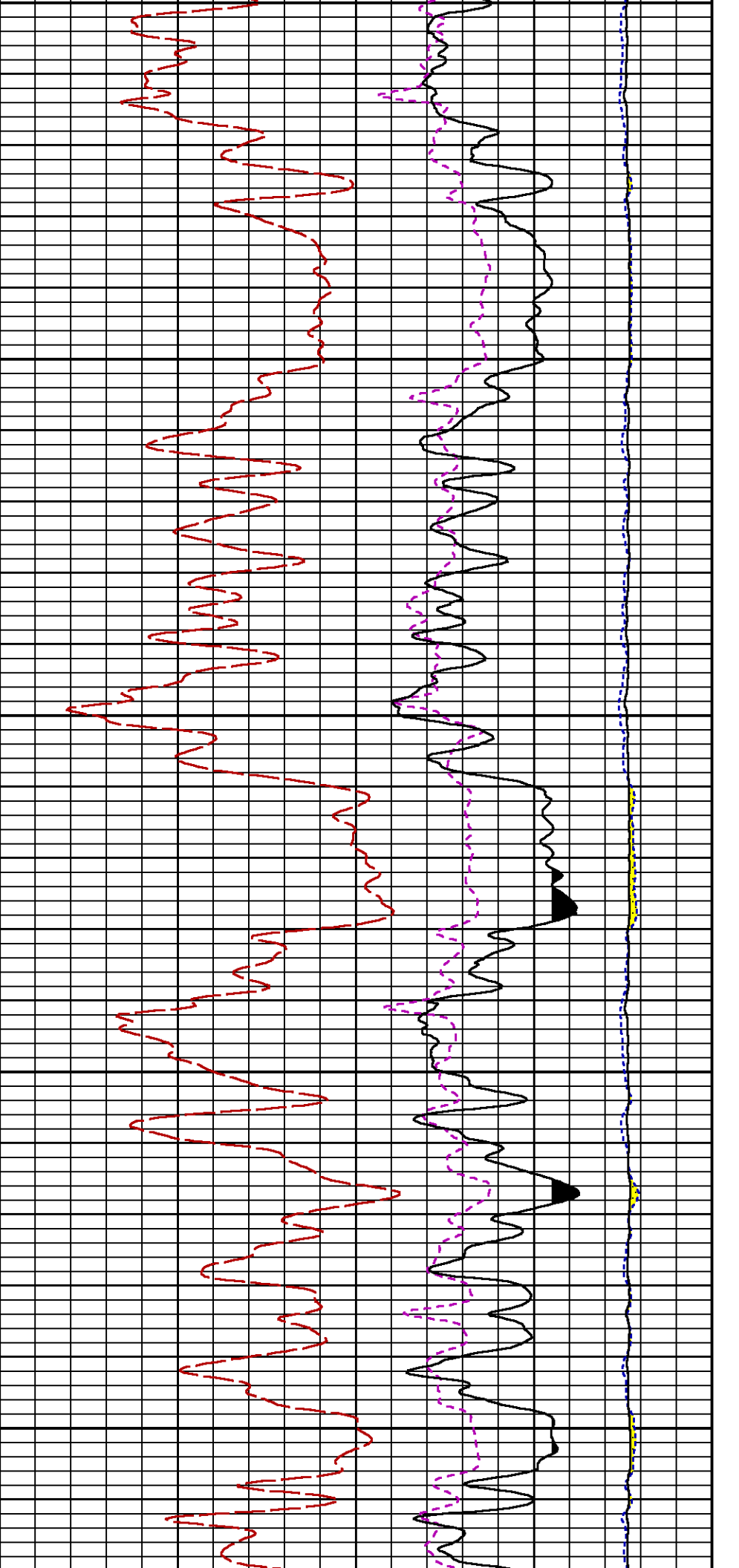
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

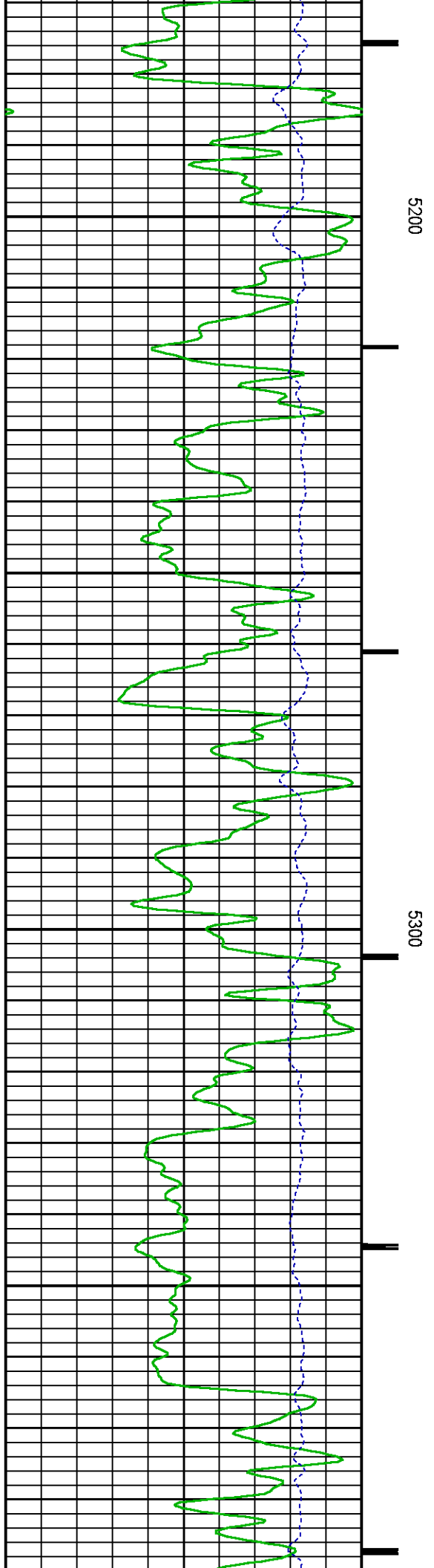
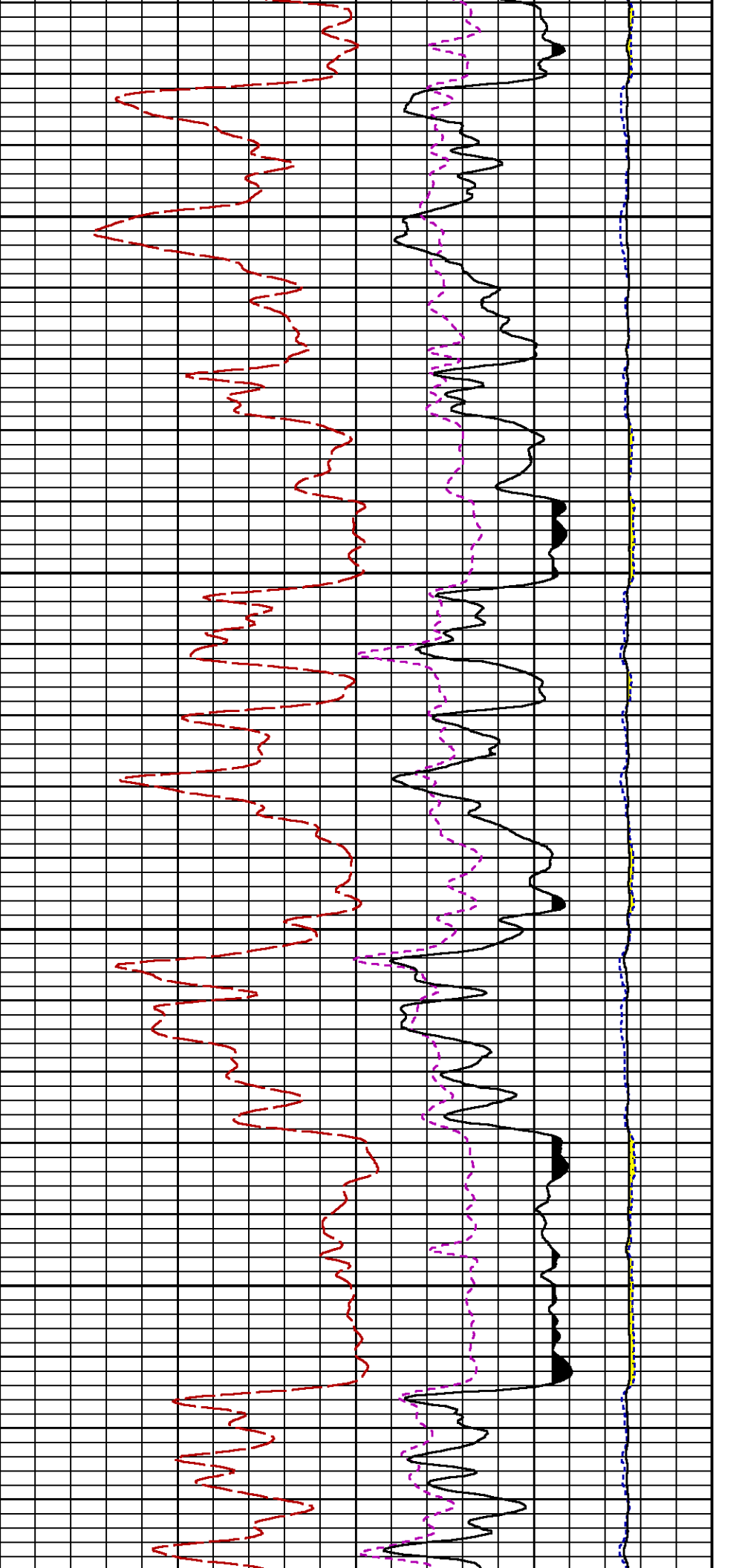
Presentation	: SysA:/dat1a/LARAMIE_NICHOLS_0994-24-18W/18W_RPM_WF.fvpdf [5"/100' Scale]
Plot Interval	: 4450 - 7741.75 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-18W/18W_RPM_WF.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: NICHOLS 0994-24-18W
Field	: VEGA
File Interval	: 4430.75 - 7742 Feet
OCT	: p354h

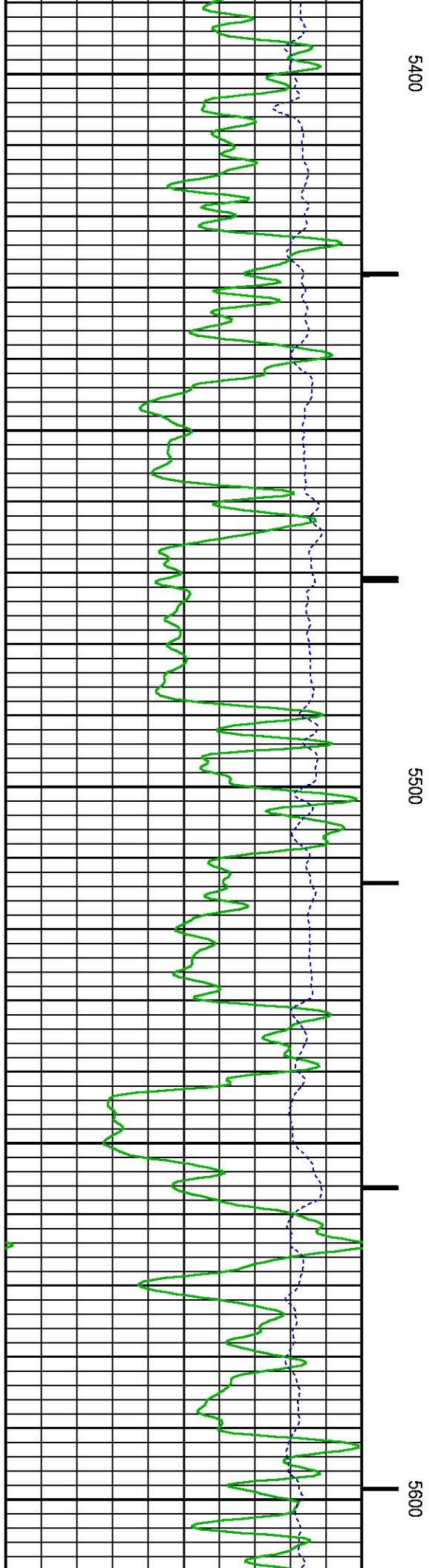
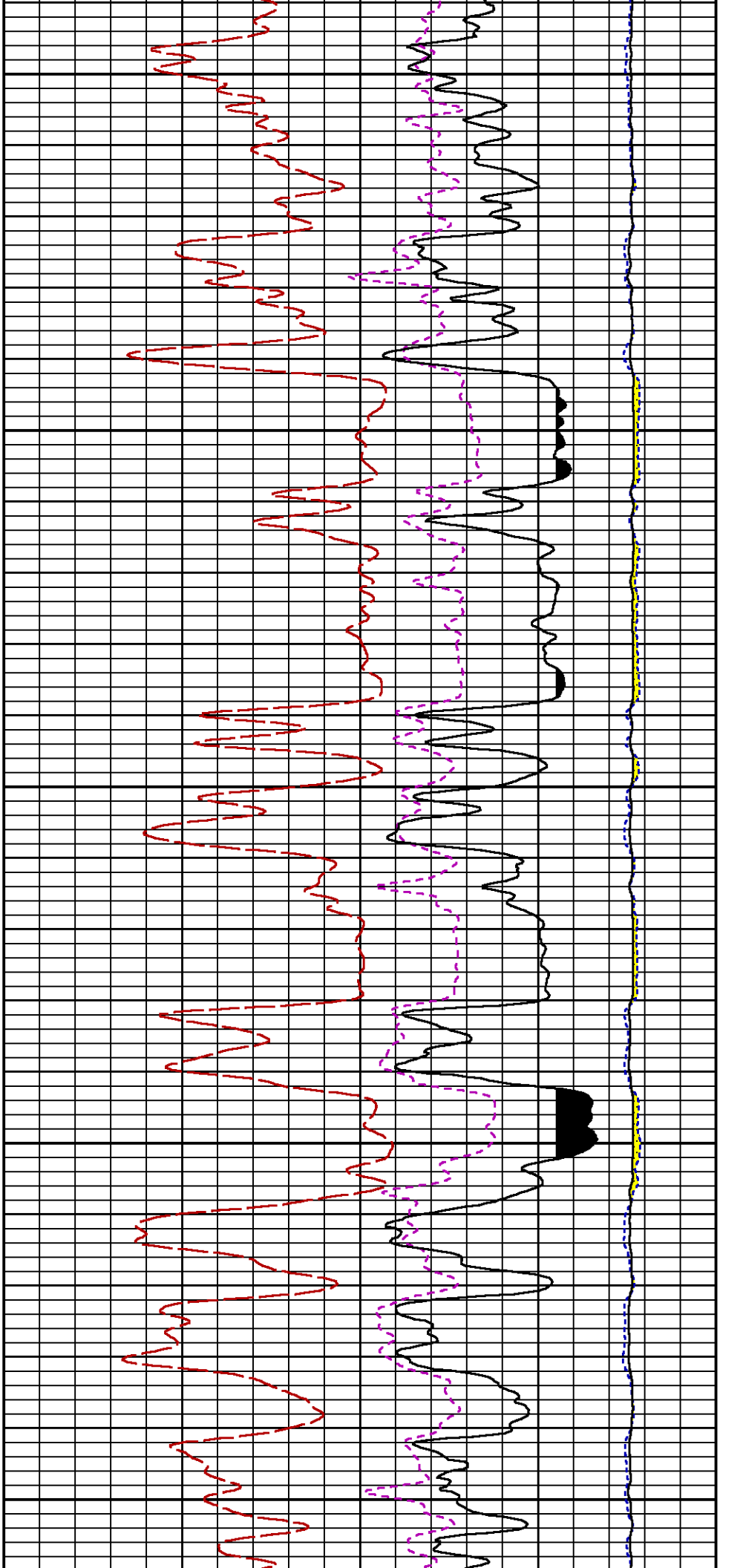


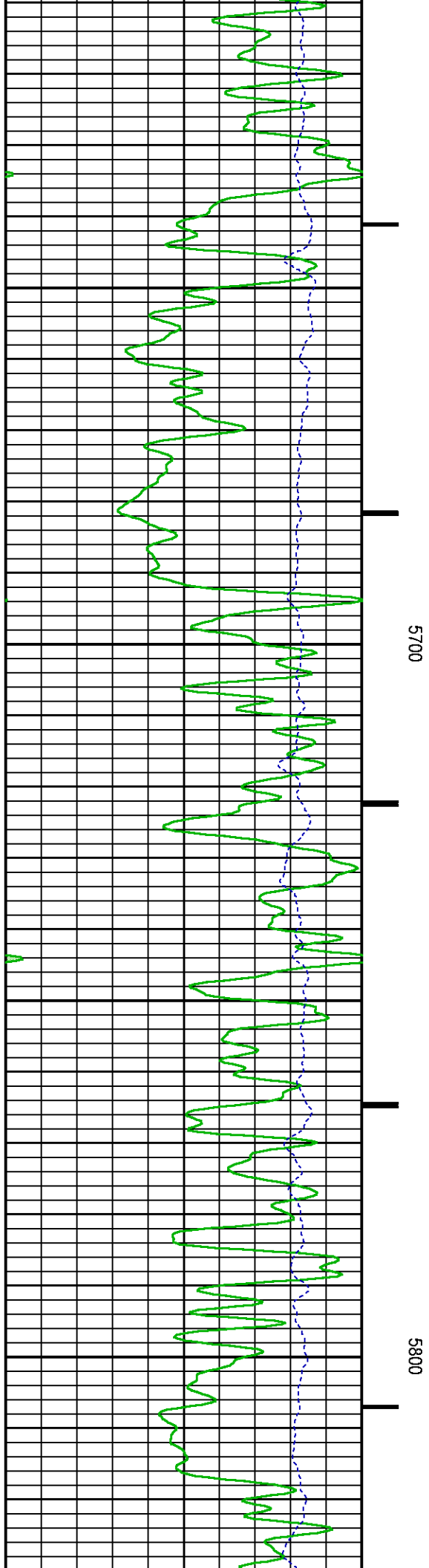
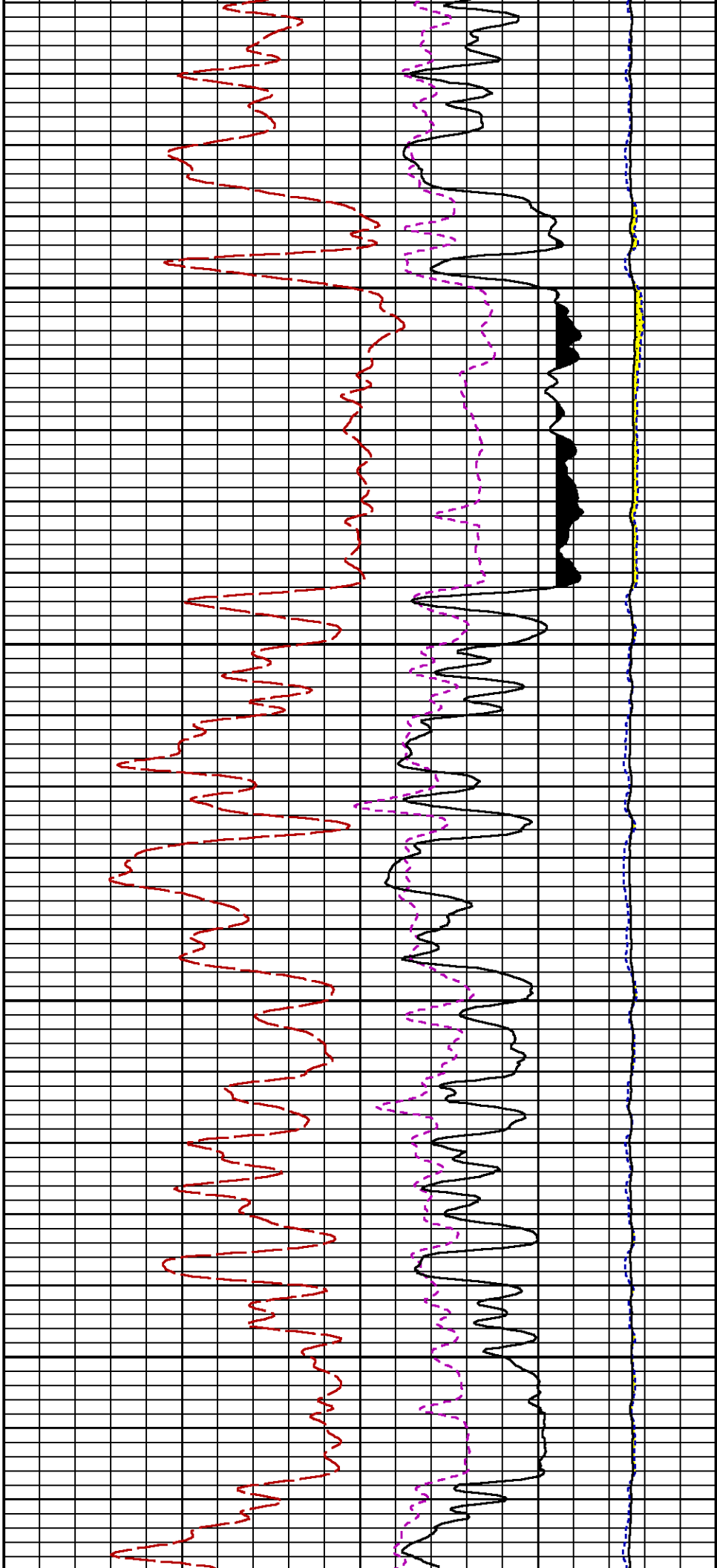


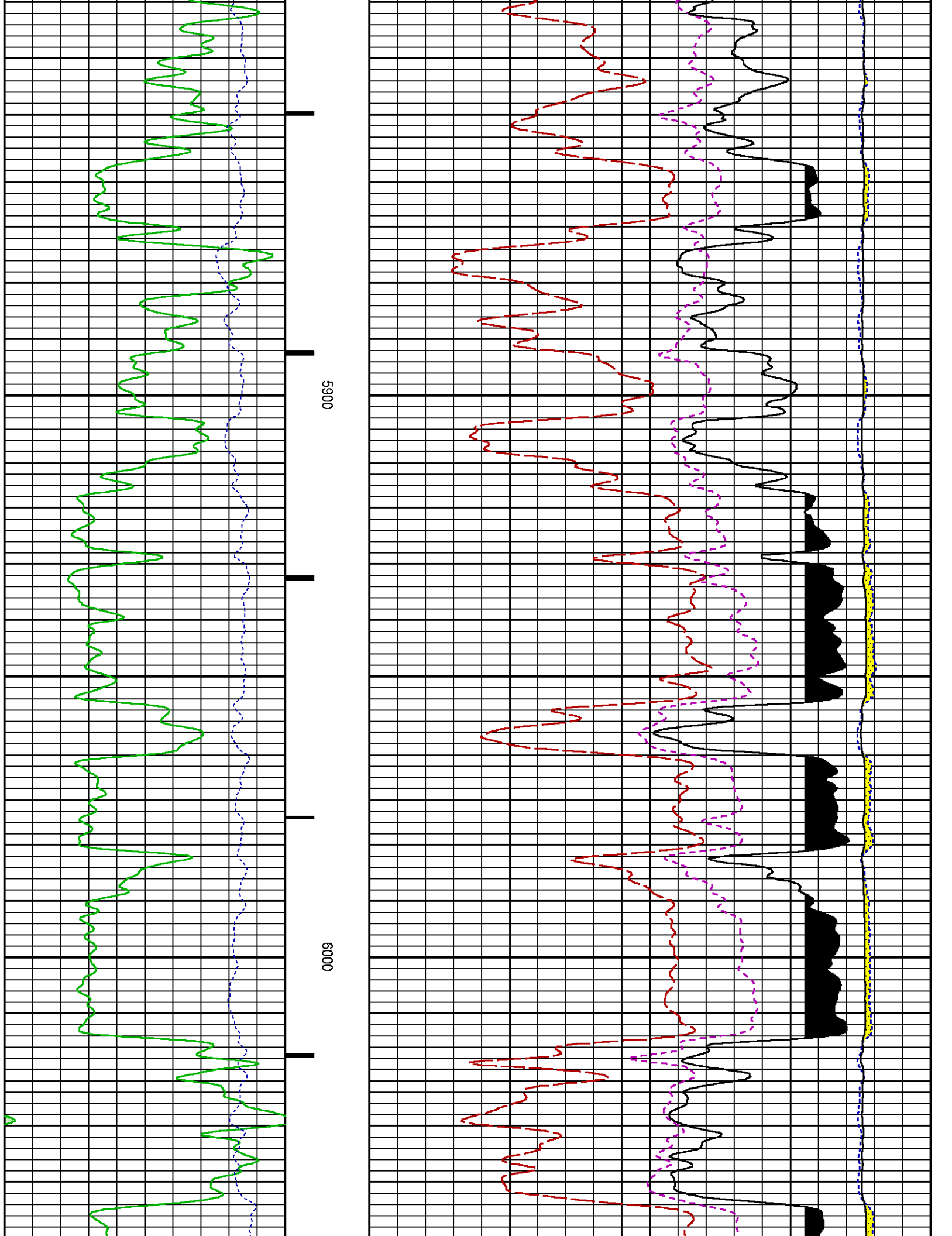


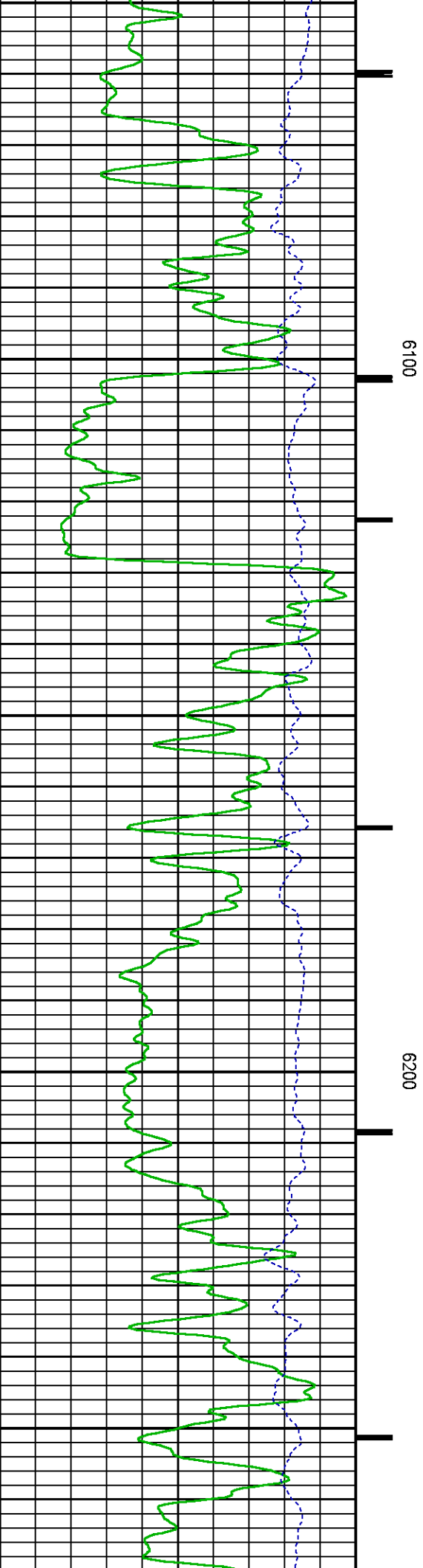
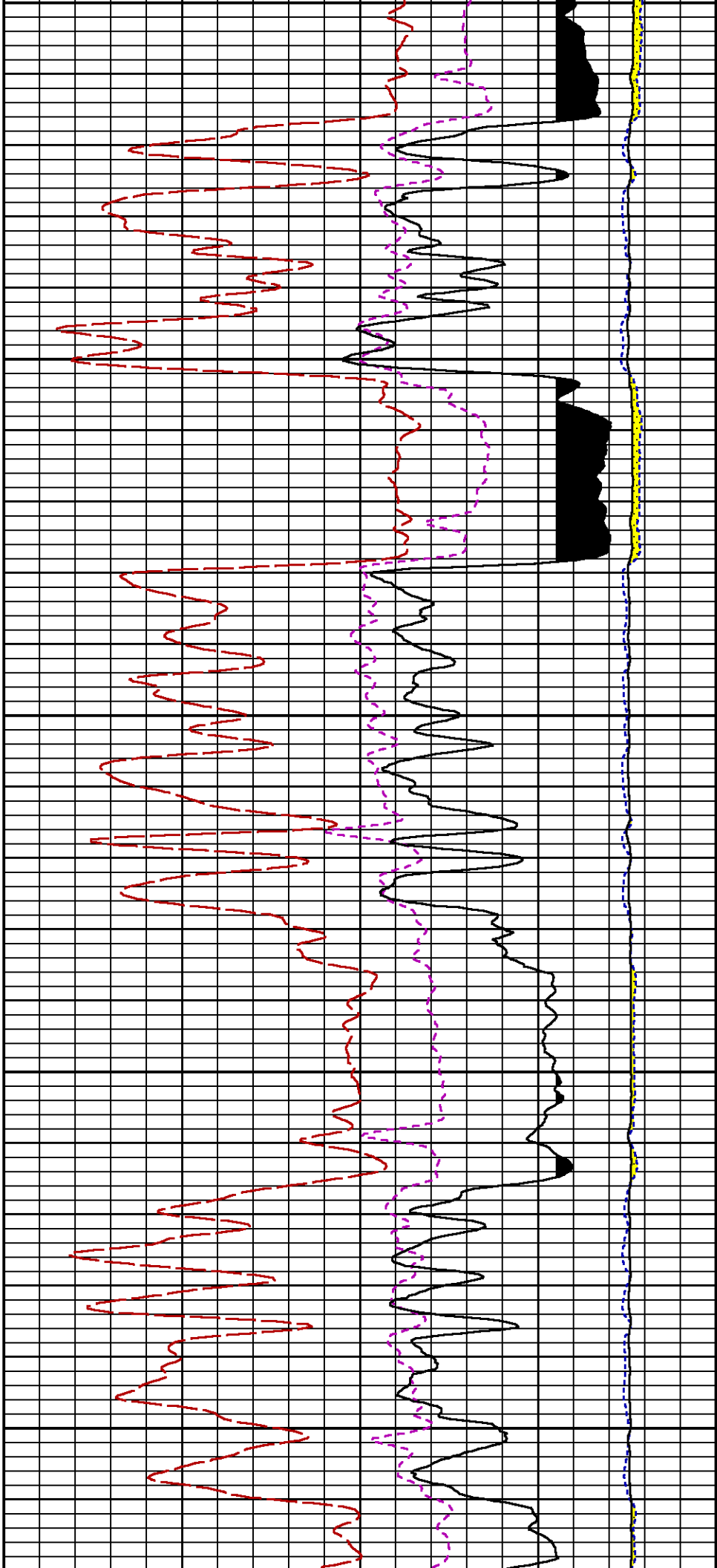


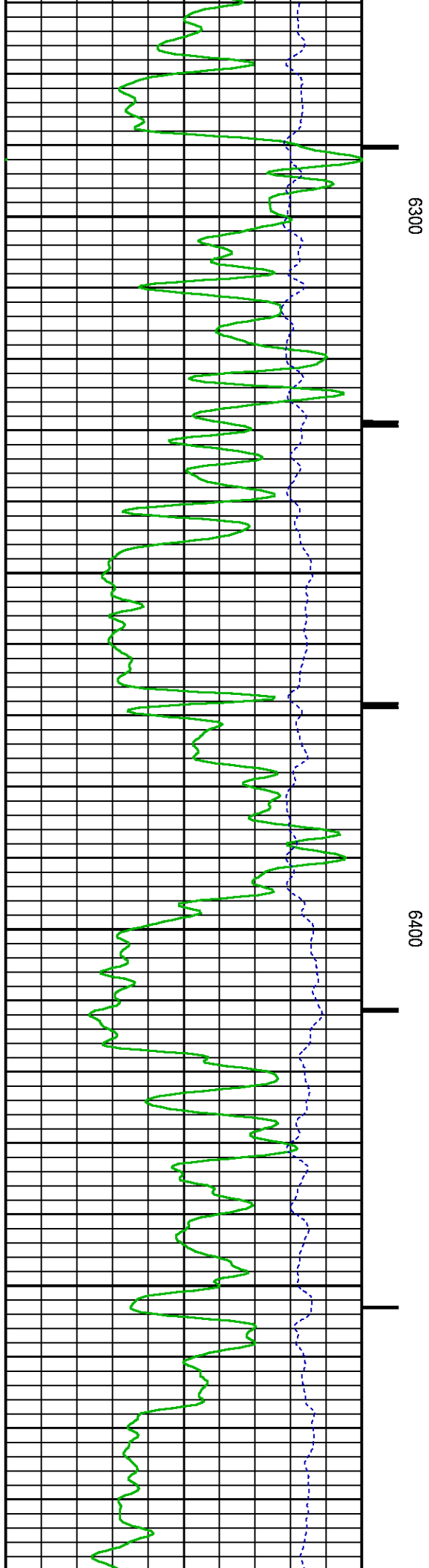
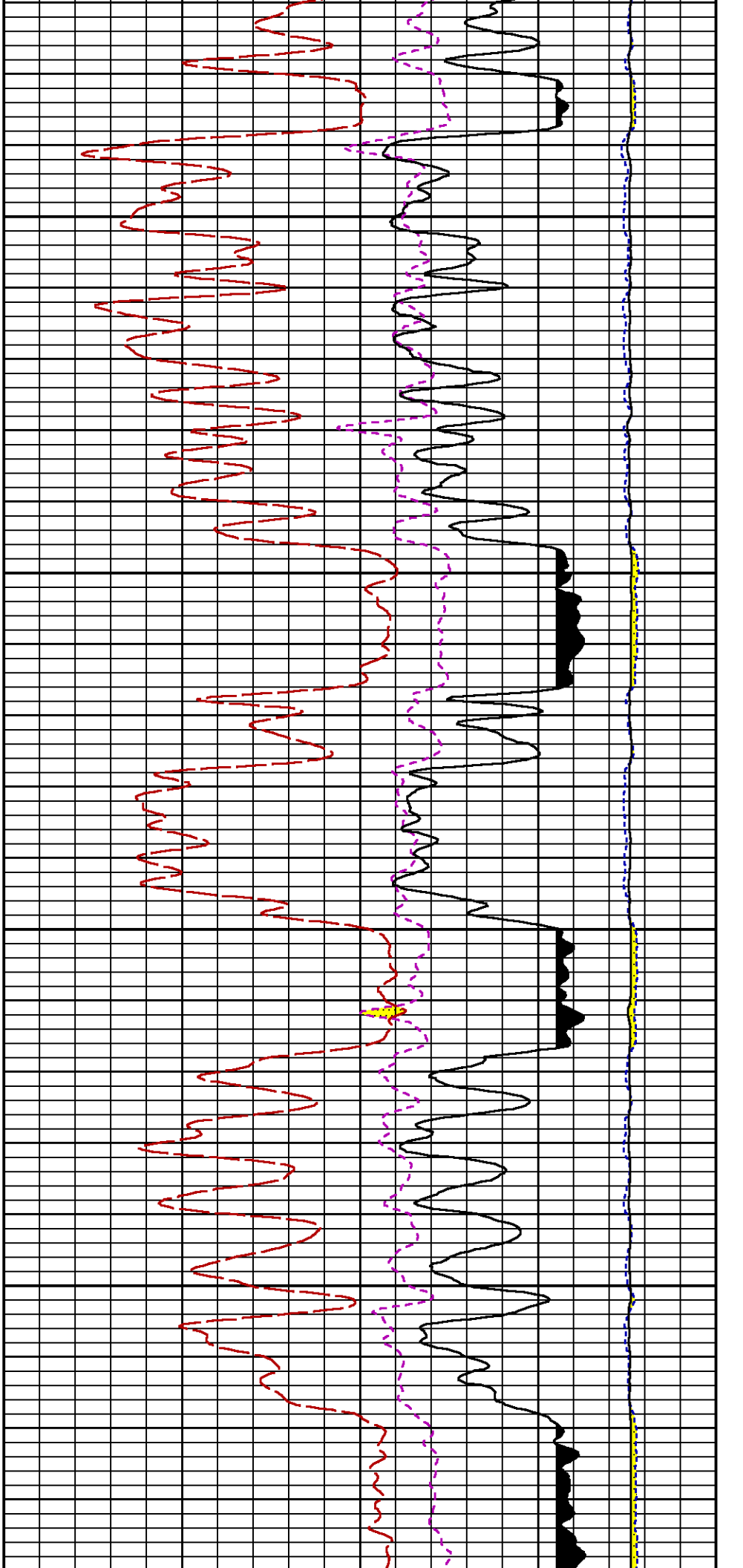


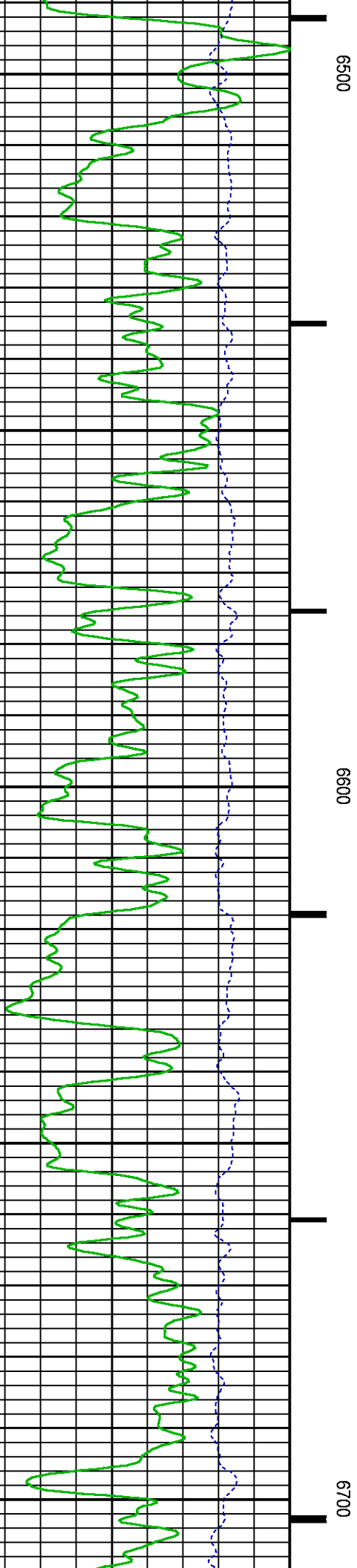
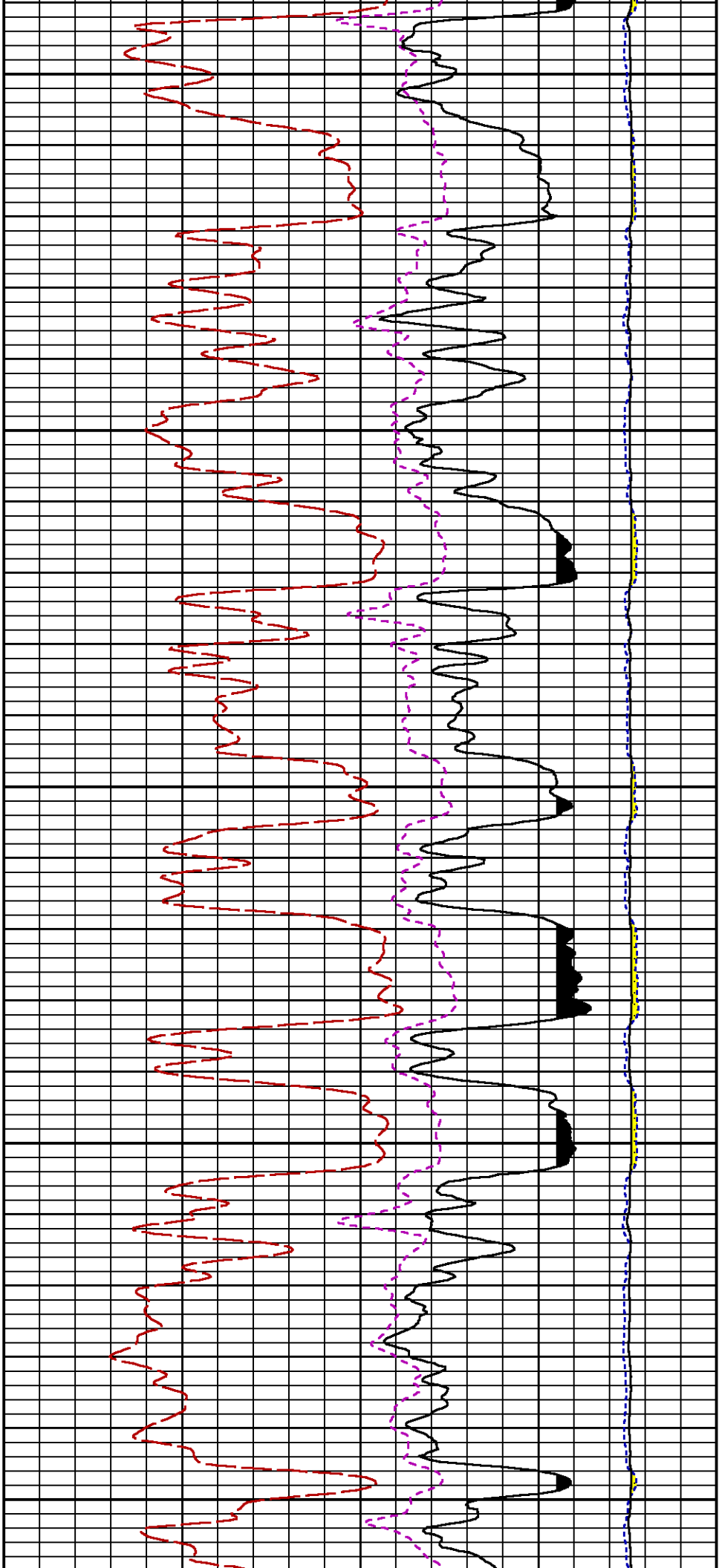


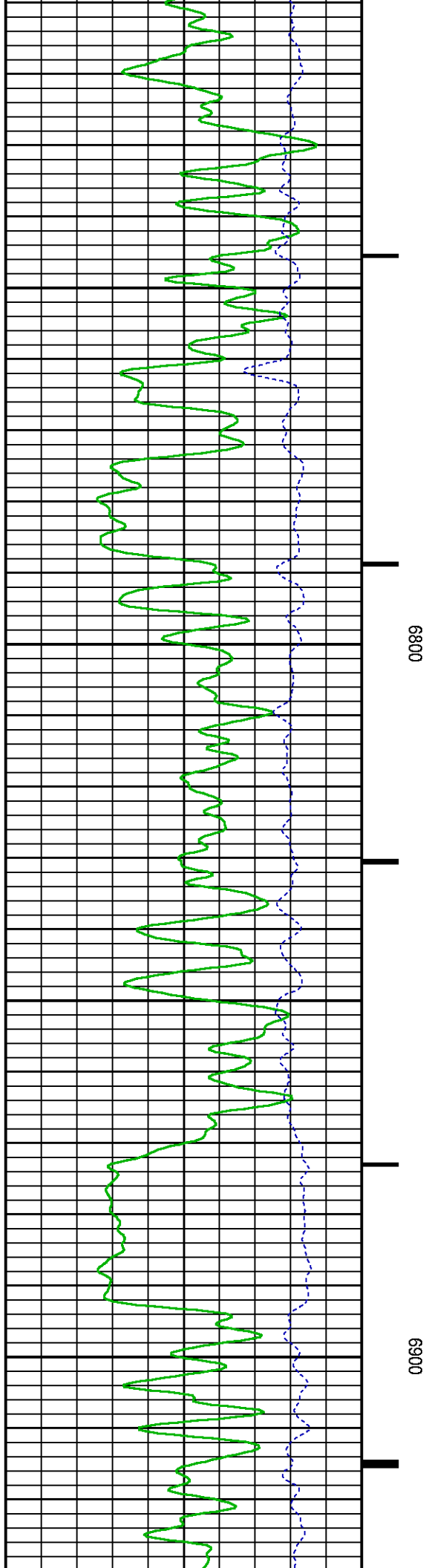
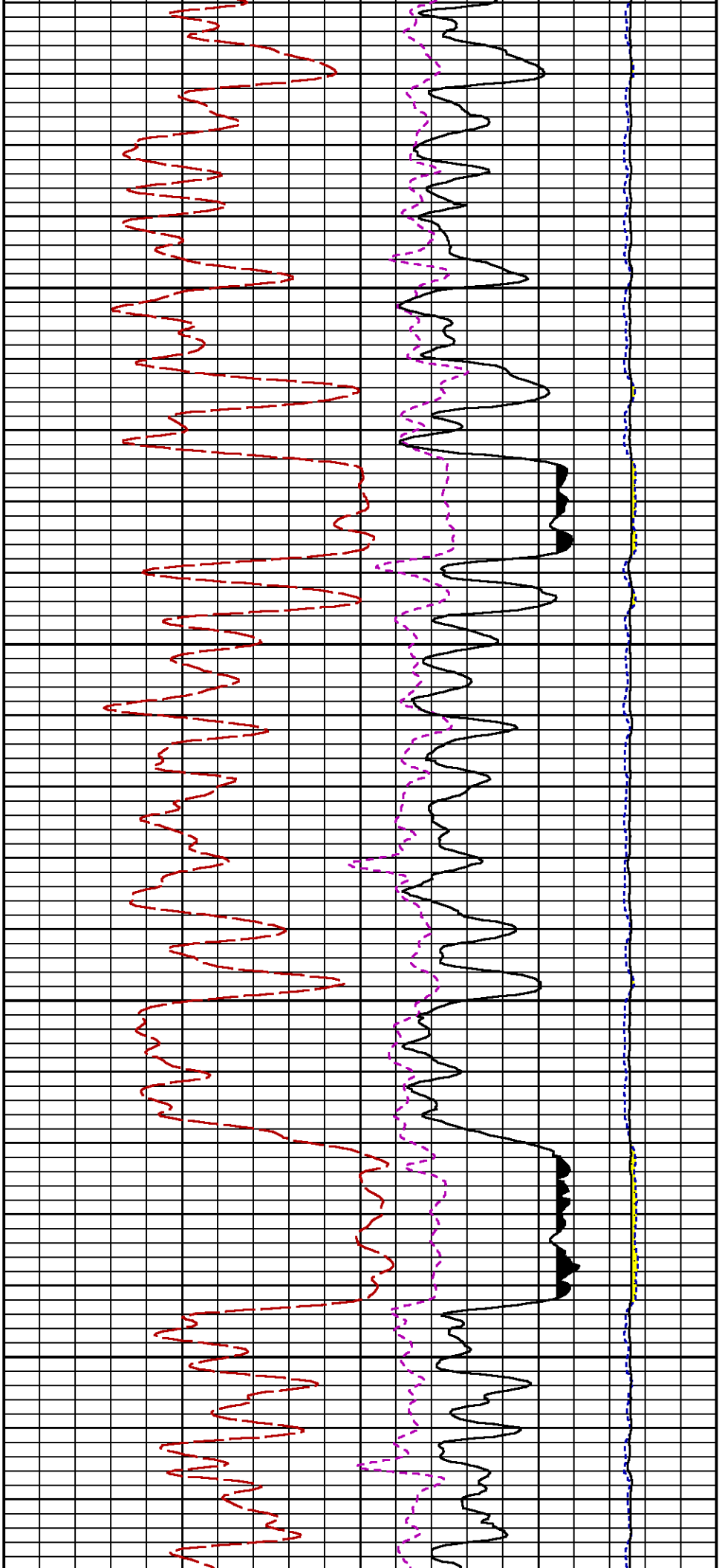


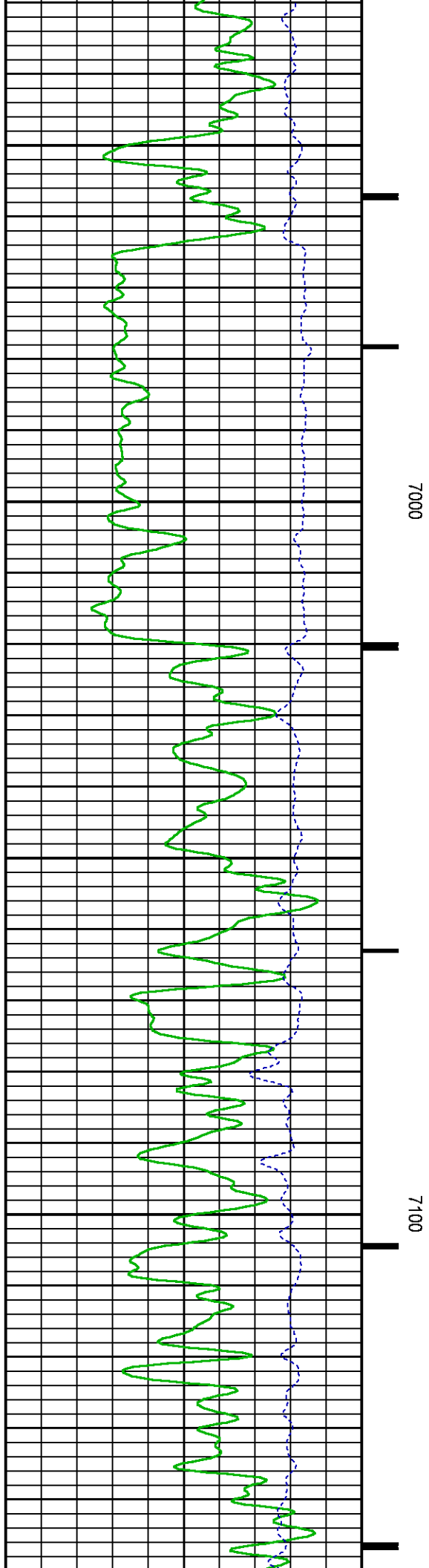
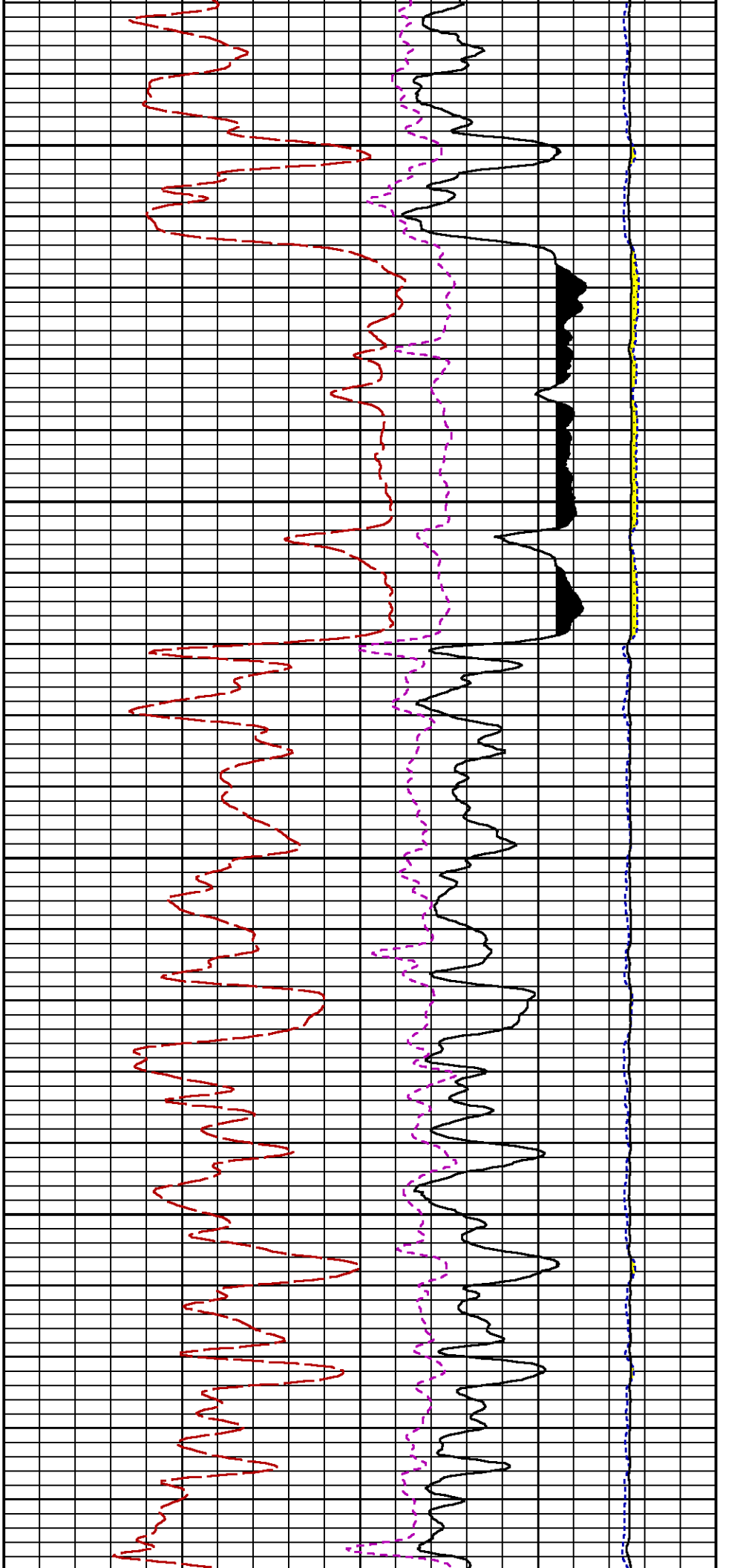


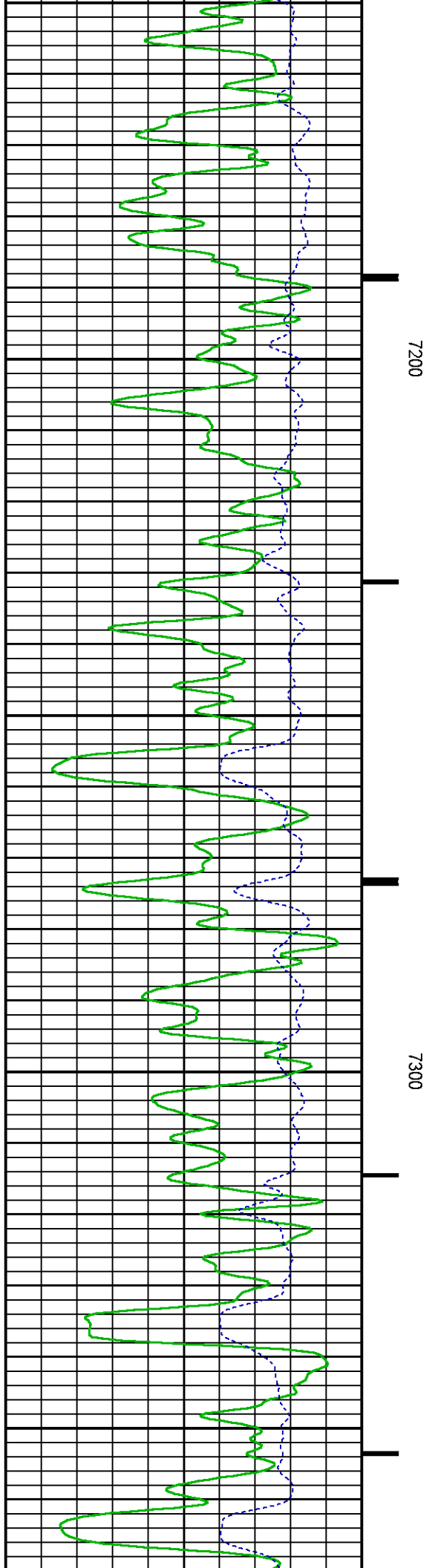
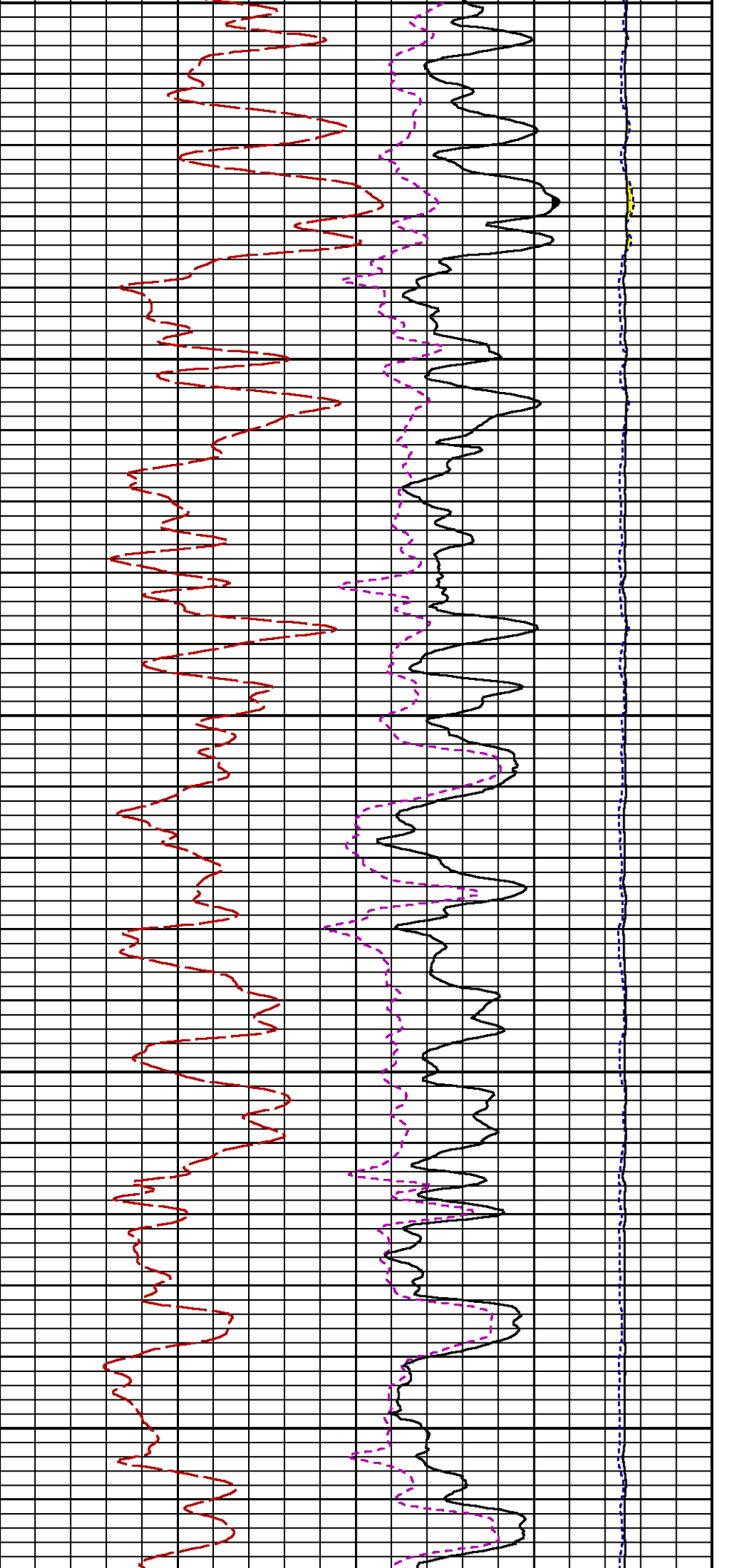


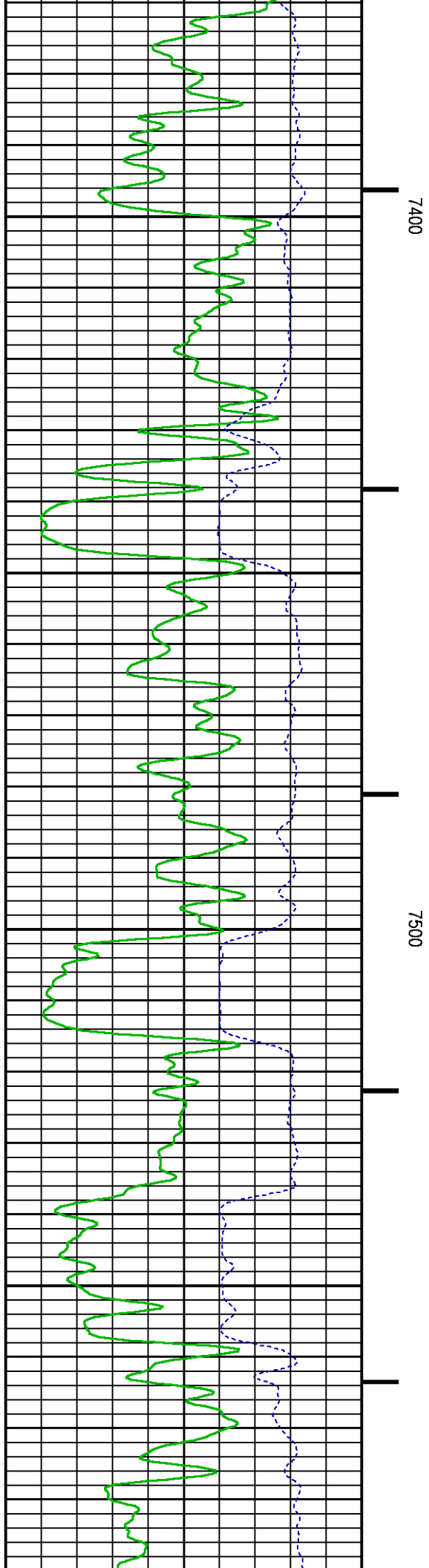
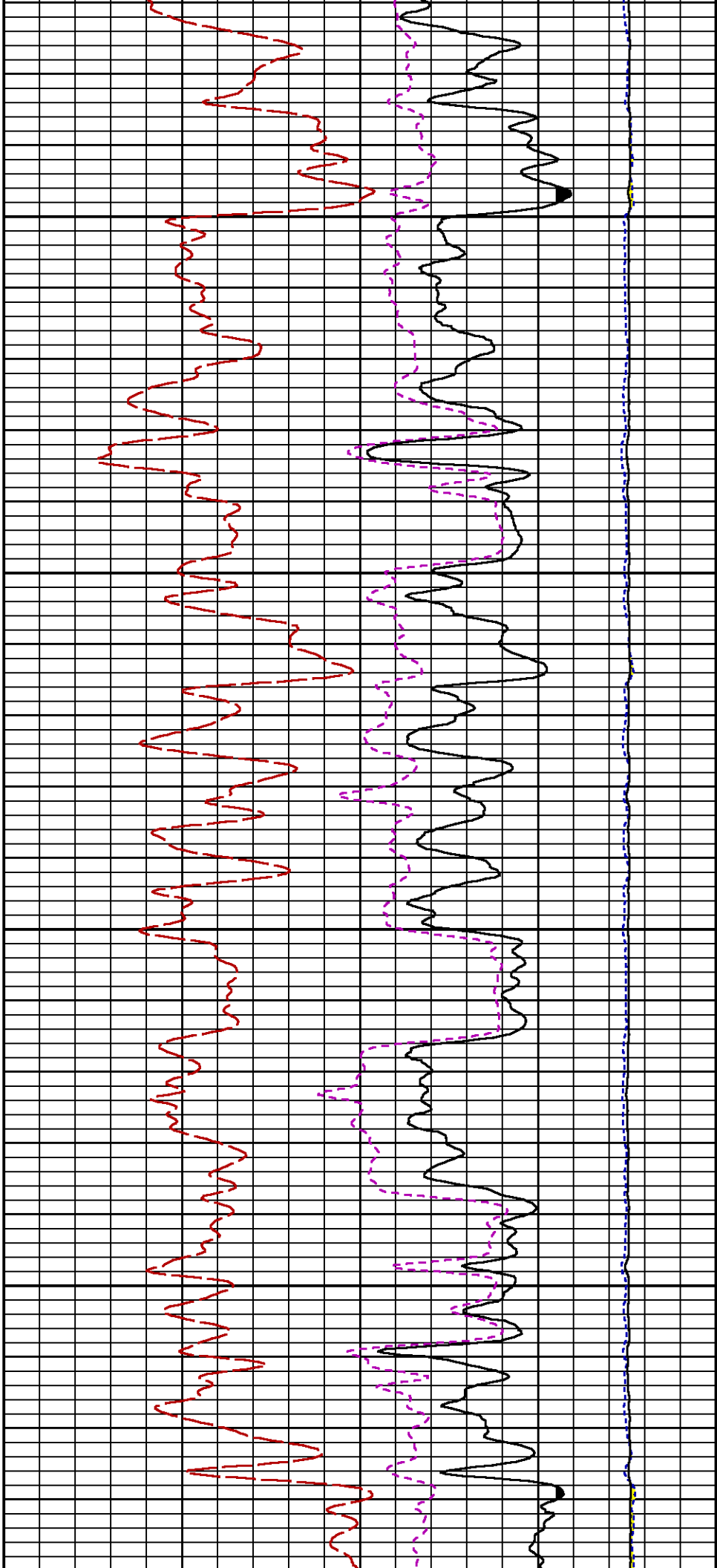


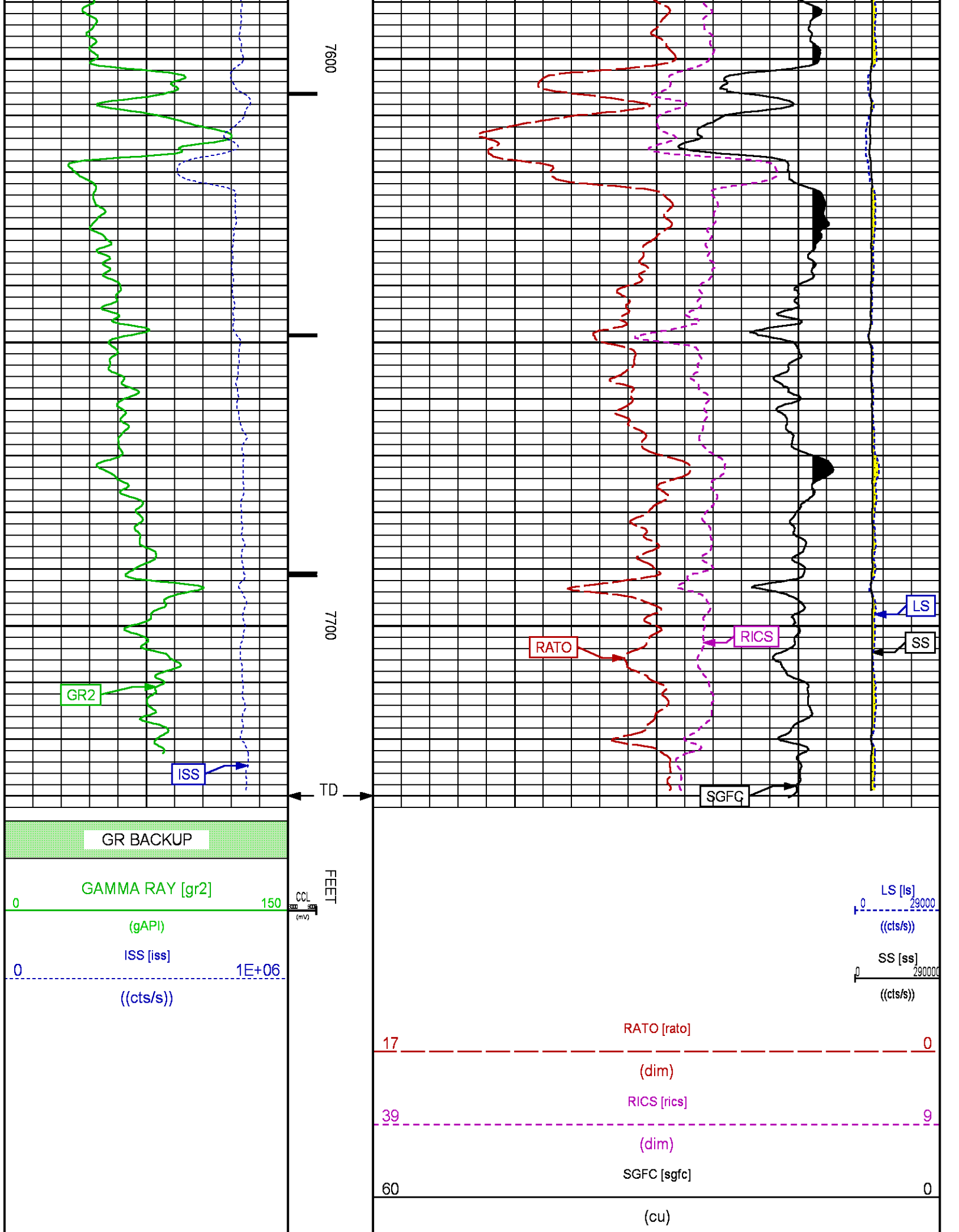












REPEAT PASS

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

Plotted: Tue Jul 3 15:55:57 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_NICHOLS_0994-24-18W/p354h01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 5454.071 ft BOTTOM DEPTH: 5694.746 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	" "
	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_NICHOLS_0994-24-18W/18W_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 5470 - 5701.25 Feet

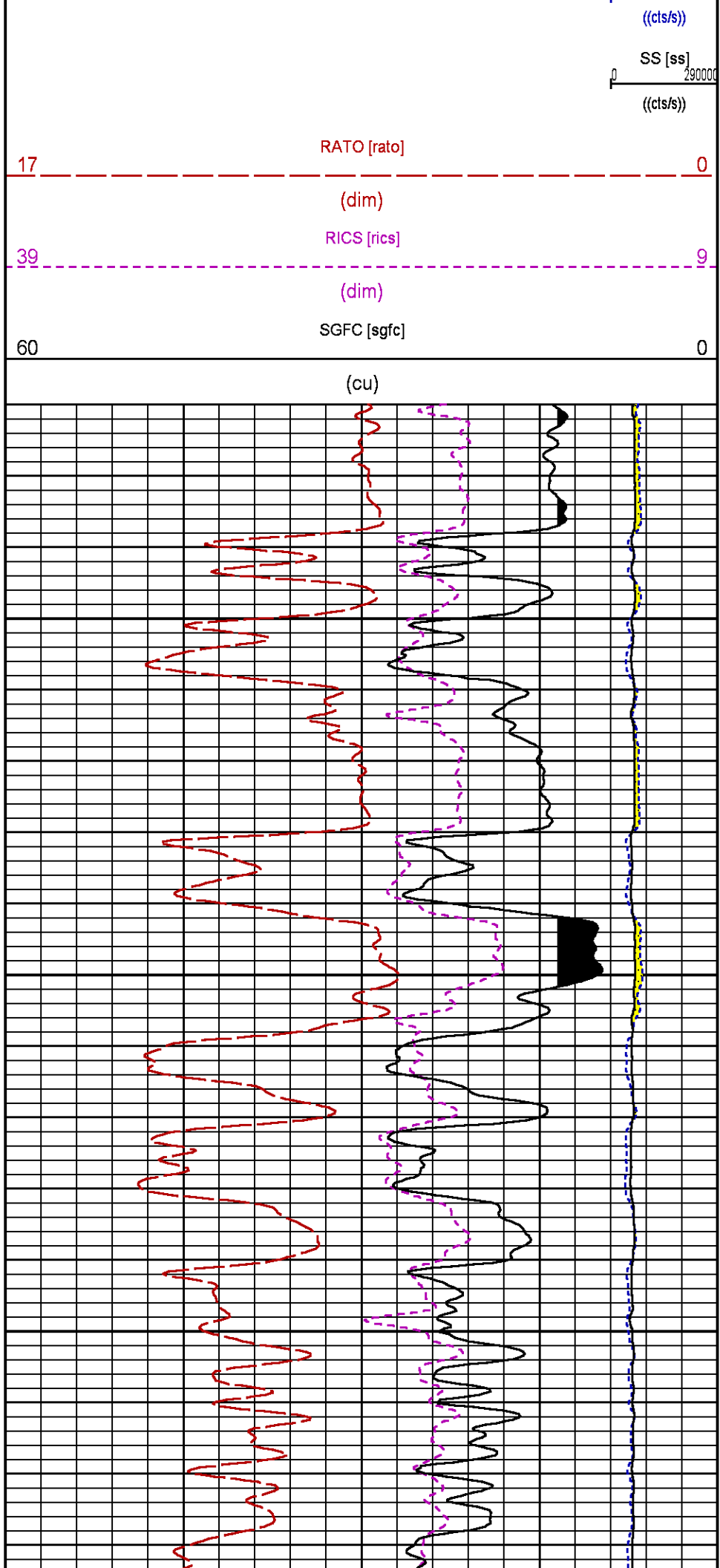
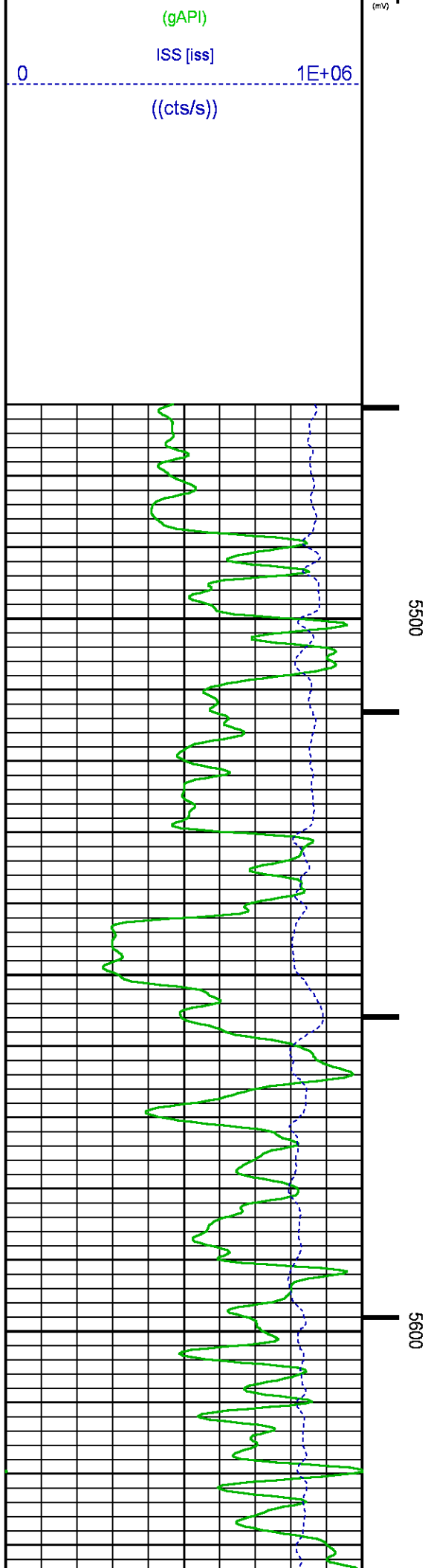
Data File 1 : F1 : SysA:/dat1a/LARAMIE_NICHOLS_0994-24-18W/18W_RPM_REPEAT.xtf
Created On : N/A
Company : LARAMIE ENERGY LLC
Well : NICHOLS 0994-24-18W
Field : VEGA
File Interval : 5442 - 5701.5 Feet
OCT : p354h

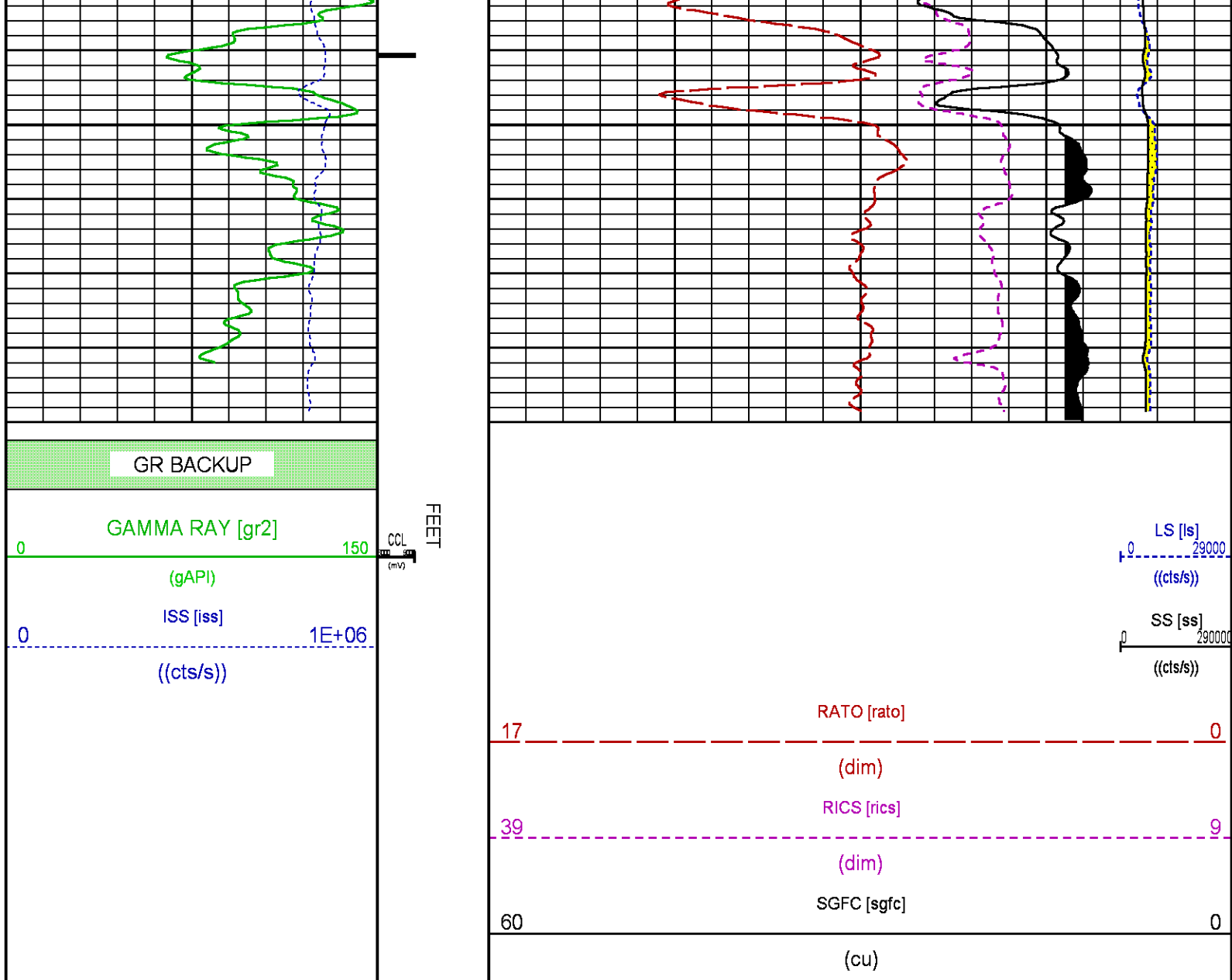
GR BACKUP

GAMMA RAY [gr2]

FEET

LS [ls]





CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_NICHOLS_0994-24-18W/p354h.tp1

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 CALBRTR ON MULT BACKGROUND CALBRTR ON DIFF.

	(cts/s)	(cts/s)		(gAPI)	(gAPI)	(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 10068031

DATE/TIME PERFORMED: Mon May 7 23:51:27 2018

UNIT: 5753XD 111111

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10047980

HOURS: 8281AA 63

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	802814	119	2217	2481	2198	114	8.0	1.0138
Interpolated	1300000	139	2201	2485	2184			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	802814	7129	1185	158	25.96	0.15	24.13	0.33
					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	802814	174125	28683	86762	30909	8359	52608	13370
Fit Quality %		0.791	0.627	0.866	0.857	0.798	0.841	0.839

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	802814	1.44	4.61	28.00	15.26	10.38	3.70	3.94
		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 %		0.030	0.272	1.006	0.137	0.113	0.110	0.077
Reduced	1449874	1.44	4.61	27.83	15.26	10.37	3.69	3.93
		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

Source File: /dat1a/LARAMIE_GUNDERSON_0994-13-17W/RPM-tdg

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

GAMMA RAY, 1 11/16"
Diameter : 1.69"
Length : 2.17'
Weight : 10 lbs
Series : 2812LA
Mnemonic : GR

33.24'

CCL MP 25.19'

GR MP 22.64'

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

XLS MP 13.58'
LS MP 13.16'
SS MP 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: 33.24'
TOTAL WEIGHT: 140 lbs
MAX DIAMETER: 0 1.70'

0.00'

**BAKER
HUGHES**
a GE company



ECLIPS

COMPANY LARAMIE ENERGY LLC

WELL NICHOLS 0994-24-18W

FIELD VEGA

COUNTY MESA **STATE** COLORADO

FILE NO:

CH137653

API NO:

05077103910000

LOCATION:

SHL: 2308' FNL & 2781' FWL

BHL: 912' FSL & 1549' FWL

ELEVATIONS:

KB 7236 FT

DF

GL 7212 FT

SEC 24 **TWP** 9S **RGE** 94W

DATE 03-Jul-2018