



FILE NO: CH100249	COMPANY WELL FIELD COUNTY	LARAMIE ENERGY PICEANCE 28-08M VEGA MESA	STATE COLORADO
API NO: 05077102450000	LOCATION: SHL: LAT 39.250933 LONG -107.779375 BHL: LAT 39.250153 LONG -107.774661 SEC 28 TWP 9S RGE 93W		
Ver. 4.01 28 9S 93W 28-05 PAD PATTERSON 306	OTHER SERVICES BOND LOG		ELEVATIONS: KB 7600 FT DF GL 7578 FT
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB 22 FT	ELEVATION 7578 FT ABOVE P.D.	

DATE	17-OCT-2015
RUN	1
SERVICE ORDER	US100249
DEPTH DRILLER	8101 FT
DEPTH LOGGER	7904 FT
BOTTOM LOGGED INTERVAL	7894 FT
TOP LOGGED INTERVAL	2600 FT
TIME STARTED	10:00
TIME FINISHED	16:00
OPERATOR RIG TIME	6 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	49 FT
LOGGED CEMENT TOP	NA
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	228 DEGF
REFERENCE LOG	BAKER HUGHES BOND LOG
REFERENCE LOG DATE	17-OCT-2015
EQUIP. NO.	HL-6670
LOCATION	GRAND JCT.
RECORDED BY	P. EDWARDS
WITNESSED BY	JOHN GRUBICH

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	22 FT	8101 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		22 FT	8101 FT

REMARKS

RUN 1 TRIP 1: All data on this log is shifted using the Gamma Ray curve to the Baker Hughes bond log dated 17/COT/2015 at the client's request.

The amount of linear shift is 7 feet.

Logged with zero PSI at wellhead.

BHT = 228 degF

SJ = 6289' - 6311'
SJ = 7146' - 7167'

THANK YOU FOR CHOOSING BAKER HUGHES ... THE BEST CHOICE!

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	Z166326	FREE
1	1	TEL/CCL	8248ED	10387150	FREE
1	1	GR	8262XA	10274382	FREE
1	1	RPM	8281EA	10190984	FREE
1	1	RPM	8283PA	10169251	FREE
1	1	RPM	8281FA	10307727	FREE
1	1	TEMP	8255XA	Z120516	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: 6

Plotted: Sat Oct 17 15:22:14 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100249/n354h03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 2597.250 ft BOTTOM DEPTH: 3231.500 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	Oct 17 14:35:44 2015	CASING COLLAR LOCATOR
F1:GR	Oct 17 14:35:44 2015	GAMMA RAY
F1:ISS	Oct 17 14:35:44 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 17 14:35:44 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 17 14:35:44 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 17 14:35:44 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 17 14:35:44 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 17 14:35:44 2015	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100249/8M_RPM_GSAND.fvpdf [5"/100' Scale]
 Plot Interval : 2600 - 3200 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100249/n354h03GSAND8M.xtf
 Created On : Oct 17 14:35:44 2015
 Company : LARAMIE ENERGY
 Well : RICEANCE 28-02M

Well : PICEANCE 28_08m
Field : VEGA
File Interval : 2571.25 - 3231.5 Feet
OCT : n354h

GR BACKUP

ISS [iss]

1E+06

(1)

GAMMA RAY [gr]

150

(gAPI)

FEET

CCL
(mV)

2600

2700

GR

ISS

RATO [rato]

17

0

(1)

RICS [rics]

39

9

(1)

SGFC [sgfc]

60

0

(1)

LS [ls]

29000

(1)

SS [ss]

290000

(1)

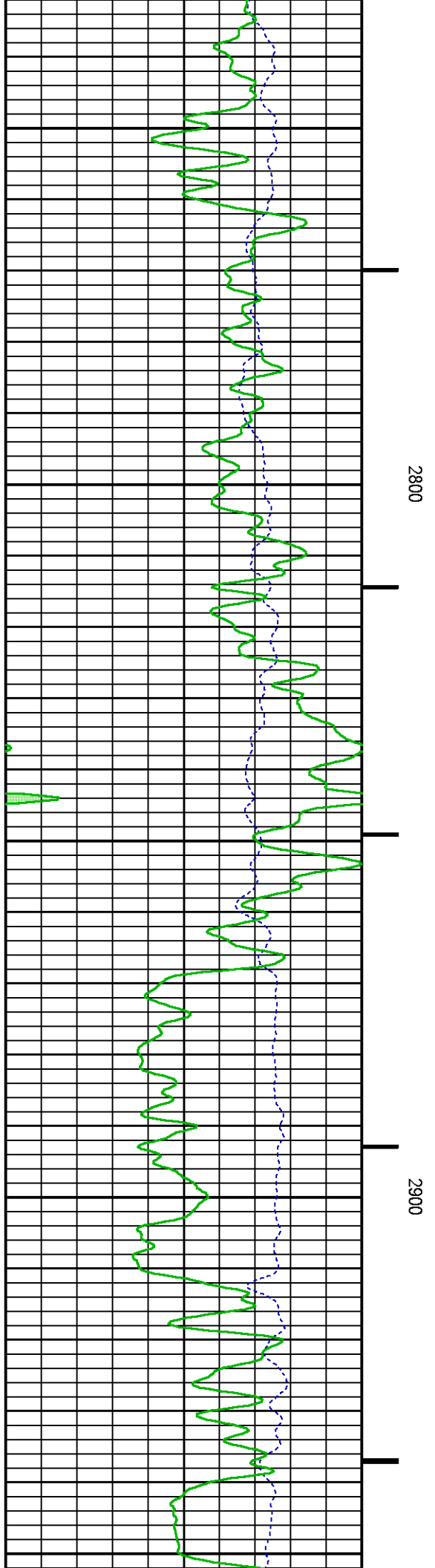
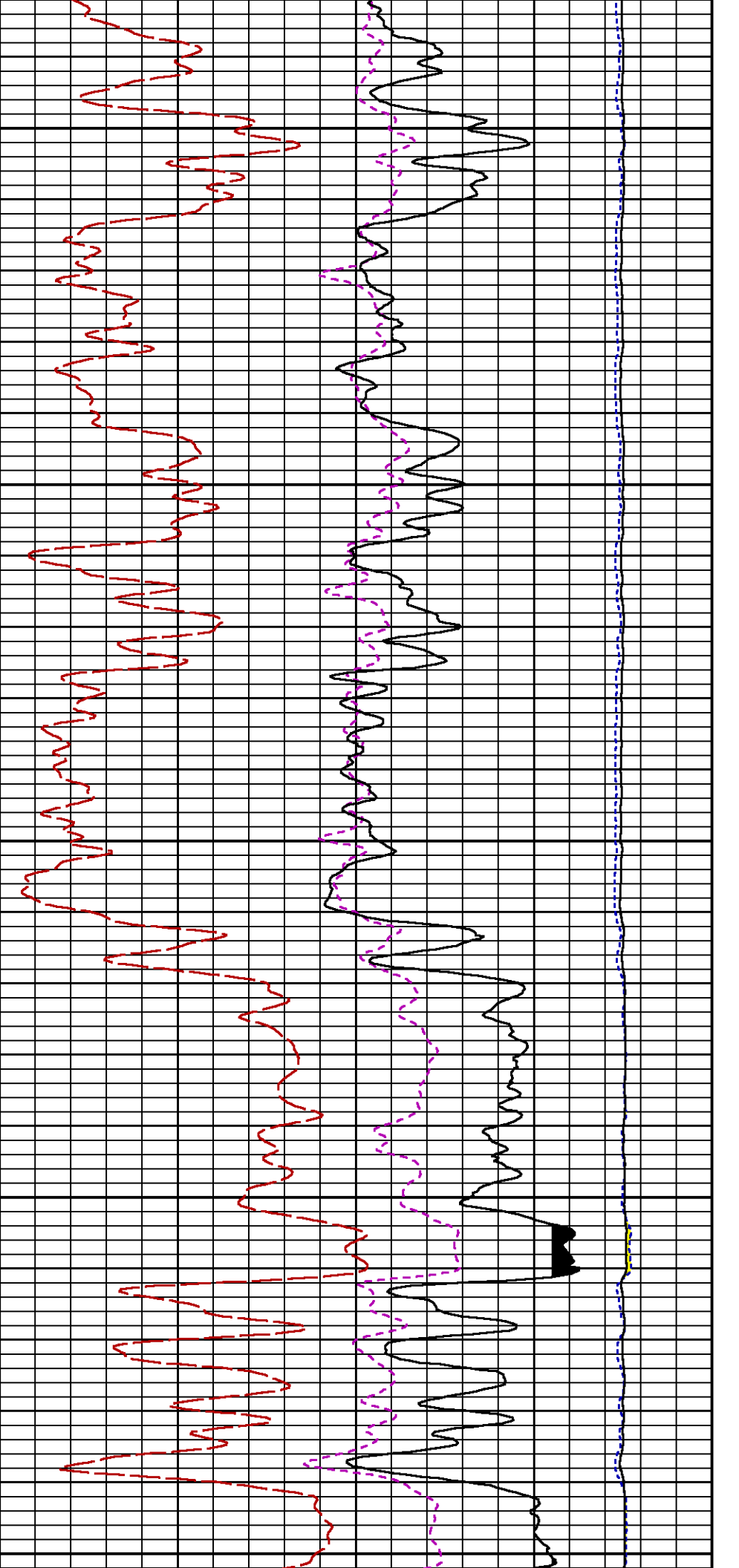
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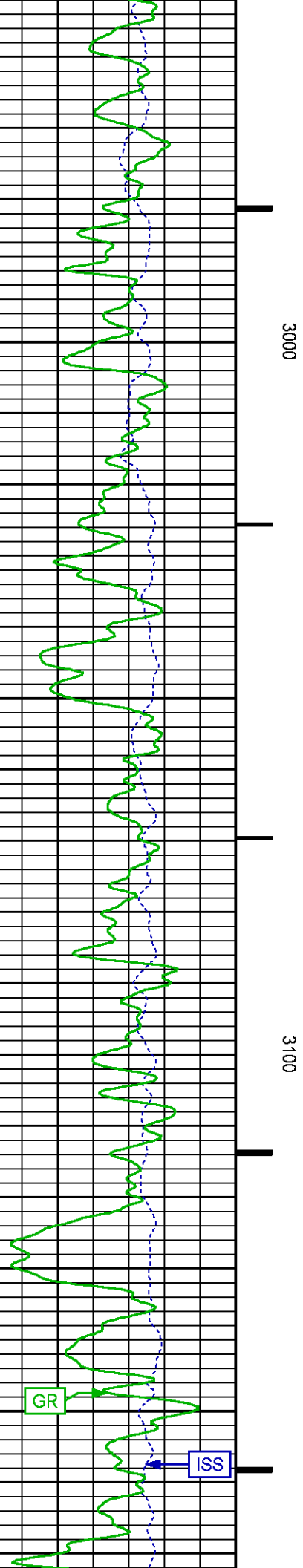
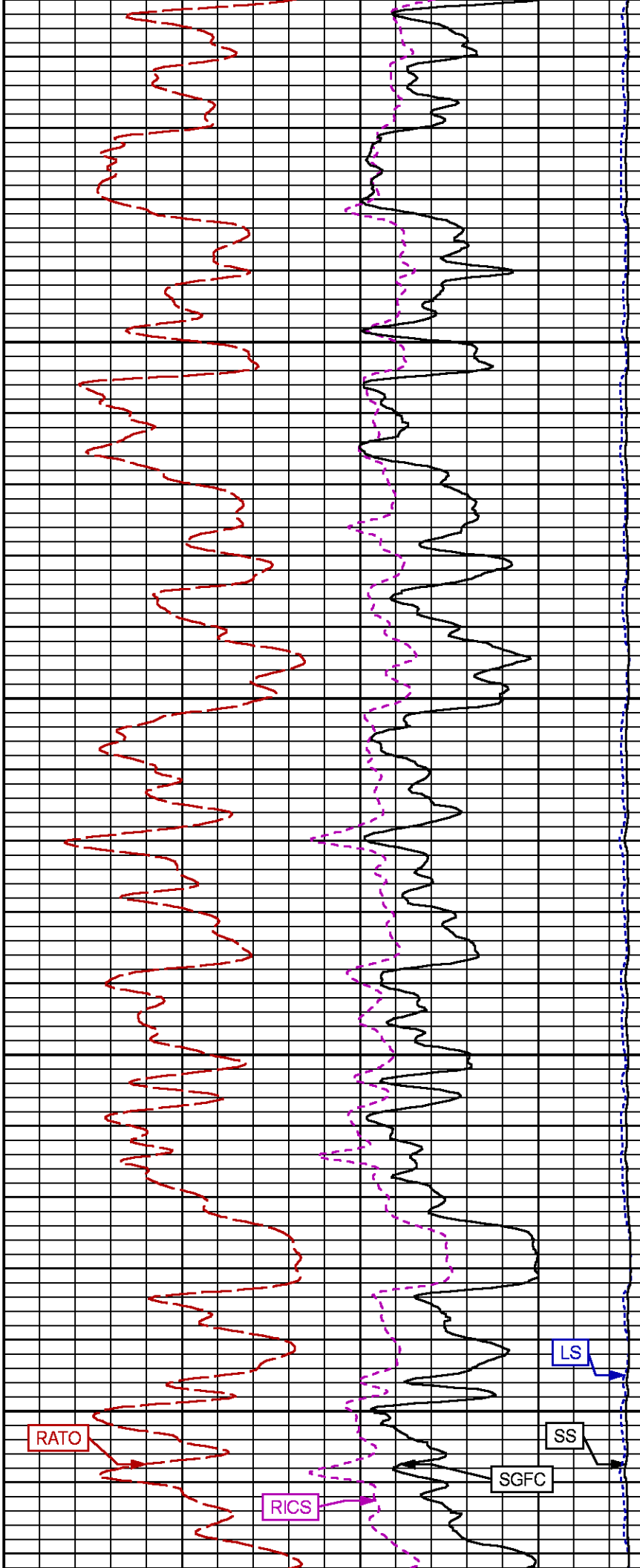
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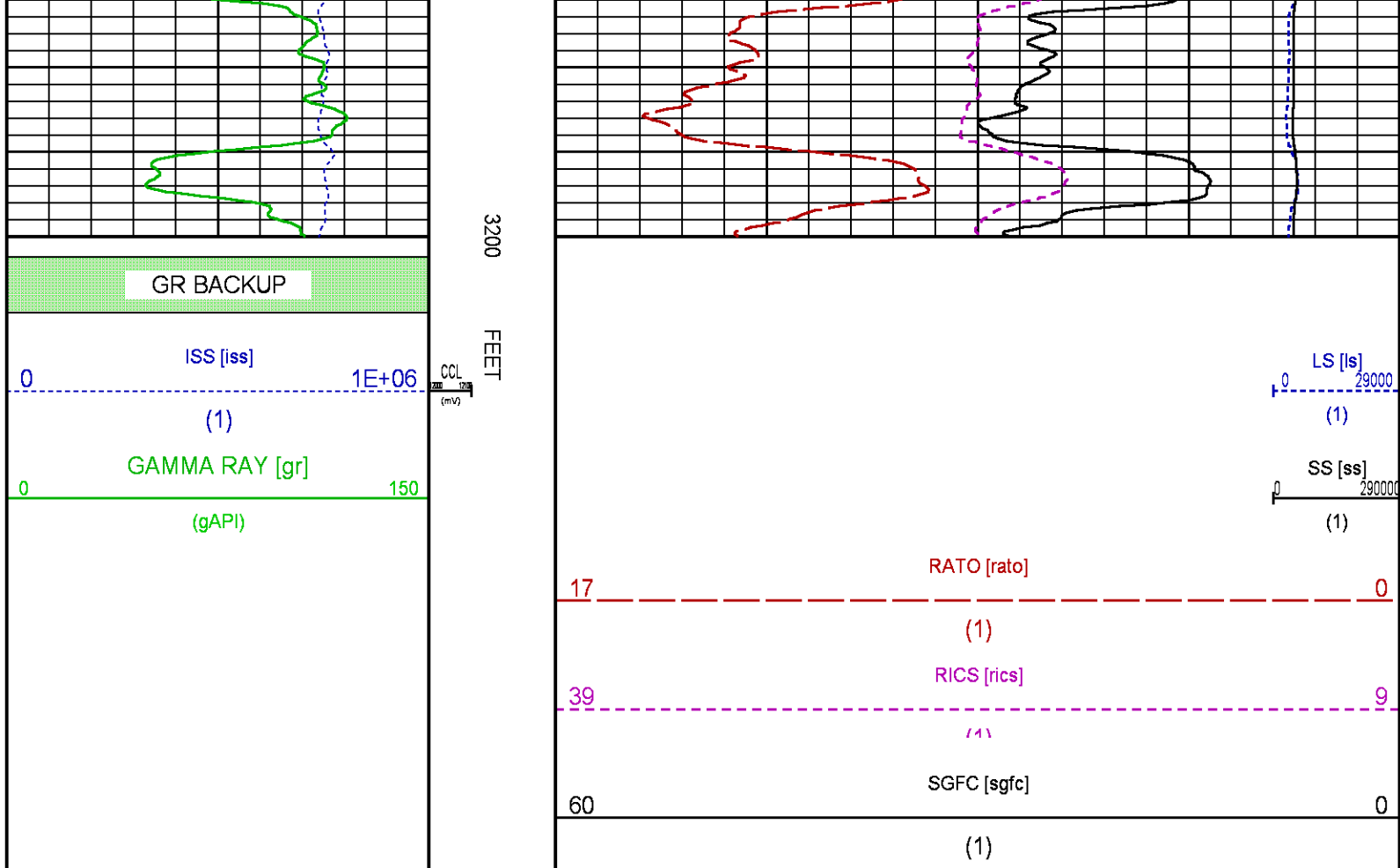
RATO

RICS

SGFC







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: 6

Plotted: Sat Oct 17 14:35:27 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100249/n354h02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4701.750 ft BOTTOM DEPTH: 7906.750 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	Oct 17 11:15:32 2015	CASING COLLAR LOCATOR
F1:GR	Oct 17 11:15:32 2015	GAMMA RAY
F1:ISS	Oct 17 11:15:32 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 17 11:15:32 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 17 11:15:32 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 17 11:15:32 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 17 11:15:32 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 17 11:15:32 2015	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100249/8M_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4705 - 7909 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100249/n354h02MAIN8M.xtf
Created On : Oct 17 11:15:32 2015
Company : LARAMIE ENERGY
Well : PICEANCE 28_08M
Field : VEGA
File Interval : 4675.75 - 7906.75 Feet
OCT : n354h

GR BACKUP

FEET

ISS [iss]

1E+06

(1)

GAMMA RAY [gr]

150

(gAPI)

LS [ls]

29000

(1)

SS [ss]

290000

(1)

RATO [rato]

17

0

(1)

RICS [rics]

39

9

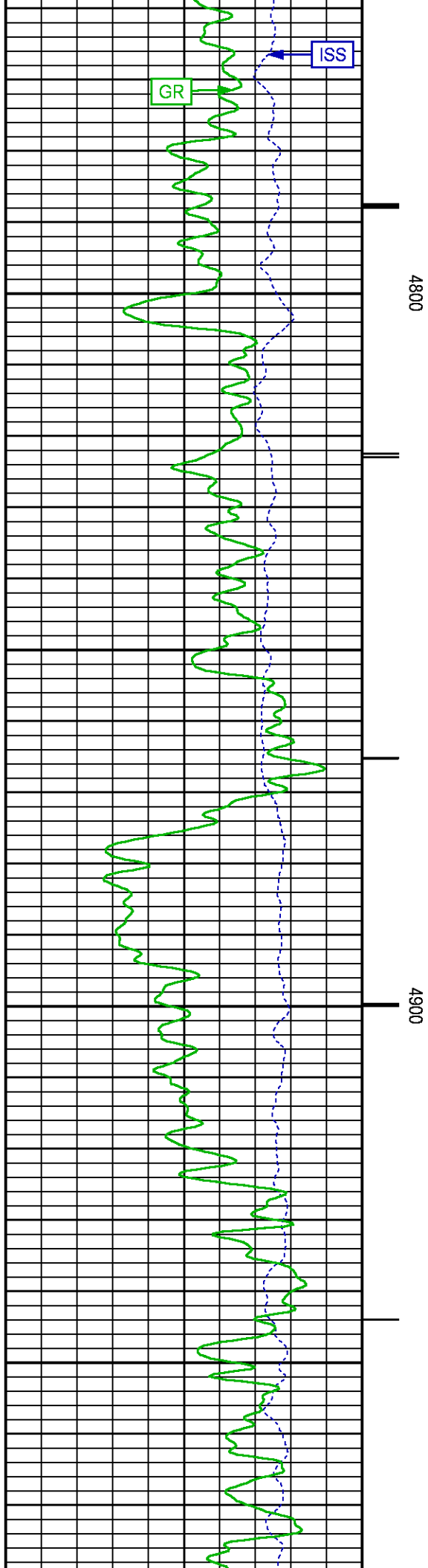
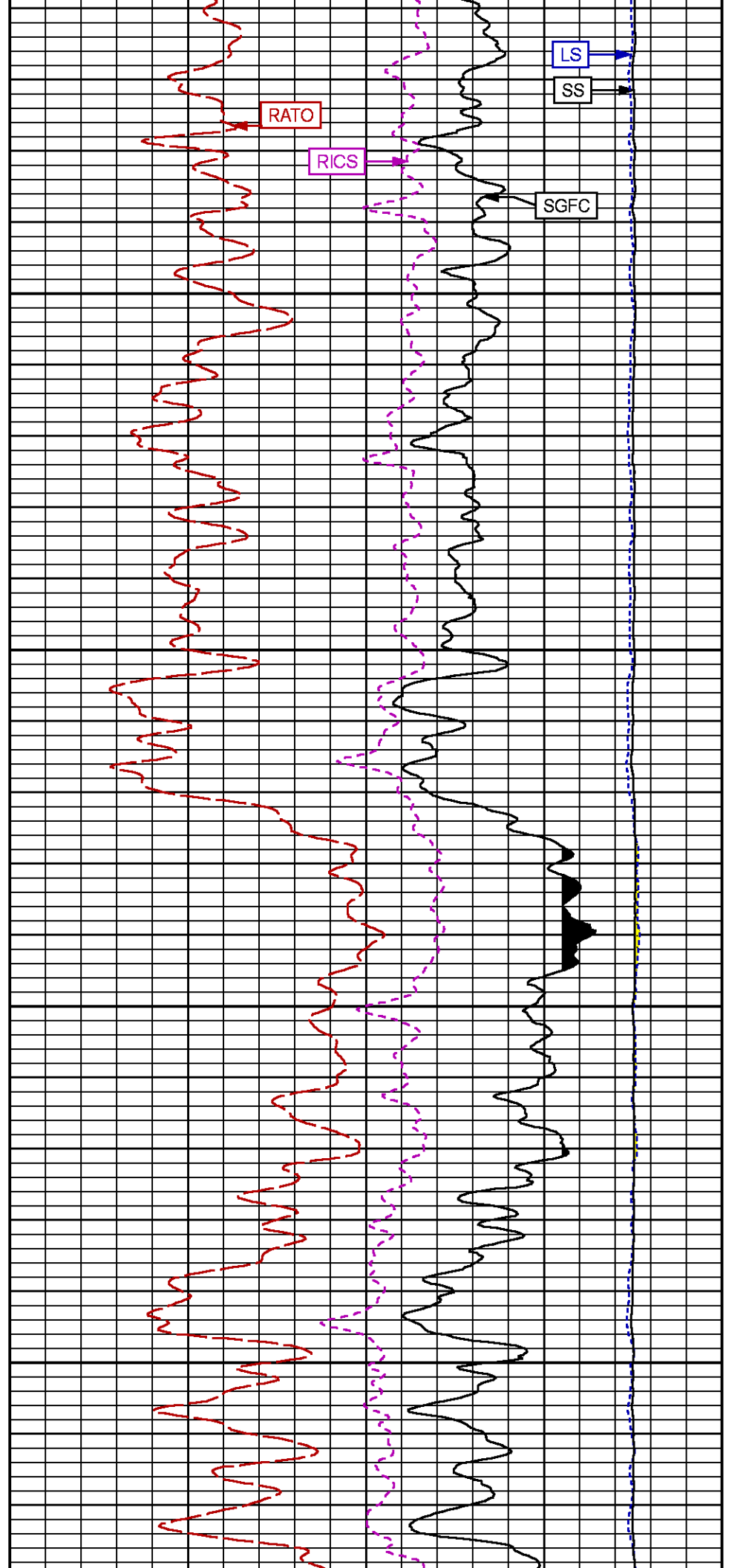
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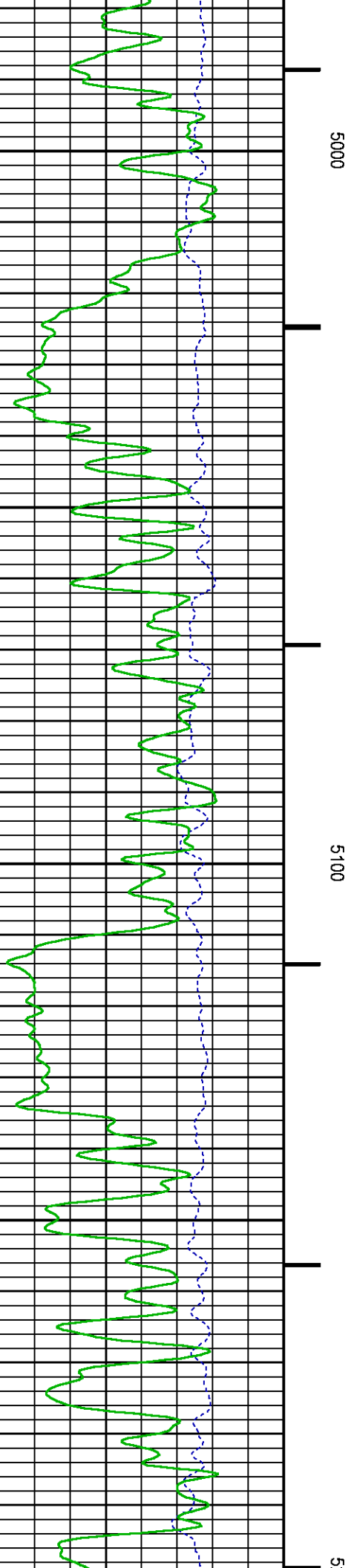
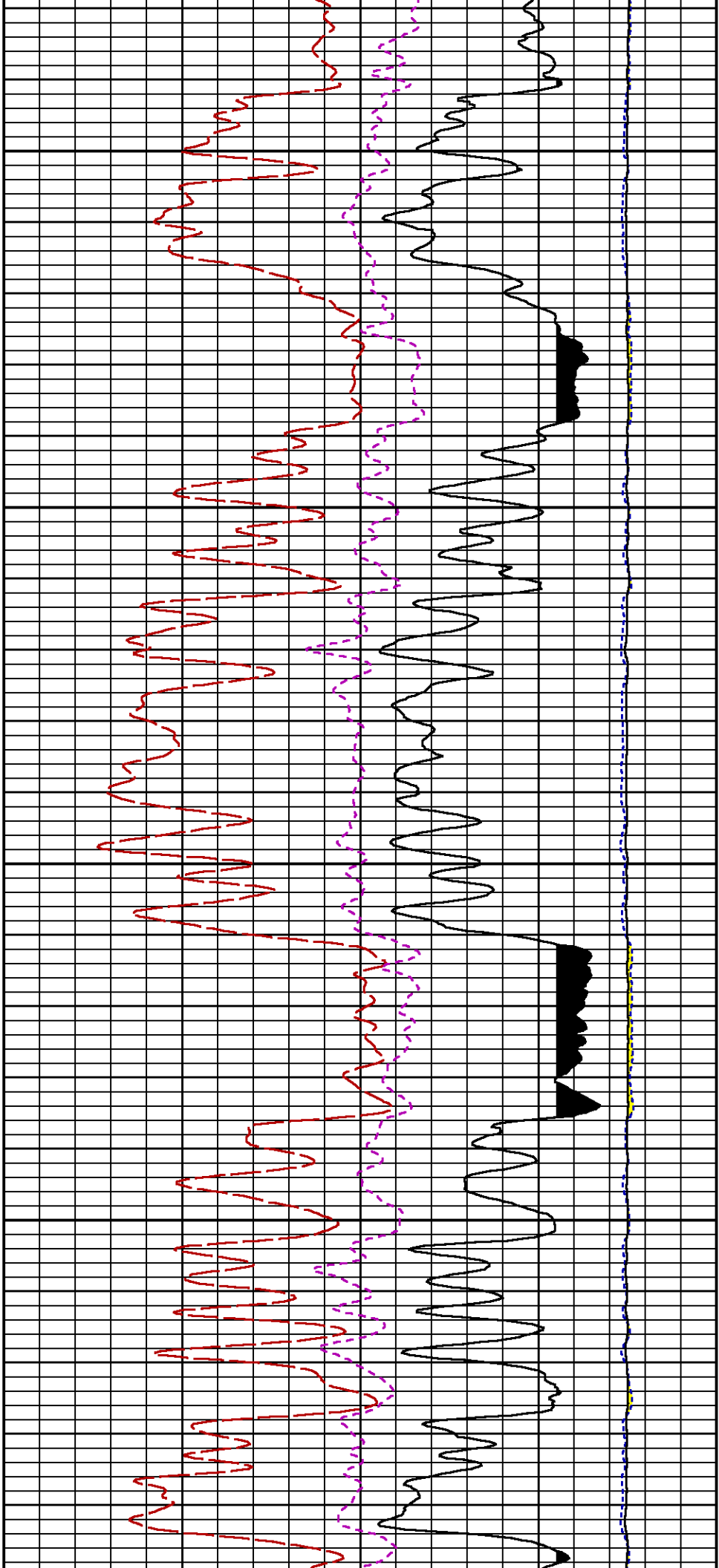
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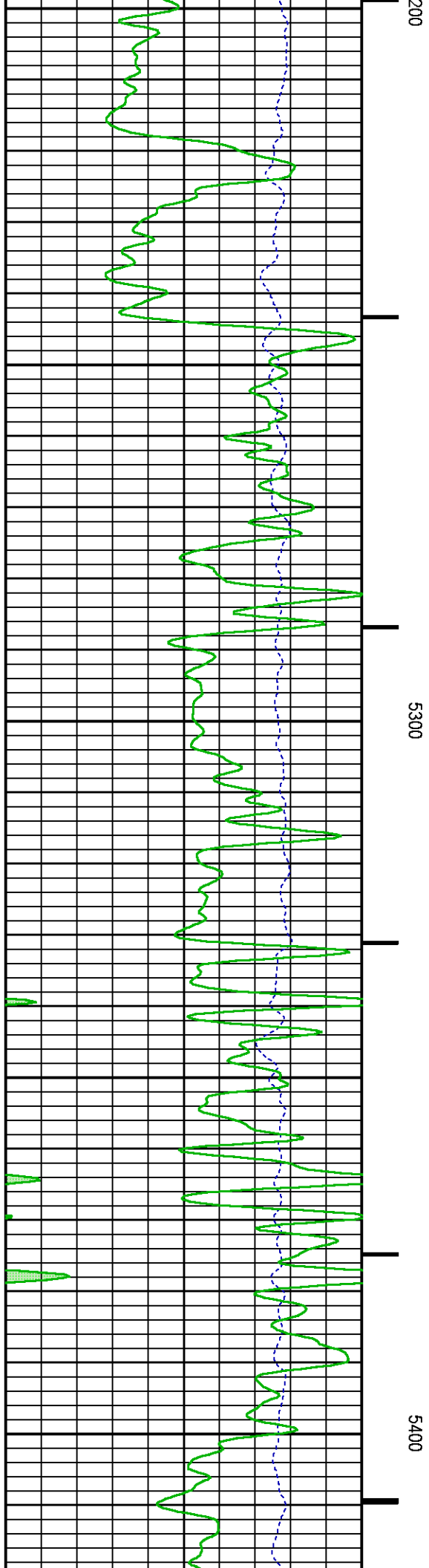
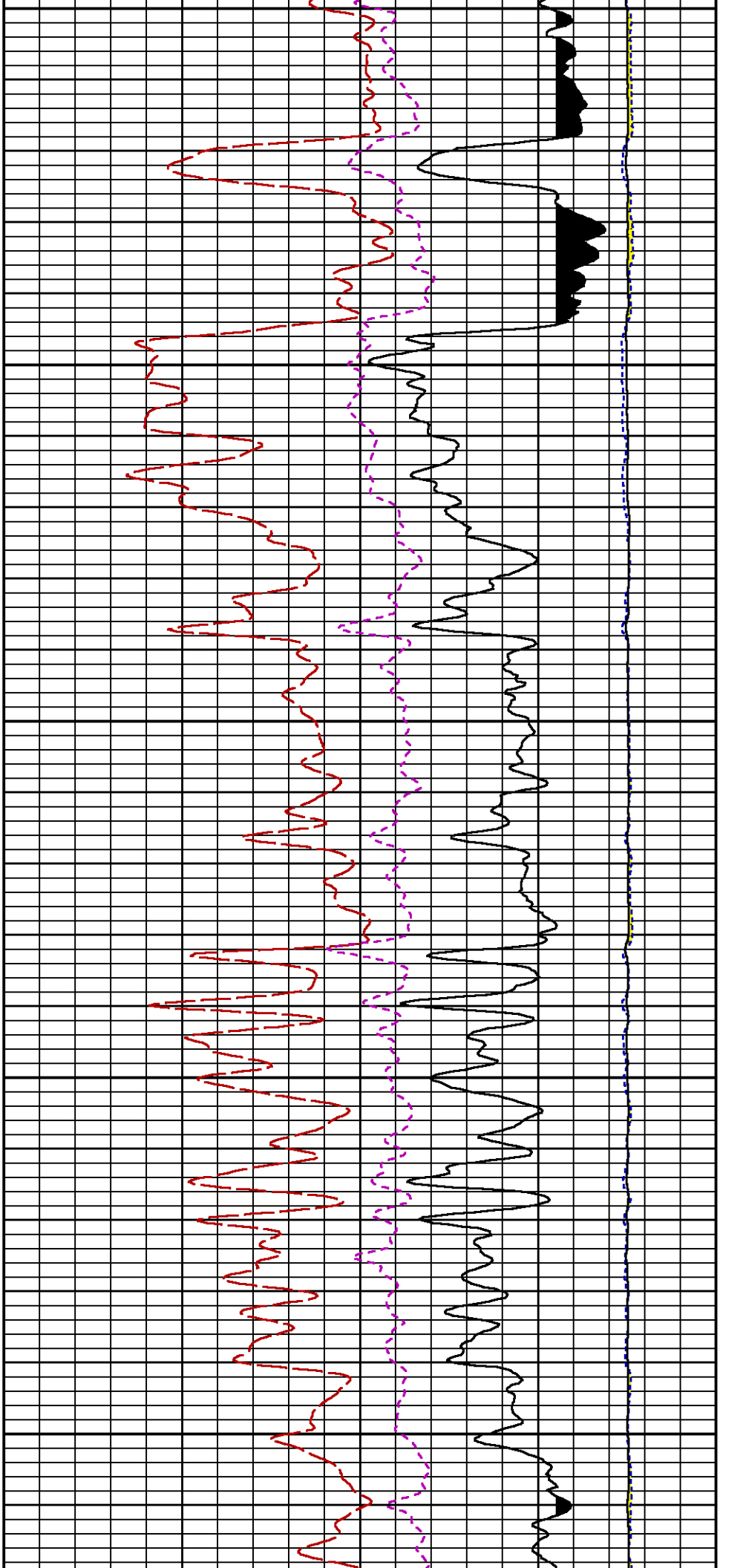
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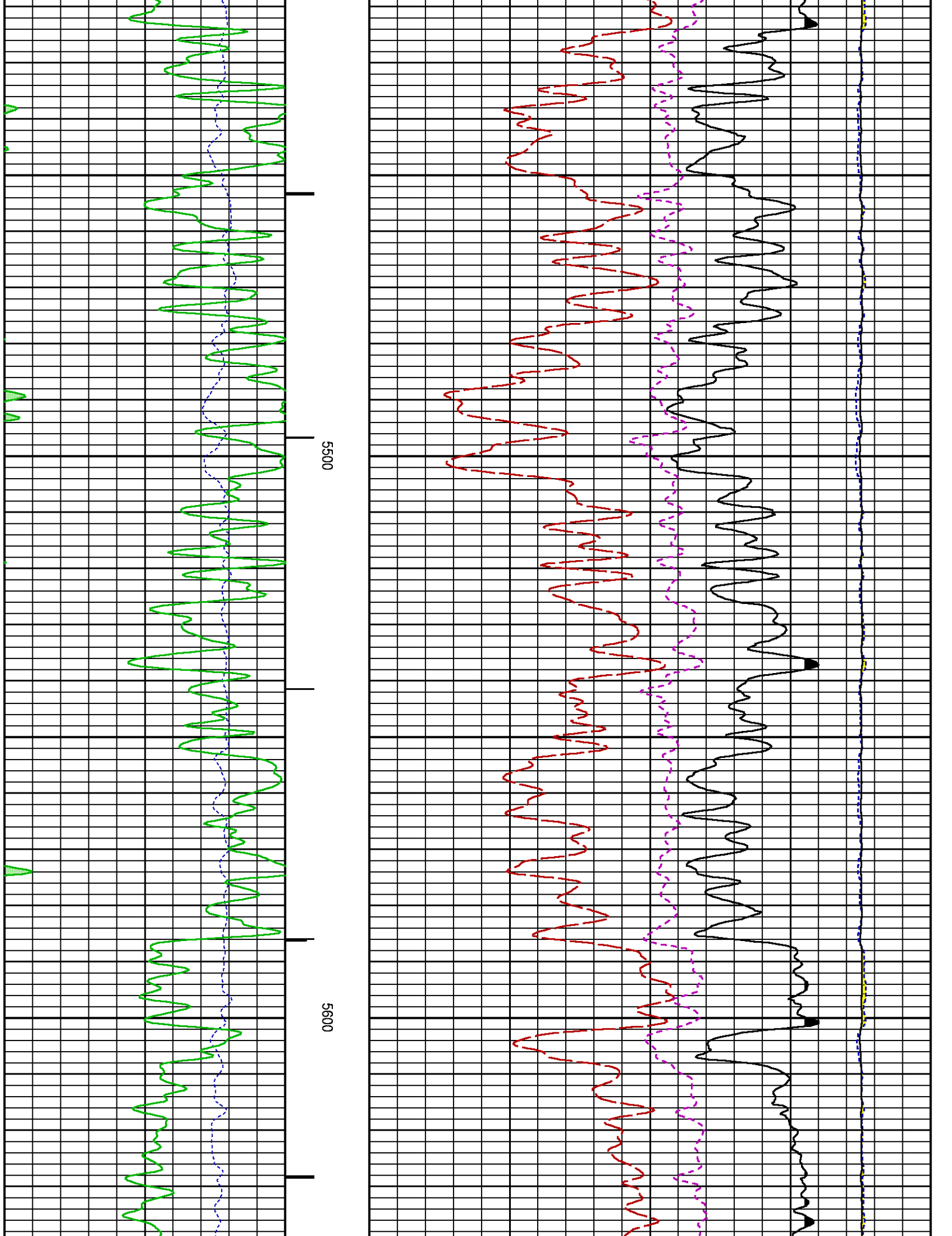
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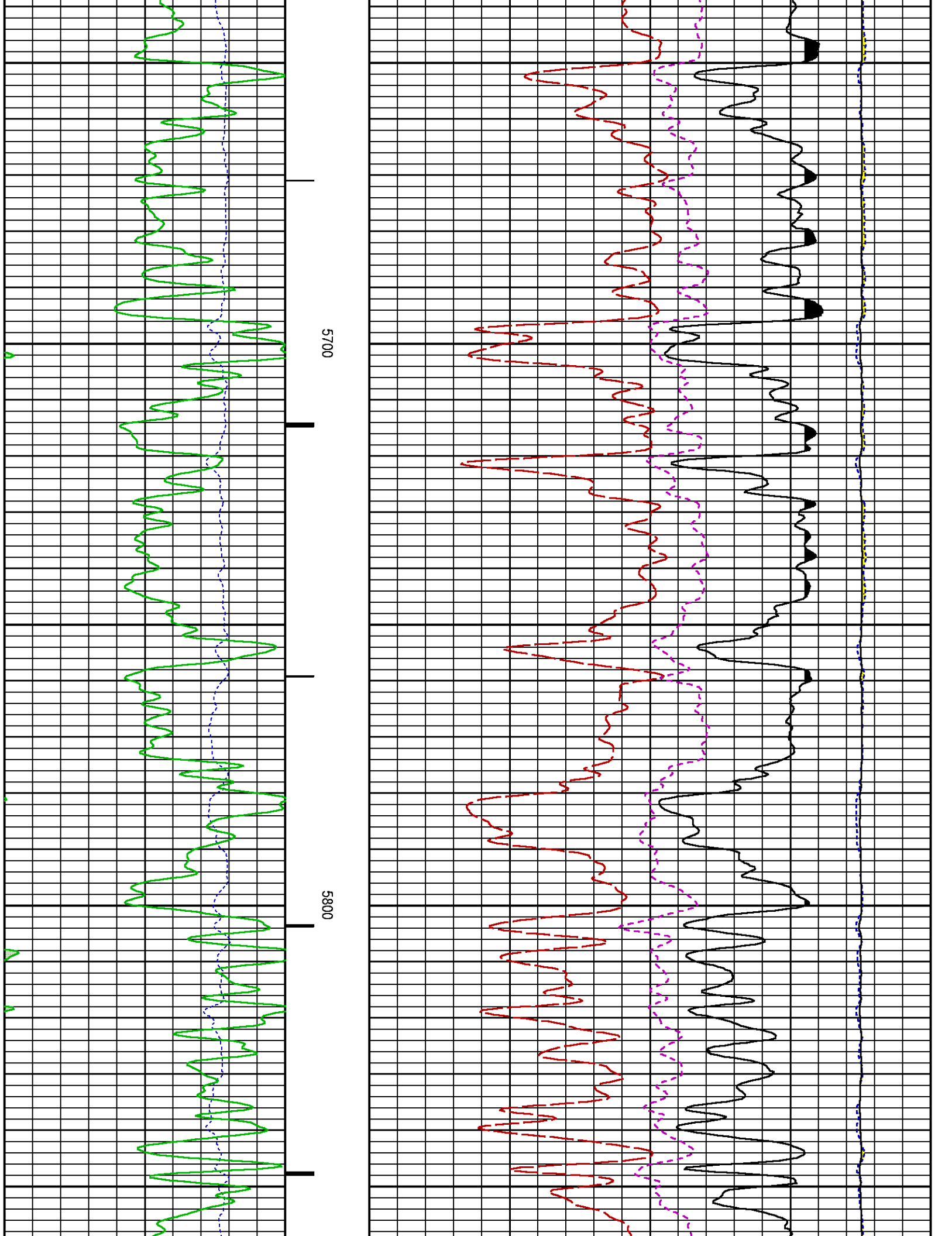
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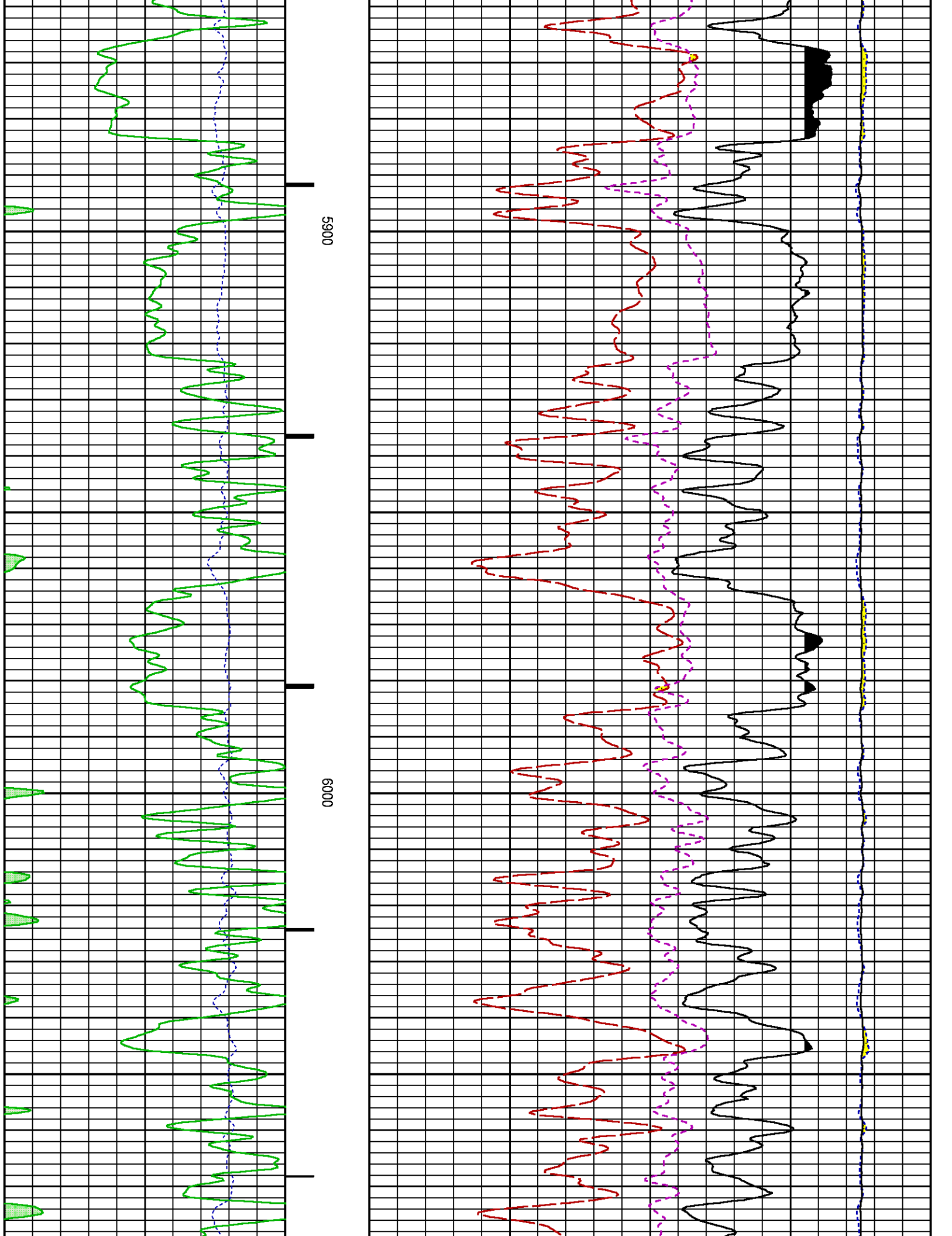


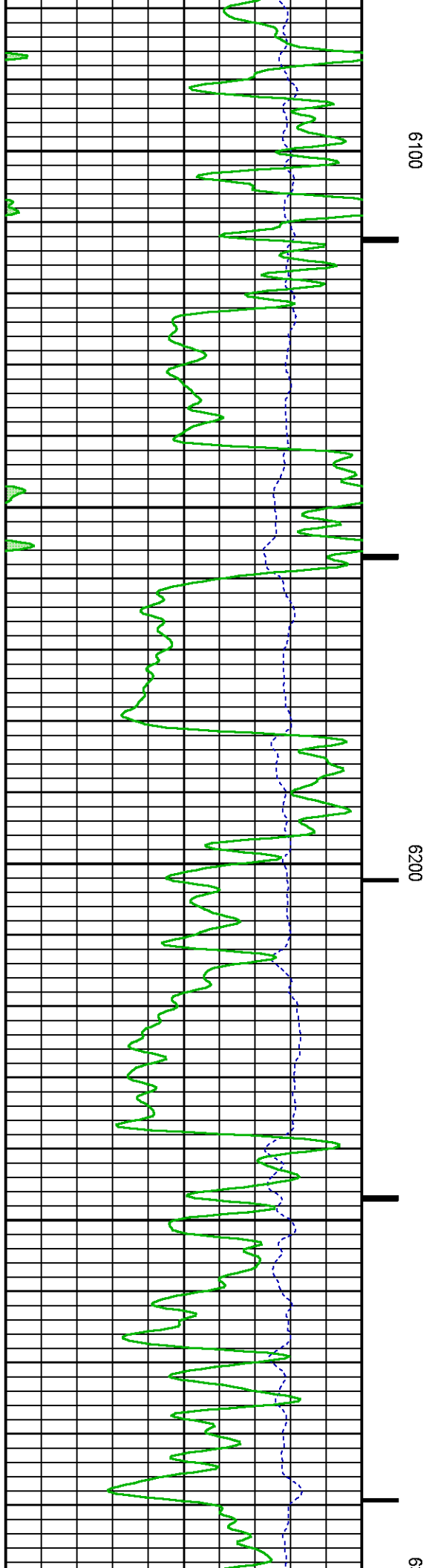
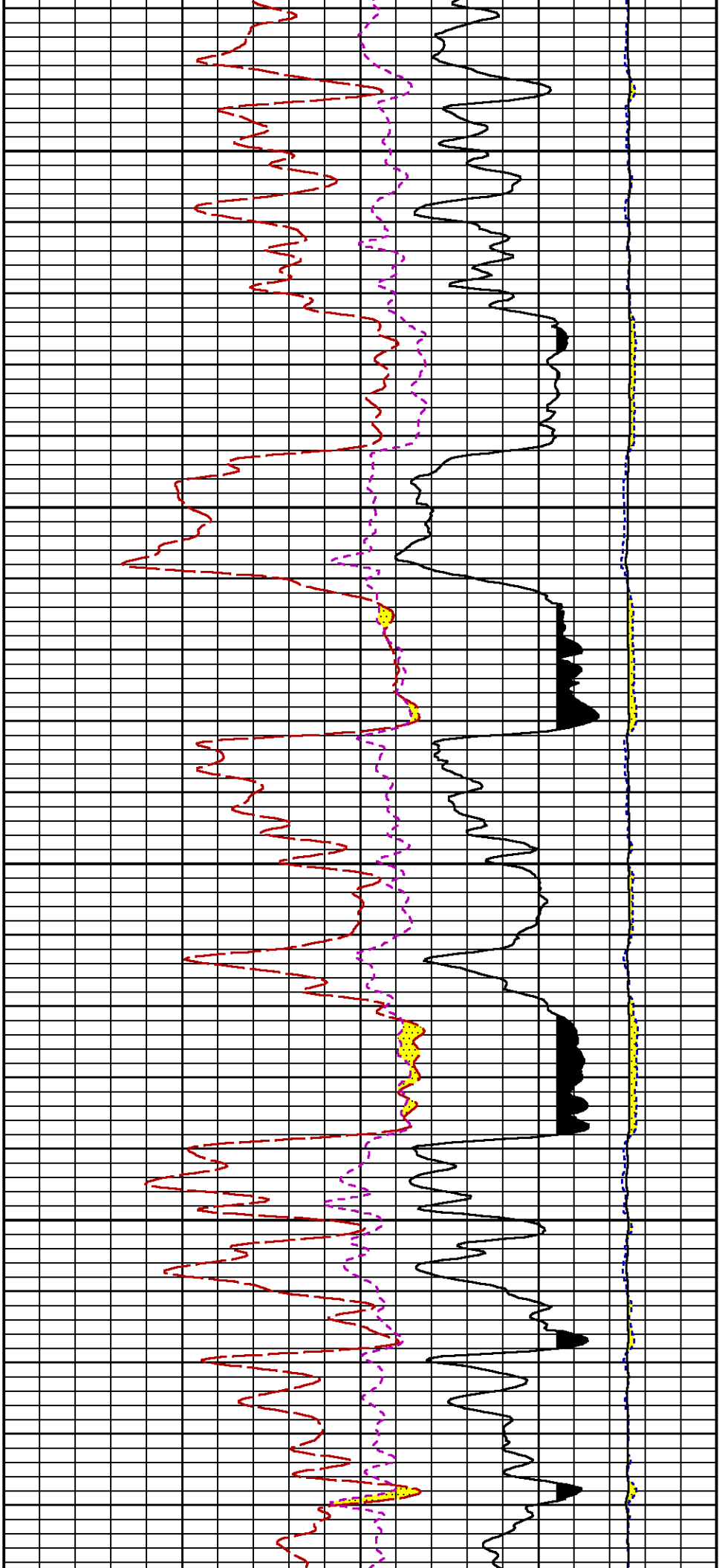


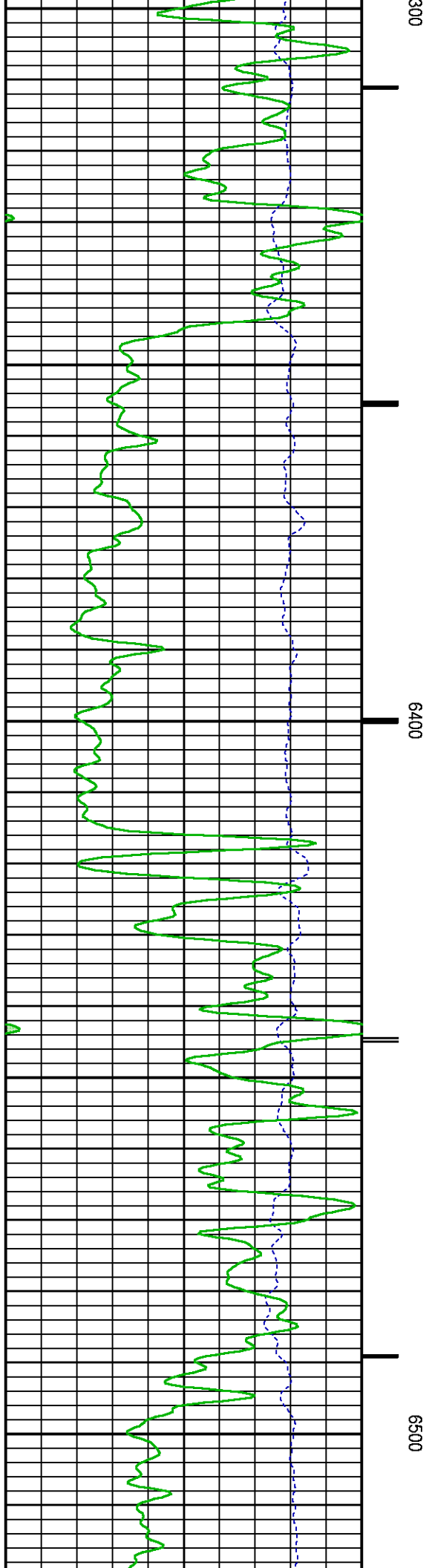
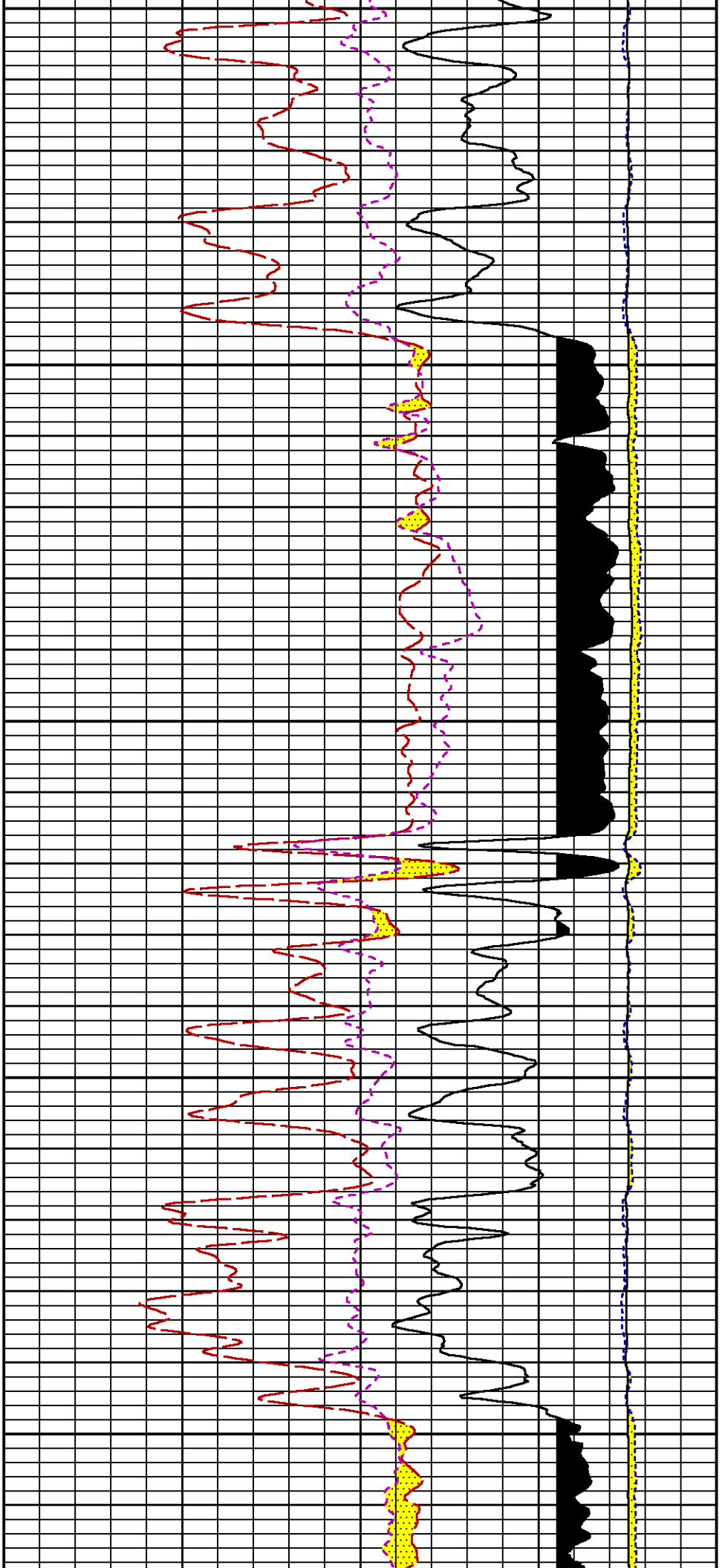


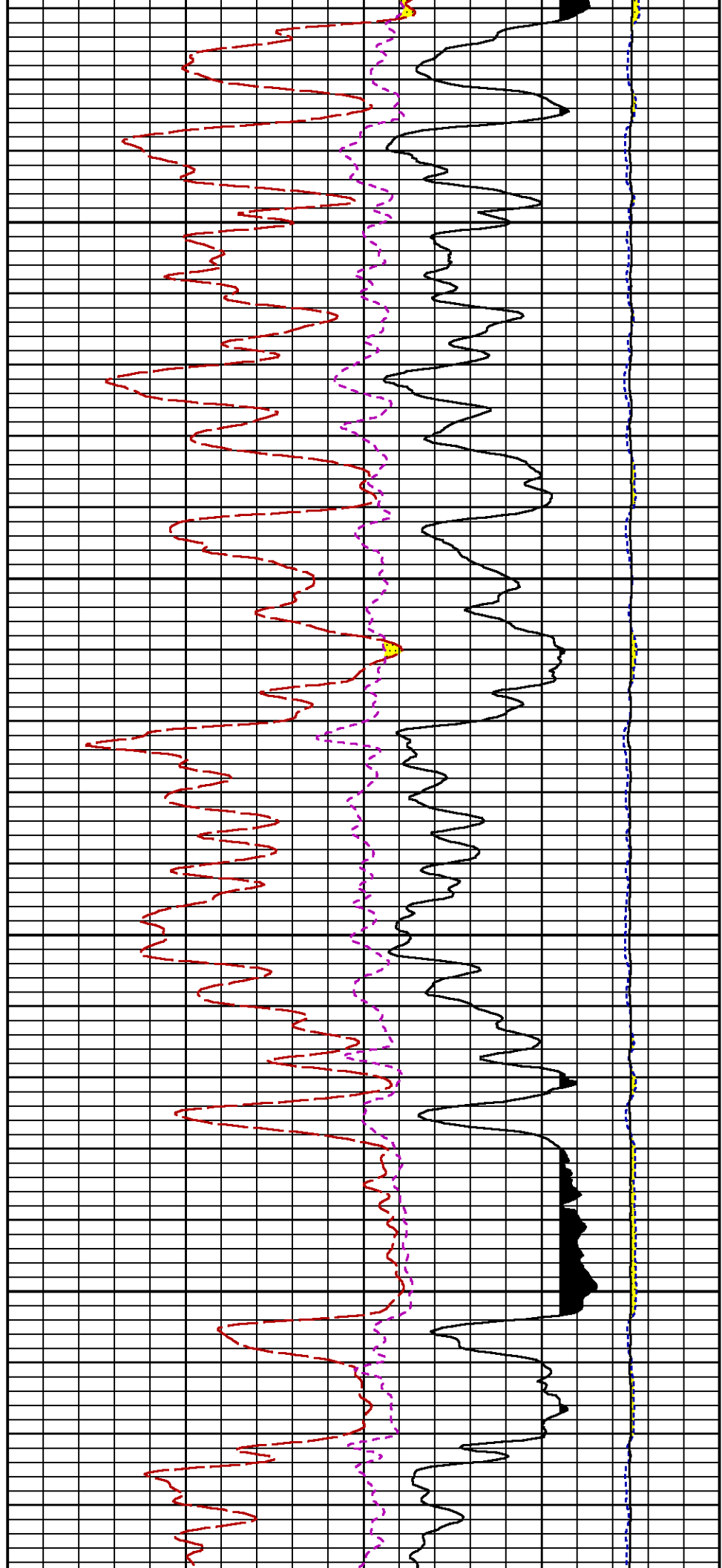
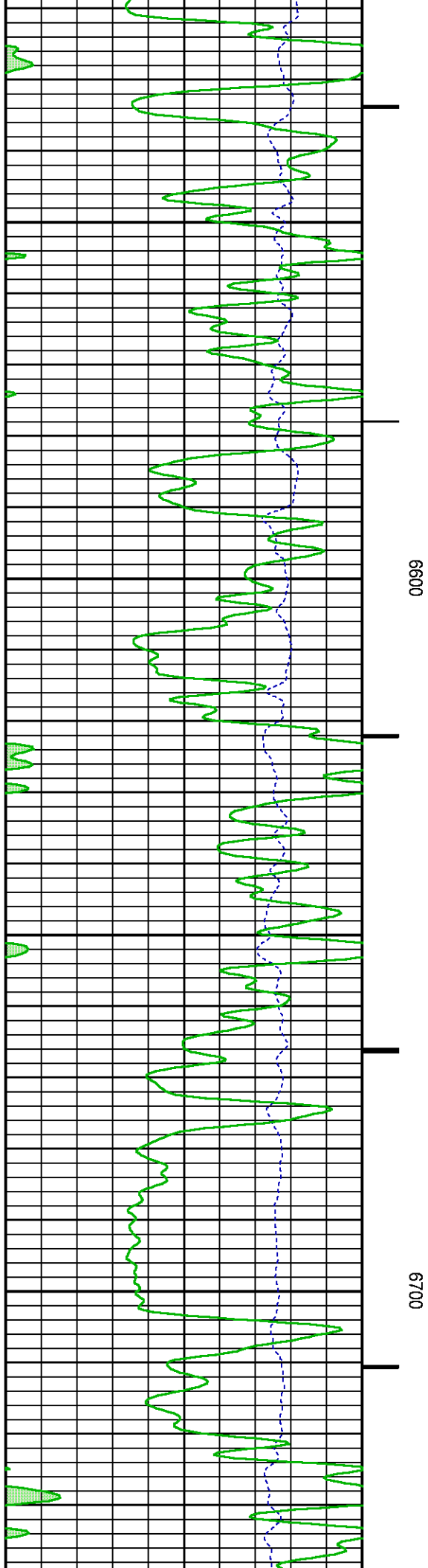


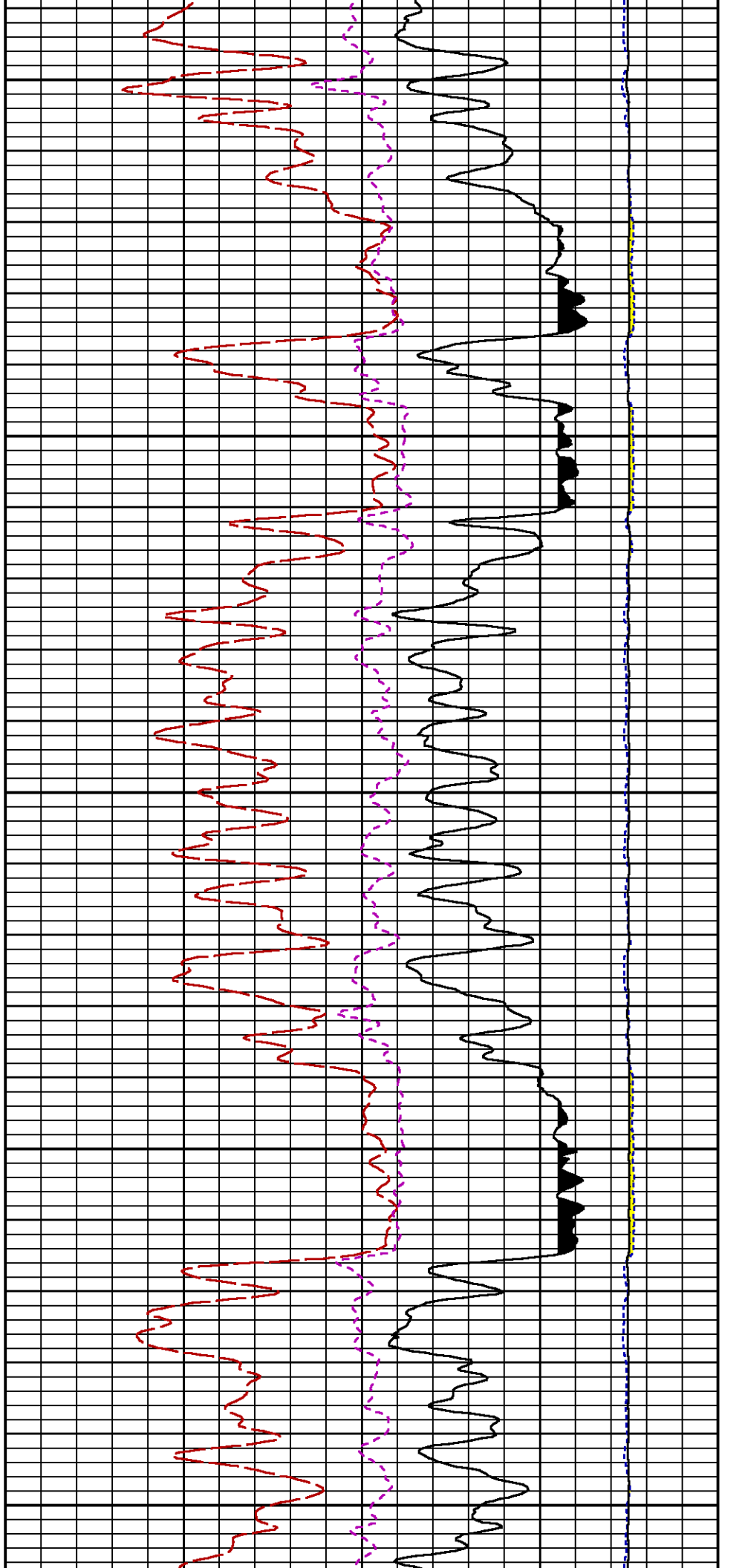
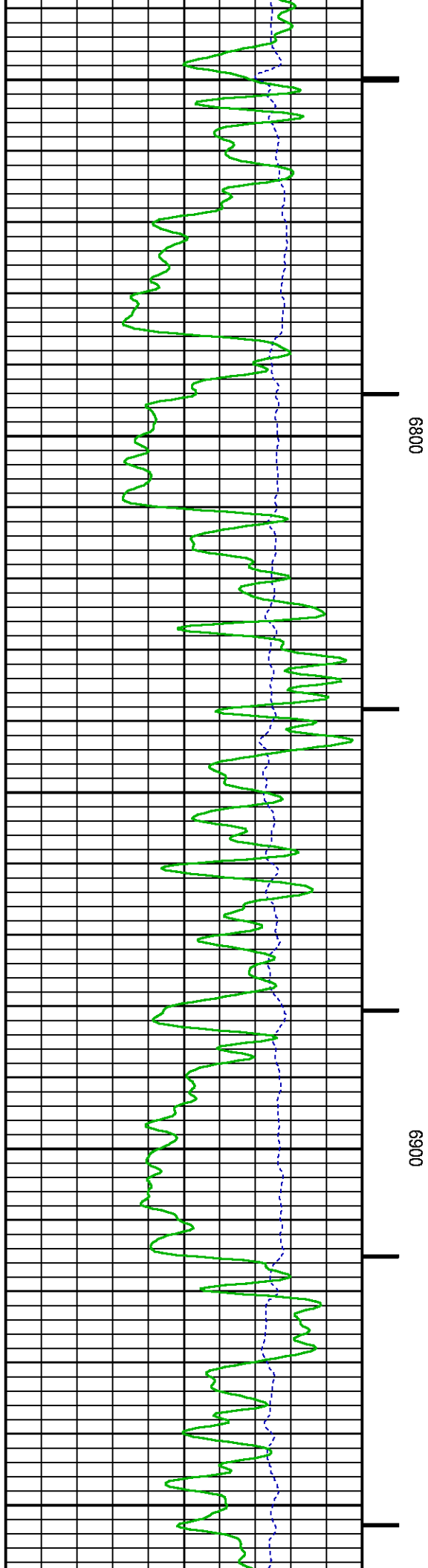


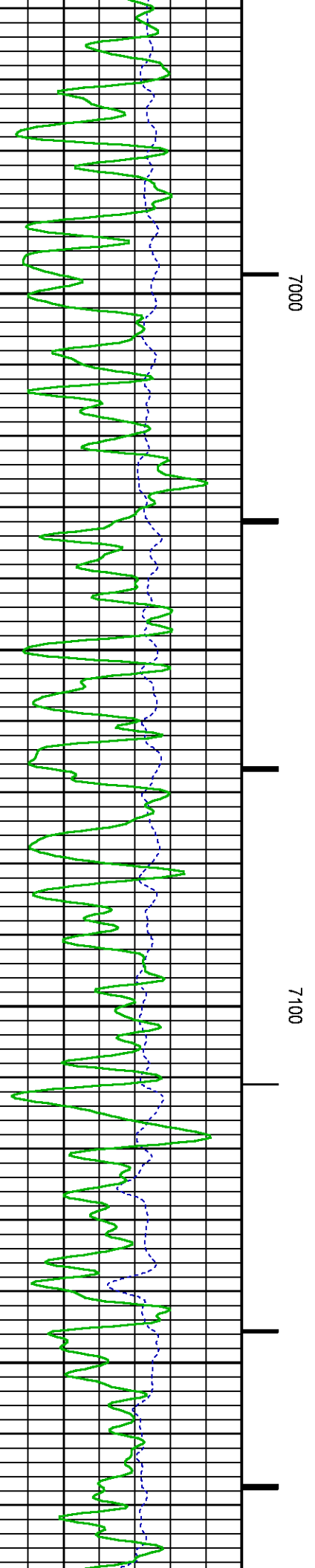
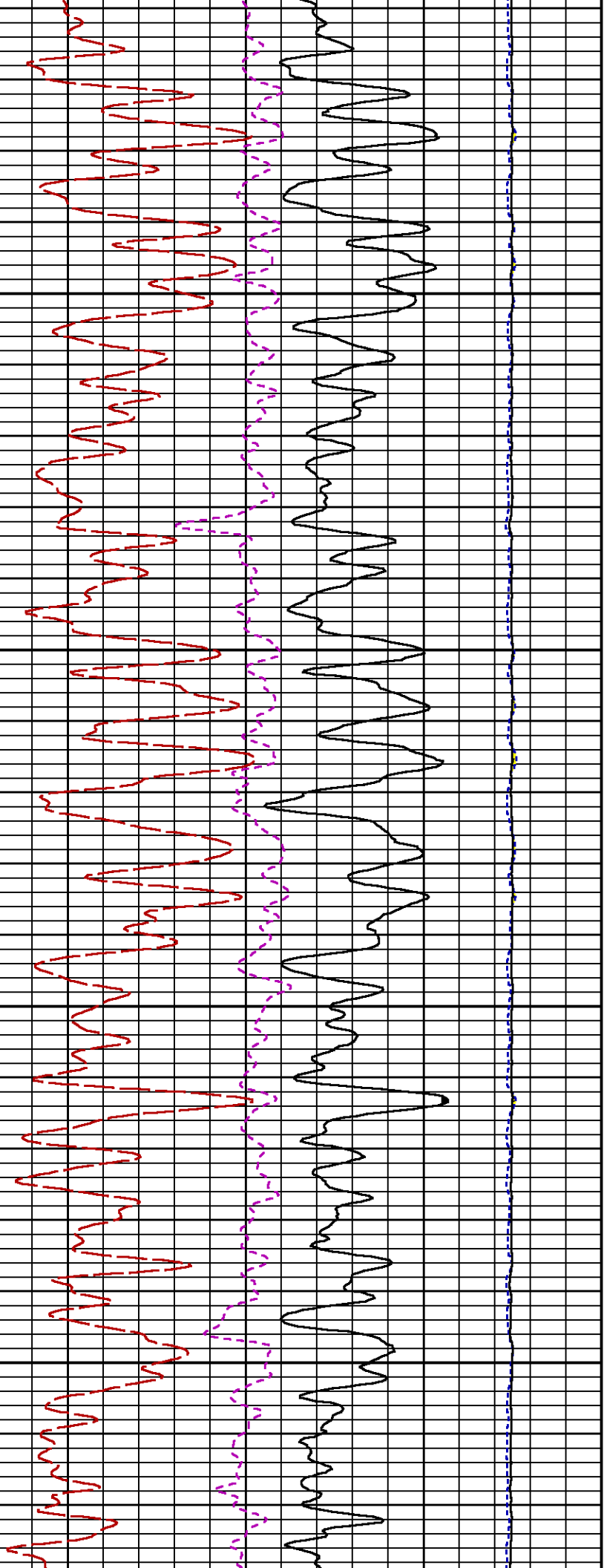


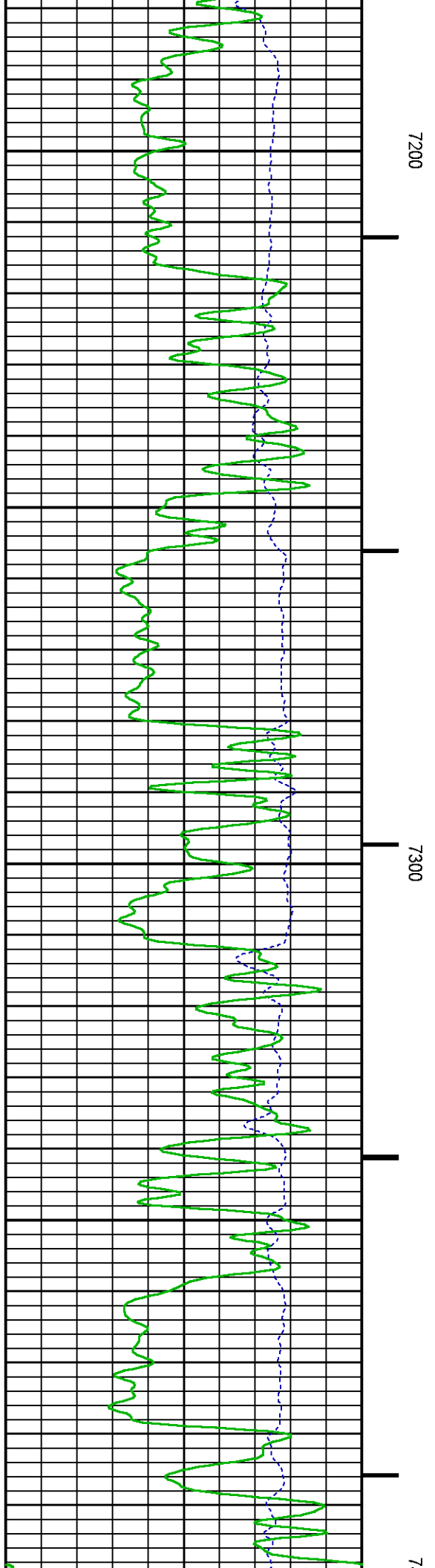
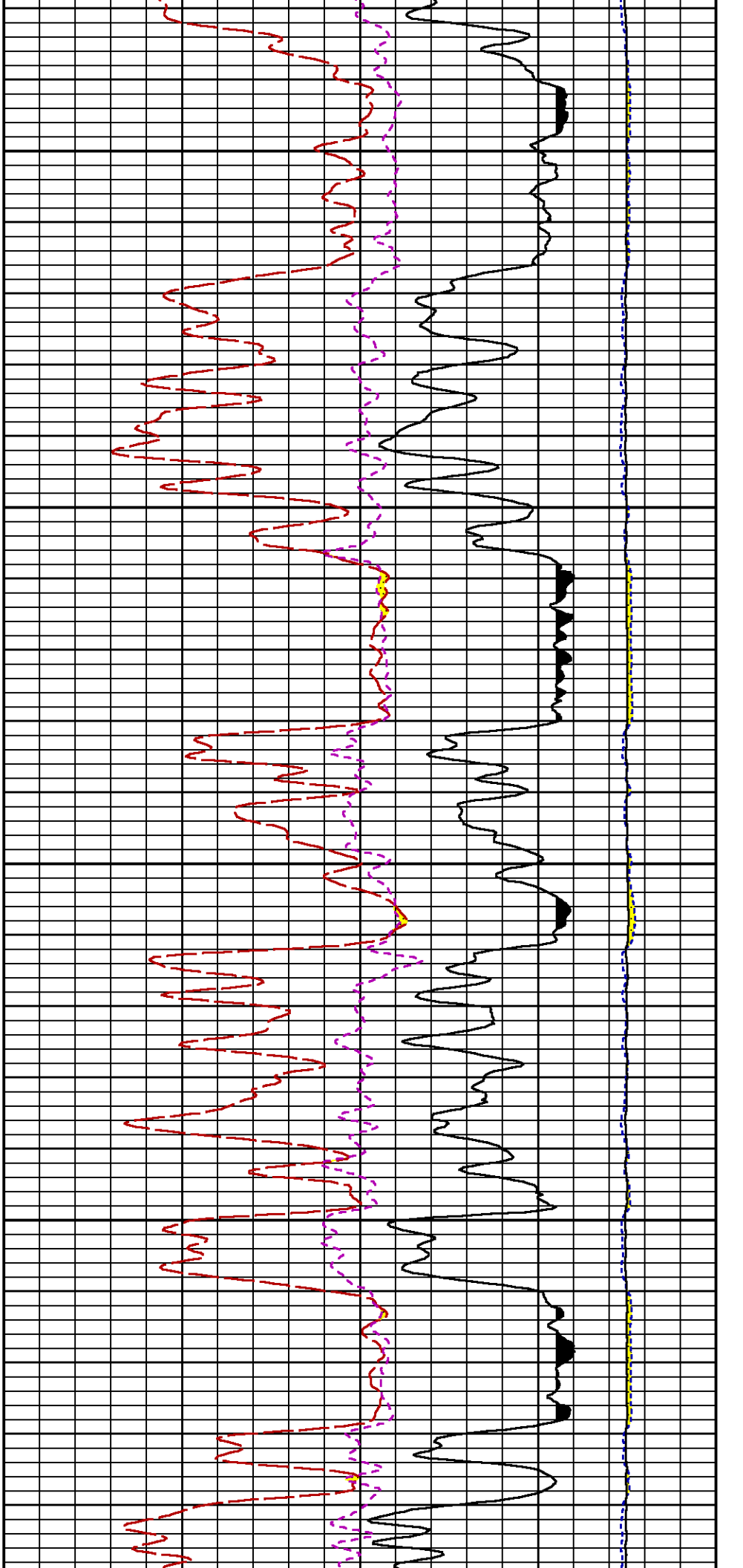


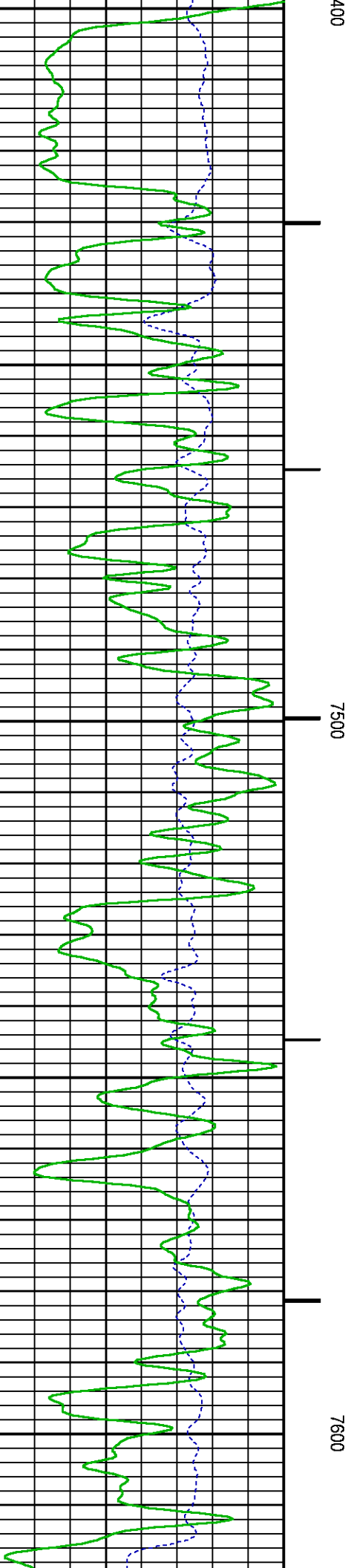
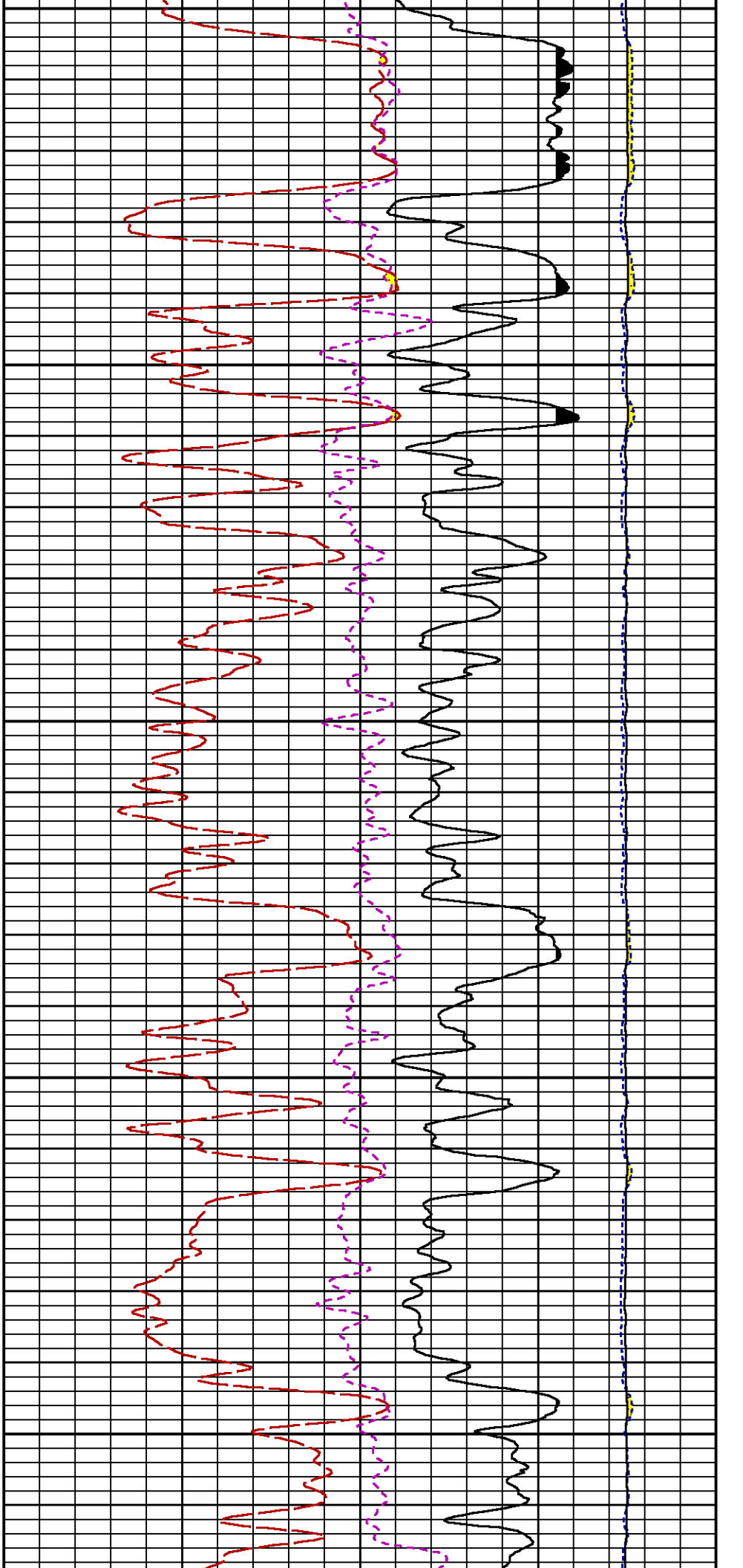


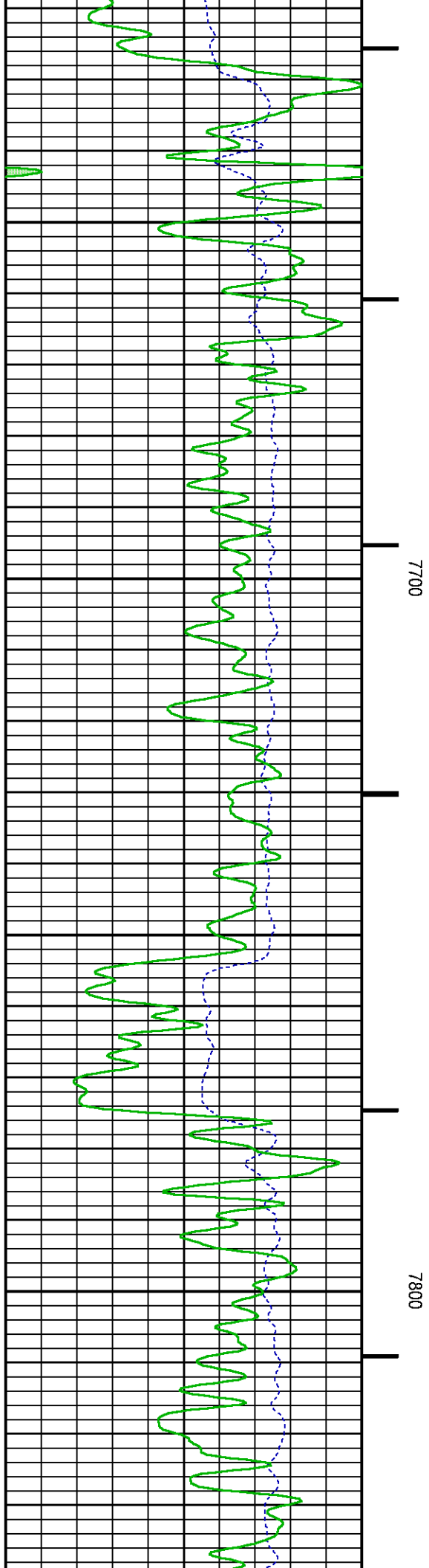
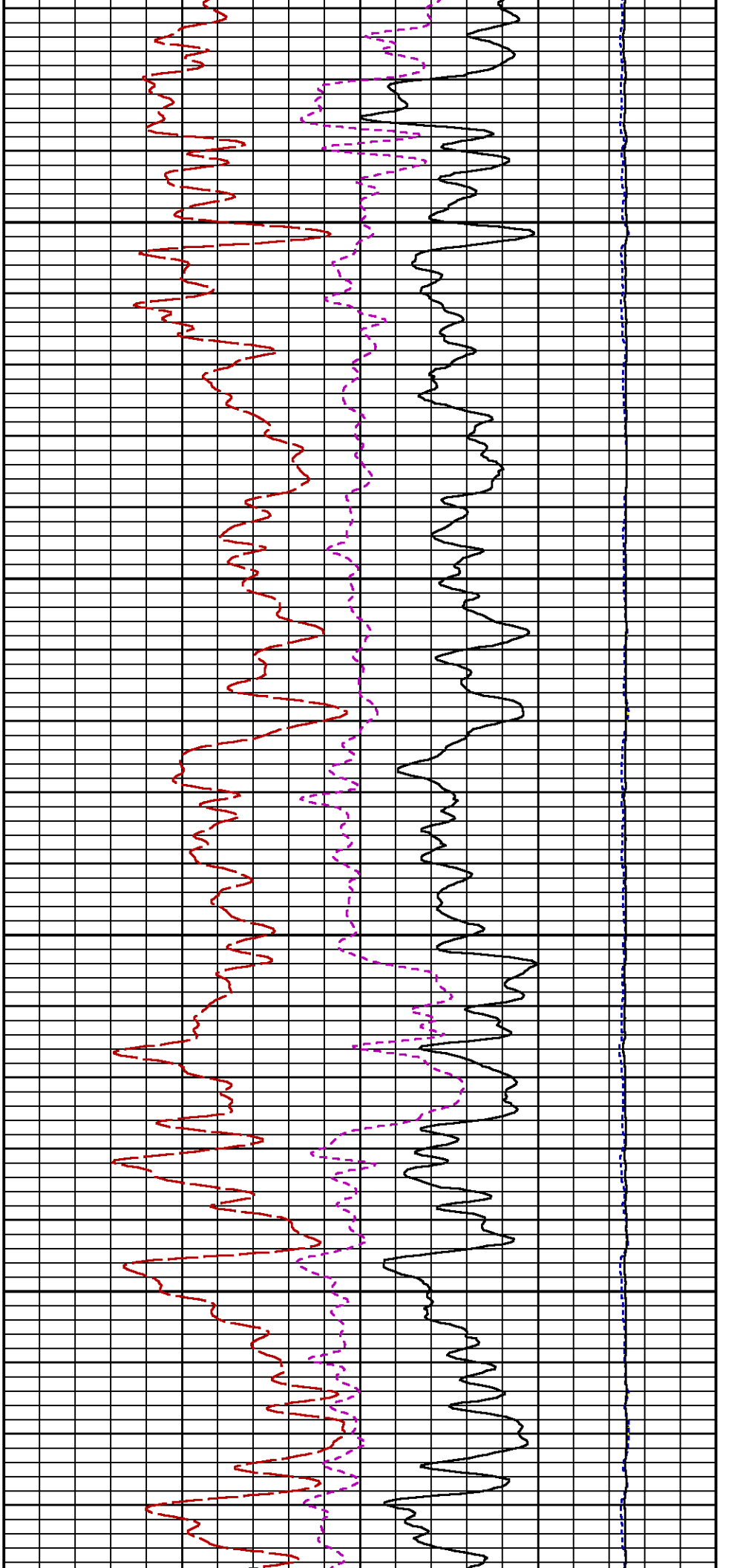


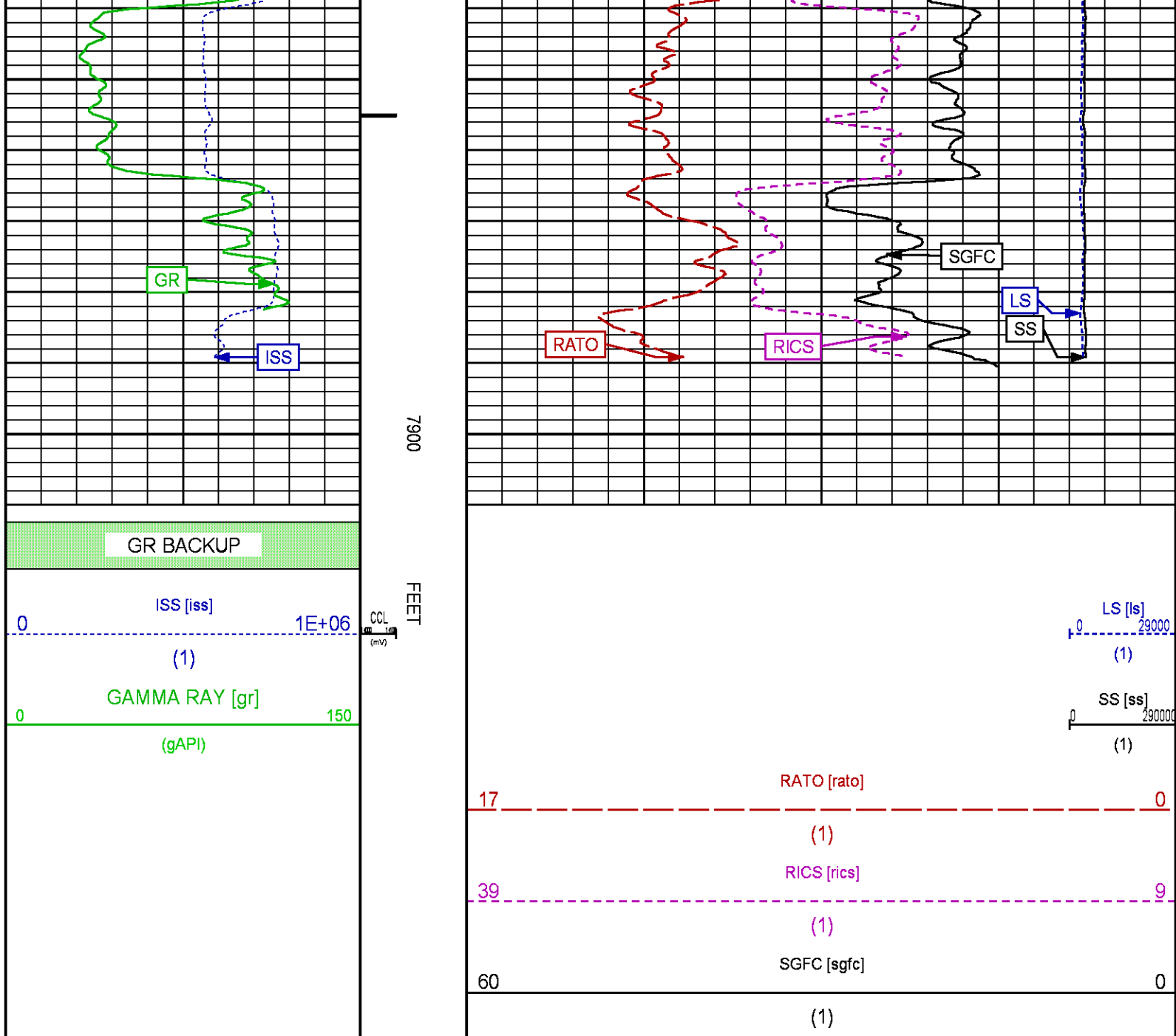












REPEAT SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013
Updates: 1 Patches: 6

Plotted: Sat Oct 17 11:37:48 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100249/n354h01.prm
LOGGING MODE: DEPTH
TOP DEPTH: 7614.250 ft
DIRECTION: UP
BOTTOM DEPTH: 7902.250 ft

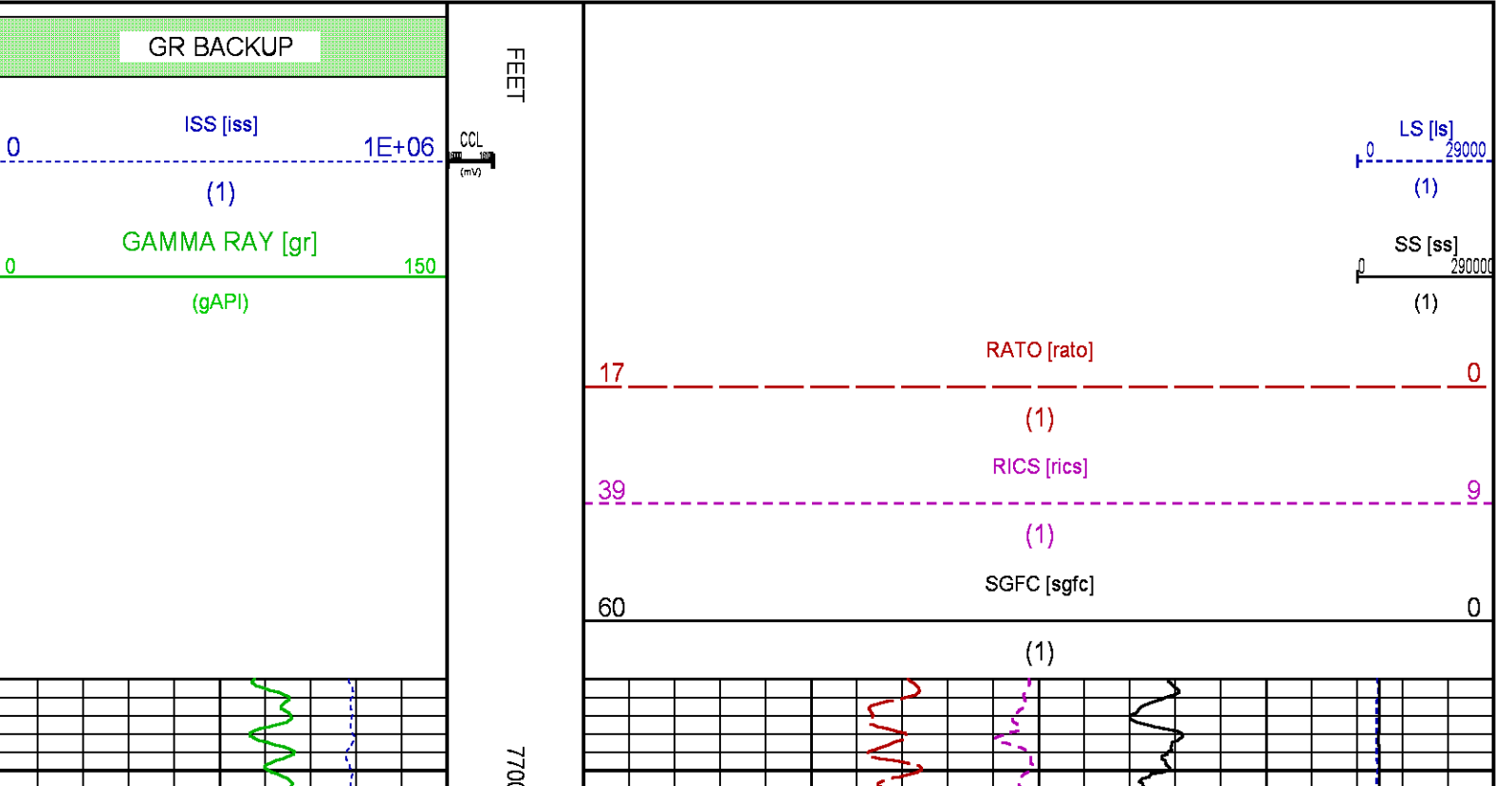
SYMMETRIC FILTER

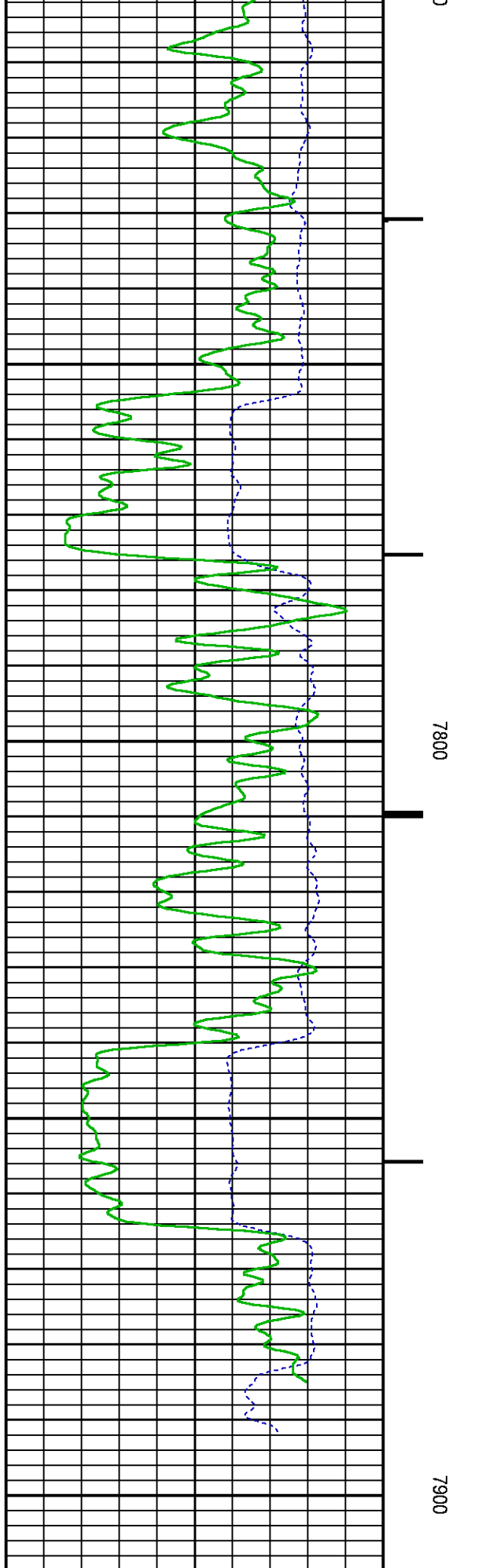
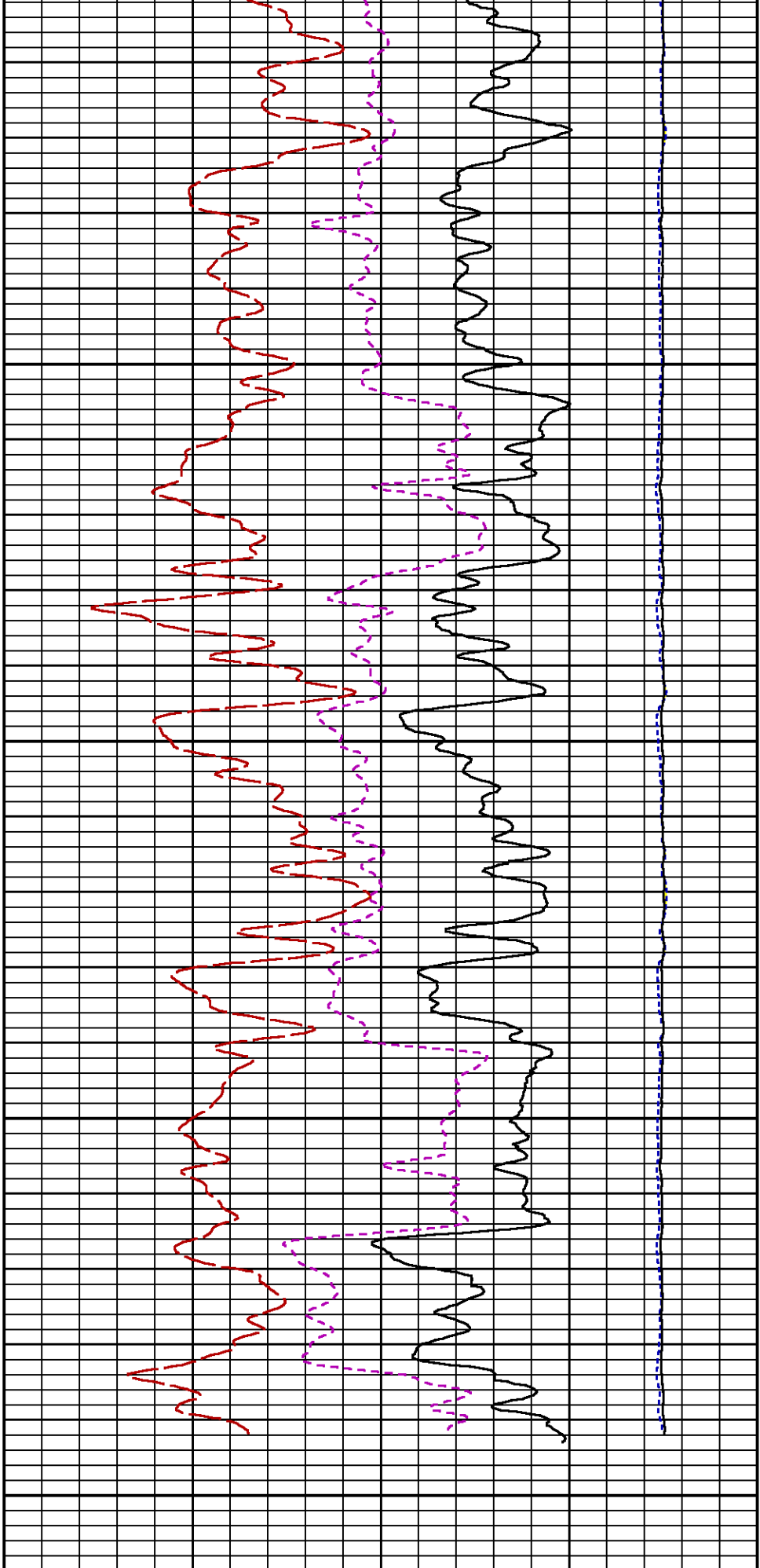
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
RPM PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.88	in	"	"
	CASING SIZE	4.50	in	"	"
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

CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Oct 17 10:48:26 2015	CASING COLLAR LOCATOR
F1:GR	Oct 17 10:48:26 2015	GAMMA RAY
F1:ISS	Oct 17 10:48:26 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 17 10:48:26 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 17 10:48:26 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 17 10:48:26 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 17 10:48:26 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 17 10:48:26 2015	SHORT SPACE COUNT RATE

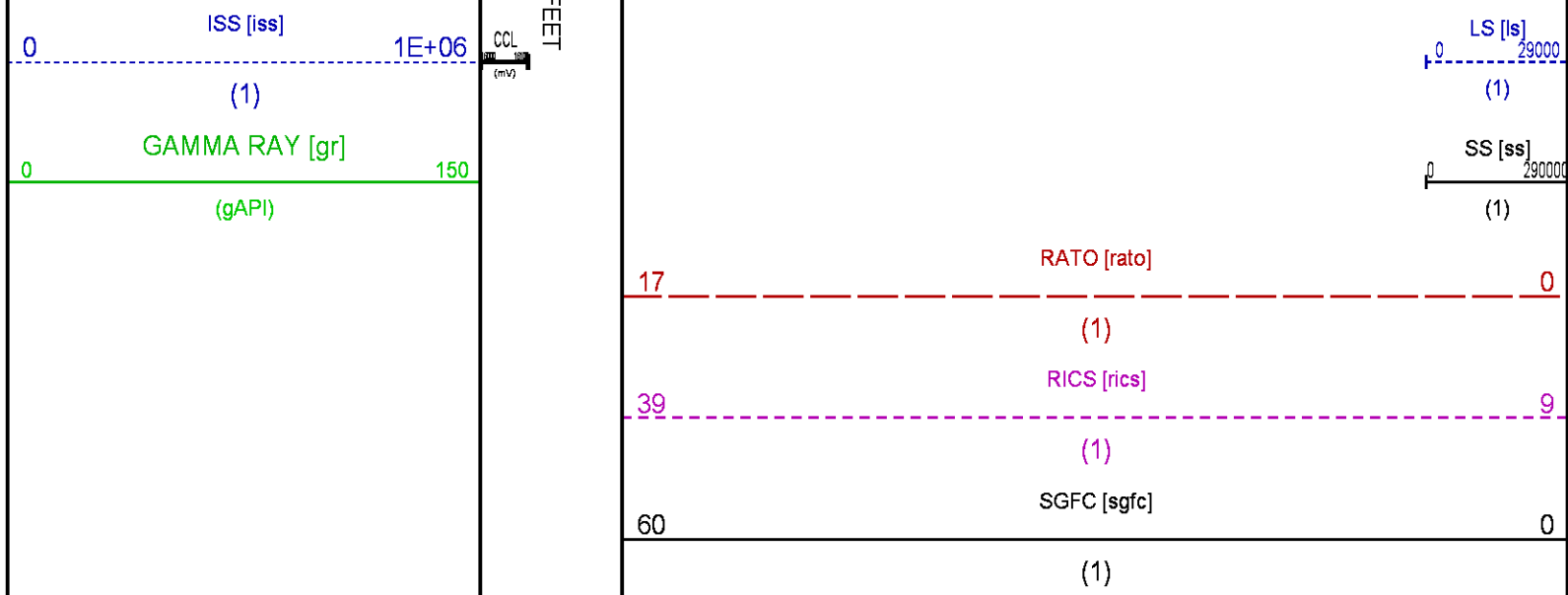
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation	: HL6670:/dat1a/CH100249/8M_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 7690 - 7909 Feet
Data File 1	: F1 : HL6670:/dat1a/CH100249/n354h01REPEAT8M.xtf
Created On	: Oct 17 10:48:26 2015
Company	: LARAMIE ENERGY
Well	: PICEANCE 28_08M
Field	: VEGA
File Interval	: 7595.5 - 7908 Feet
OCT	: n354h





GR BACKUP



CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH100249/n354h.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Fri Oct 9 13:18:59 2015

UNIT #: 3880TA HL6670

CALB JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	47.82	238.76	190.9	1.100	52.60	262.60	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Fri Oct 9 13:21:02 2015

UNIT #: 3880TA HL6670

VERI JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	48.98	234.73	1.100	53.87	258.17	204.31
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10169251

DATE/TIME PERFORMED: Thu Oct 8 10:31:28 2015

UNIT: 3885TC 6685

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 11765055

HOURS: 8281AA 64

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	794094	124	2318	2302	2313	89	7	0.9708
Interpolated	1300000	146	2294	2295	2306			
	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794094	7648	1253	160	26.05	0.15	24.33	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	794094	164038	25399	87325	31076	8040	52891	12871
Fit Quality %		0.835	0.945	0.905	0.908	0.767	0.832	0.802

	ISS	RBOR	RIN	RIN13	RICS	RATO	RTWO	RONE
			ISS/ILS	ISS/IXS	ISS/CSS	SS/LS	SS2/LS	CSS/CLS
Raw Data	794094	1.44	4.84	31.28	15.01	10.87	3.87	4.11
		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 %		0.069	0.196	0.156	0.174	0.096	0.105	0.067
Reduced	1398936	1.43	4.83	31.18	14.97	10.87	3.87	4.11
		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 120516

DATE/TIME PERFORMED: Fri Oct 9 14:47:11 2015

UNIT #: 3880TA HL6670

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Temp	-2.032071E+01	1.041576E-01	1.407105E-06	-1.763022E-10

INSTRUMENT CONFIGURATION

Source File: /dat1a/CH100249/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

SONDEX GAMMA RAY
Diameter : 1.69"
Length : 2.17'
Weight : 10 lbs
Series : 2812LA
Mnemonic : GR

33.24'

CCL MP 25.19'

GR MP 22.64'

Mnemonic : GR
Measure Point: 0.62': 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
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: 33.24'
TOTAL WEIGHT: 140 lbs
MAX DIAMETER: 0'1.70"

0.00'



COMPANY
WELL
FIELD
COUNTY

LARAMIE ENERGY
PICEANCE 28-08M
VEGA
MESA

STATE COLORADO

FILE NO:
CH100249

API NO:
05077102450000



LOCATION:

SHL: LAT 39.250933 LONG -107.779375
BHL: LAT 39.250153 LONG -107.774661

SEC 28 TWP 9S RGE 93W

ELEVATIONS:

KB 7600 FT
DF
GL 7578 FT

28 9S 93W
28-05 PAD
PATTERSON 306

DATE 17-OCT-2015