



FILE NO: CH097898	COMPANY WELL FIELD COUNTY	LARAMIE ENERGY GUNDERSON 29-08E VEGA MESA STATE COLORADO
API NO: 05077097600000		

Ver. 4.01 SEC 29 T9S R93W PAD 29-09 PATTERSON 306	LOCATION: SHL: 2394' FNL & 1150' FEL BHL: 1891' FNL & 849' FEL SEC 29 TWP 9S RGE 93W	OTHER SERVICES BOND LOG
--	---	----------------------------

PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KB GL	ELEVATION 22 FT 7631 FT 7653 FT 7631 FT	ABOVE P.D.
---	----------------------	---	------------

DATE	21-Jul-2015
RUN	1
SERVICE ORDER	US097898
DEPTH DRILLER	7717 FT
DEPTH LOGGER	7679 FT
BOTTOM LOGGED INTERVAL	7669 FT
TOP LOGGED INTERVAL	2470 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	NA
LOGGED CEMENT TOP	NA
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	243 DEGF
REFERENCE LOG	BAKER HUGHES BOND LOG
REFERENCE LOG DATE	21-Jul-2015
EQUIP. NO.	6670
LOCATION	T. NEWELL GRAND JCT.
RECORDED BY	JOHN GRUBICH
WITNESSED BY	

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	7843 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		22 FT	7843 FT

REMARKS

RUN 1 TRIP 1: ALL DATA ON THIS LOG IS SHIFTED AT TD USING THE GAMMA RAY CURVE TO BE ON DEPTH WITH THE BAKER HUGHES BOND LOG DATED 21/JULY/2015 AT THE CLIENT'S REQUEST

THE AMOUNT OF LINEAR SHIFT IS 2 FEET

BHT = 243 degF

SJ = 5919' - 5941'
SJ = 6823' - 6845'

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

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	10586851	FREE
1	1	TEL/CCL	8248ED	10460262	FREE
1	1	GR	8262XA	10274382	FREE
1	1	RPM	8281EA	10190984	FREE
1	1	RPM	8283PA	10414345	FREE
1	1	RPM	8281FA	10401926	FREE
1	1	TEMP	8255XA	11774568	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: Tue Jul 21 16:26:15 2015

PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/CH097898/n354h03.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 2474.500 ft BOTTOM DEPTH: 3101.140 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	Jul 21 14:23:01 2015	CASING COLLAR LOCATOR
F1:GR	Jul 21 14:23:01 2015	GAMMA RAY
F1:ISS	Jul 21 14:23:01 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jul 21 14:23:01 2015	LONG SPACE COUNT RATE
F1:RATO	Jul 21 14:23:01 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jul 21 14:23:01 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jul 21 14:23:01 2015	CORRECTED FORMATION SIGMA
F1:SS	Jul 21 14:23:01 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/CH097898/8E_RPM_GSAND.fvpdf [5"/100' Scale]
 Plot Interval : 2475 - 3080 Feet

Data File 1 : F1 : HL6670:/dat1a/CH097898/8E_RPM_GSAND.xtf
 Created On : Jul 21 14:23:01 2015
 Company : LARAMIE ENERGY
 Well : GUNDERSON 29-8E
 Field : WEGA

Field : VEGA
File Interval : 2443.25 - 3097 Feet
OCT : n354h

GR BACKUP

FEET

ISS [iss]

0 1E+06

(1)

GAMMA RAY [gr]

0 150

(gAPI)

CCL
(mV)

2500

2600

LS [ls]

0 29000

(1)

SS [ss]

0 290000

(1)

RATO [rato]

17

0

(1)

RICS [rics]

39

9

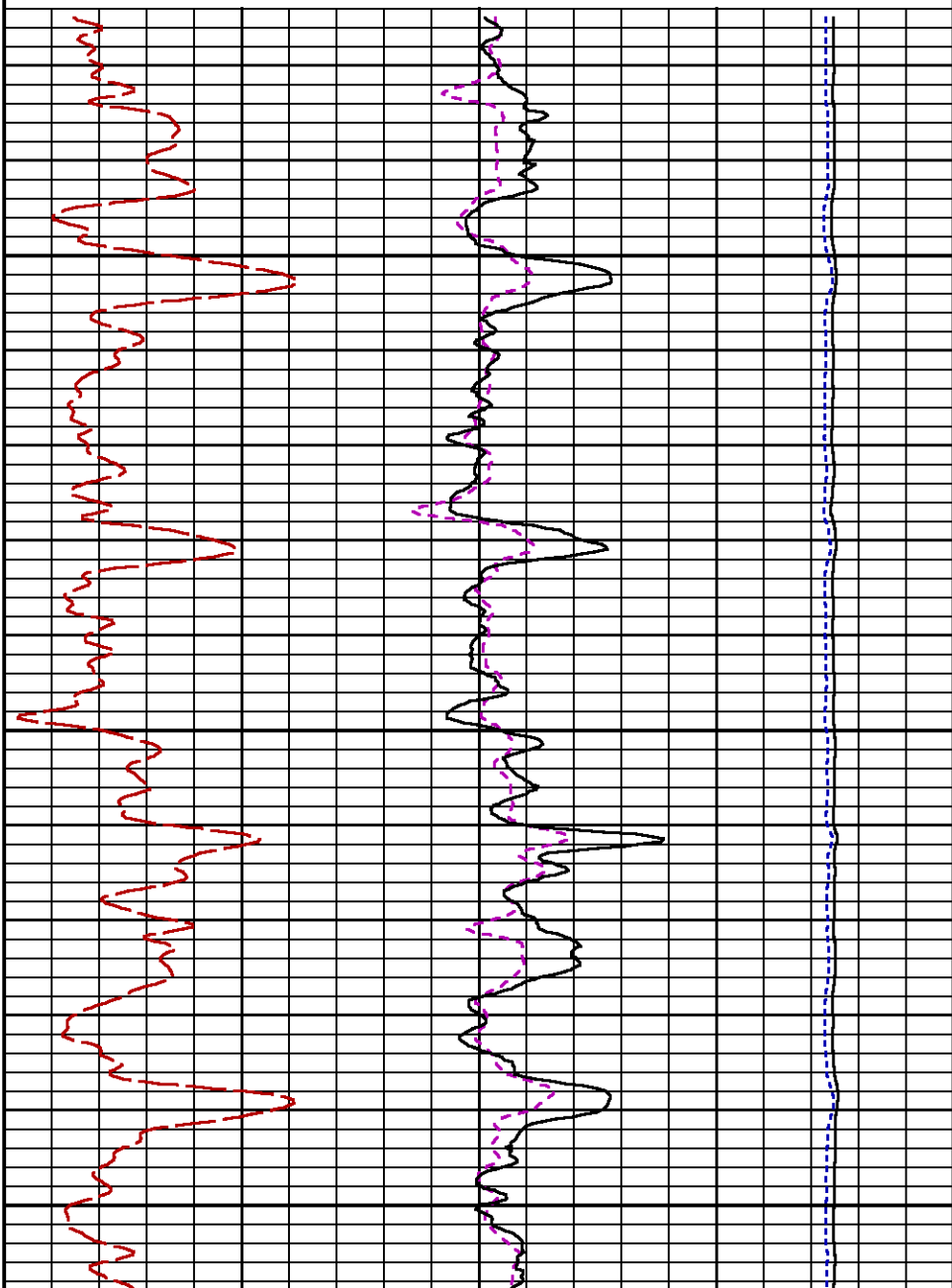
(1)

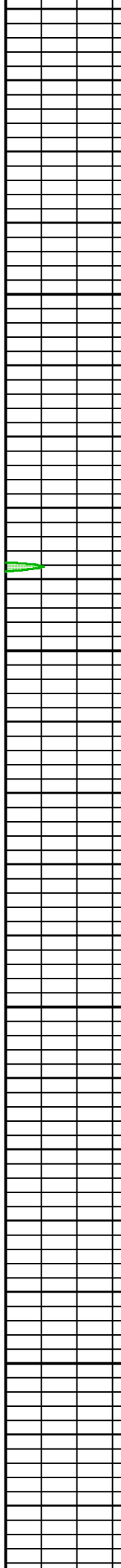
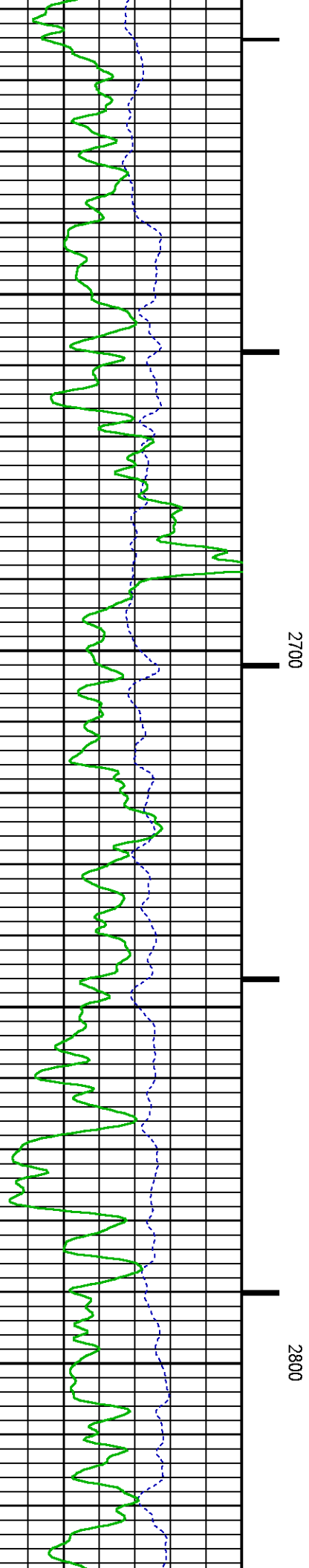
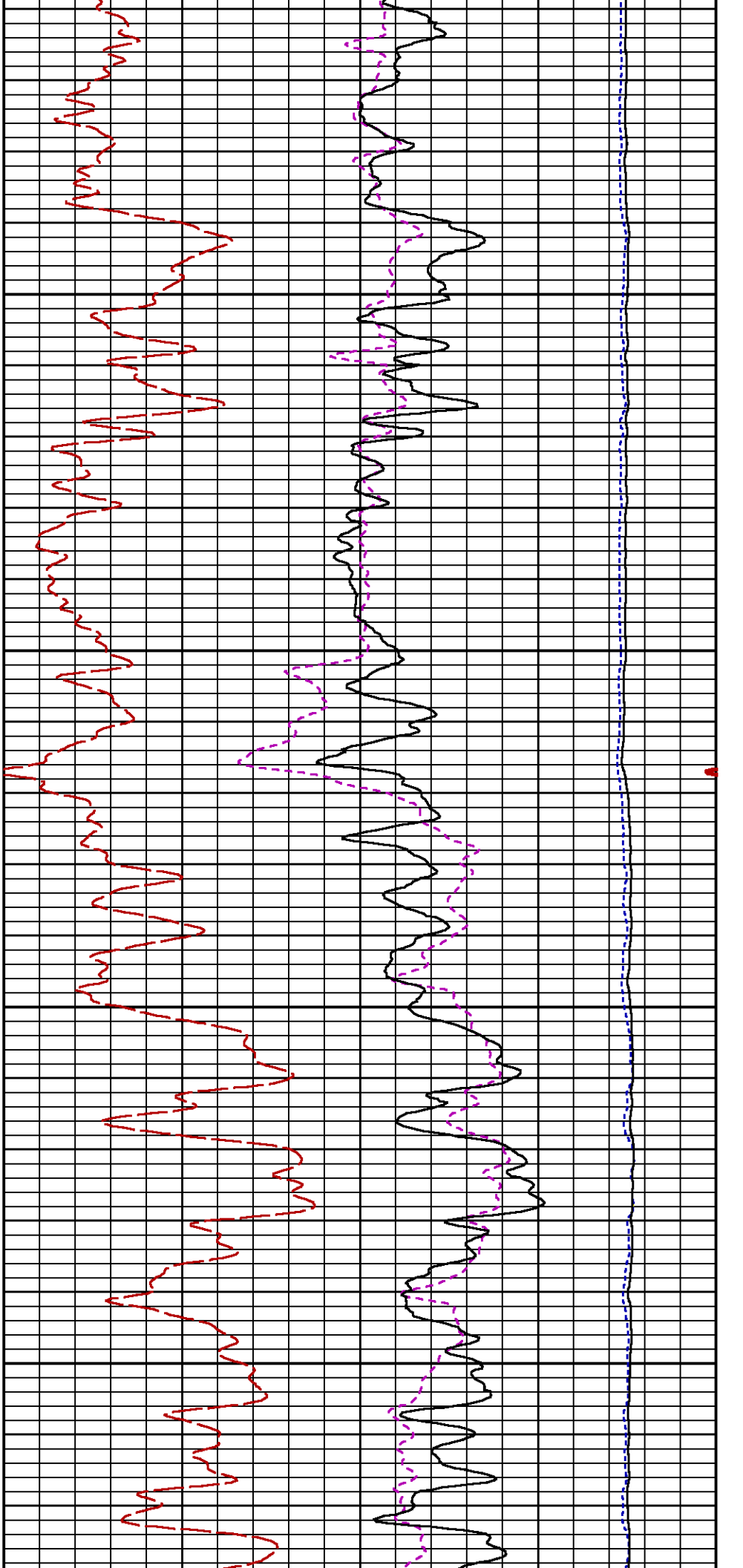
SGFC [sgfc]

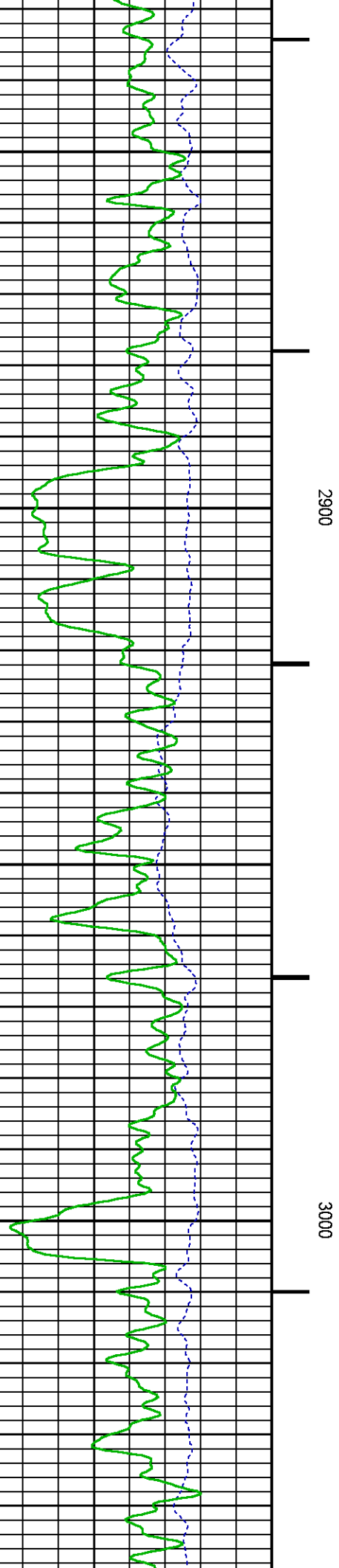
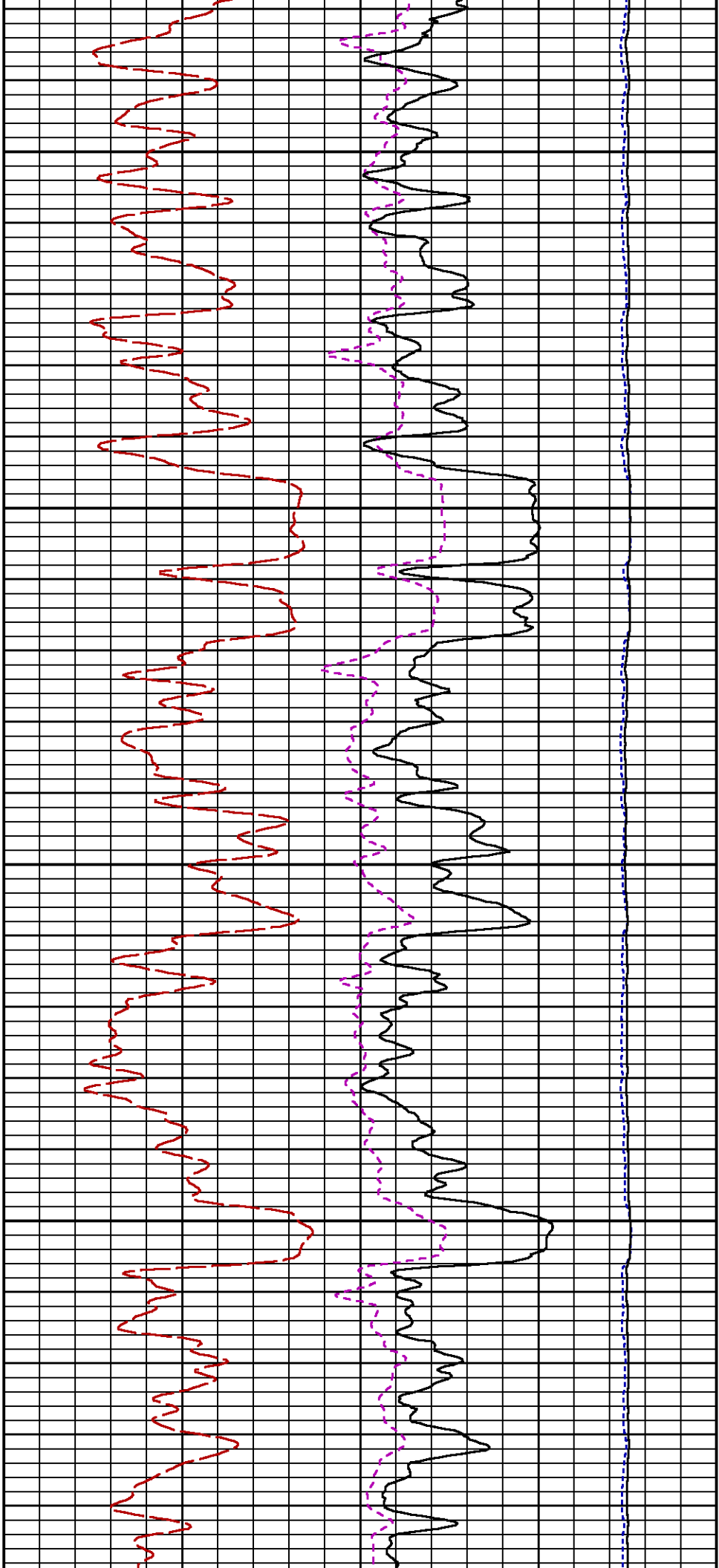
60

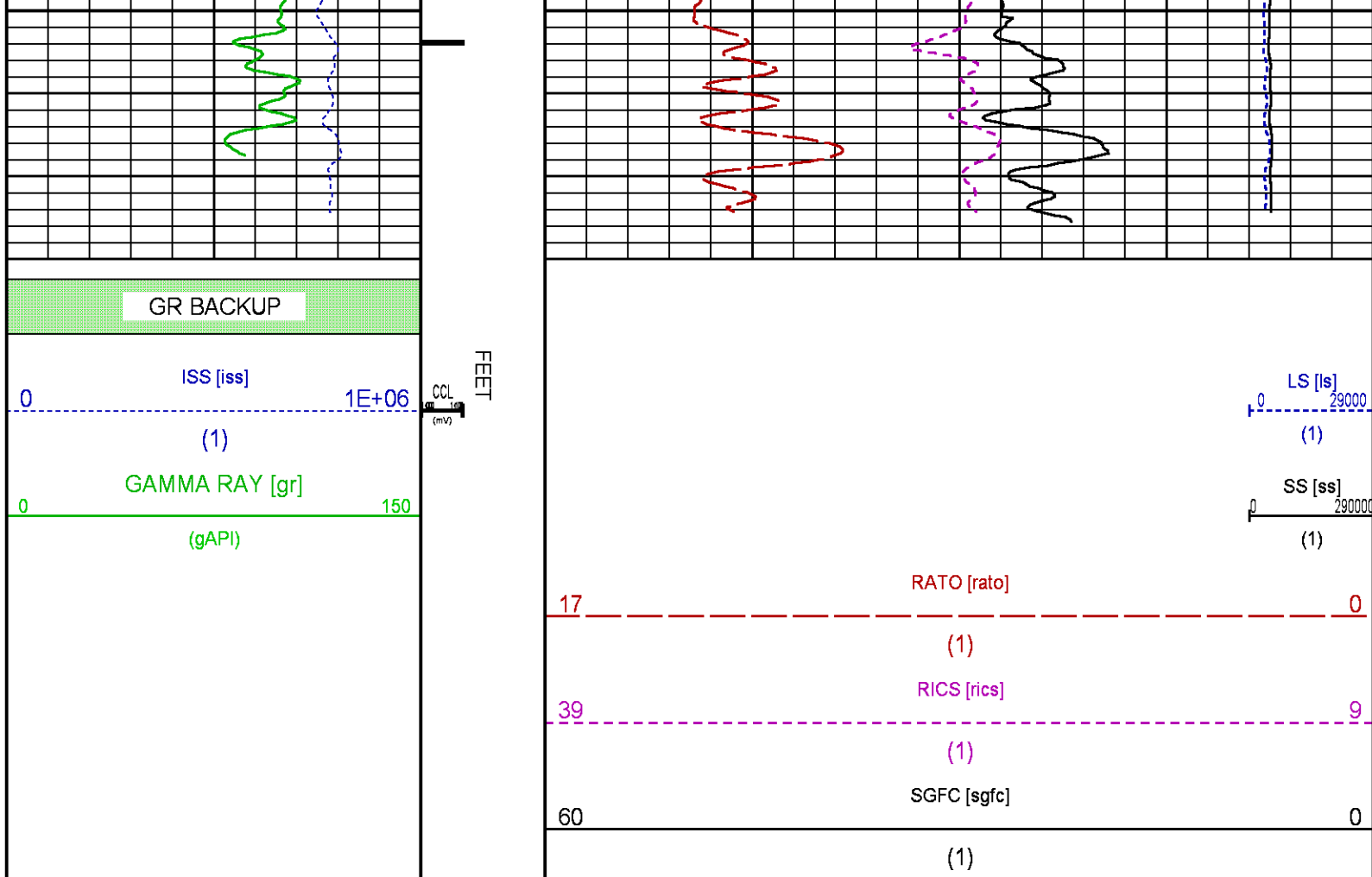
0

(1)









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: Tue Jul 21 14:39:12 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH097898/n354h02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4439.750 ft BOTTOM DEPTH: 7683.750 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

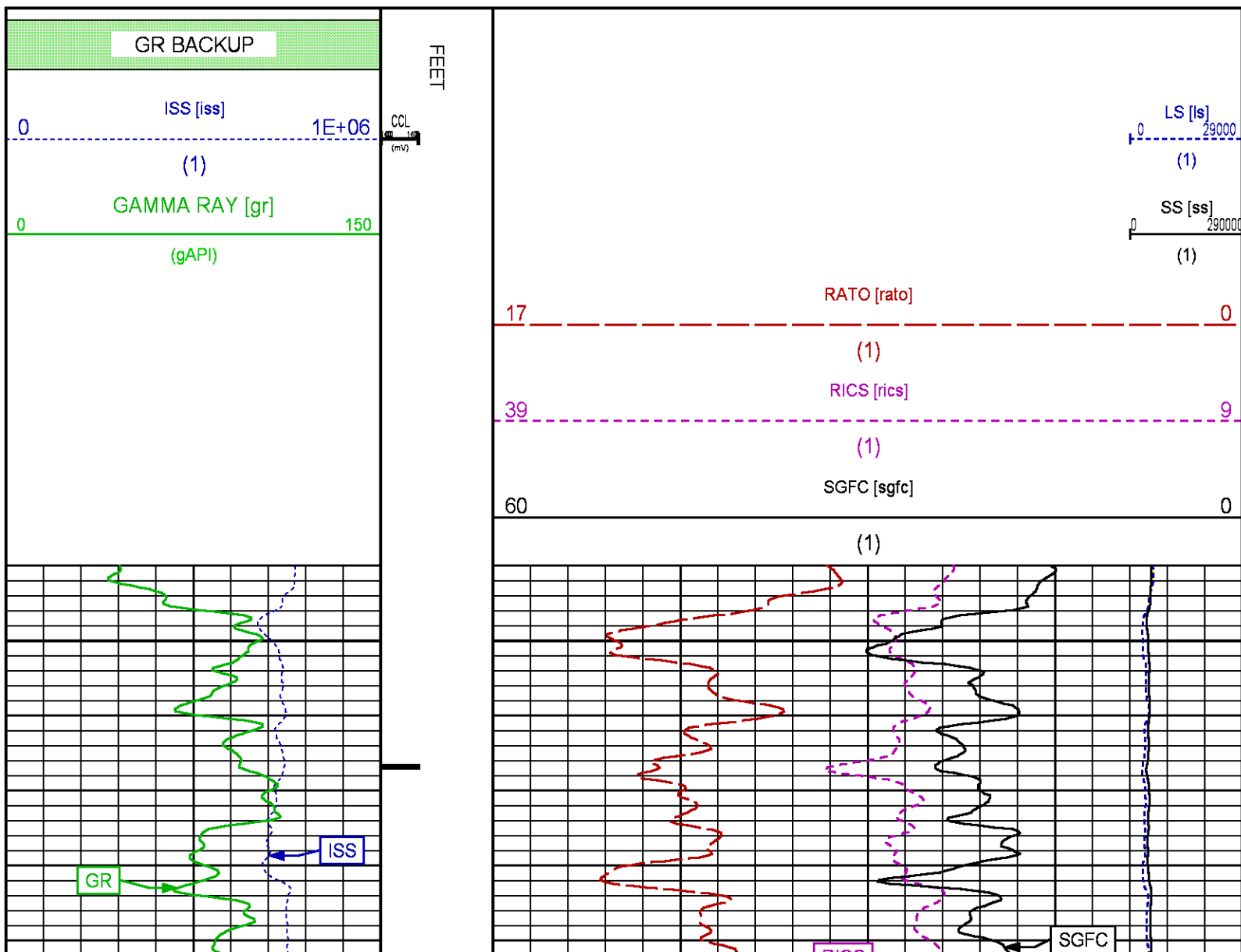
F1:CCL	Jul 21 10:53:56 2015	CASING COLLAR LOCATOR
F1:GR	Jul 21 10:53:56 2015	GAMMA RAY
F1:ISS	Jul 21 10:53:56 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jul 21 10:53:56 2015	LONG SPACE COUNT RATE
F1:RATO	Jul 21 10:53:56 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jul 21 10:53:56 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jul 21 10:53:56 2015	CORRECTED FORMATION SIGMA
F1:SS	Jul 21 10:53:56 2015	SHORT SPACE COUNT RATE

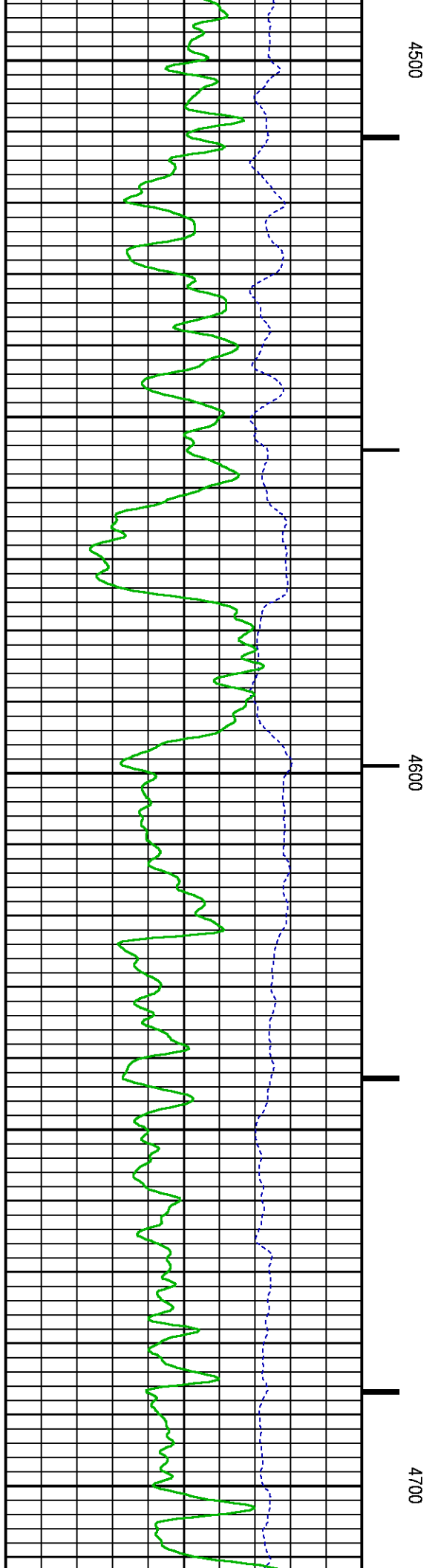
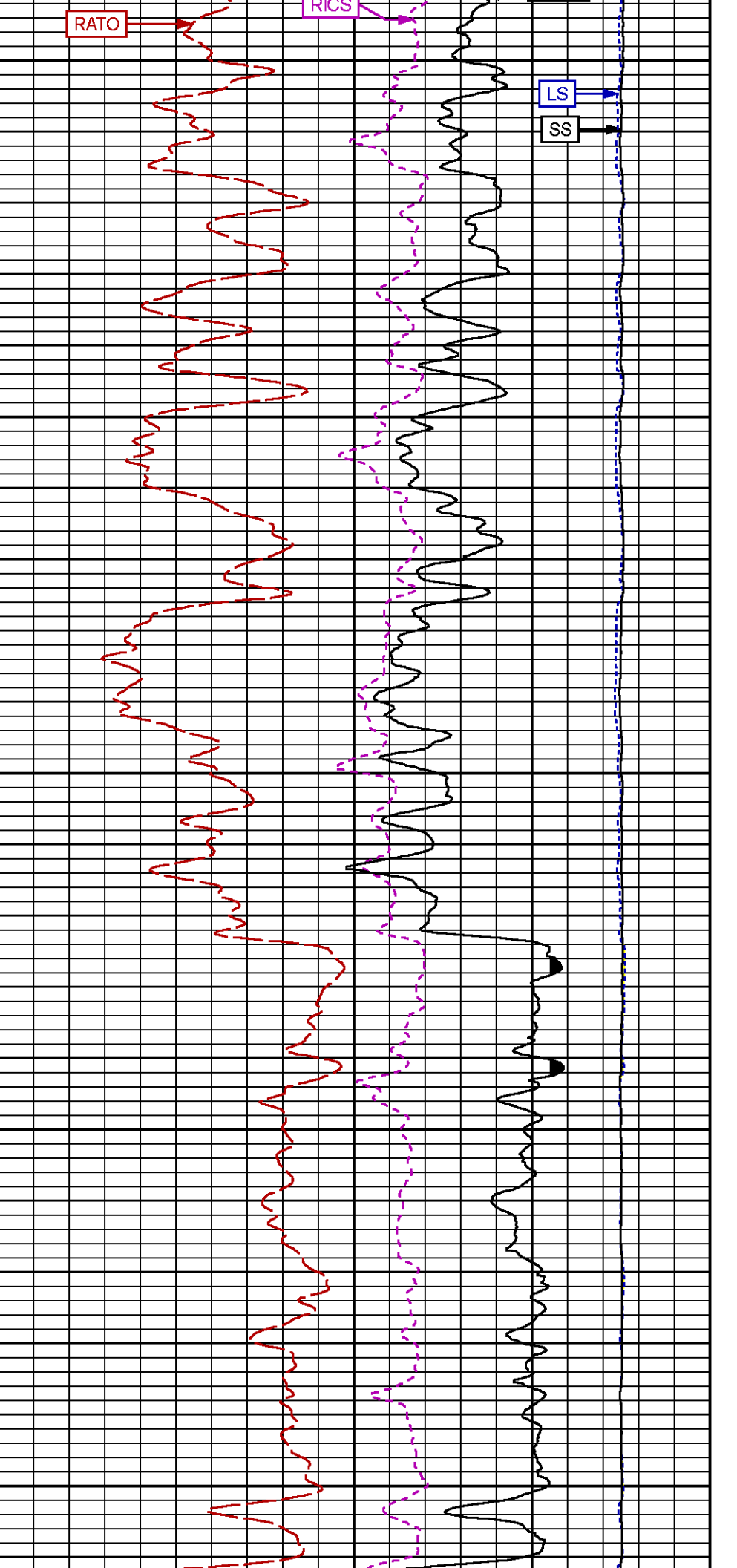
CURVE MEASURE POINT OFFSET

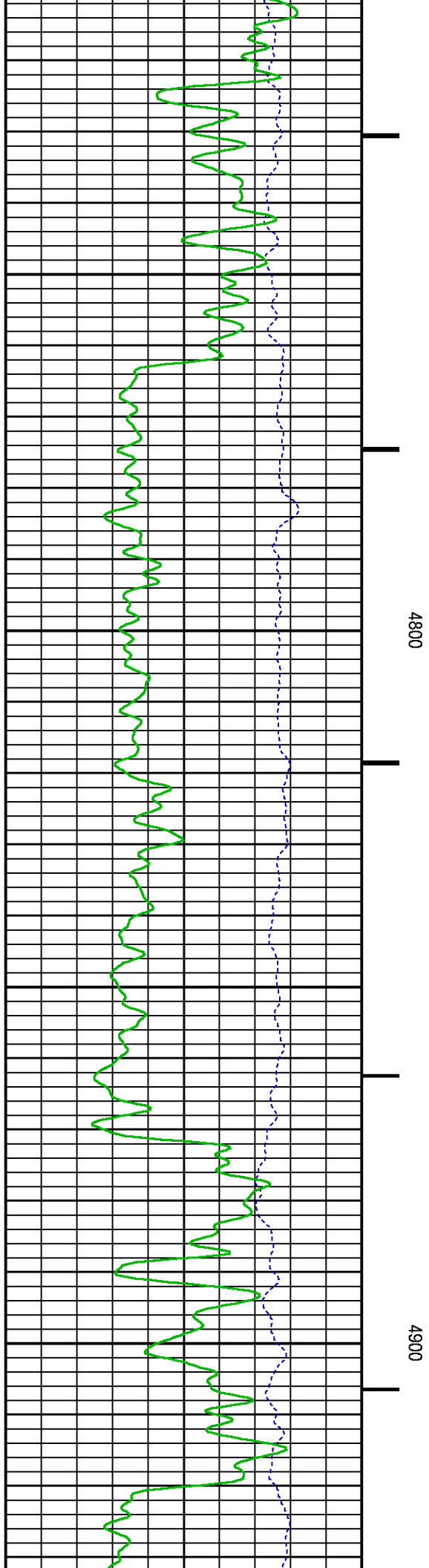
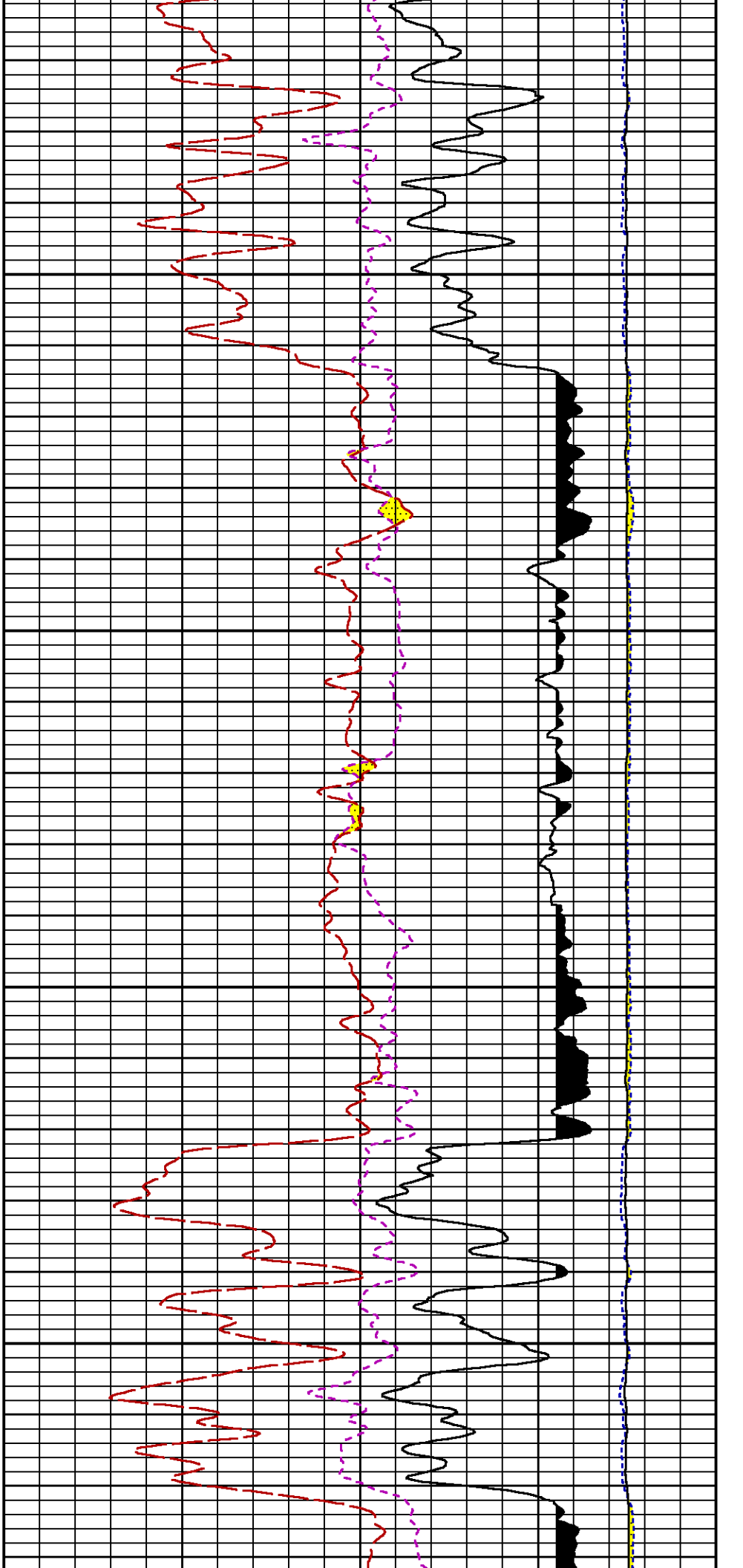
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

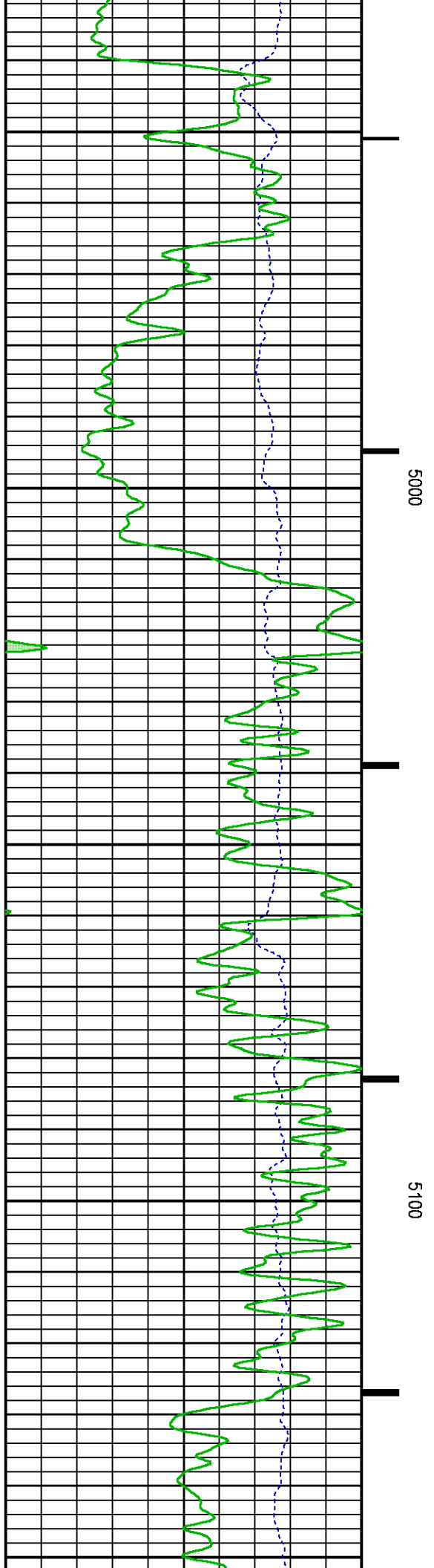
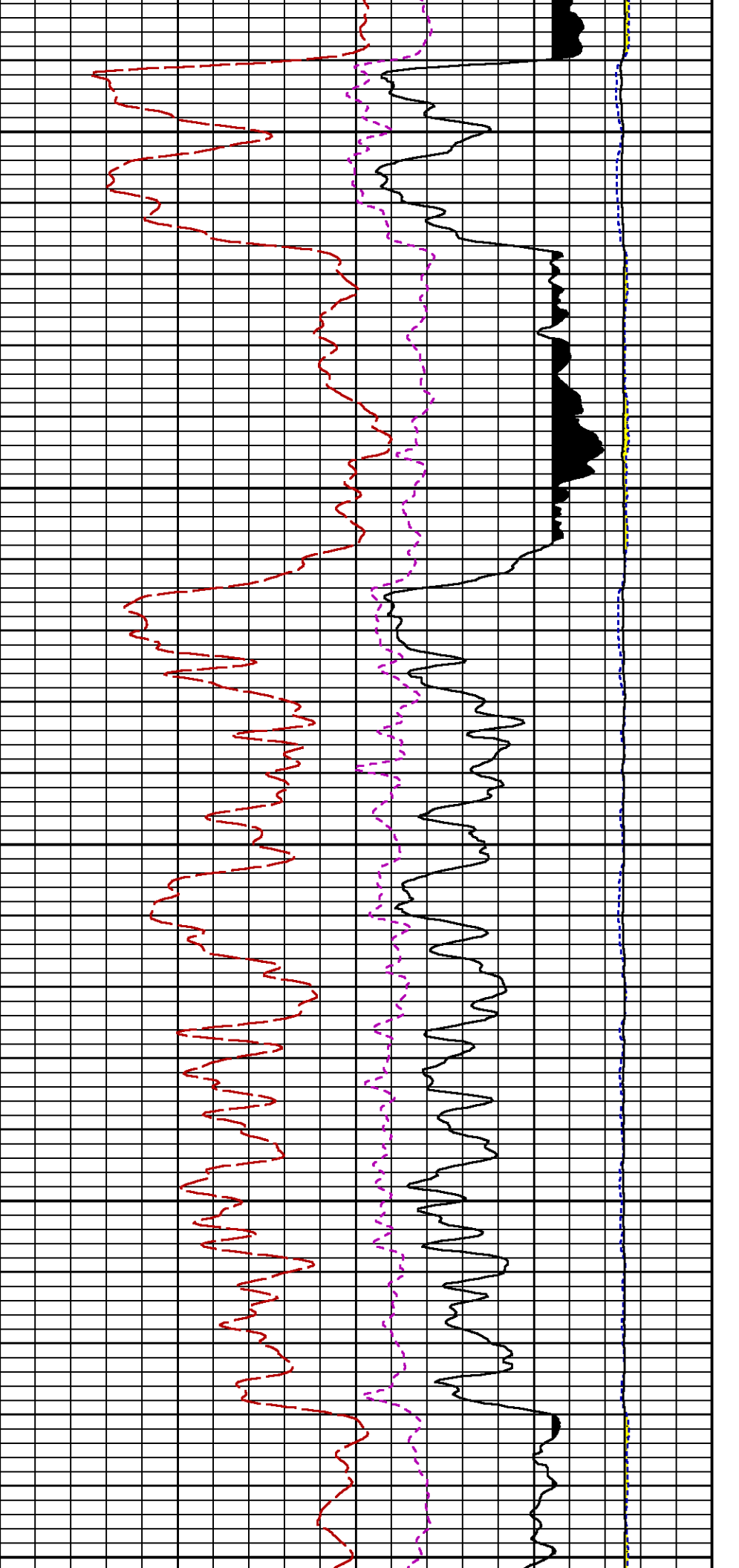
Presentation : HL6670:/dat1a/CH097898/8E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4440 - 7685 Feet

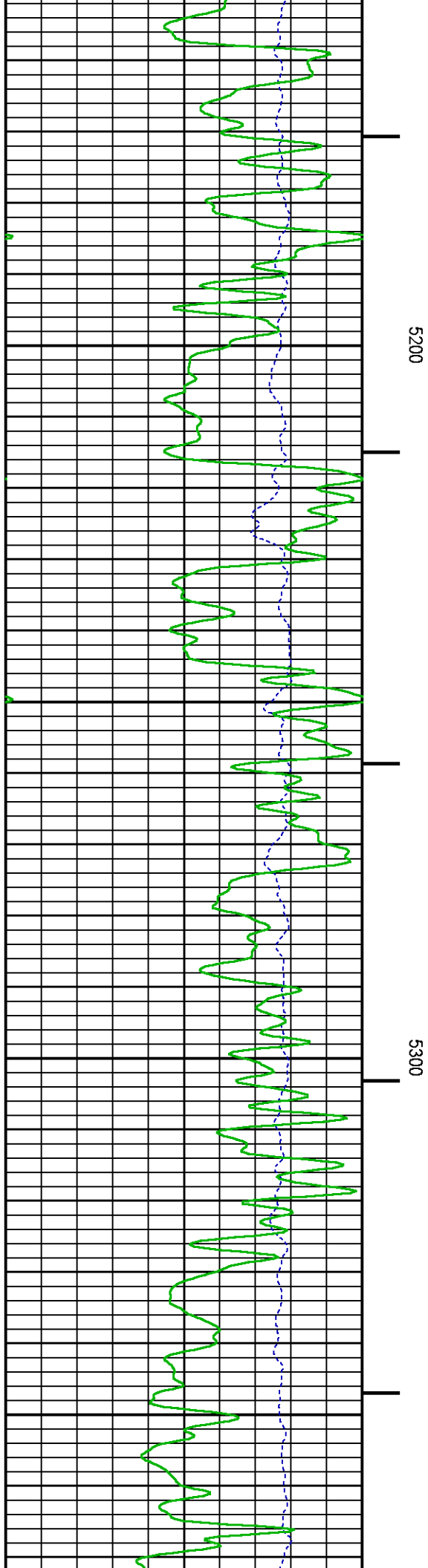
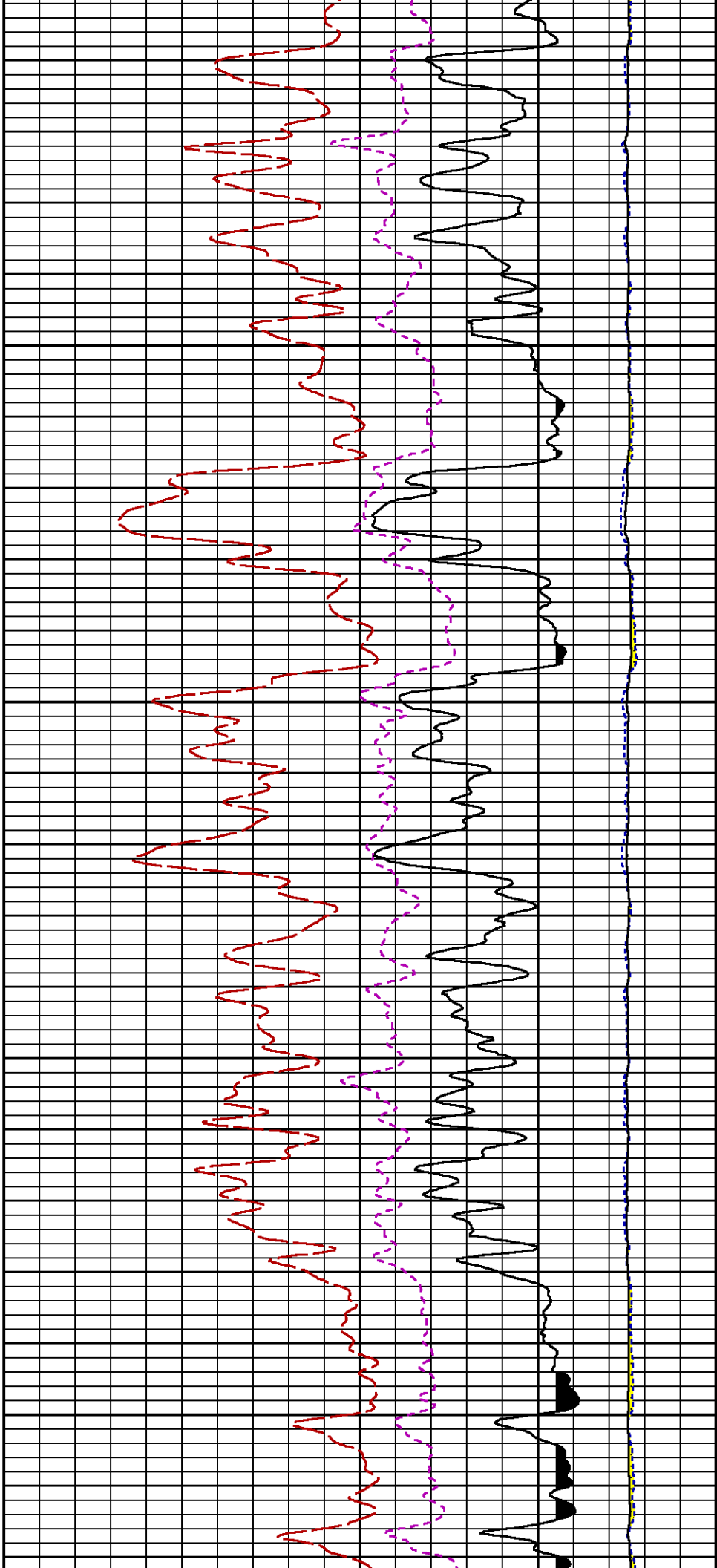
Data File 1 : F1 : HL6670:/dat1a/CH097898/8E_RPM_MAIN.xtf
Created On : Jul 21 10:53:56 2015
Company : LARAMIE ENERGY
Well : GUNDERSON 29-8E
Field : VEGA
File Interval : 4414 - 7682.75 Feet
OCT : n354h

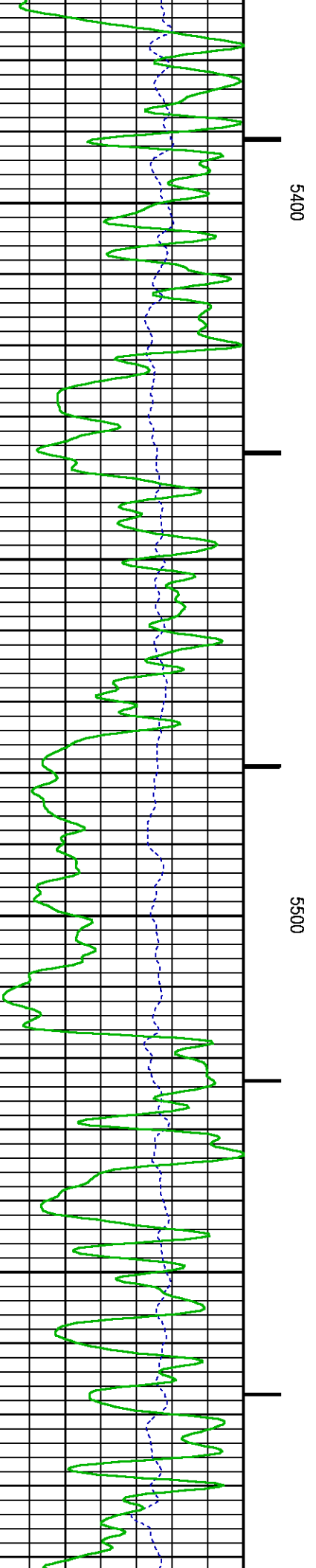
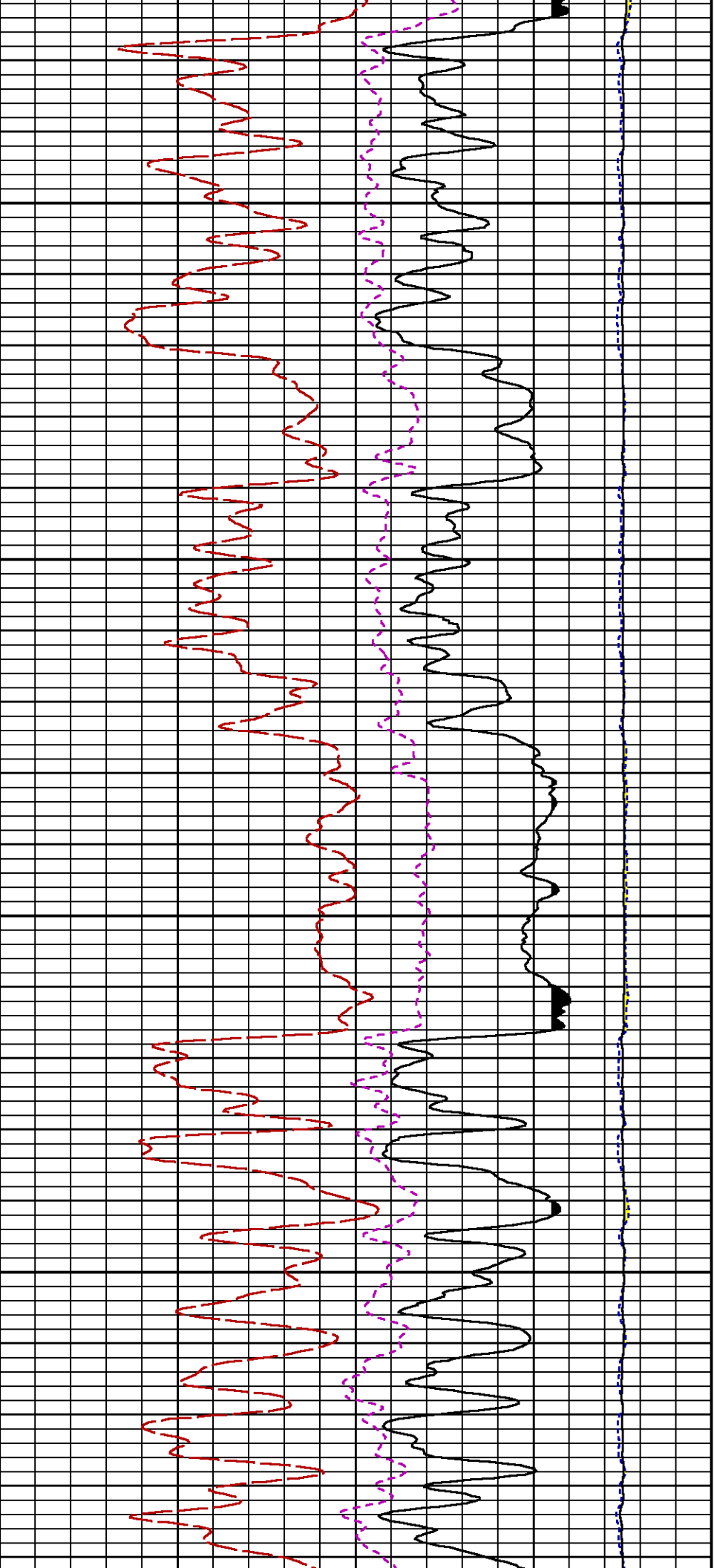


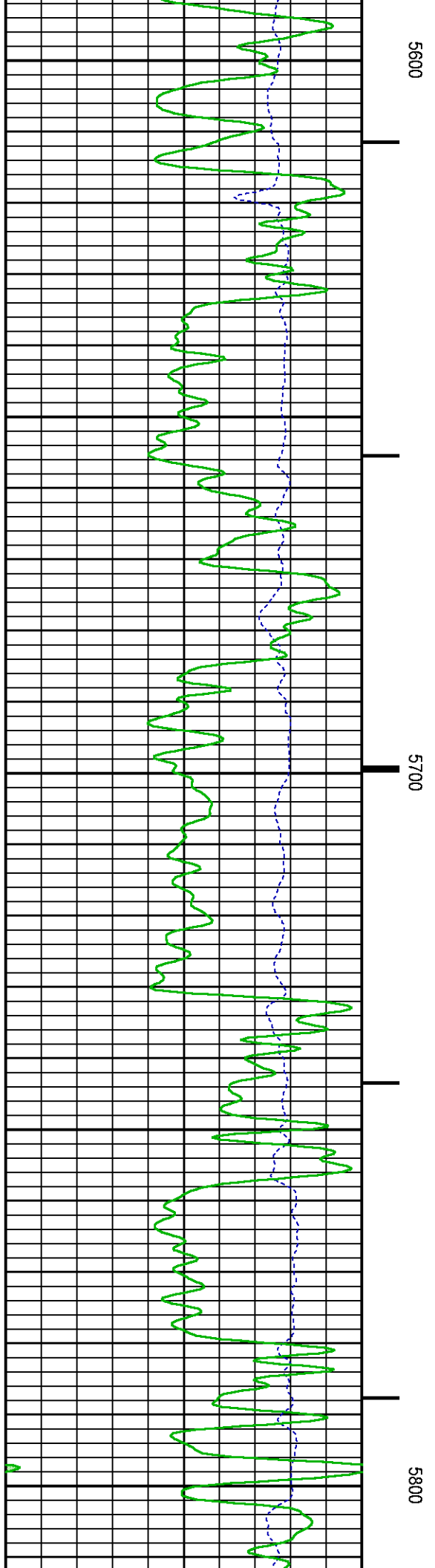
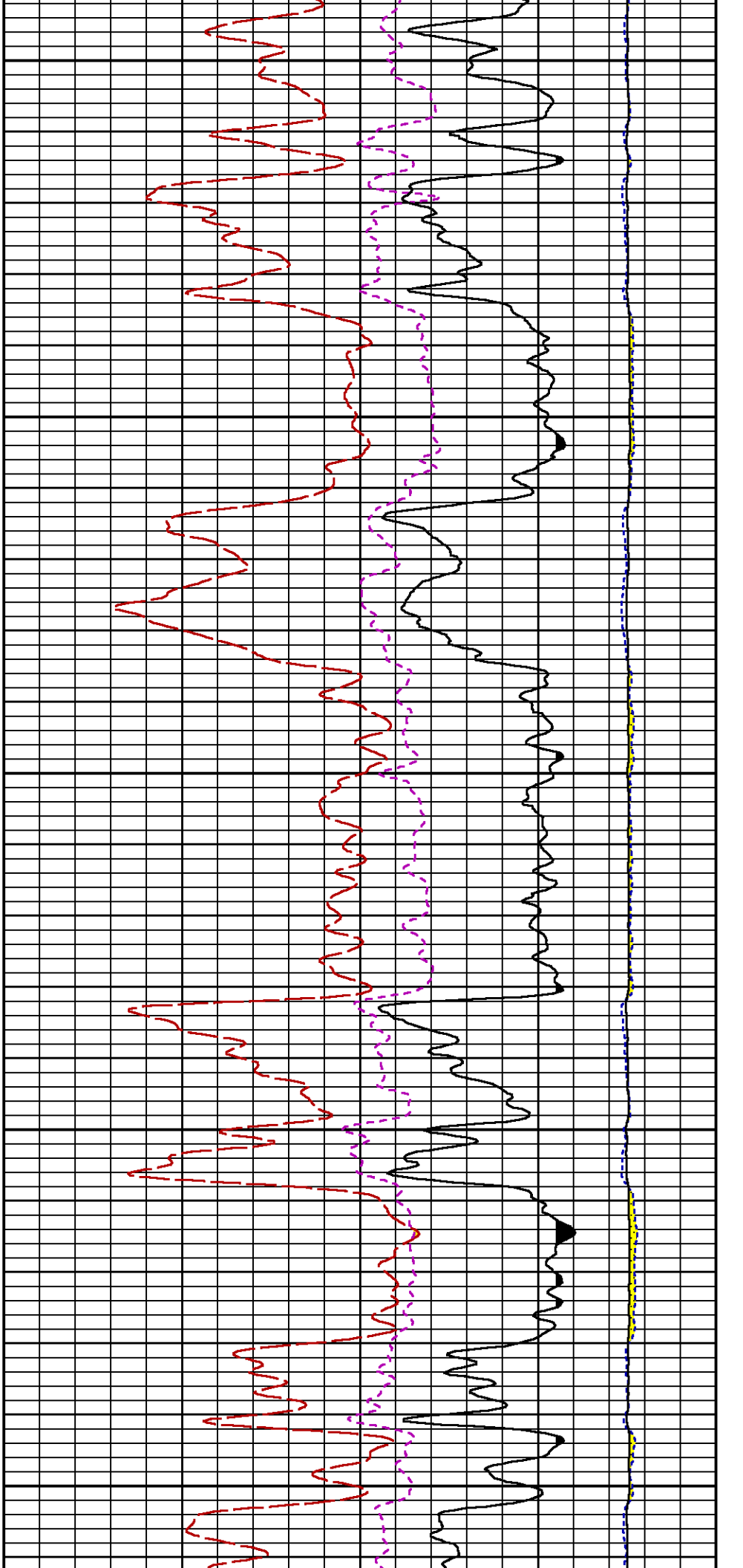


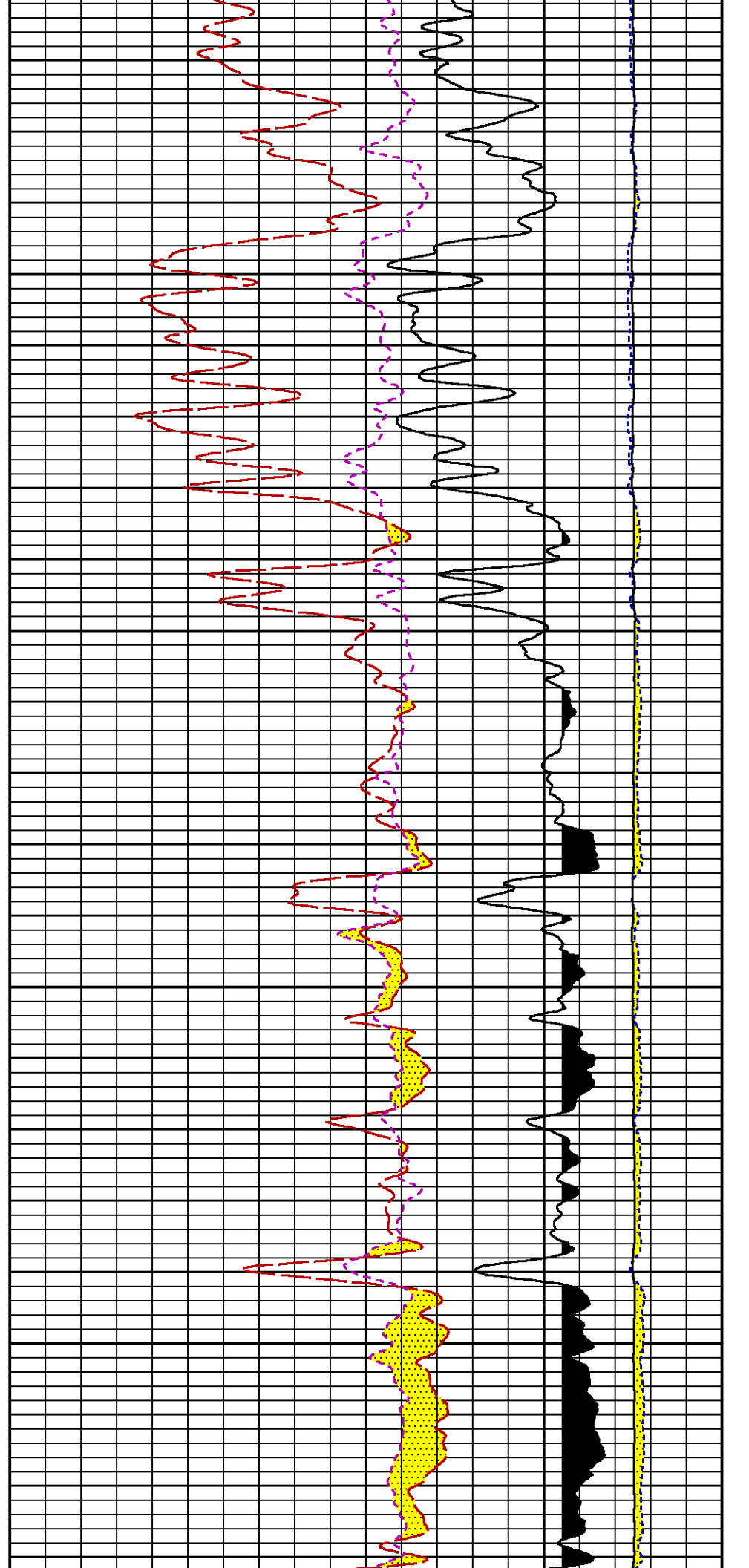
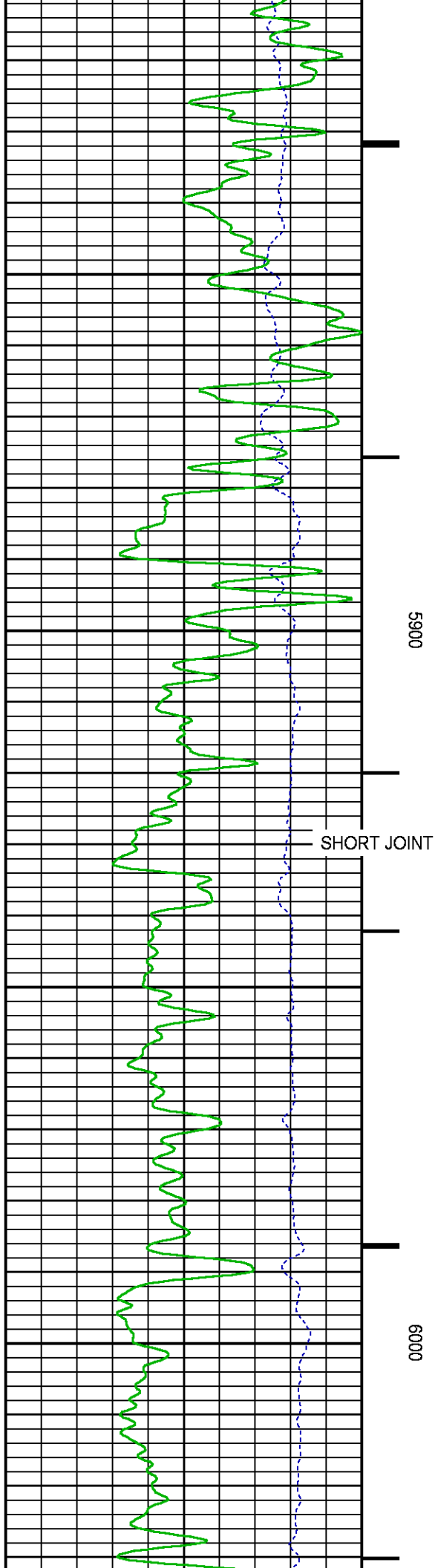


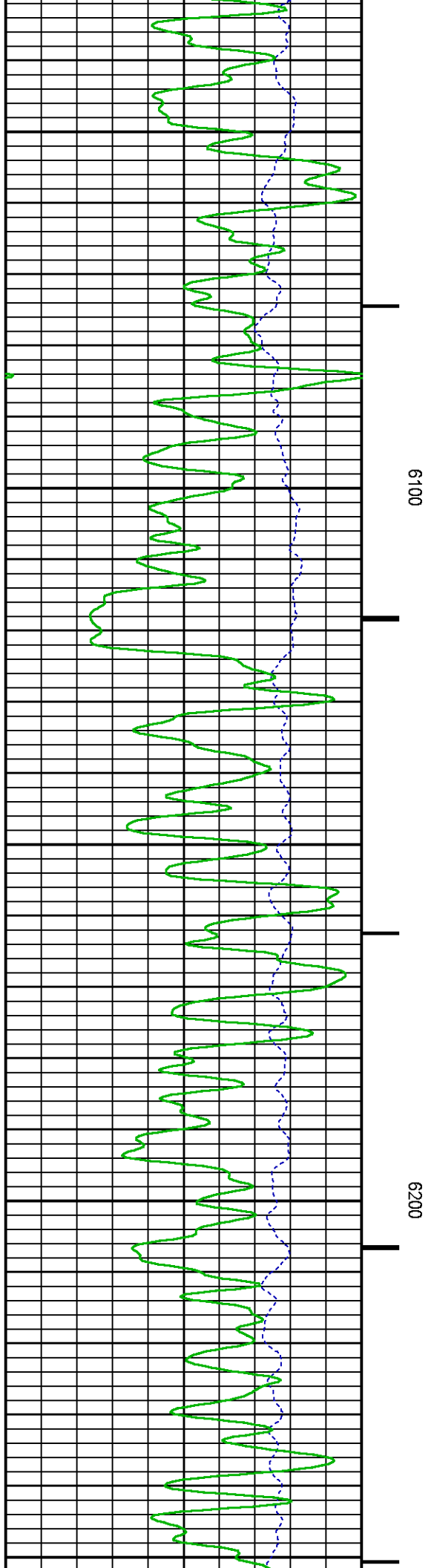
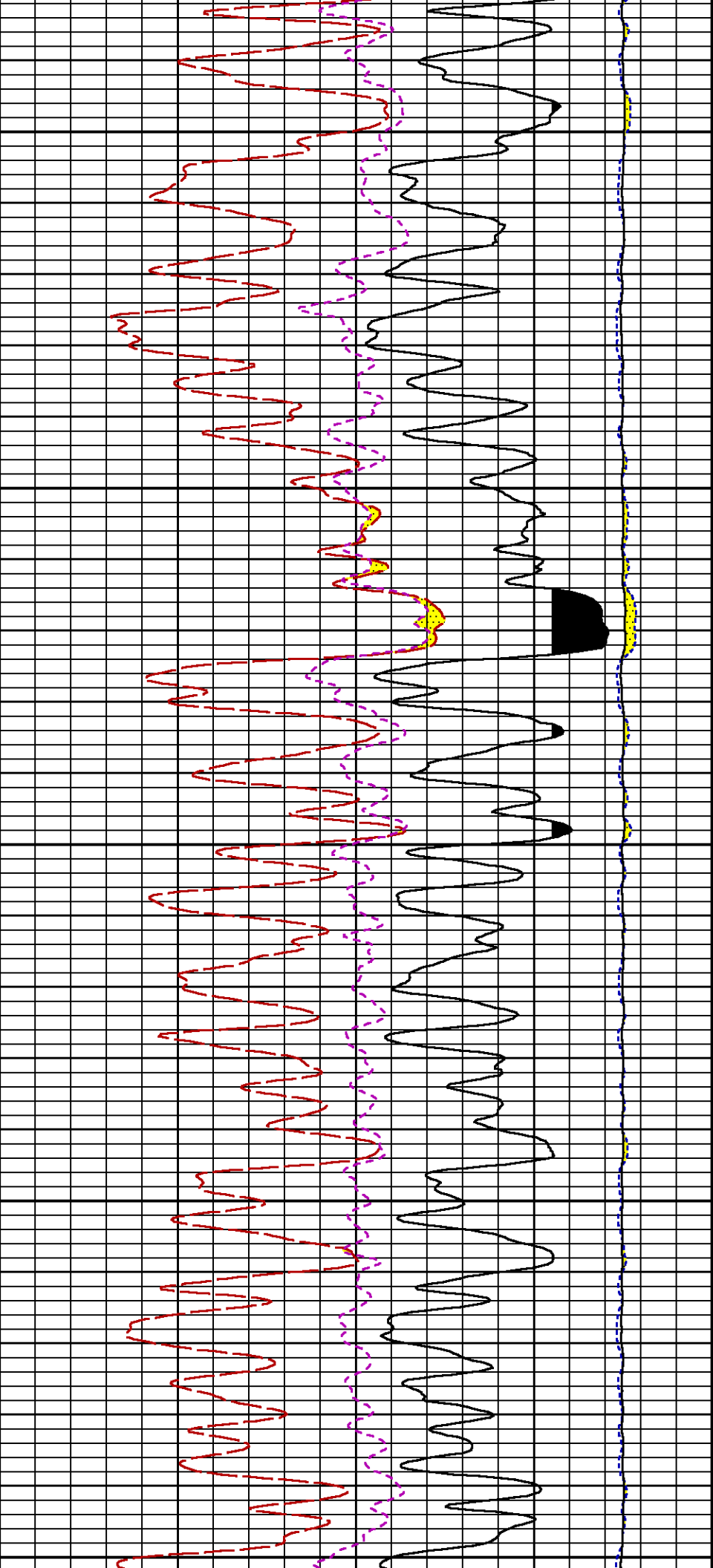


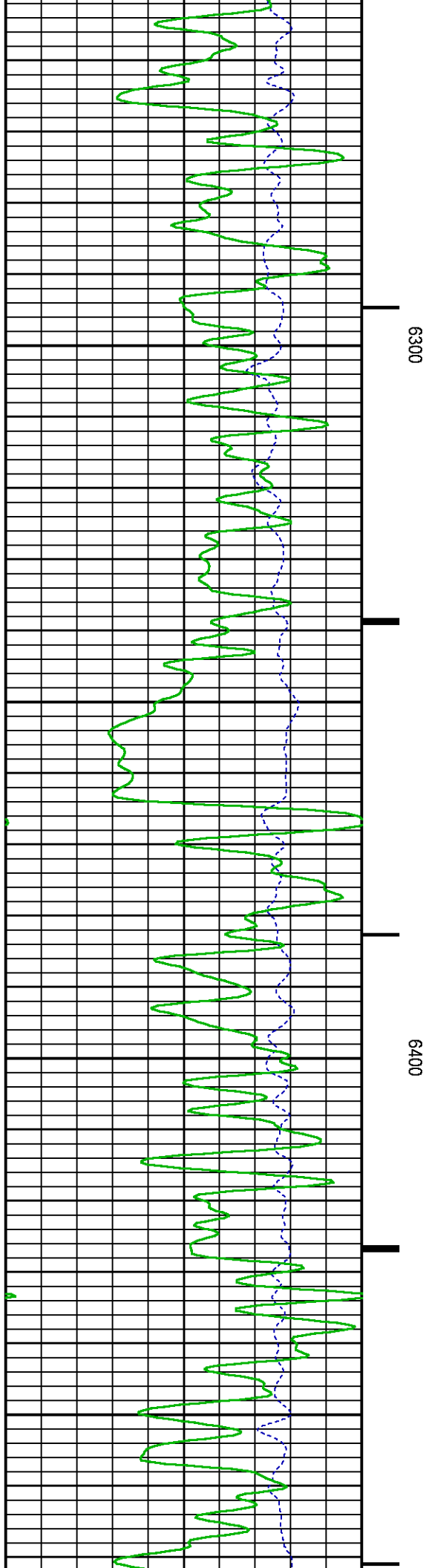
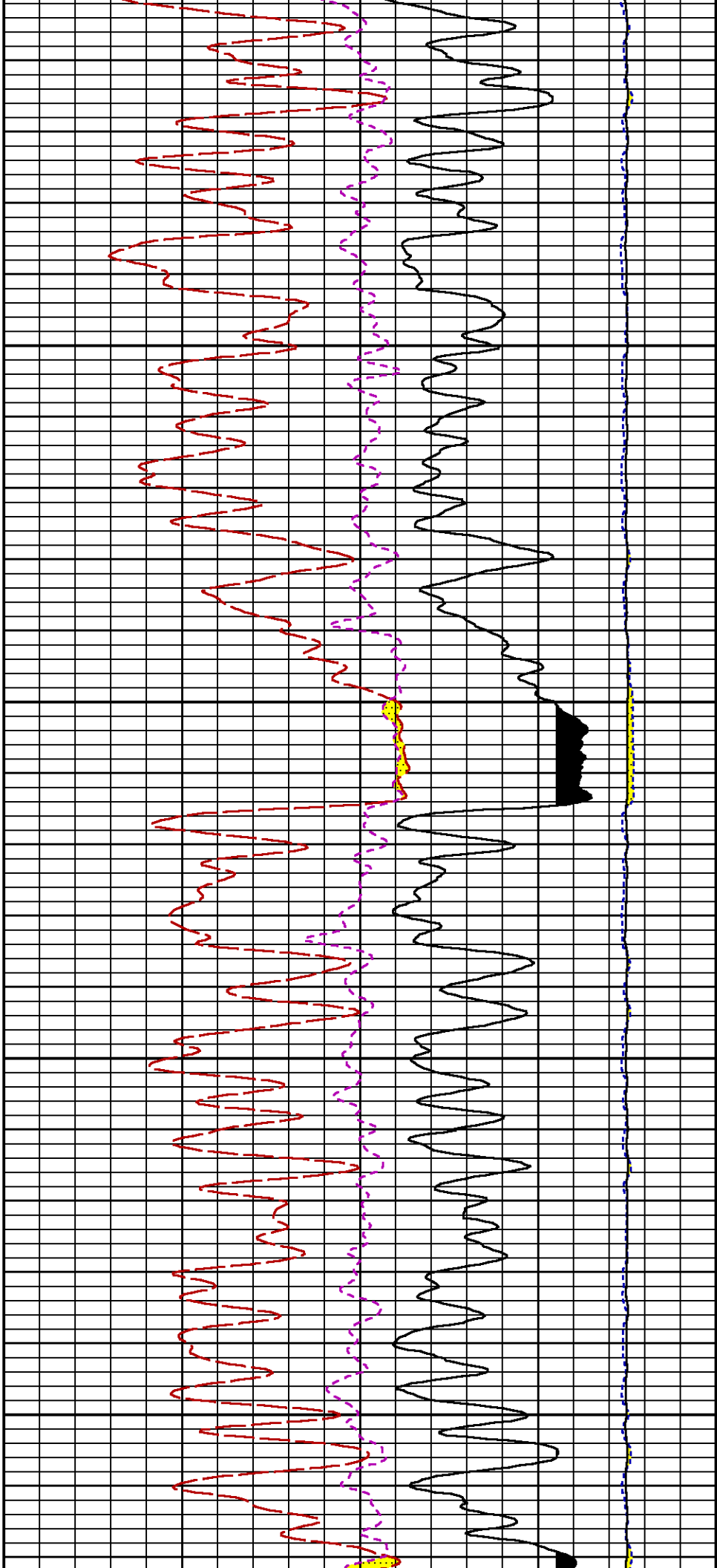


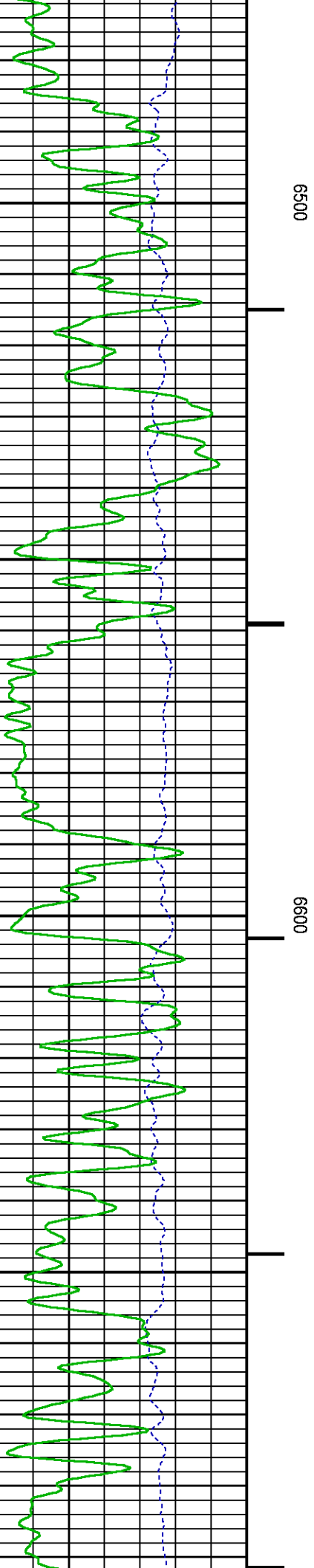
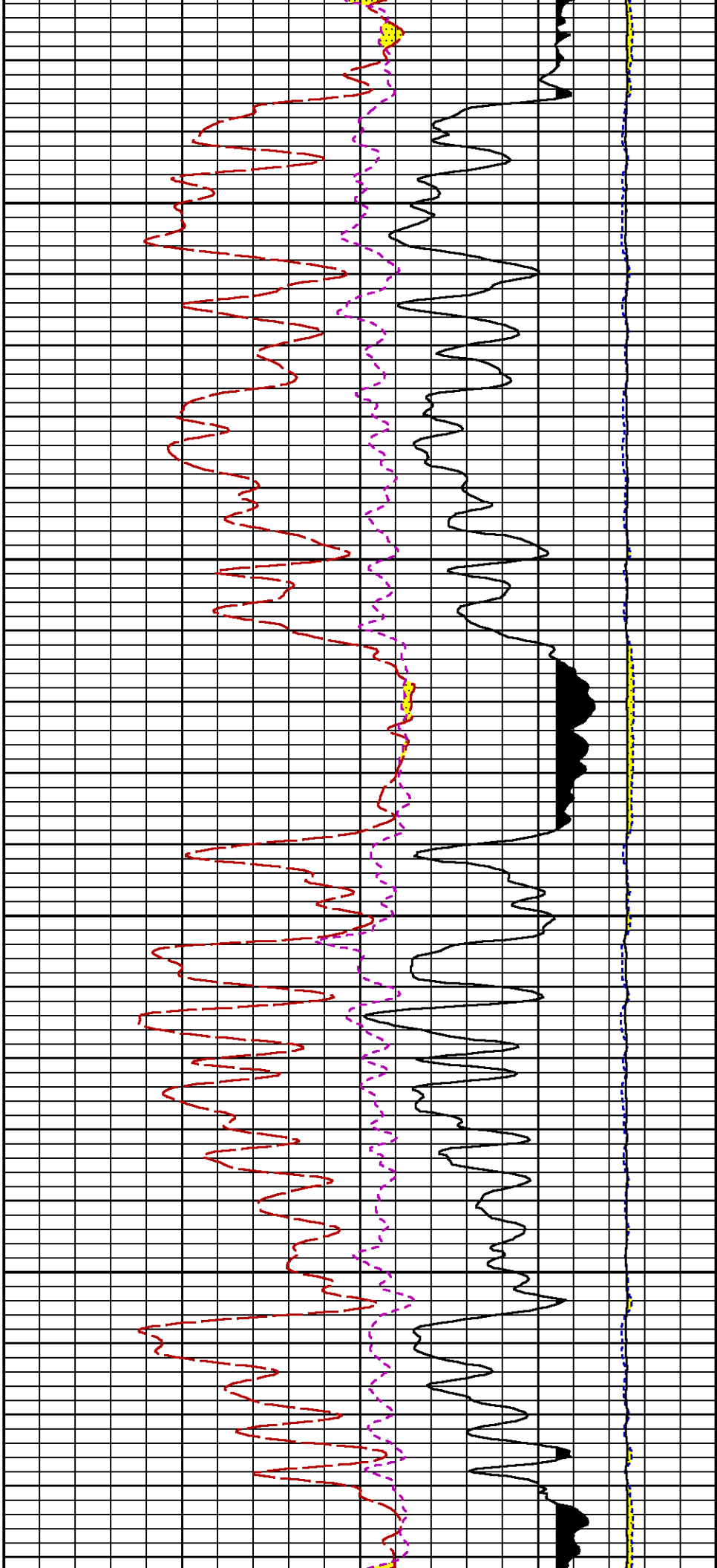


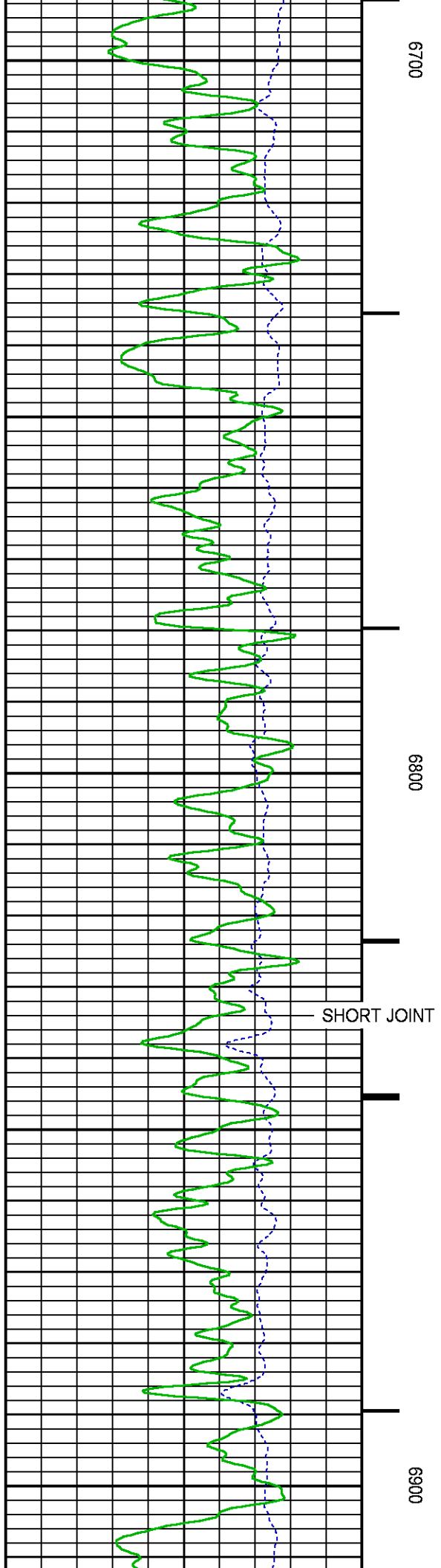
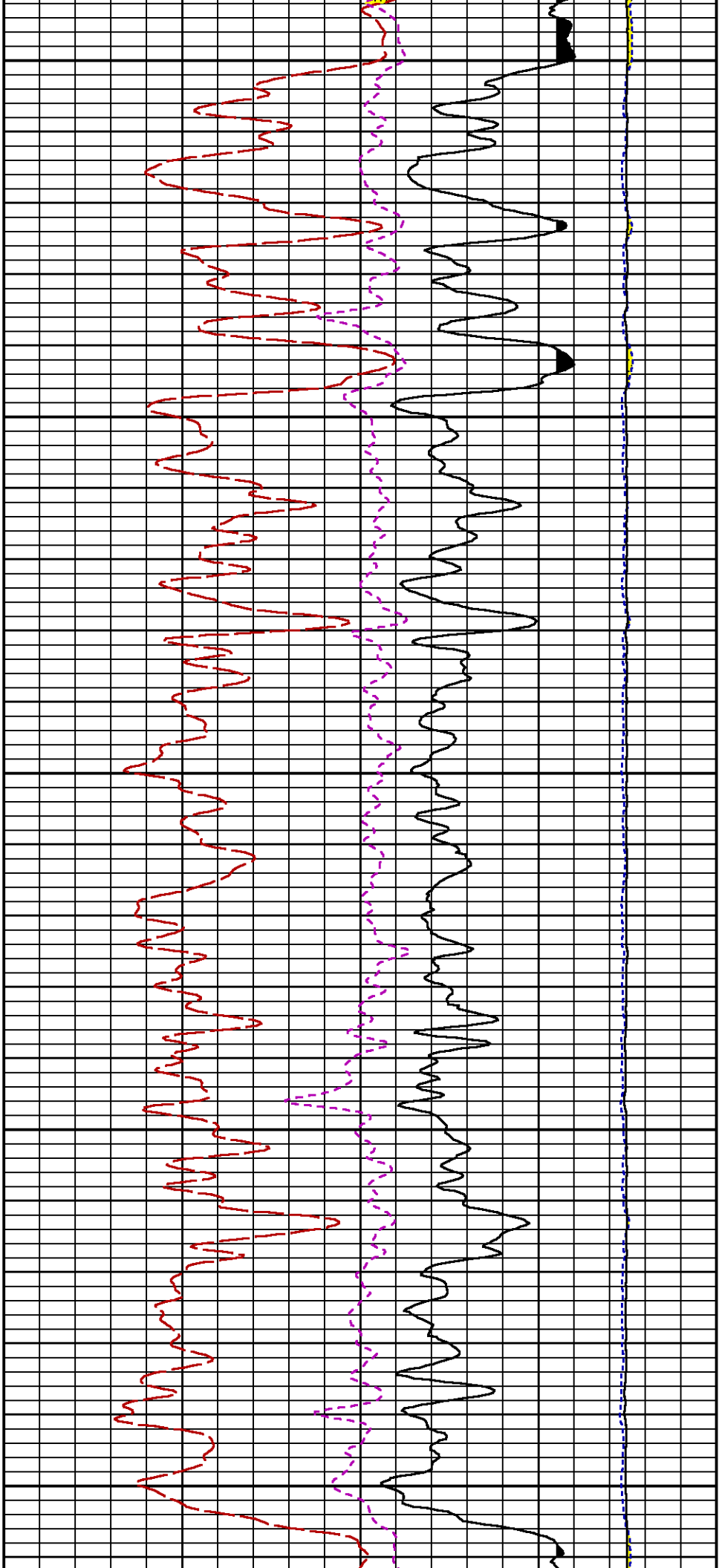


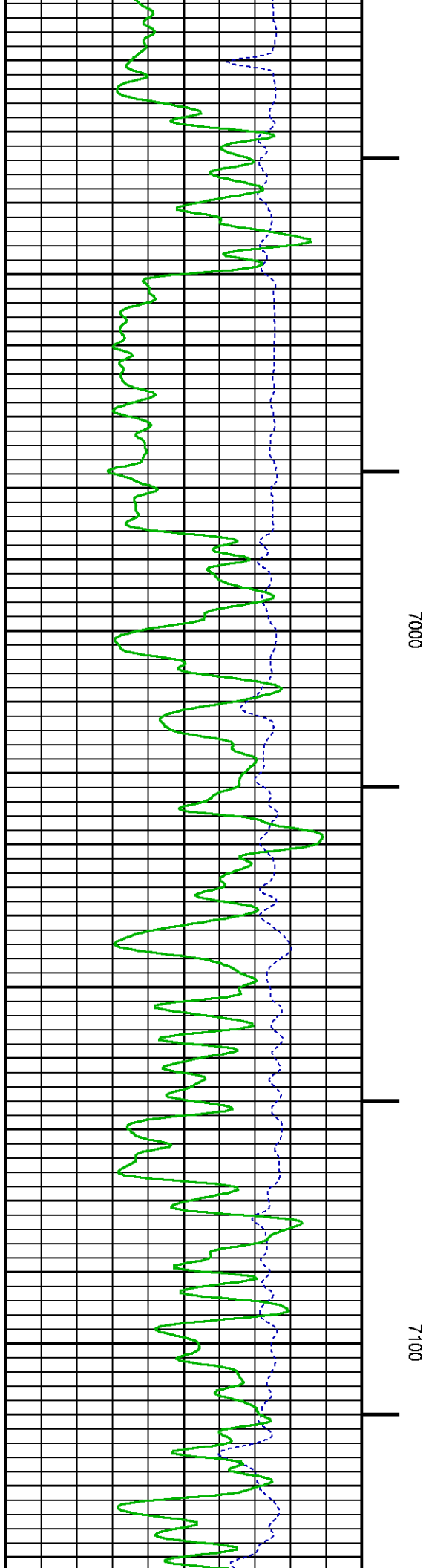
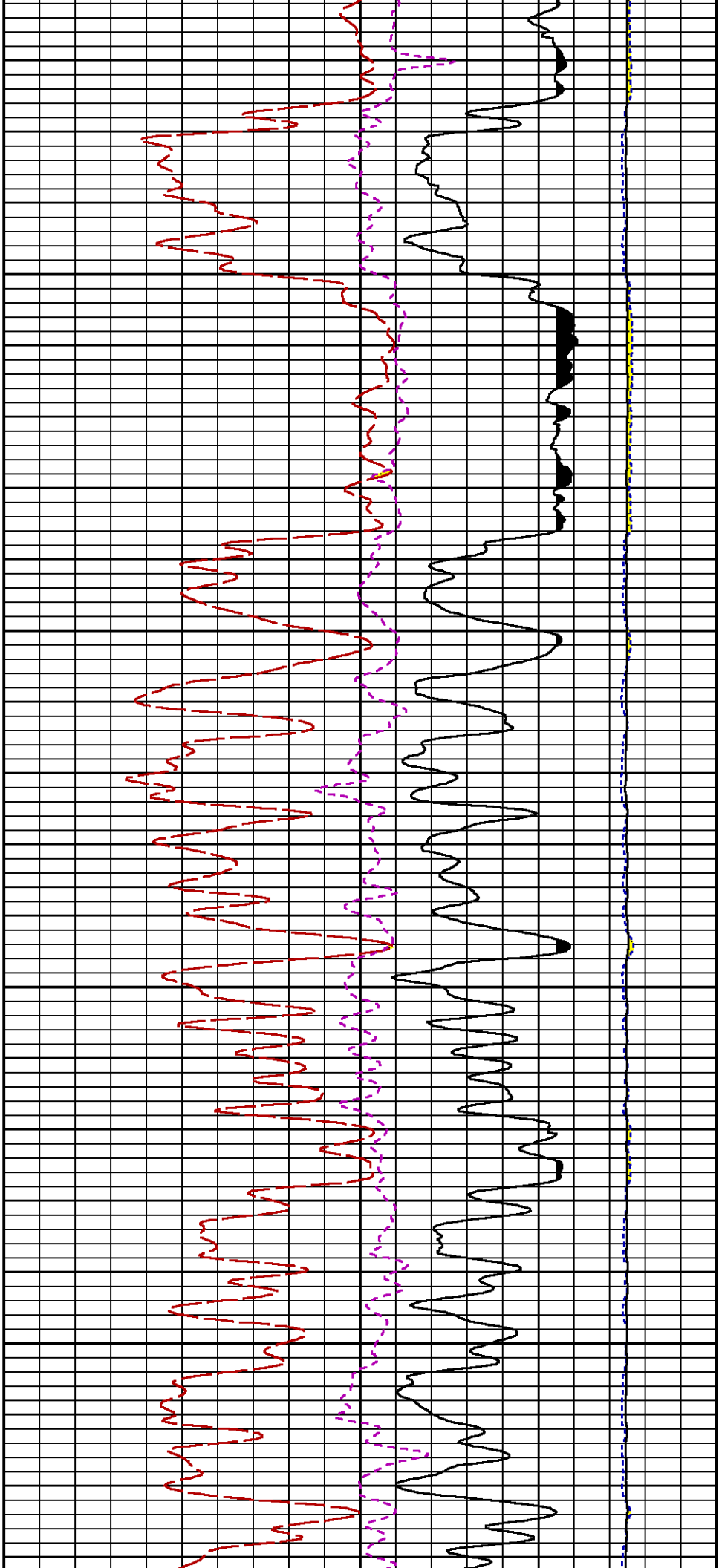


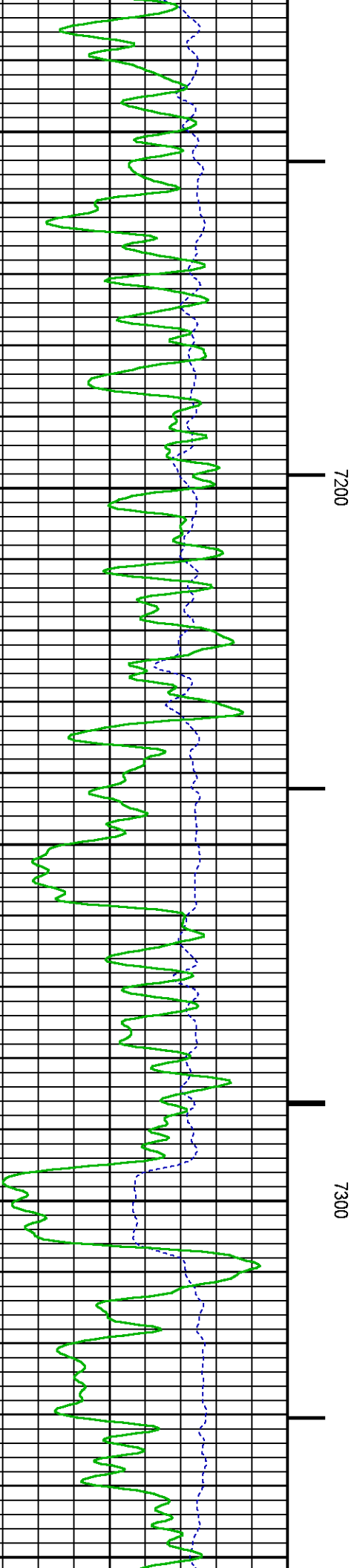
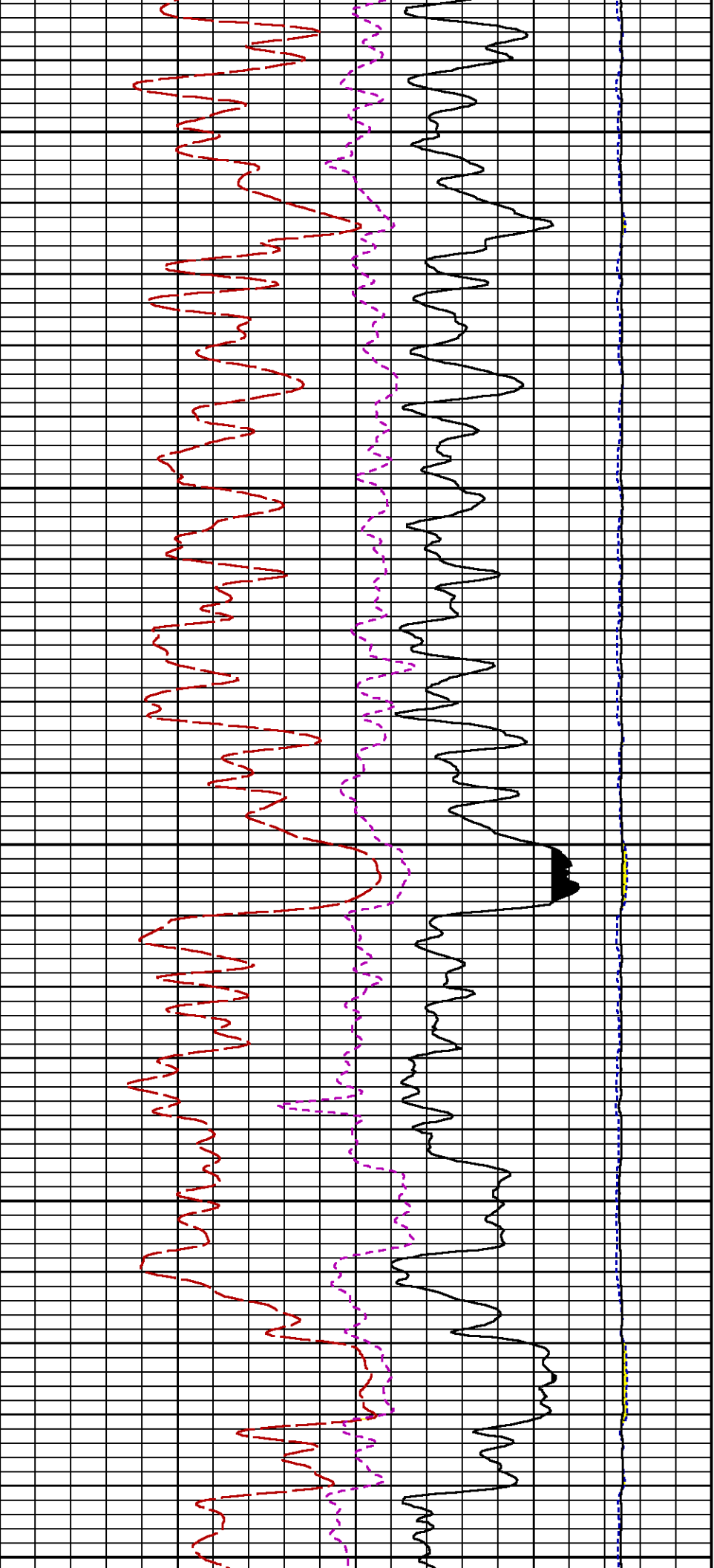


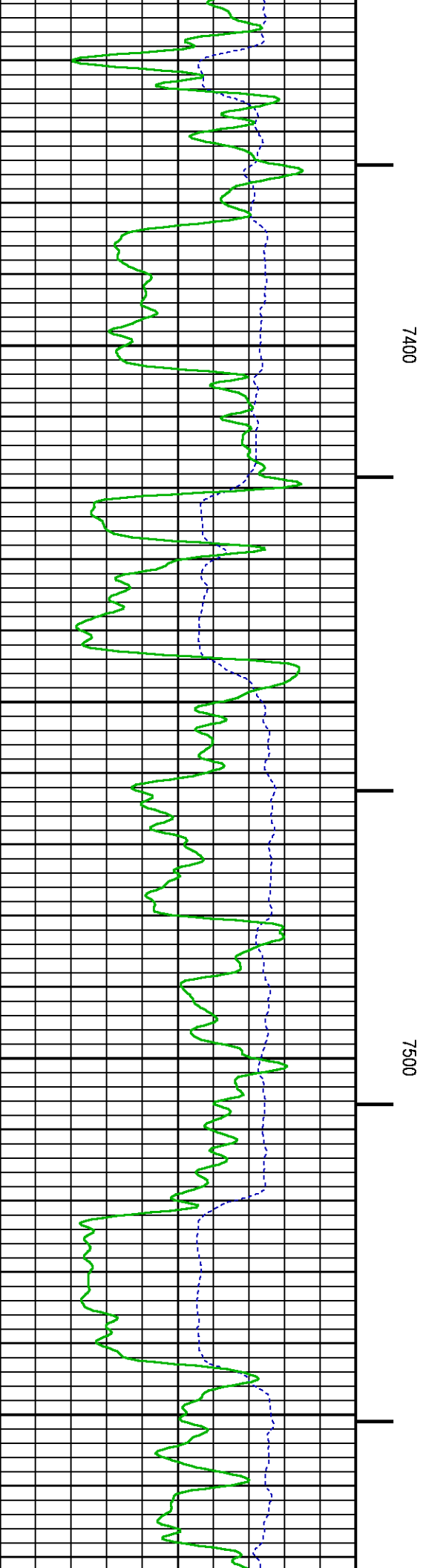
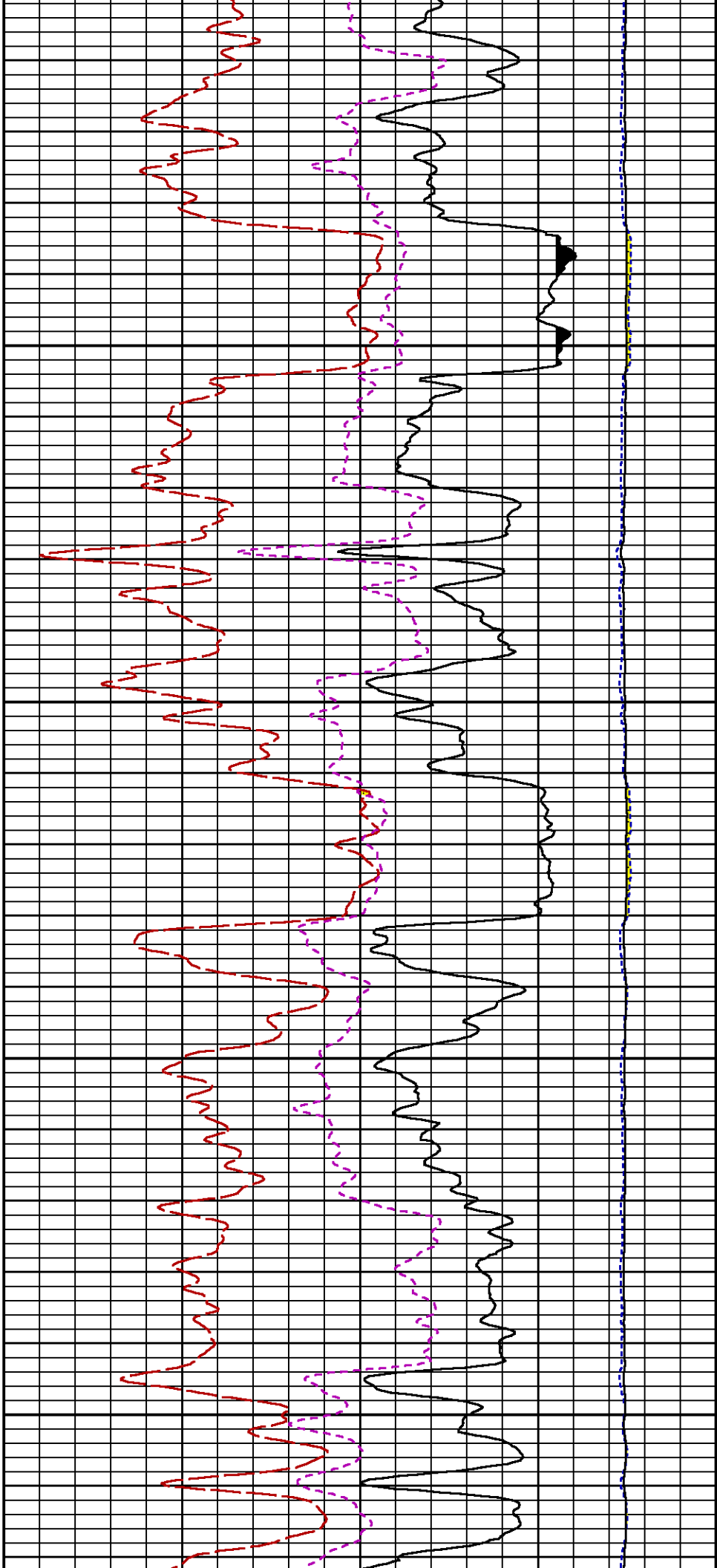


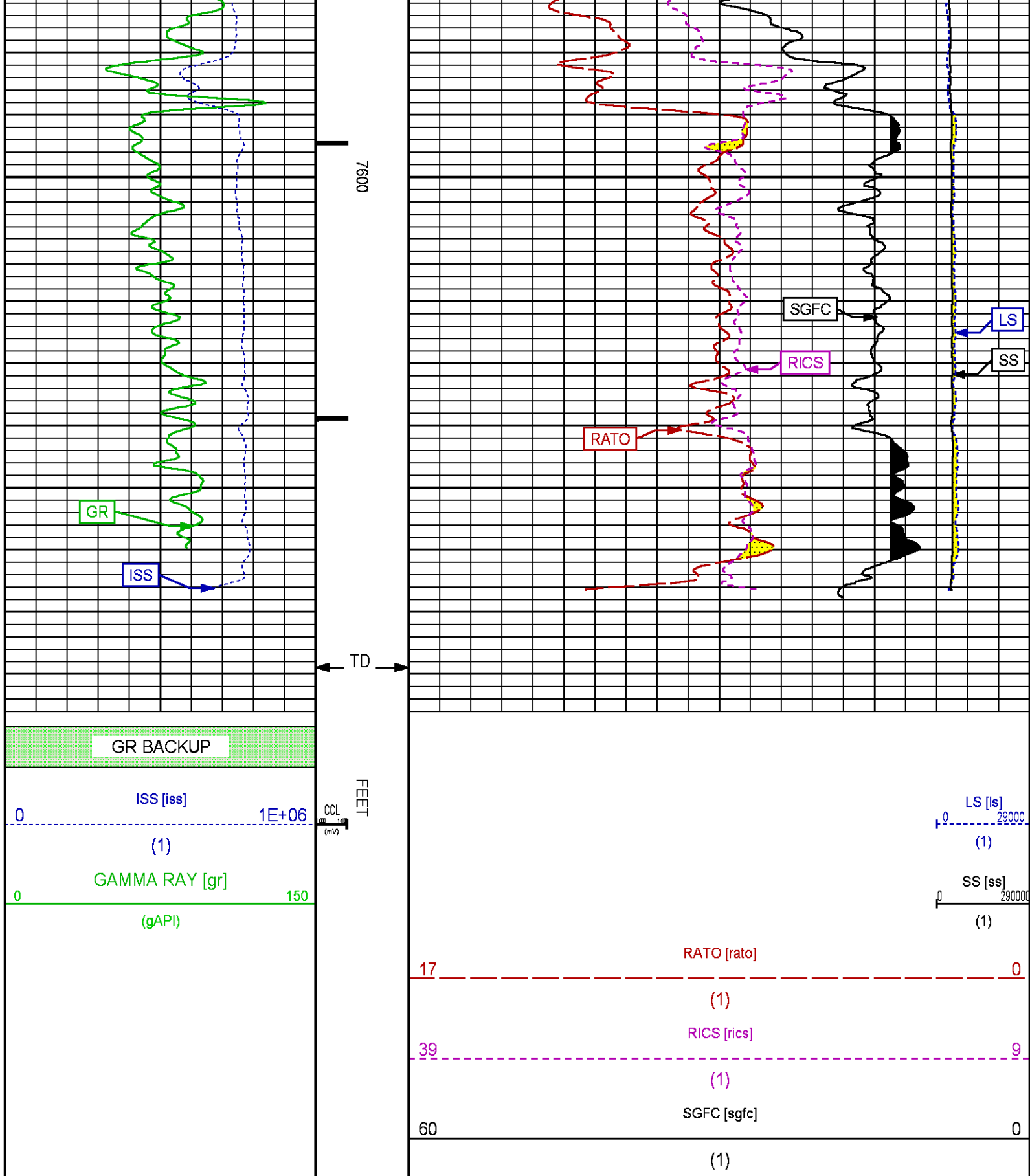












REPEAT SECTION PNC-3D MODE

Plotted: Tue Jul 21 14:40:28 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH097898/n354h01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 7431.750 ft BOTTOM DEPTH: 7683.750 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

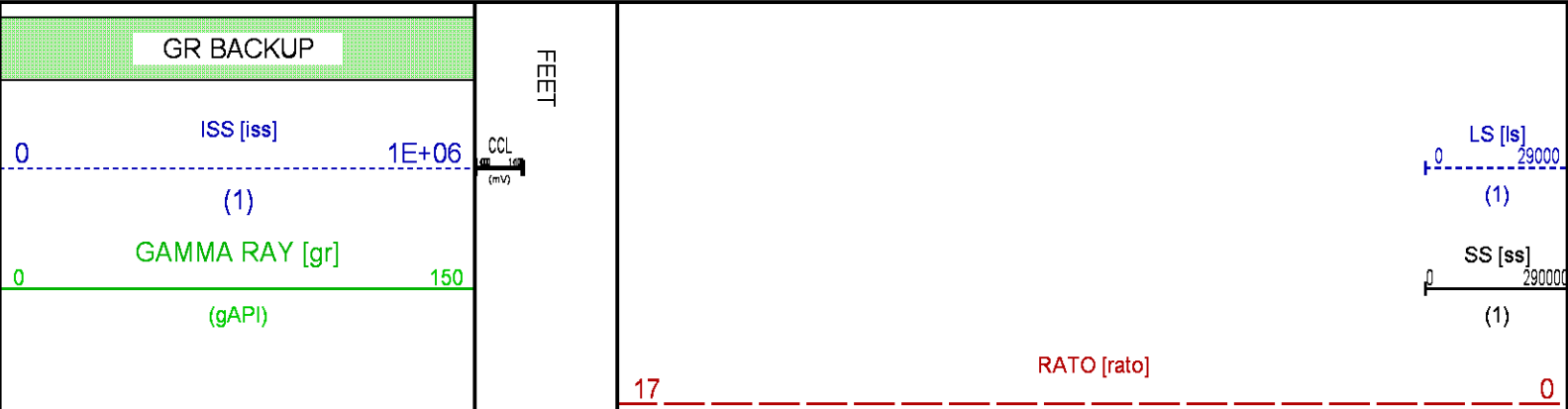
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jul 21 10:32:24 2015	CASING COLLAR LOCATOR
F1:GR	Jul 21 10:32:24 2015	GAMMA RAY
F1:ISS	Jul 21 10:32:24 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jul 21 10:32:24 2015	LONG SPACE COUNT RATE
F1:RATO	Jul 21 10:32:24 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jul 21 10:32:24 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jul 21 10:32:24 2015	CORRECTED FORMATION SIGMA
F1:SS	Jul 21 10:32:24 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

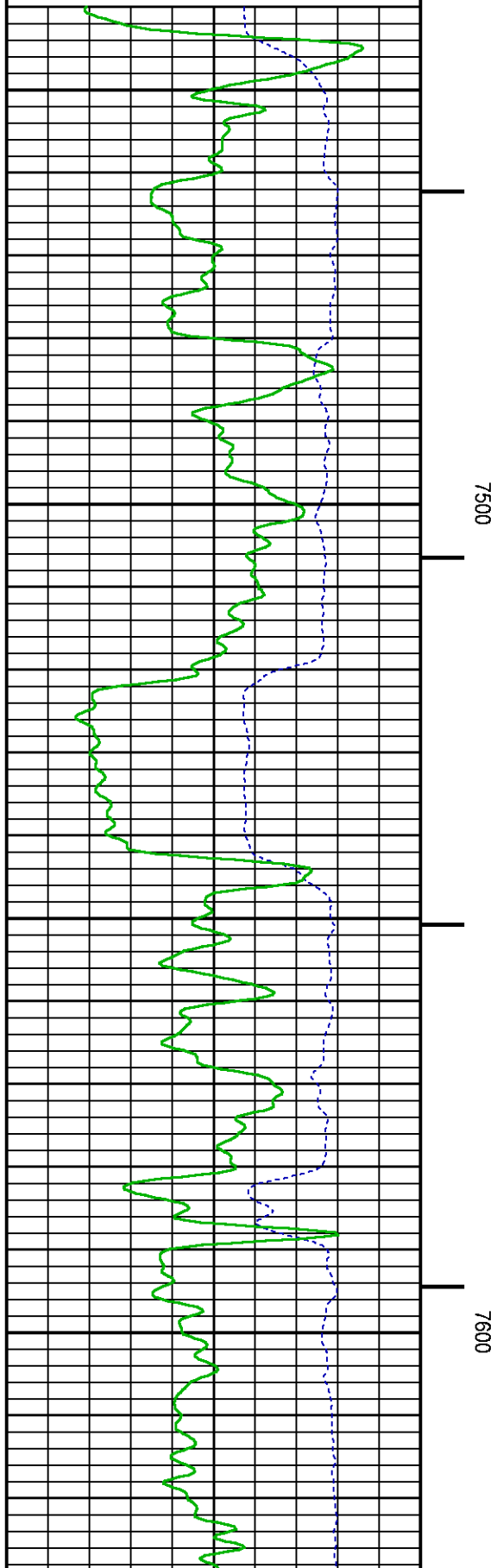
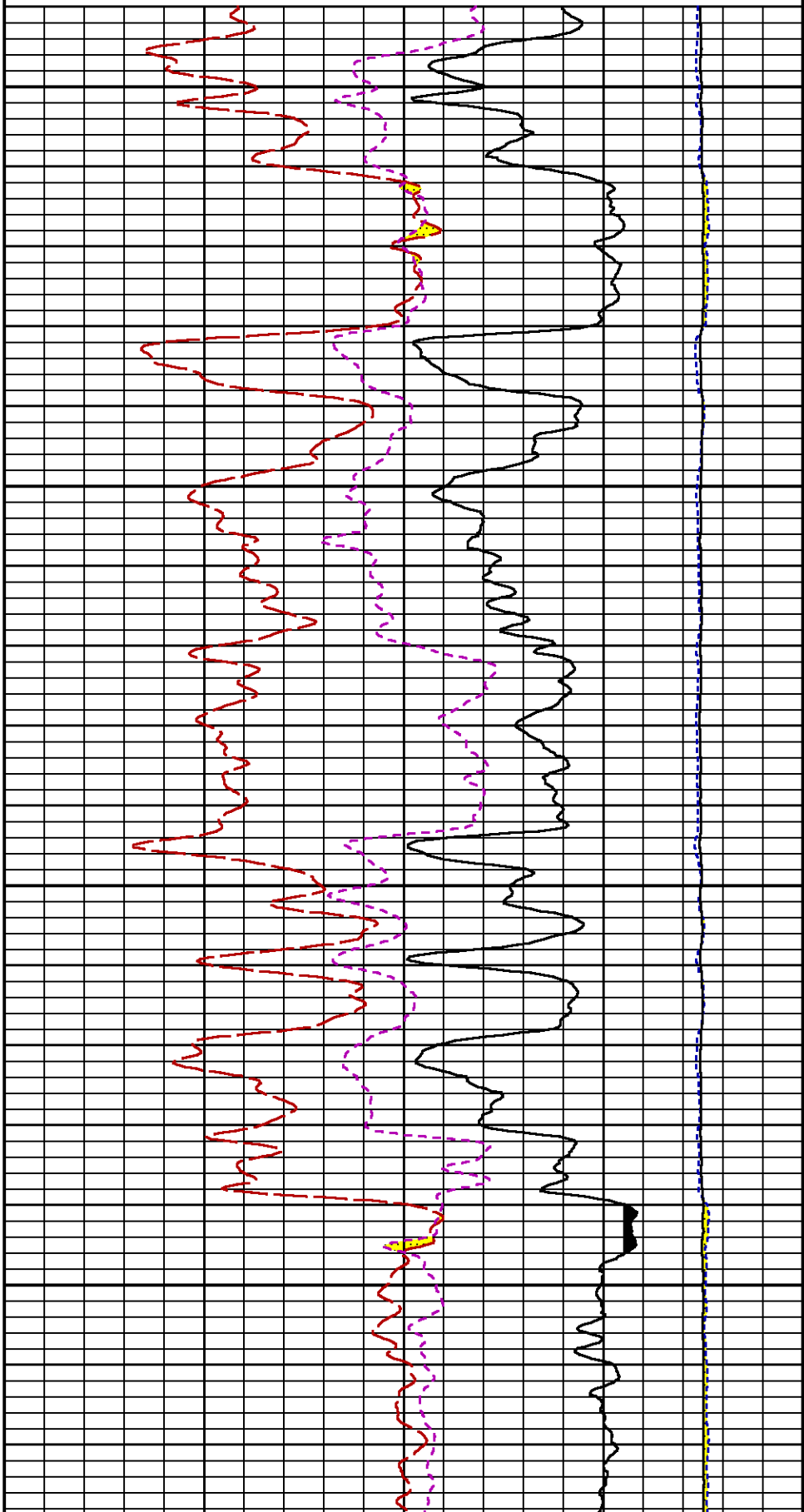
Presentation : HL6670:/dat1a/CH097898/8E_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 7440 - 7685 Feet

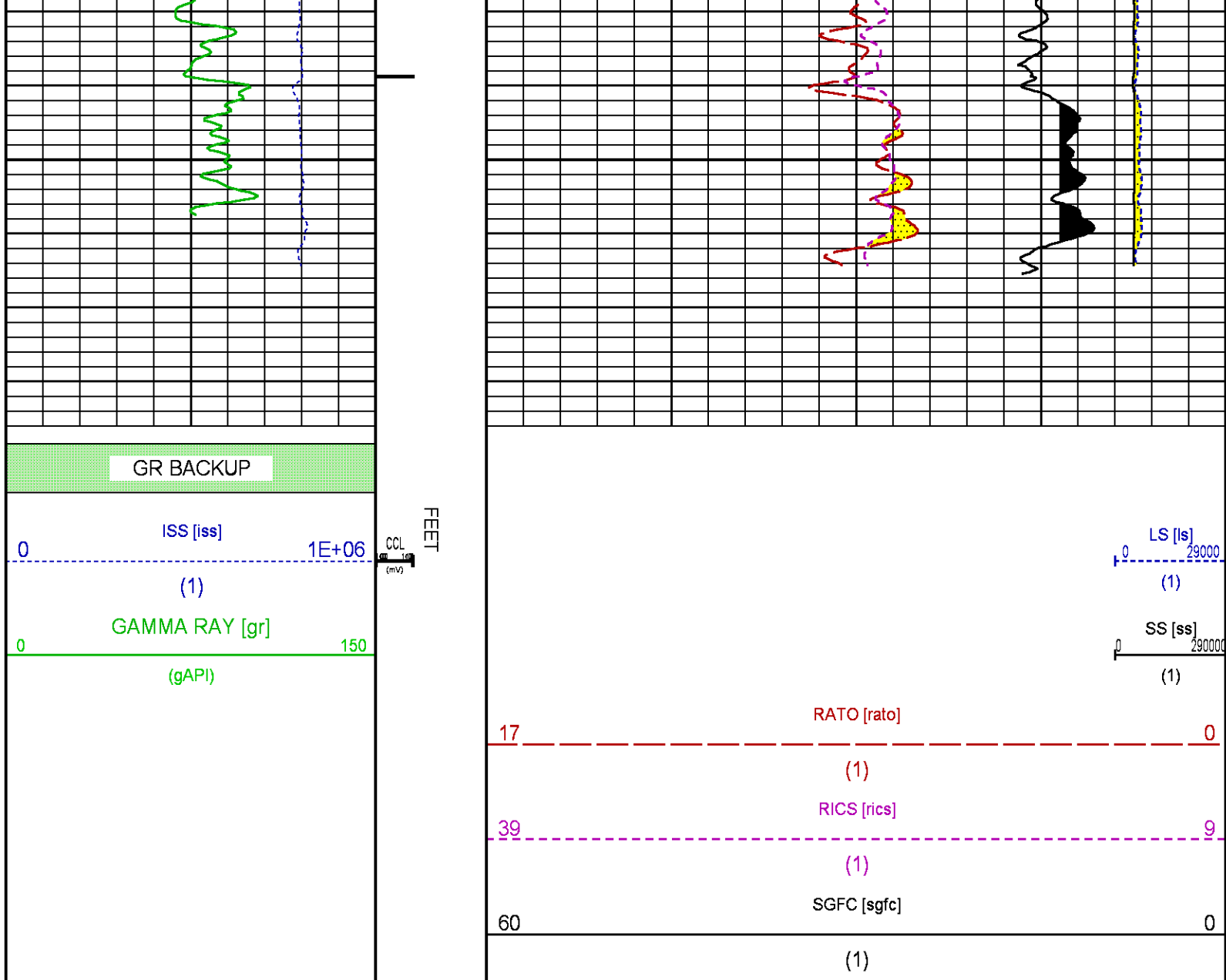
Data File 1 : F1 : HL6670:/dat1a/CH097898/8E_RPM_REPEAT.xtf
Created On : Jul 21 10:32:24 2015
Company : LARAMIE ENERGY
Well : GUNDERSON 29-8E
Field : VEGA
File Interval : 7404 - 7680.5 Feet
OCT : n354h



(1)
RICS [rics] 39 9

(1)
SGFC [sgfc] 60 0





CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH097898/n354h.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #:		2812LA 10274382		DATE/TIME PERFORMED:		Mon Jun 29 13:50:46 2015	
UNIT #:		3880TA HL6670		CALB JIG #:		4702NK WA-612	
	BACKGROUND	CALBRTR ON	CR DIFF	MULT	BACKGROUND	CALBRTR ON	CALBRTR
	(cts/s)	(cts/s)	(cts/s)		(gAPI)	(gAPI)	(gAPI)
GR	53.69	250.18	196.5	1.069	57.38	267.38	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #:	2812LA 10274382	DATE/TIME PERFORMED:	Mon Jun 29 13:52:57 2015
UNIT #:	3880TA HL6670	VERI JIG #:	4702NK WA-612

	BACKGROUND CALBRTR ON (cts/s)	MULT (cts/s)	BACKGROUND CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	54.84	255.69	1.069	58.62
				273.27
				214.66
				200.00
				220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10414345

DATE/TIME PERFORMED: Mon Jun 29 13:21:43 2015

UNIT: 3880TA HL6670

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10160601

HOURS: 8281AA 35

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	789473	123	2266	2250	2244	111	7	0.9752
Interpolated	1300000	144	2249	2245	2242			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	789473	5721	905	127	25.91	0.15	24.01	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	789473	159387	24447	85326	30418	7922	51779	12657
Fit Quality %		0.817	0.981	0.689	0.679	0.788	0.643	0.795

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	789473	1.44	4.95	32.31	15.25	10.77	3.84	4.09
		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 %		0.015	0.061	0.086	0.097	0.069	0.063	0.073
Reduced	1393911	1.44	4.94	32.28	15.21	10.79	3.85	4.09
		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 11774568

DATE/TIME PERFORMED: Wed May 14 12:39:45 2014

UNIT #: 3880TA HL6670

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Temp	-9.274653E+00	1.055639E-01	2.143764E-06	-2.782846E-10

INSTRUMENT CONFIGURATION

33.24'

A3 CABLEHEAD
Diameter : 1.37"

PCM POWER SUPPLY
Diameter : 1.30"



Source File: /dat1a/CH097898/RPM-tdg

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

CCL MP — 25.19'

SONDEX GAMMA RAY

Diameter : 1.69"
Length : 2.17'
Weight : 10 lbs
Series : 2812LA
Mnemonic : GR
Measure Point: 0.62': GR MP

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 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
PRES MP

1.65'

BULL PLUG 1 11/16

0.00'

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



COMPANY
WELL
FIELD
COUNTY

LARAMIE ENERGY
GUNDERSON 29-08E
VEGA
MESA

STATE COLORADO

FILE NO:
CH097898

API NO:
05077097600000

LOCATION:

SHL: 2394' FNL & 1150' FEL
BHL: 1891' FNL & 849' FEL

ELEVATIONS:

KB 7553 FT
DF
GL 7531 FT

SEC 29 T9S R93W
PAD 29-09
PATTERSON 306

SEC 29 TWP 9S RGE 93W

DATE 21-Jul-2015

