



FILE NO: CH101523	COMPANY WELL FIELD COUNTY	LARAMIE ENERGY PICEANCE FEDERAL 28-18E VEGA MESA STATE CO
API NO: 05077102580000	LOCATION: Ver. 4.01 28 9S 93W 28-10 PAD PATTERSON 306	OTHER SERVICES BOND LOG
SEC 28 TWP 9S RGE 93W		
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM		ELEVATIONS: KB 7704 FT DF GL 7682 FT
GL ELEVATION 7682 FT KB 22 FT ABOVE P.D. KB		

DATE		26-JAN-2016			
RUN	TRIP	1	1		
SERVICE ORDER		US101523			
DEPTH DRILLER		8351 FT			
DEPTH LOGGER		8274 FT			
BOTTOM LOGGED INTERVAL		8264 FT			
TOP LOGGED INTERVAL		2827 FT			
TIME STARTED		10:30			
TIME FINISHED		16:00			
OPERATOR RIG TIME		5.5 HOURS			
TYPE OF FLUID IN HOLE		WATER			
FLUID DENSITY		NA			
FLUID SALINITY		NA			
FLUID LEVEL		32 FT			
LOGGED CEMENT TOP		NA			
WELLHEAD PRESSURE		0 PSI			
MAXIMUM HOLE DEVIATION		NA			
NOMINAL LOGGING SPEED		10 F/MIN			
MAX. RECORDED TEMP.		236 DEGF			
REFERENCE LOG		BAKER HUGHES BOND LOG			
REFERENCE LOG DATE		26-JAN-2016			
EQUIP. NO.	LOCATION	HL-6670	GRAND JCT.		
RECORDED BY		T. NEWELL			
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

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		22 FT	8437 FT

REMARKS
RUN 1 TRIP 1: ALL DATA ON THIS LOG IS SHIFTED AT TD, USING THE GAMMA RAY CURVE, TO THE BAKER HUGHES BOND LOG DATED 26/JAN/2016 AT THE CLIENT'S REQUEST.
THE AMOUNT OF LINEAR SHIFT IS -6'
LOGGED IN PNC-3D MODE
BHT = 236 DEGF
SJ = 6401' - 6422'
SJ = 7512' - 7534'
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	2812LA	10274382	FREE
1	1	RPM	8281EA	10423671	FREE
1	1	RPM	8283PA	10585555	FREE
1	1	RPM	8281FA	10460082	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: Tue Jan 26 15:17:10 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH101523/n354h03.prm
 LOGGING MODE: DEPTH: DIRECTION: UP
 TOP DEPTH: 2817.750 ft BOTTOM DEPTH: 3453.322 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	8.75	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jan 26 14:34:00 2016	CASING COLLAR LOCATOR
F1:GR	Jan 26 14:34:00 2016	GAMMA RAY
F1:ISS	Jan 26 14:34:00 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jan 26 14:34:00 2016	LONG SPACE COUNT RATE
F1:RATO	Jan 26 14:34:00 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jan 26 14:34:00 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jan 26 14:34:00 2016	CORRECTED FORMATION SIGMA
F1:SS	Jan 26 14:34:00 2016	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/CH101523/18E_RPM_GSAND.fvpdf [5"/100" Scale]
 Plot Interval : 2825 - 3435 Feet

Data File 1 : F1 : HL6670:/dat1a/CH101523/18E_RPM_GSAND.xtf
 Created On : Jan 26 14:34:00 2016
 Company : LARAMIE ENERGY
 Well : RICEANCE FEDERAL 28-18E

Well : PICEANCE FEDERAL 26-18E
Field : VEGA
File Interval : 2793.5 - 3453 Feet
OCT : n354h

GR BACKUP

ISS [iss]

1E+06

(1)

GAMMA RAY [gr]

150

(gAPI)

FEET

CCL
(mV)

2900

LS [ls]

29000

(1)

SS [ss]

290000

(1)

RATO [rato]

17

0

(1)

RICS [rics]

37

7

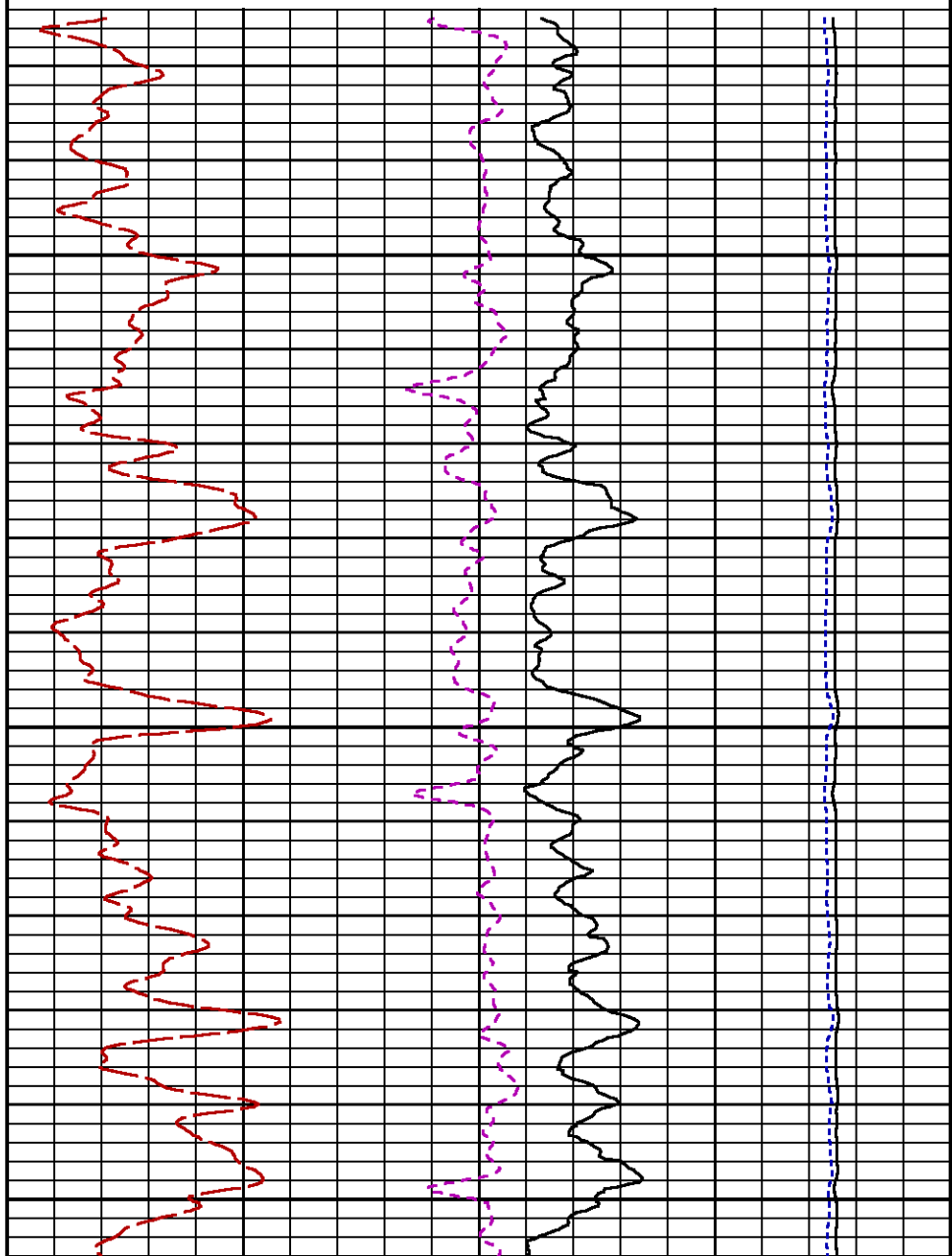
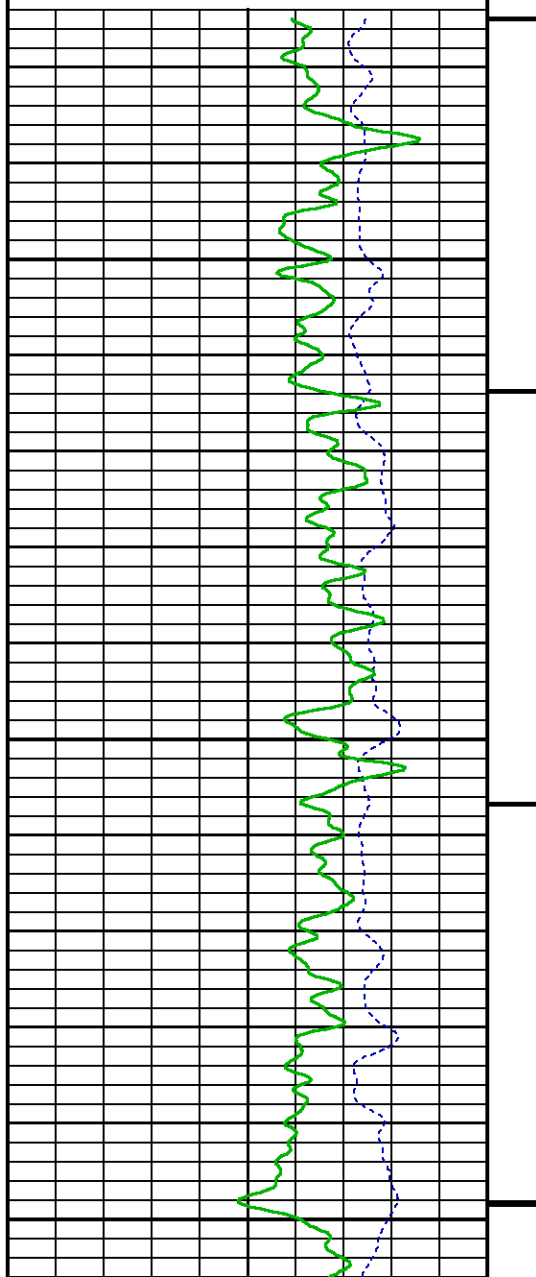
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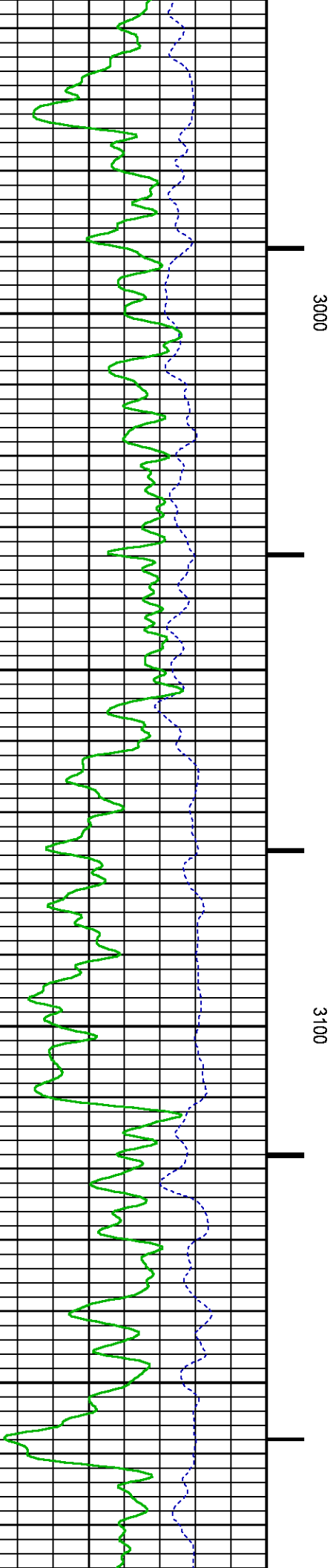
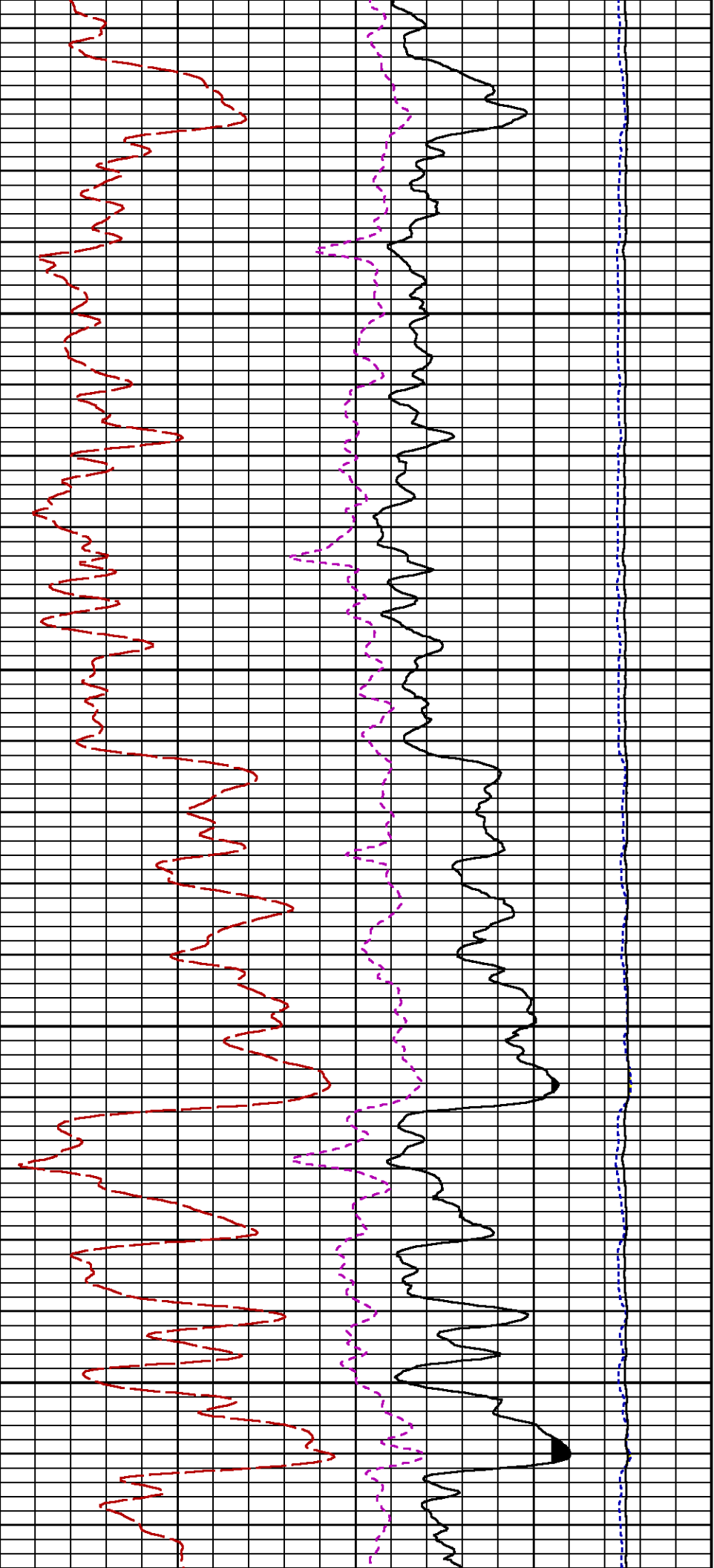
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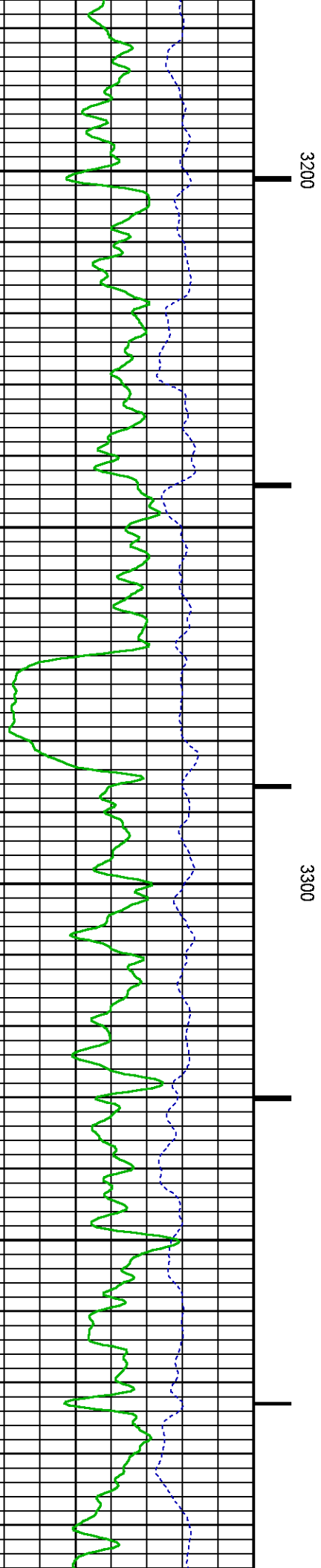
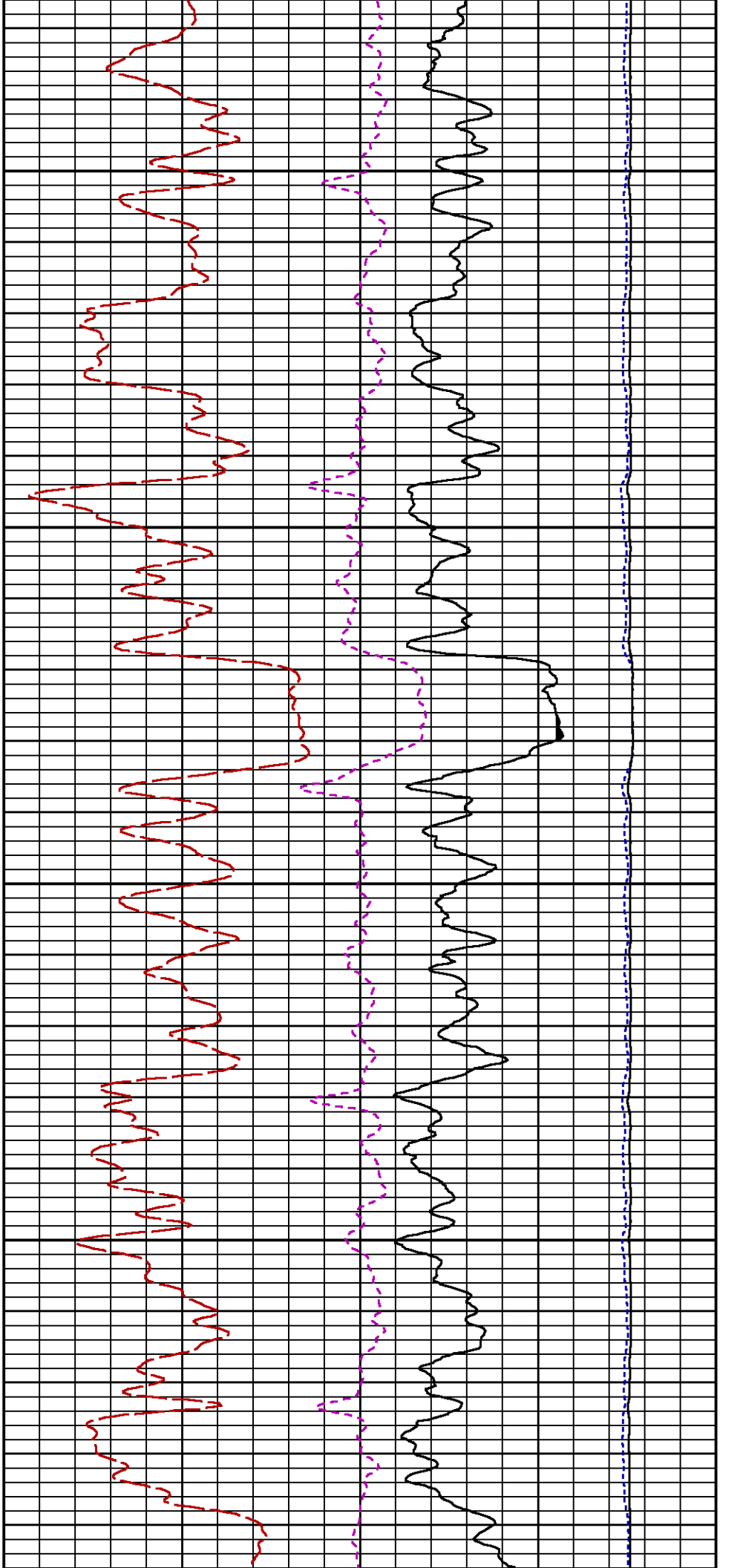
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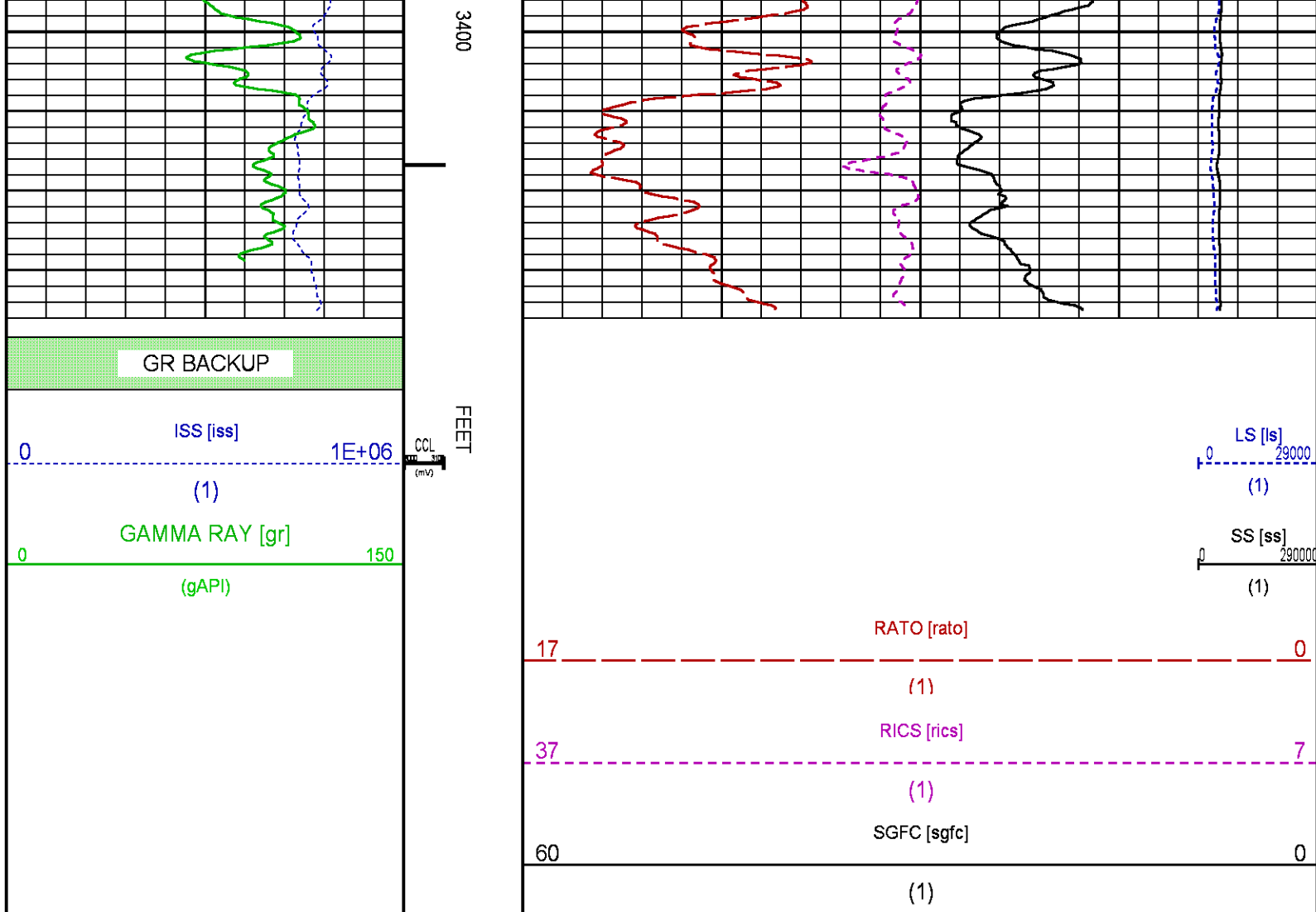
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(1)









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 Jan 26 14:46:18 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH101523/n354h02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4974.000 ft BOTTOM DEPTH: 8277.500 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	8.75	in	" "

CASING SIZE
MATRIX
CORRECTION BUFFER

4.50
SANDSTONE
11

in

"

"

CURVE DESCRIPTION REPORT

CURVE NAME CREATION DATE

CURVE DESCRIPTION

F1:CCL	Jan 26 11:07:51 2016	CASING COLLAR LOCATOR
F1:GR	Jan 26 11:07:51 2016	GAMMA RAY
F1:ISS	Jan 26 11:07:51 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jan 26 11:07:51 2016	LONG SPACE COUNT RATE
F1:RATO	Jan 26 11:07:51 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jan 26 11:07:51 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jan 26 11:07:51 2016	CORRECTED FORMATION SIGMA
F1:SS	Jan 26 11:07:51 2016	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/CH101523/18E_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4975 - 8285 Feet

Data File 1 : F1 : HL6670:/dat1a/CH101523/18E_RPM_MAIN.xtf
Created On : Jan 26 11:07:51 2016
Company : LARAMIE ENERGY
Well : PICEANCE FEDERAL 28-18E
Field : VEGA
File Interval : 4948.75 - 8278 Feet
OCT : n354h

GR BACKUP

FEET

ISS [iss]

1E+06

(1)

GAMMA RAY [gr]

150

(gAPI)

ISS

5000

RATO [rato]

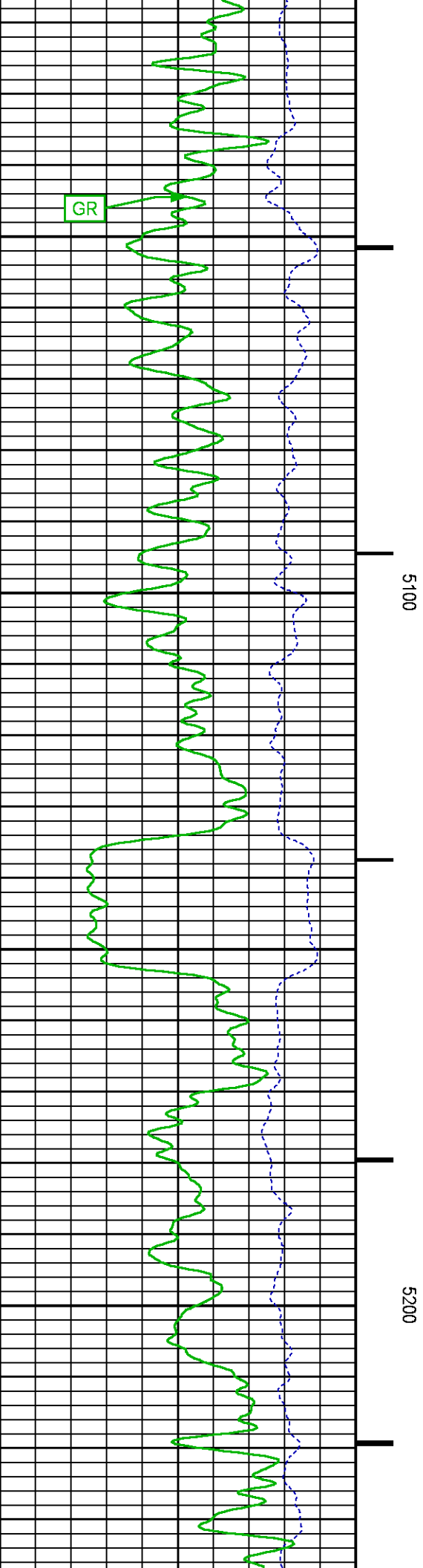
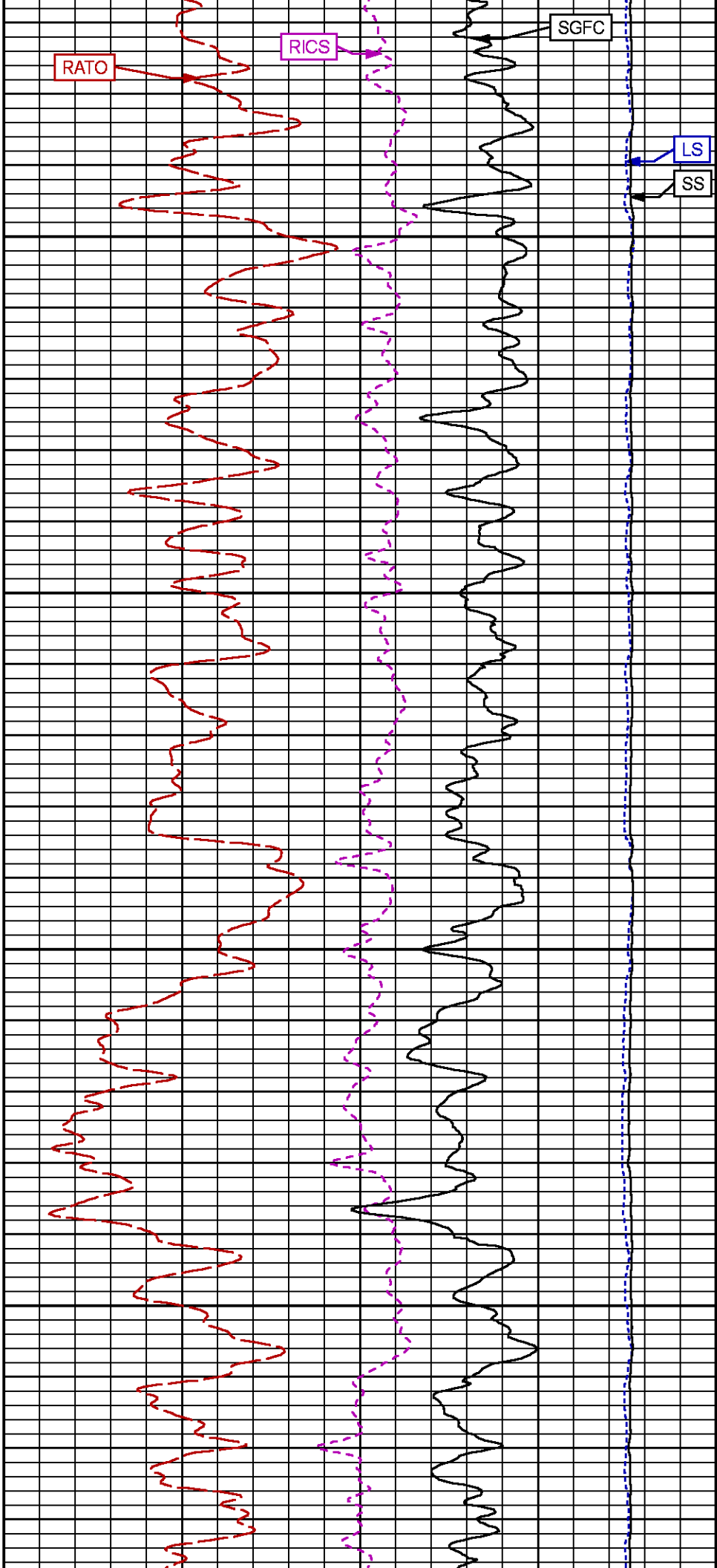
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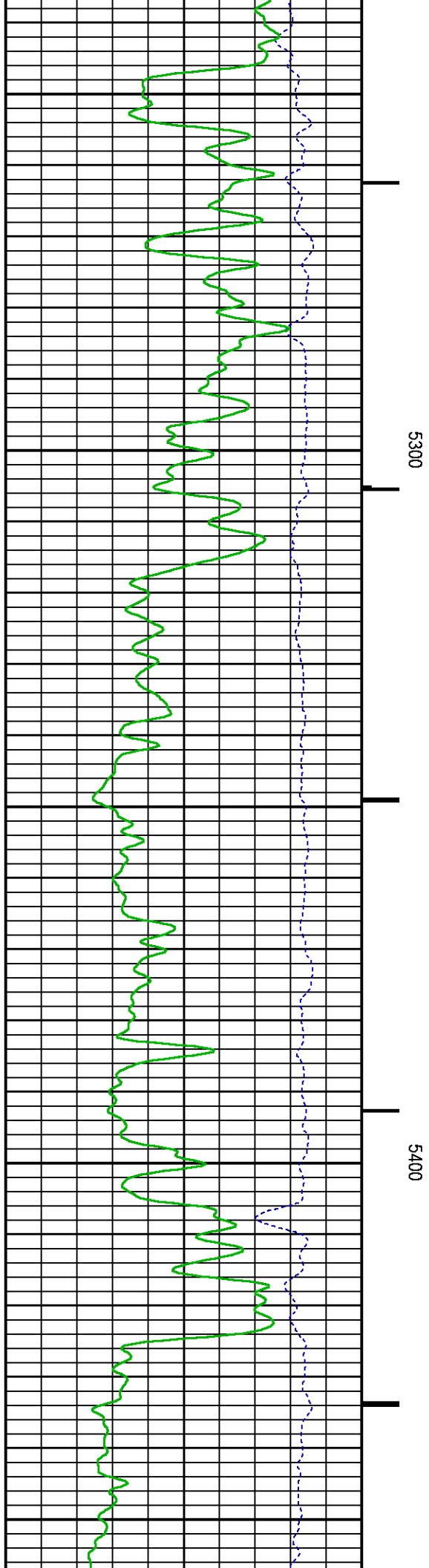
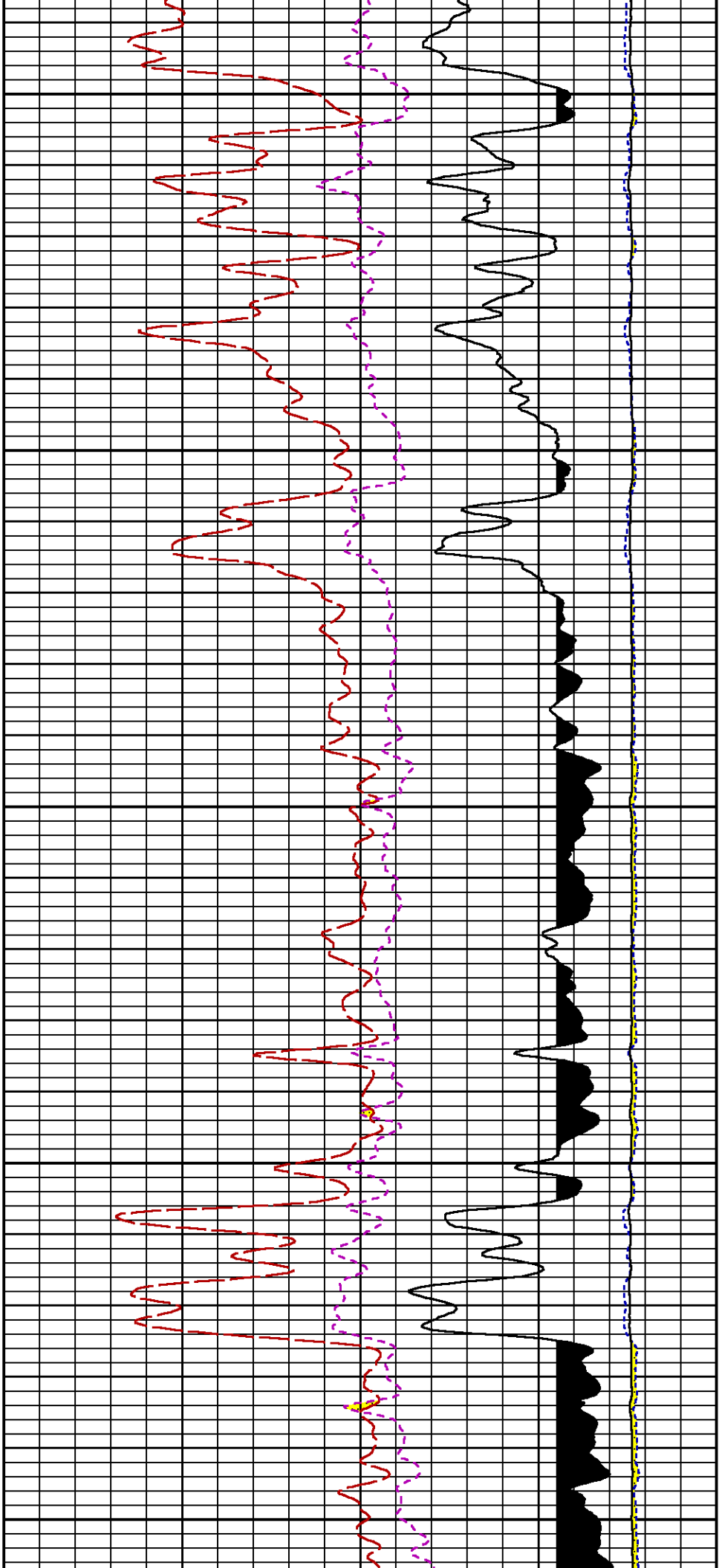
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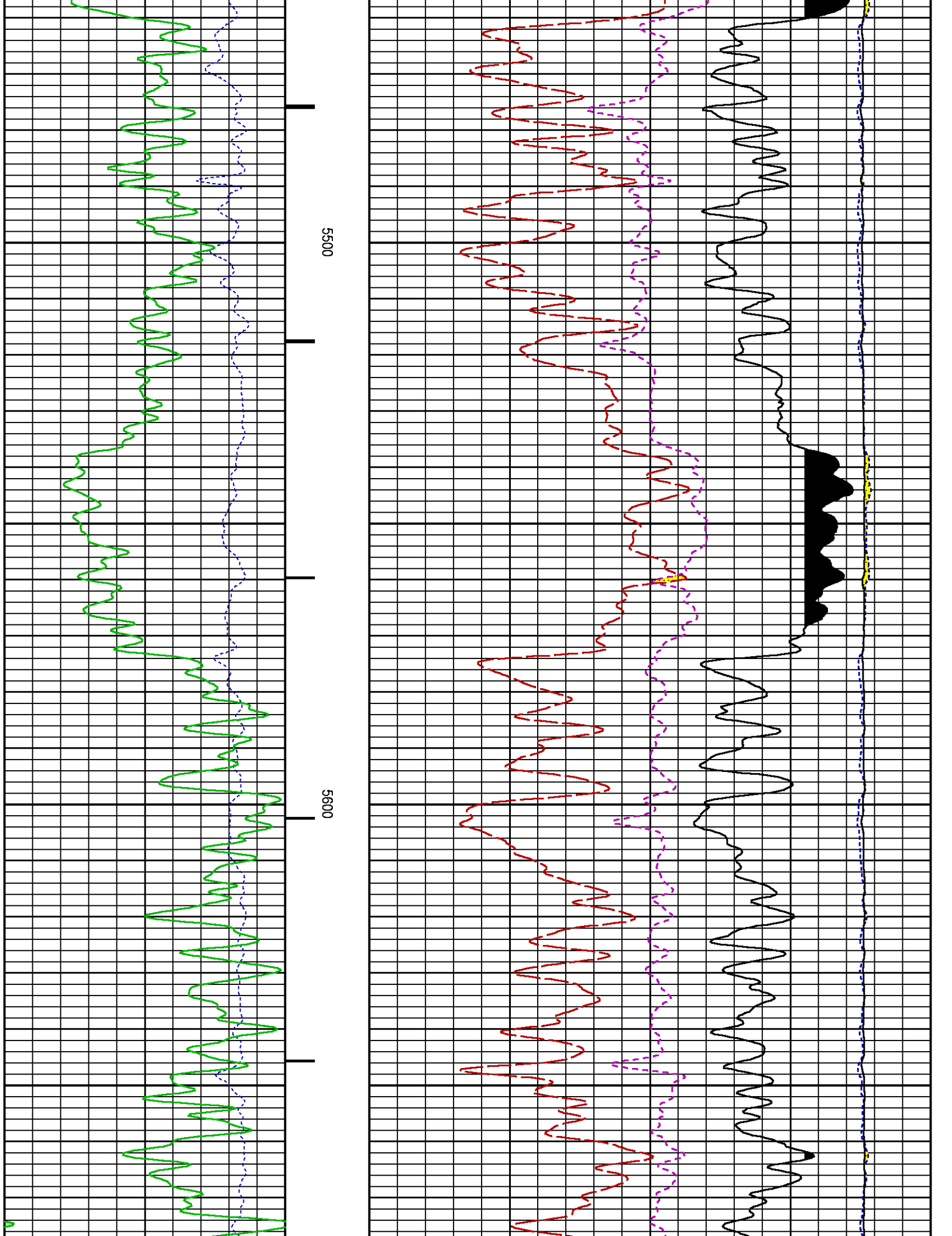
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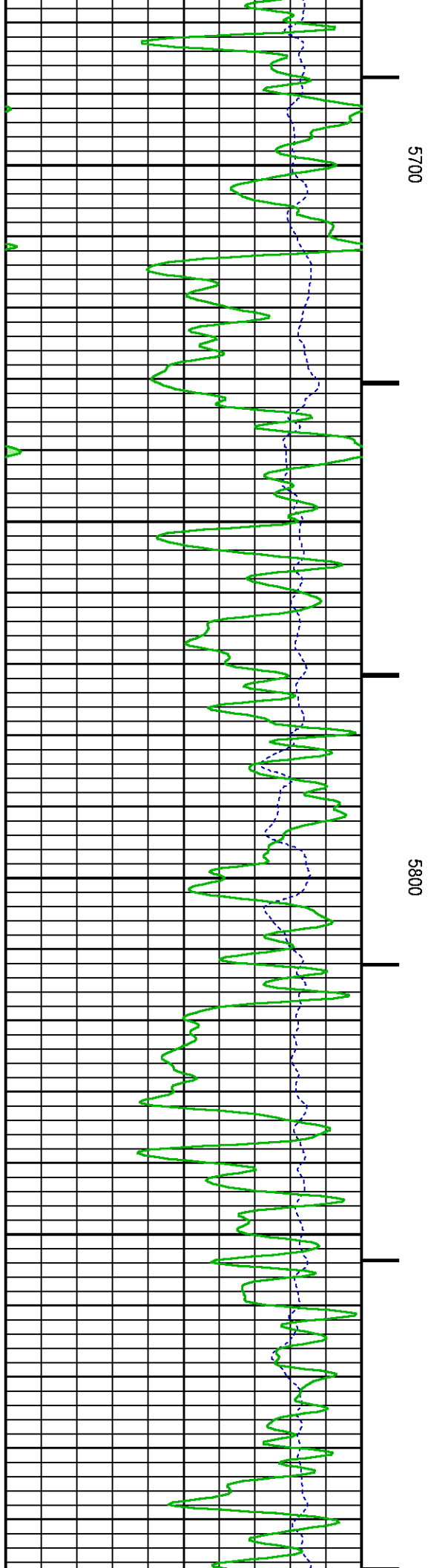
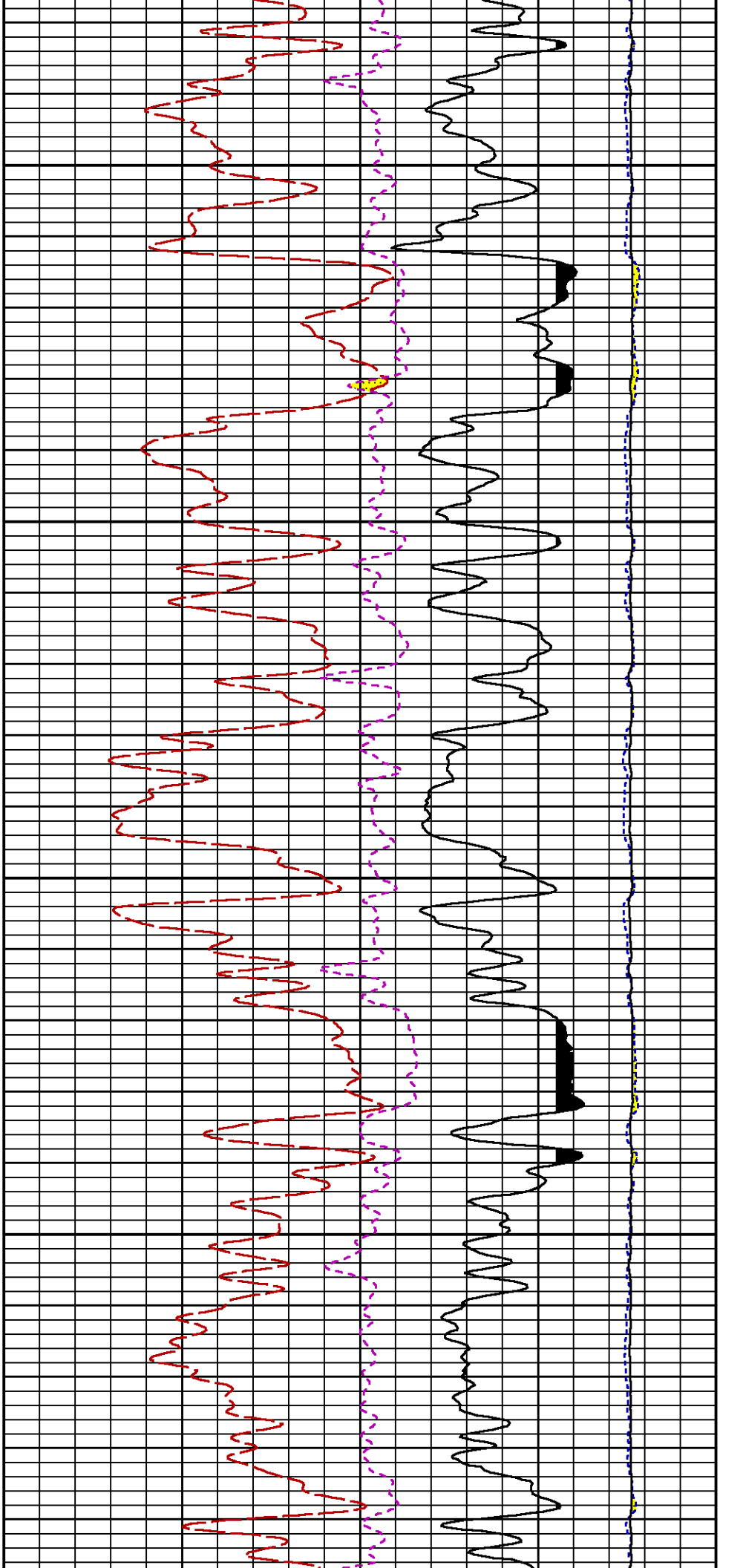
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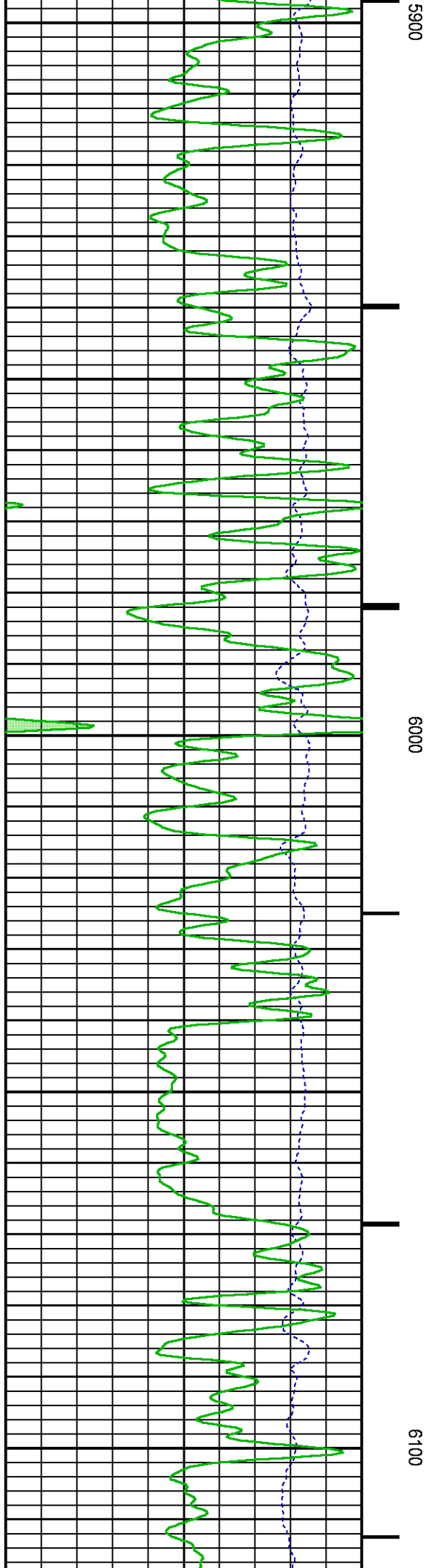
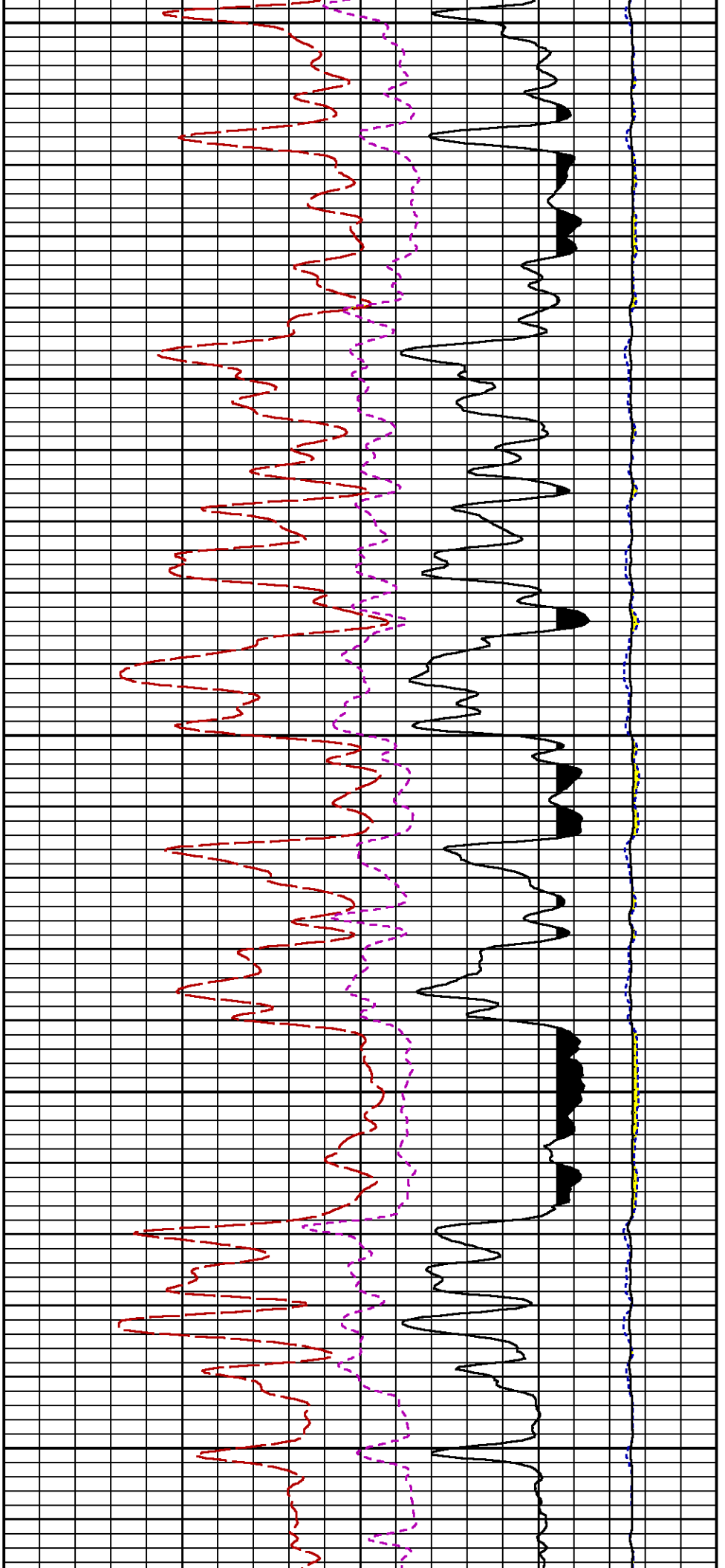
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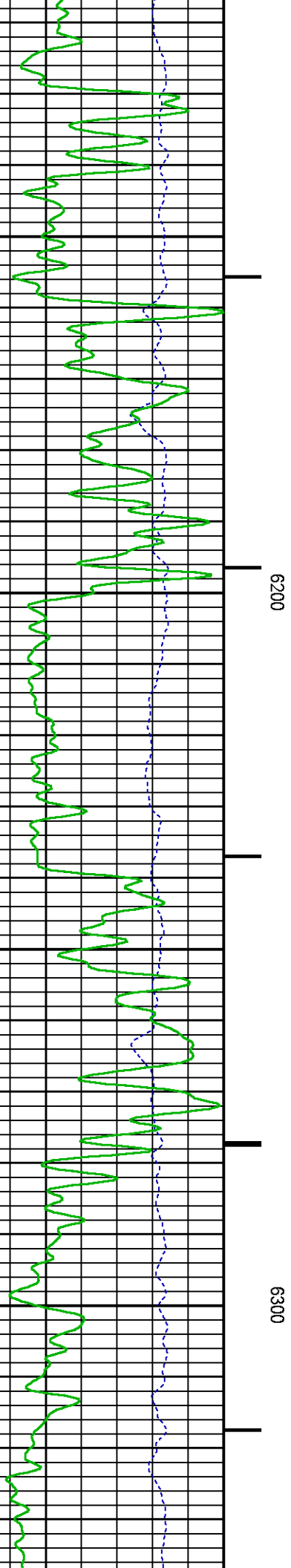
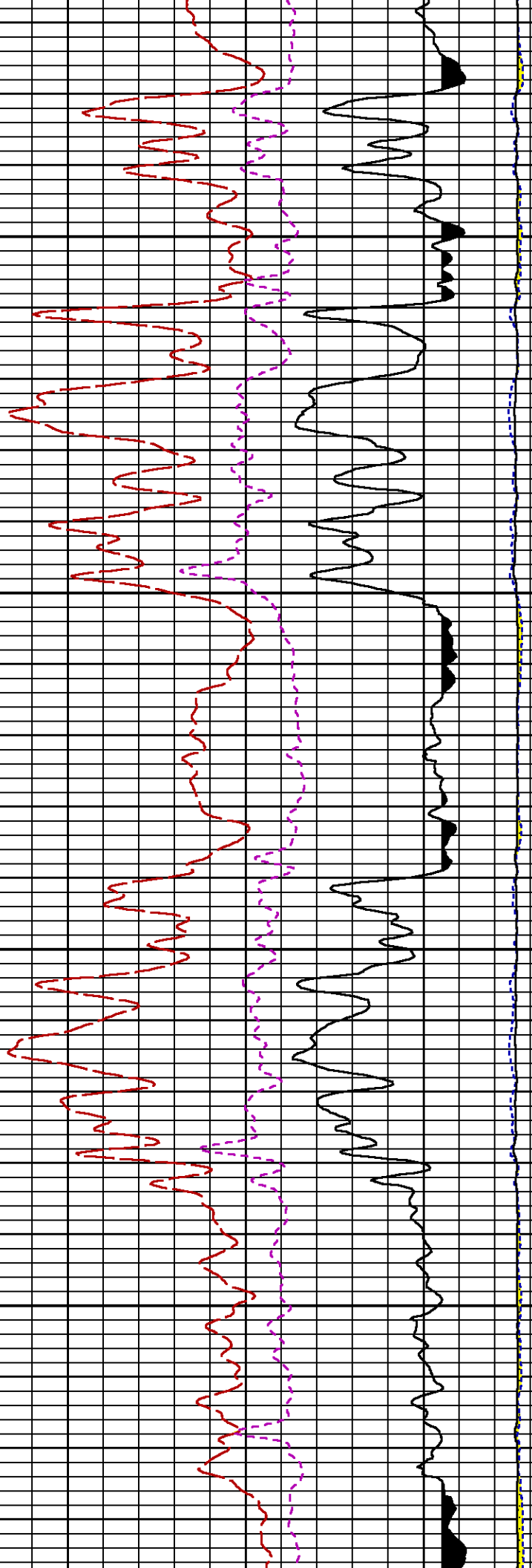


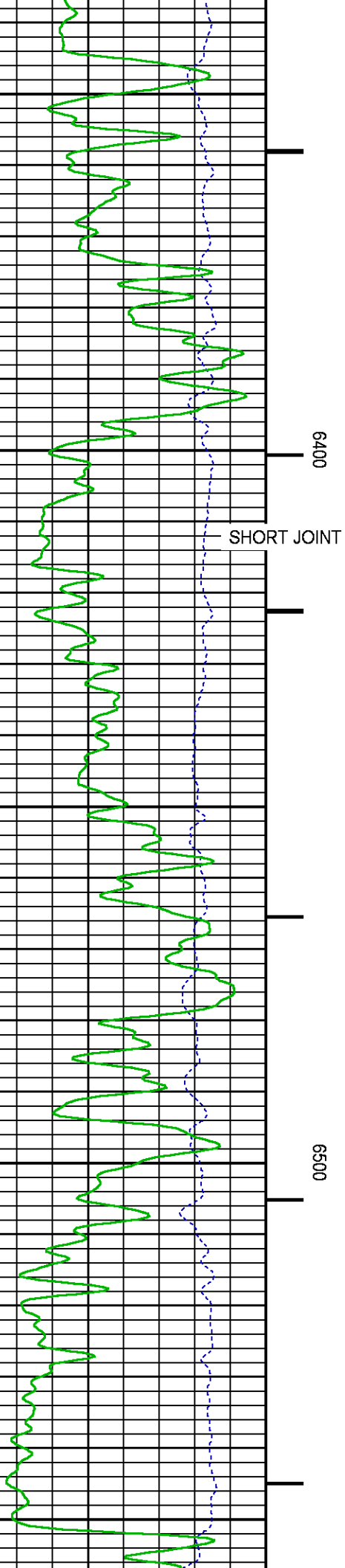
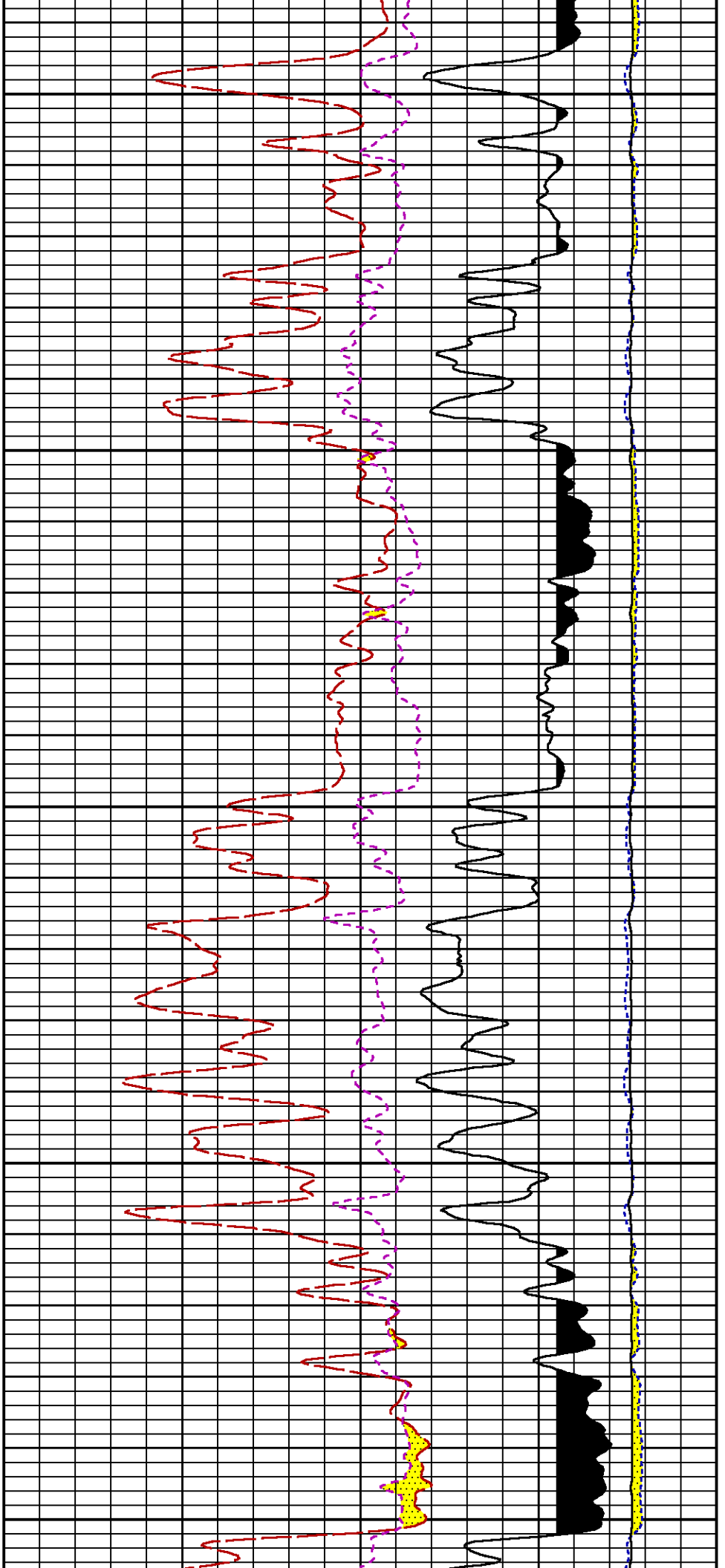


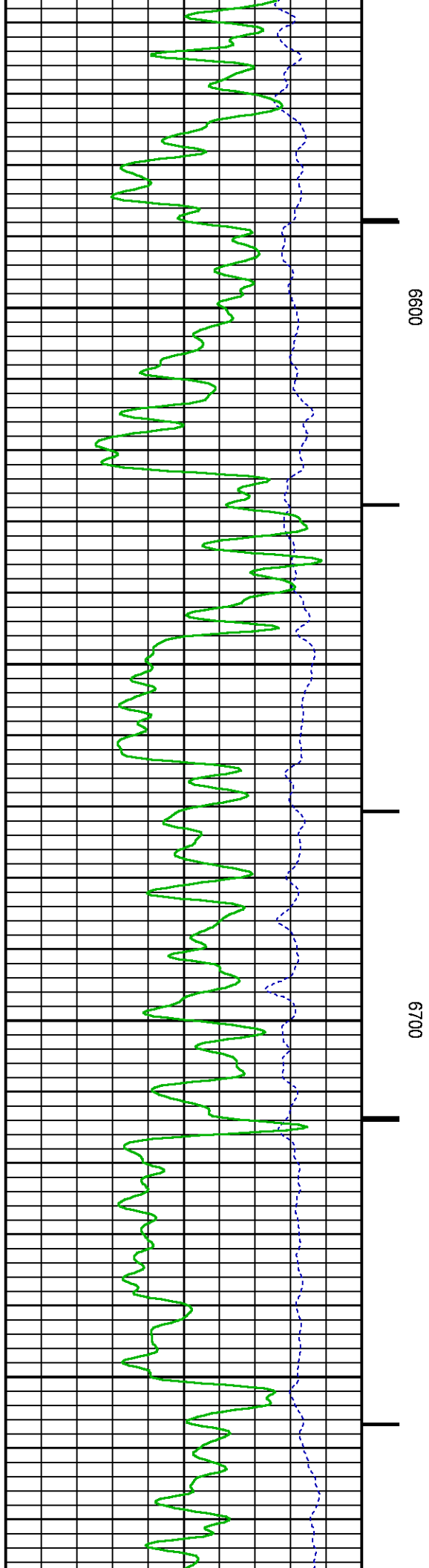
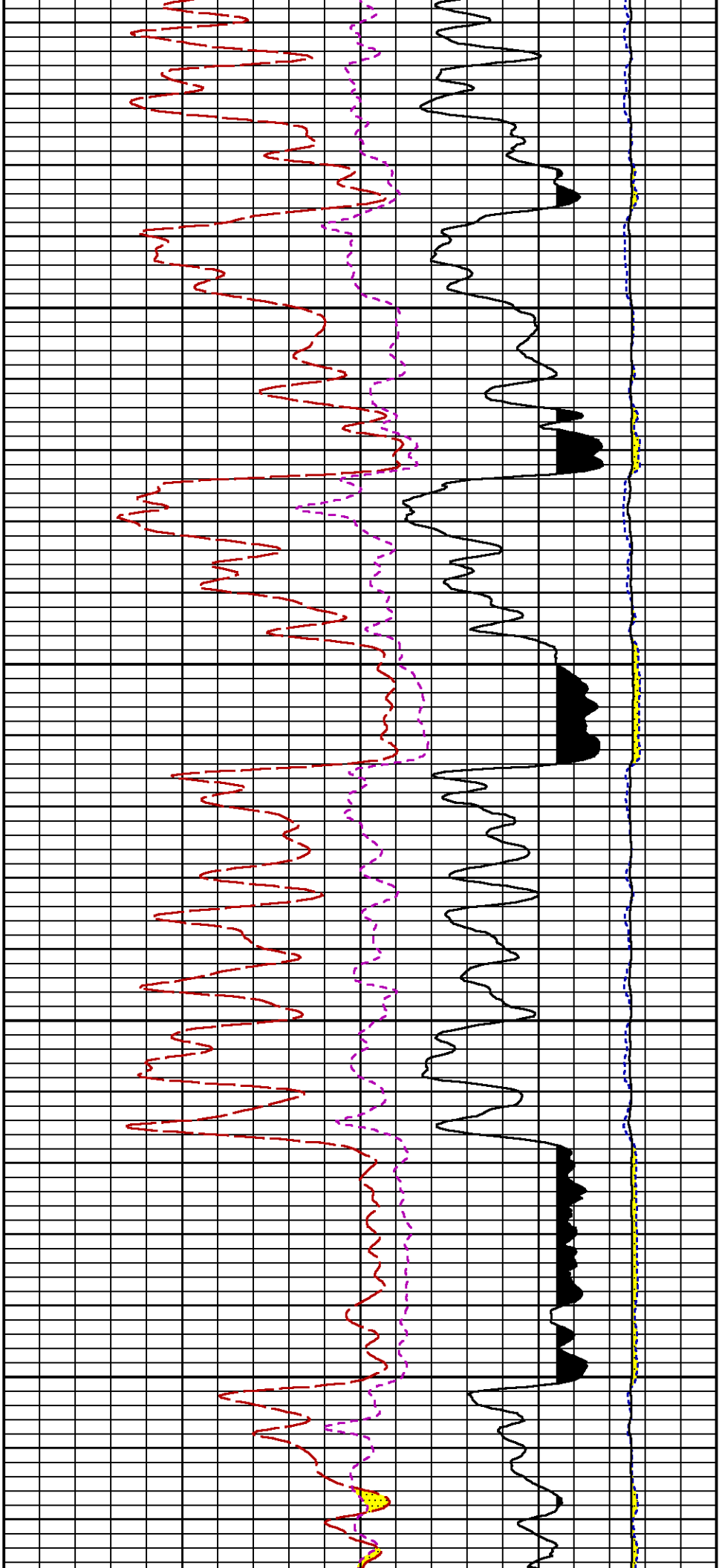


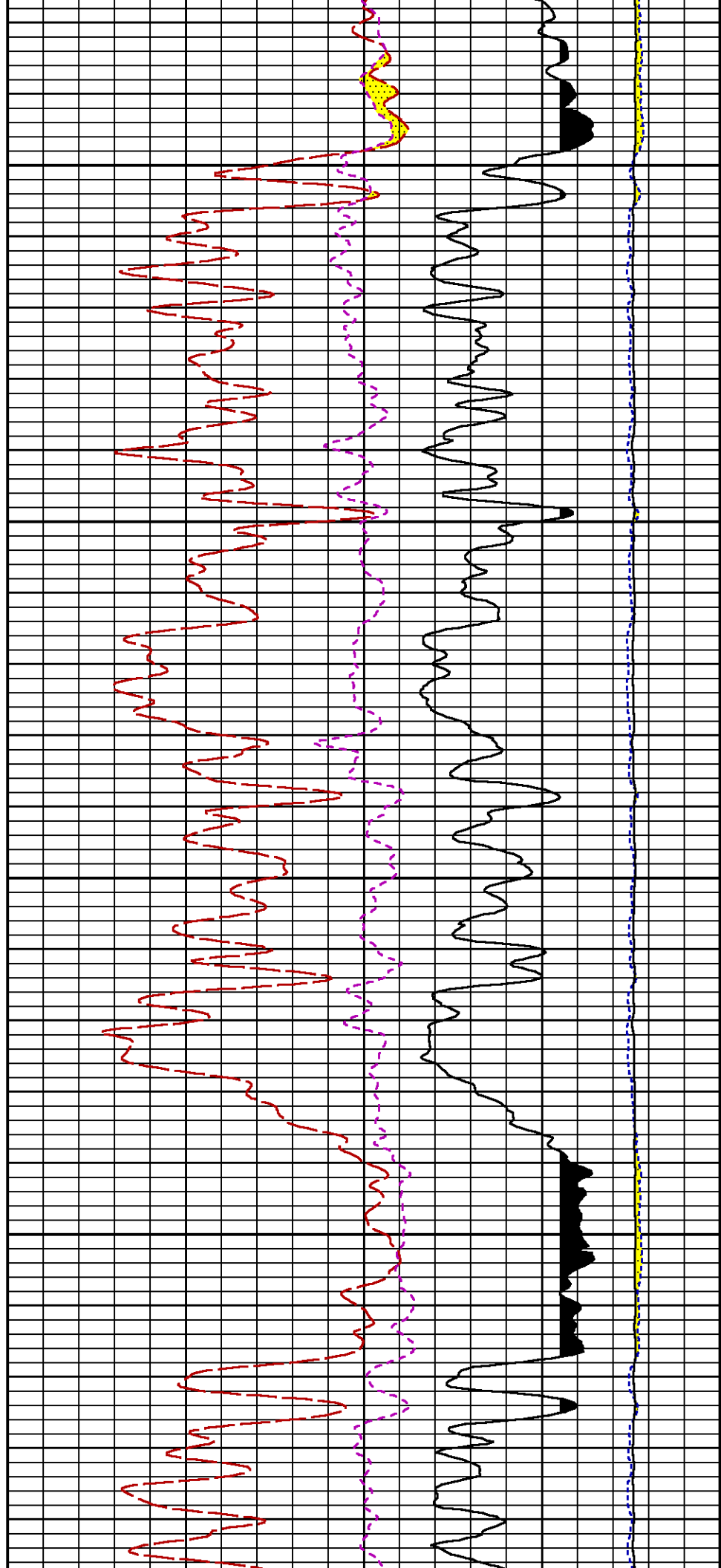
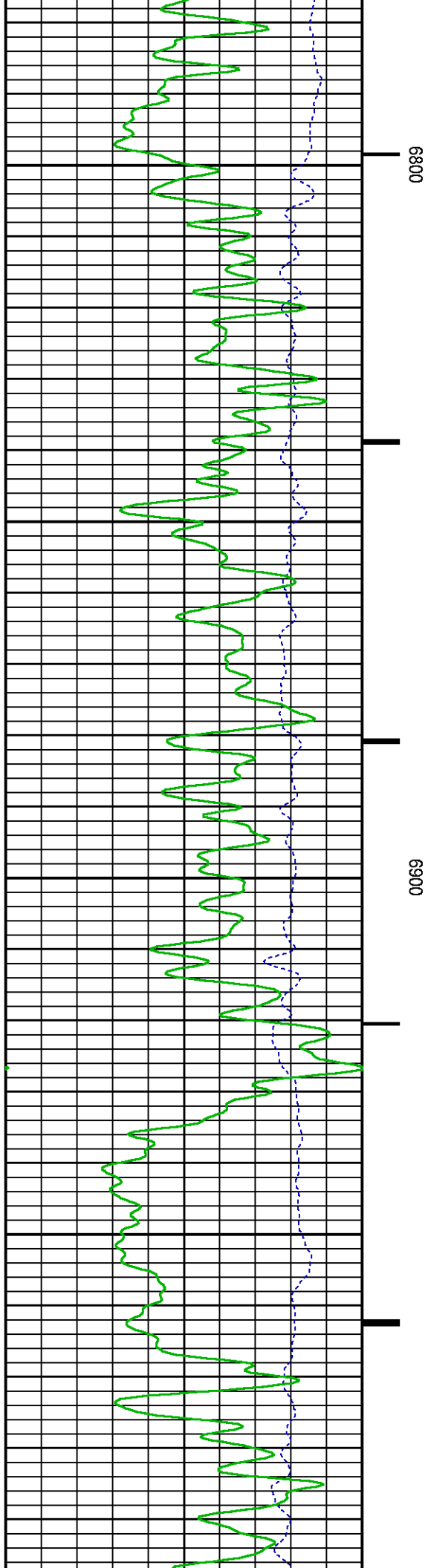


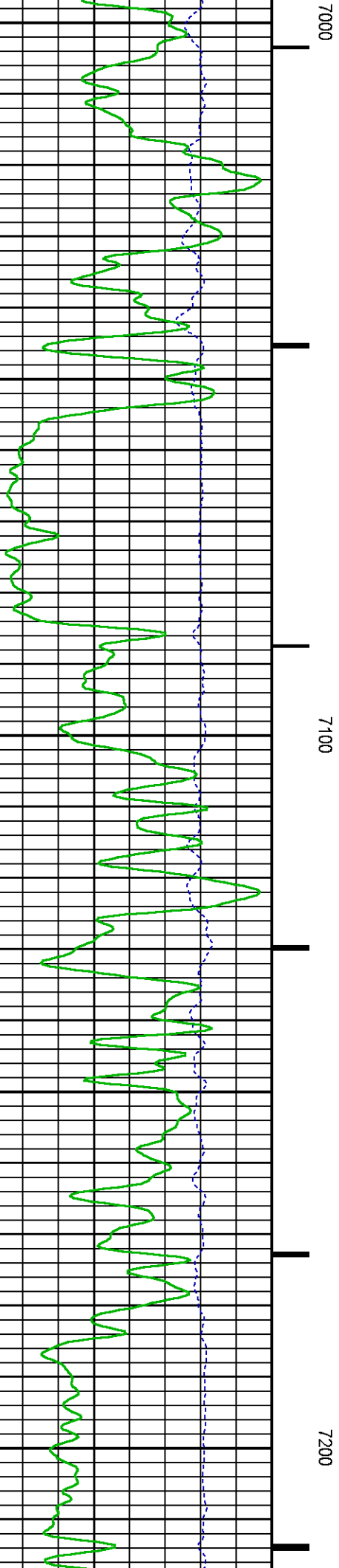
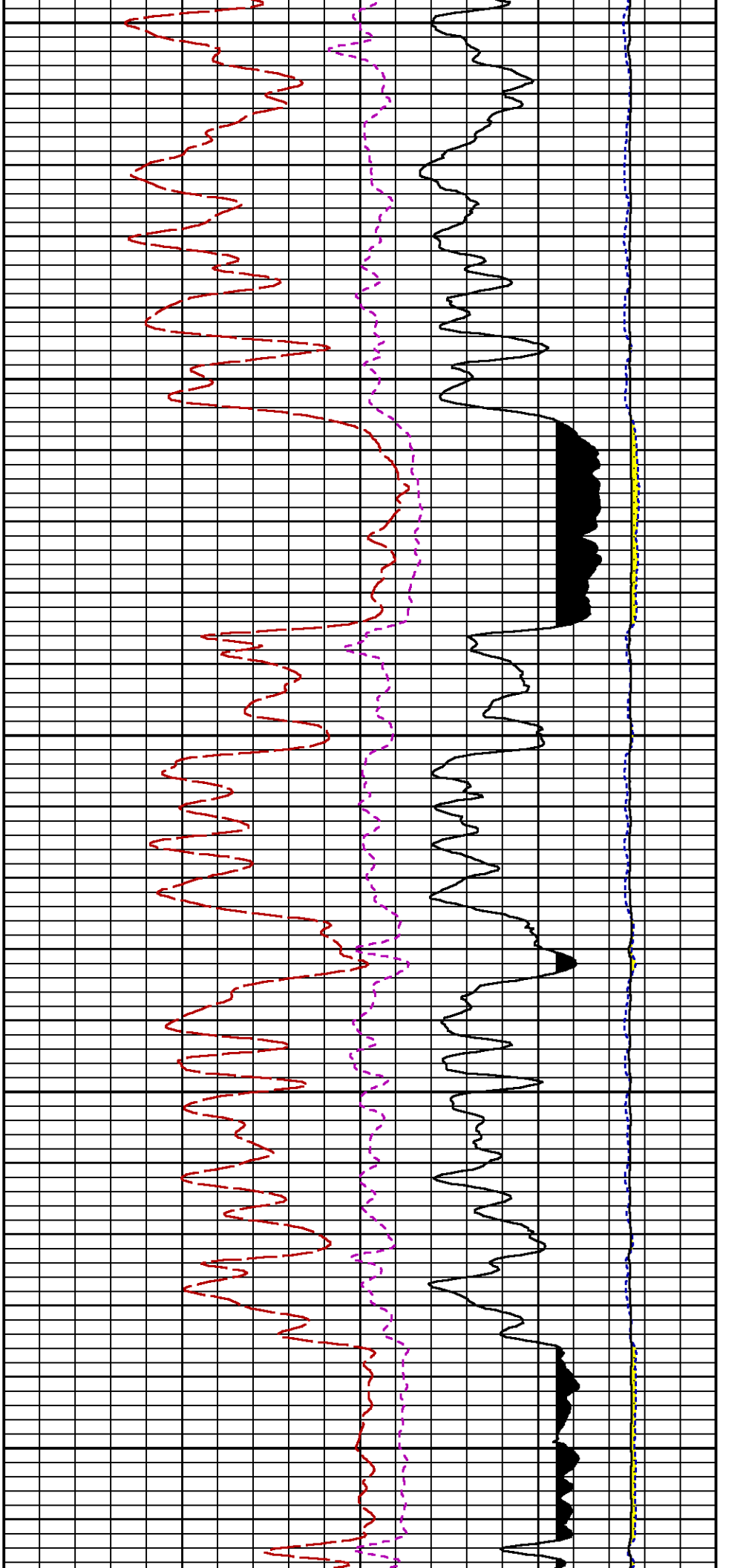


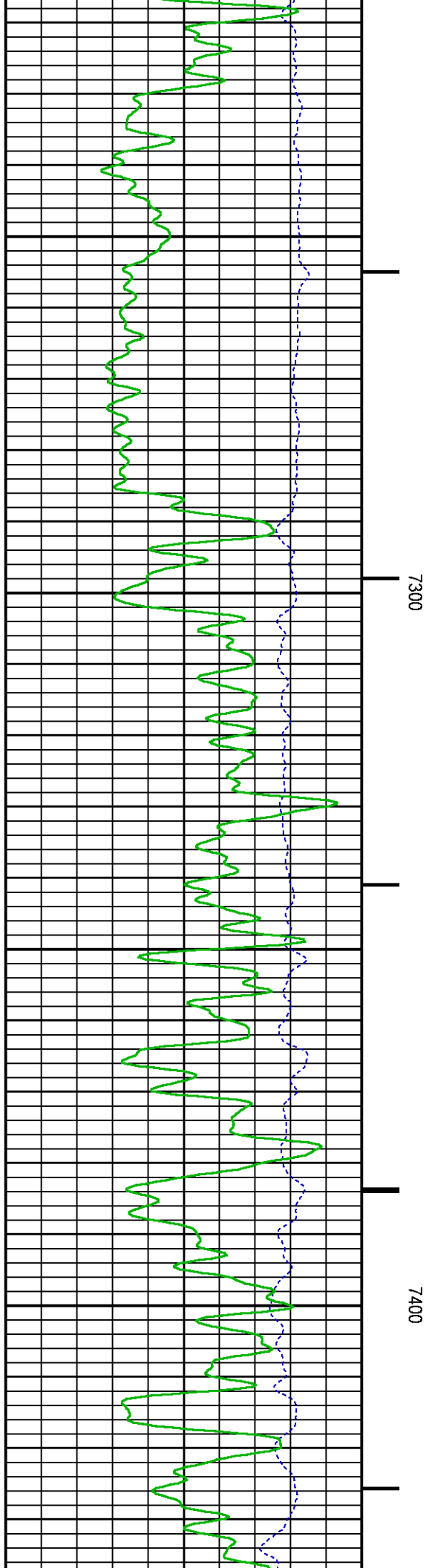
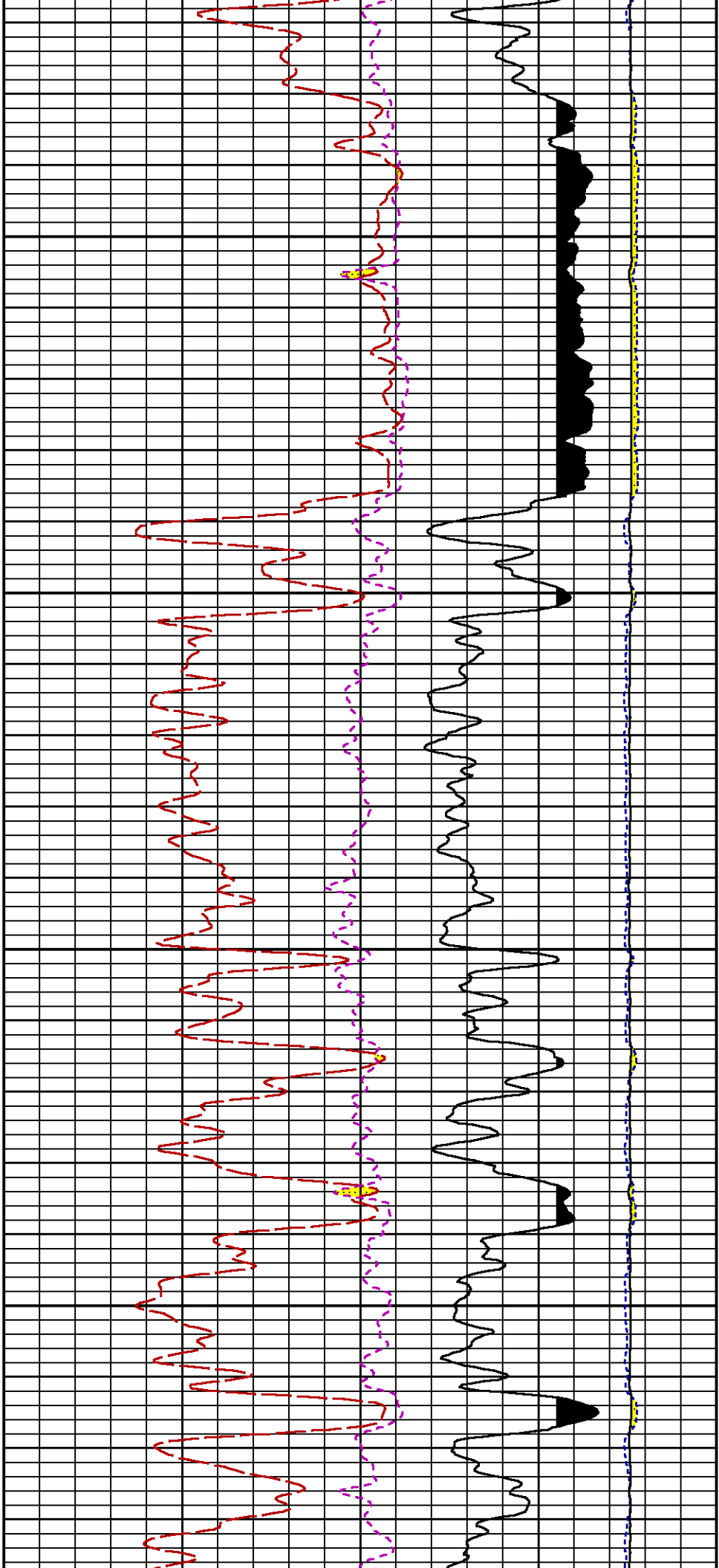


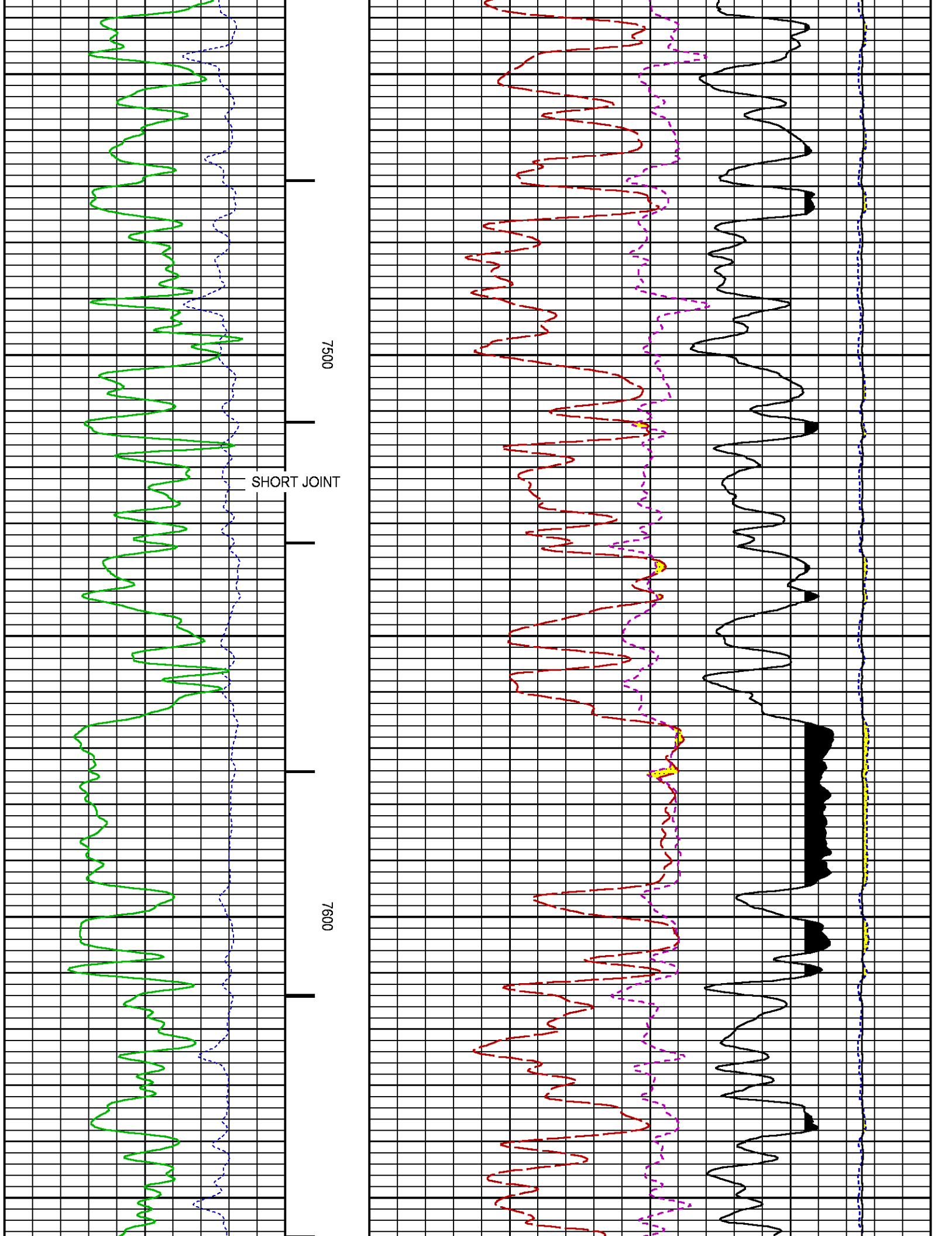


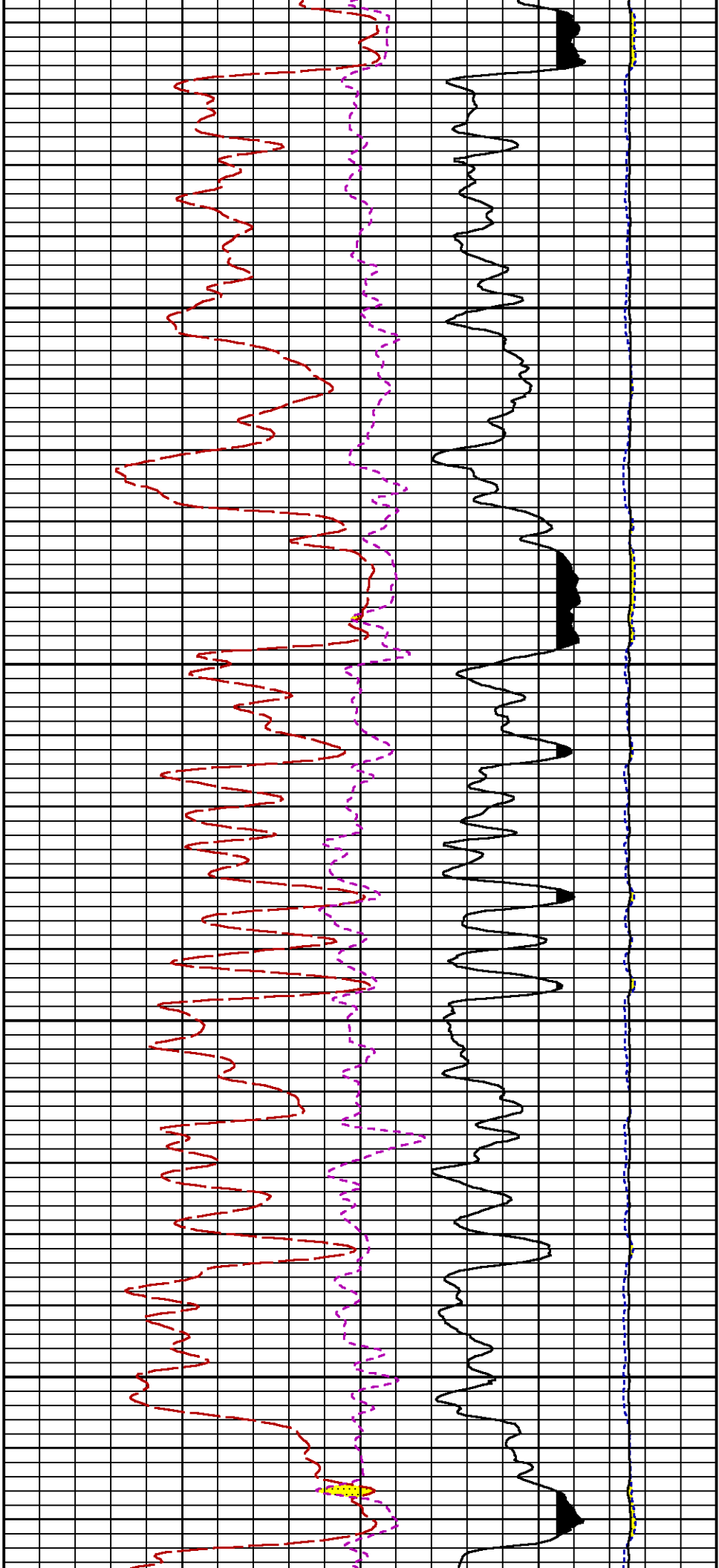






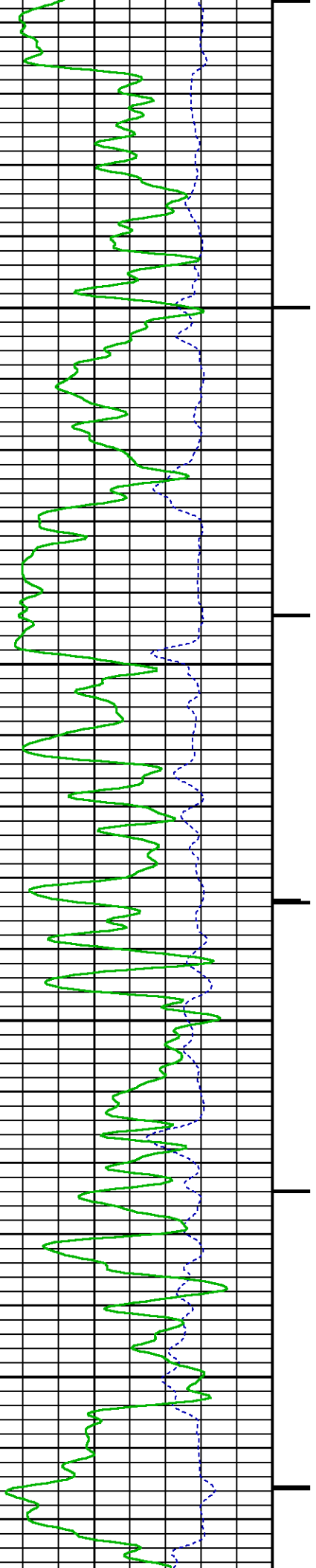


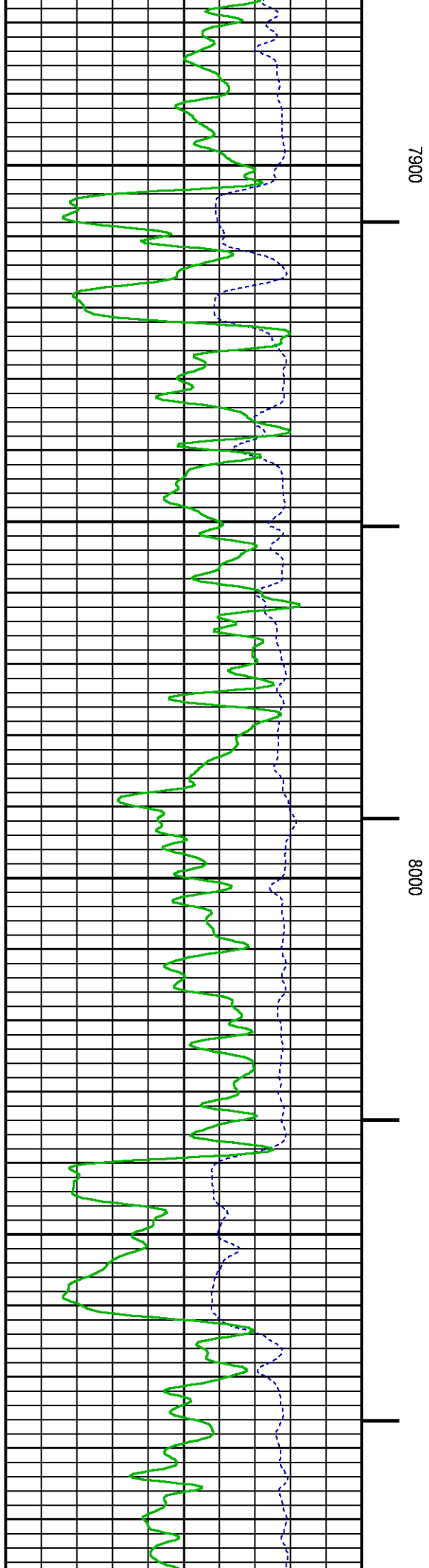
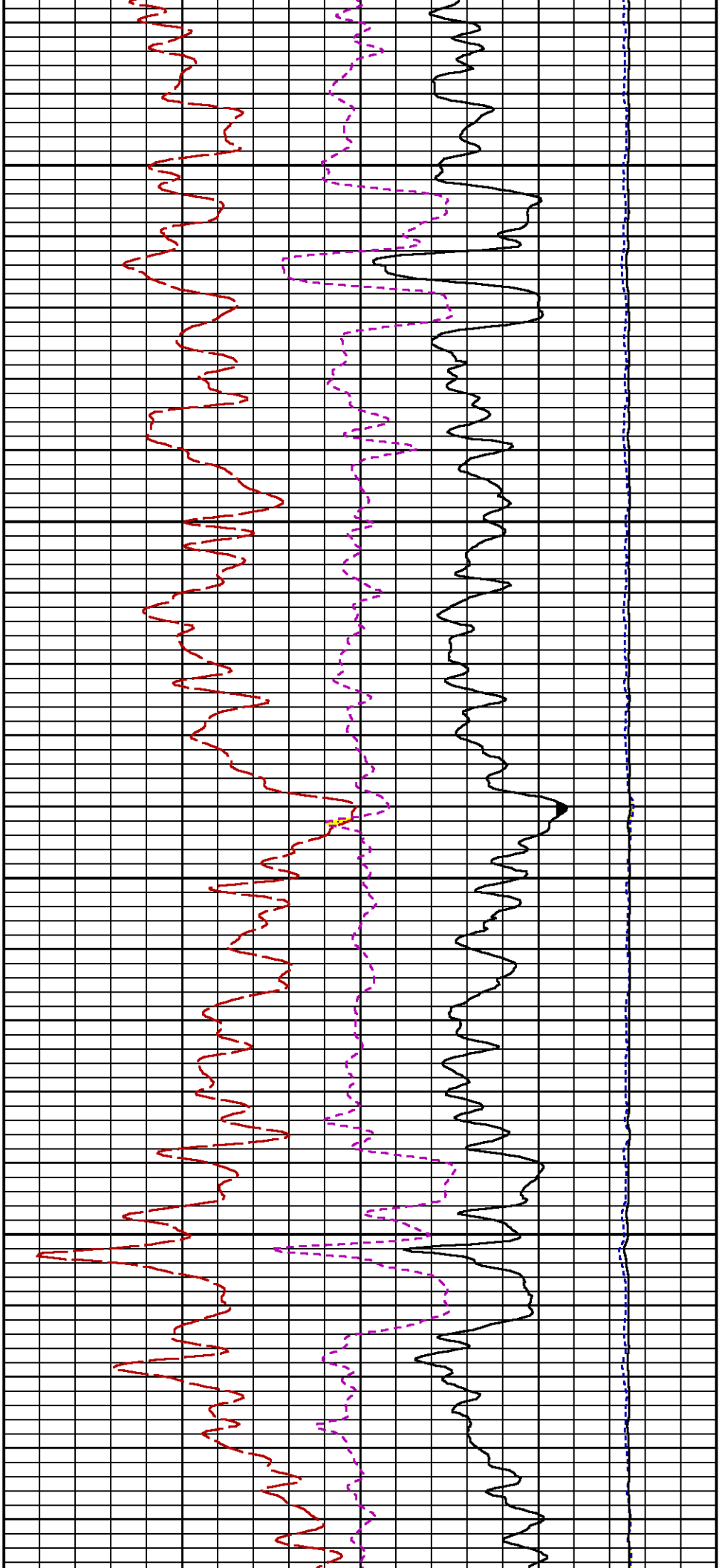


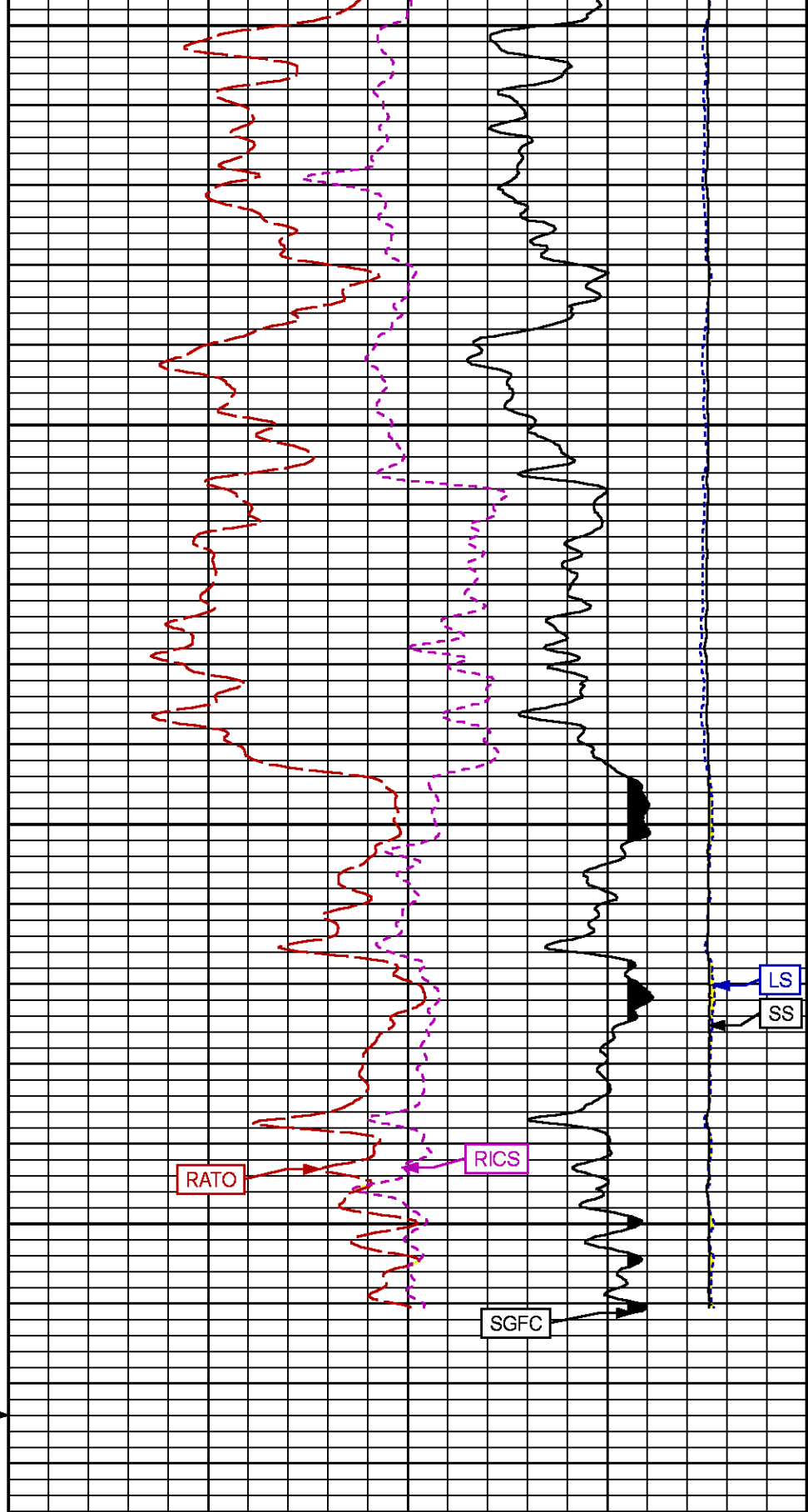
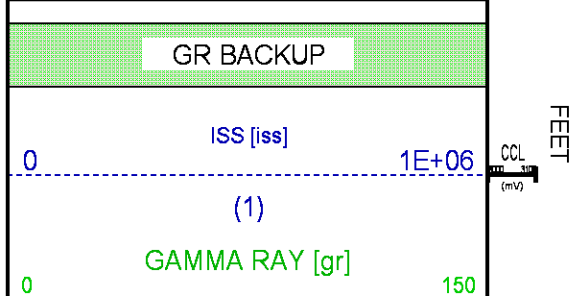
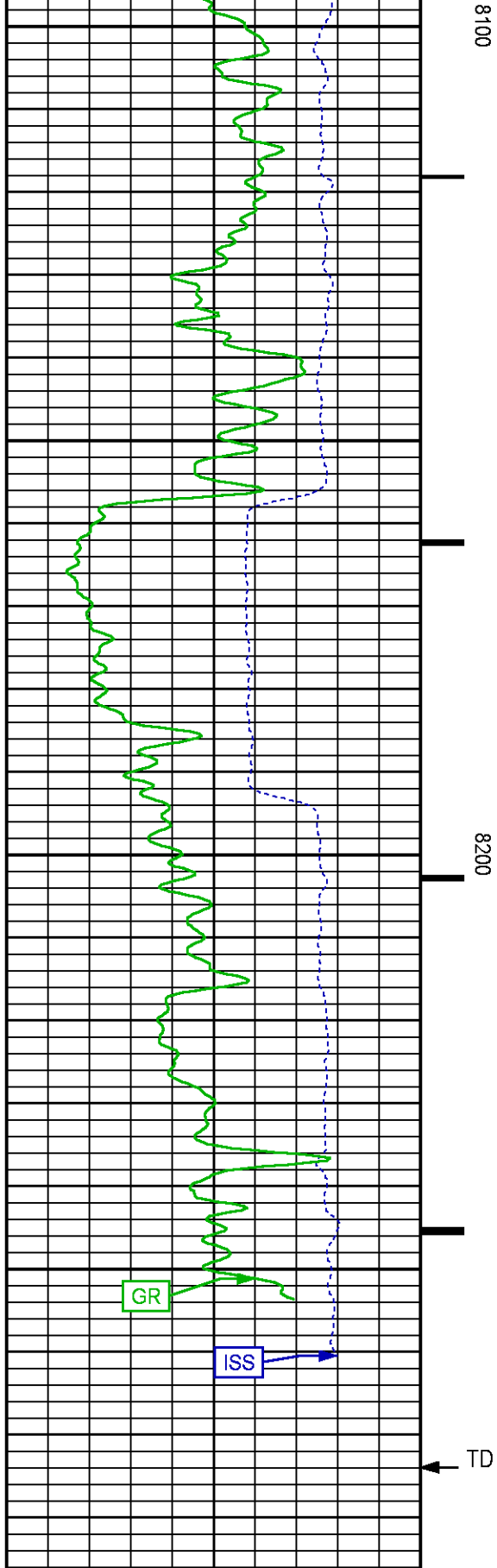


7700

7800







(gAPI)		(1)	
		RATO [rato]	
		17	0
		(1)	
		RICS [rics]	
		37	7
		(1)	
		SGFC [sgfc]	
		60	0
		(1)	

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: Tue Jan 26 11:54:45 2016

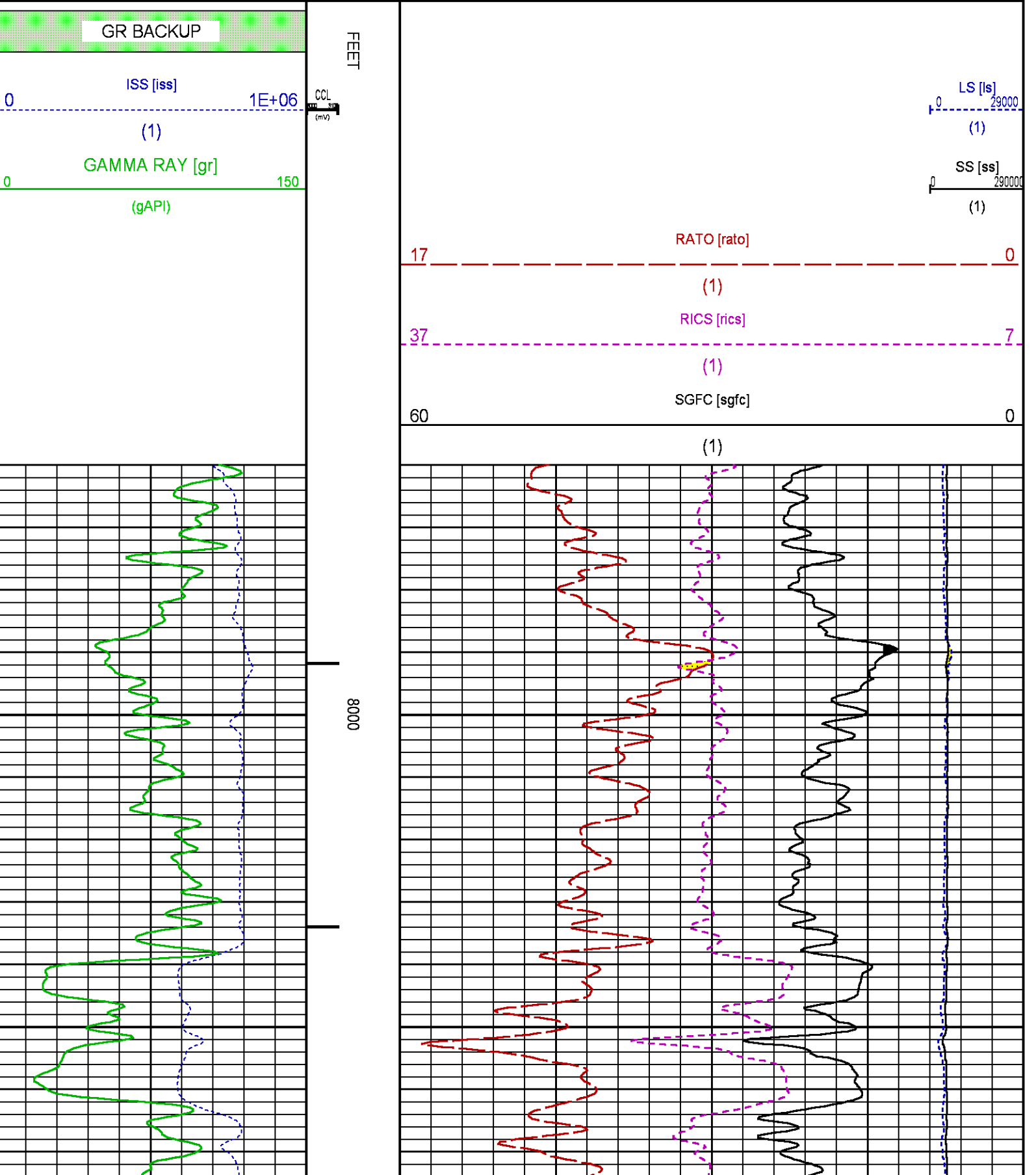
PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/CH101523/n354h01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 7963.750 ft BOTTOM DEPTH: 8290.500 ft					
SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
RPM PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	8.75	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

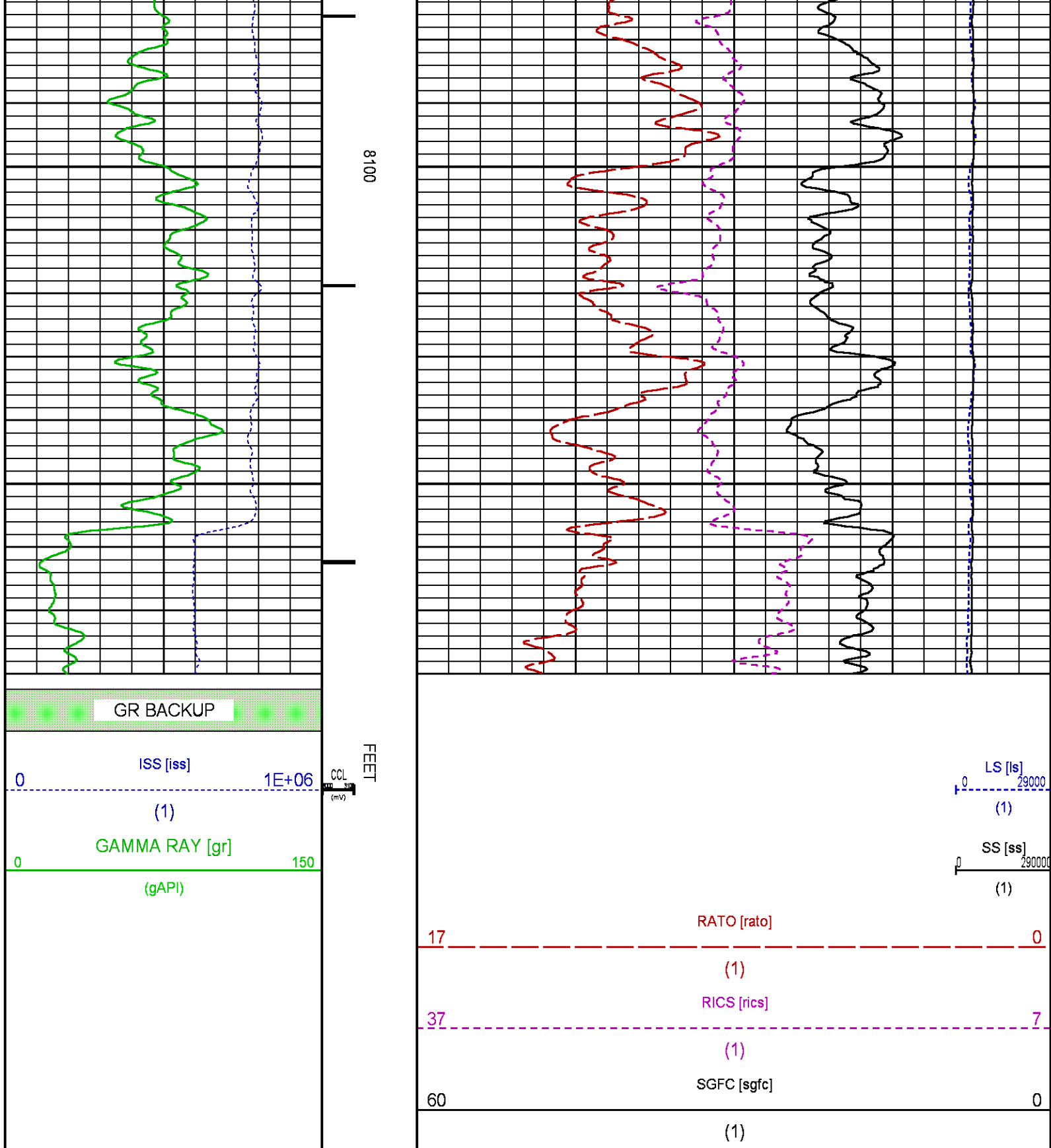
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jan 26 10:42:53 2016	CASING COLLAR LOCATOR
F1:GR	Jan 26 10:42:53 2016	GAMMA RAY
F1:ISS	Jan 26 10:42:53 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jan 26 10:42:53 2016	LONG SPACE COUNT RATE
F1:RATO	Jan 26 10:42:53 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jan 26 10:42:53 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jan 26 10:42:53 2016	CORRECTED FORMATION SIGMA
F1:SS	Jan 26 10:42:53 2016	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/CH101523/18E_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 7960 - 8180 Feet

Data File 1 : F1 : HL6670:/dat1a/CH101523/18E_RPM_REPEAT.xtf
Created On : Jan 26 10:42:53 2016
Company : LARAMIE ENERGY
Well : PICEANCE FEDERAL 28-18E
Field : VEGA
File Interval : 7931.75 - 8283 Feet
OCT : n354h





CALIBRATION / VERIFICATION SUMMARY

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Thu Jan 14 11:54:50 2016

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	29.51	215.93	186.4	1.126	33.24	243.24	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Thu Jan 14 11:56:42 2016

UNIT #: 3880TA HL6670

VERI JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	29.36	214.51	1.126	33.07	241.64	208.57
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10585555

DATE/TIME PERFORMED: Tue Jan 5 13:43:17 2016

UNIT: 3885TC 6685

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 11724361

HOURS: 8281AA 67

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	803214	123	2244	2201	2233	105	7	0.9784
Interpolated	1300000	146	2225	2189	2227			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	803214	6764	1075	149	26.18	0.14	24.25	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	803214	175103	27203	91100	32407	8421	55002	13490
Fit Quality %		0.620	0.631	0.726	0.710	0.593	0.613	0.604

	ISS	RBOR	RIN	RIN13	RICS	RATO	RTWO	RONE
		ISS/ILS	ISS/IXS	ISS/CSS	SS/LS	SS2/LS	CSS/CLS	
Raw Data	803214	1.43	4.59	29.54	14.60	10.82	3.85	4.08
		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	0.379	0.433	0.302	0.139	0.124	0.083
Reduced	1396227	1.43	4.59	29.60	14.61	10.80	3.84	4.08
		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/CH101523/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
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

33.24'

CCL MP — 25.19'

GR MP — 22.64'

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	<u>LARAMIE ENERGY</u>		FILE NO:	<u>CH101523</u>
	WELL	<u>PICEANCE FEDERAL 28-18E</u>		API NO:	<u>05077102580000</u>
	FIELD	<u>VEGA</u>			
	COUNTY	<u>MESA</u>	STATE	<u>CO</u>	
	LOCATION:	SHL: 2030' FSL & 2497' FWL BHL: 863' FSL & 880' FEL		ELEVATIONS:	28 9S 93W 28-10 PAD PATTERSON 306
	SEC <u>28</u>	TWP <u>9S</u>	RGE <u>93W</u>	DATE	26-JAN-2016