



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: WPX ENERGY

CH085759 FEDERAL NER 434-32

API No: RULISON

05045217780000 GARFIELD State CO

## Location

SHL: 165' FNL & 2598' FWL (5 75 93W)

BHL: 346' FSL & 1766' FEL (32 65 93W)

SEC 32 TWP 6S RGE 93W

## Other Services

BOND LOG

32 65 93W

RU 23-5 PAD

NABORS 576

Permanent Datum

GL Elevation 7603 ft  
KB 26 ft Above P. D.

Log Measured From

KB

## Elevations

KB 7629 ft

DF

GL 7603 ft

Date 13/MAY/14

Run ONE

Service Order USC085759

Depth Driller 10077 ft

Depth Logger 10012 ft

Bottom Logged Interval 10002 ft

Top Logged Interval 5957 ft

Time Started 12:00

Time Finished 18:00

Operator Rig Time 6 HOURS

Type of Fluid in Hole WATER

Fluid Density NA

Salinity NA

Fluid Level 88 ft

Logged Cement Top NA

Wellhead Pressure 0 psi

Maximum Hole Deviation NA

Nominal Logging Speed 10 fpm

Maximum Recorded Temperature 246 degF

Reference Log Date 13/MAY/14

Equipment No. 4271 Location GRAND JUNCTION

Recorded By NEMELL

Witnessed By JEFF DUCY

- FOLD HERE

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
13.5 in	0 ft	1108 ft
8.75 in	1108 ft	10133 ft

## Casing Record

Size	Weight	Grade	From	To
9.625 in			0 ft	1108 ft
4.5 in	11.6 lbm/ft	P-110	0 ft	10133 ft

## Remarks

All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 5/13/2014 at the client's request.

The depth matching process creates potential for collar lengths to vary from those recorded on other cased hole wireline units without a Gamma Ray reference.

The amount of linear shift is 4 feet.

Logged in PNC-3D mode.

BHT = 246 °F

SJ = 6537'-6559'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	PCM	8250EA	10397894	FREE
1	1	TEL/CCL	8248ED	10296408	FREE
1	1	GR	2812LA	10274382	FREE
1	1	RPM	8281EA	10303640	FREE
1	1	RPM	8283PA	10585555	FREE
1	1	RPM	8281FA	10401926	FREE
1	1	TEMP	8255XA	11774568	FREE

MAIN SECTION  
PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		5931.500	10008.785
PNC Porosity	Borehole Size	8.750	inch	5931.500	10008.785
PNC Porosity	Casing Size	4.500	inch	5931.500	10008.785
PNC Porosity	Gas Filled	Non Gas Filled		5931.500	10008.785
PNC Porosity	Matrix	Sandstone		5931.500	10008.785
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	5931.500	10008.785

DEPTH OFFSETS  
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-26.519	FLTM
8248ED	-24.519	CCL CHV

2812LA	-21.969	GR
8281XA	-12.702	HVC3Q0 SEQ3 AMA3 AML3 BKX CXS CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3 SDL3 SGA3 SGL3 STA3 XS ASPEC3 AMB3 AMF3 CHF3 IXSC IXSN RATO23 RICXC RIN13C RIN23 RIN23C SD3D SG3D SGB3 SGF3 WDT3 CXSR IXSR XSR RICXR
8281XA	-12.291	HVC2Q0 SEQ2 AMA2 AMB2 AMF2 AML2 BKL CHF2 CLS CPT2Q0 CPT2Q2 CPT2Q3 CPT2Q4 ET2 ILS LS MCS2 MCS2Q0 QCAL2 RGN2 RICL RONE23 RTWO23 SDA2 SDL2 SGA2 SGB2 SGF2 SGK2 SGL2 STA2 ASPEC2 ILSC ILSN WDT2 RICLC CLSR ILSR LSR RICLR
8281XA	-12.041	CPRS HVC1Q0 MV SEQ SEQ1 AMA1 AMB1 AME1 AMF1 AML1 BKS CHF1 CSS CORB CORF CPT1Q0 CPT1Q2 CPT1Q2A CPT1Q2B CPT1Q2C CPT1Q3 CPT1Q4 CPT1Q5 ET1 G1 G2 GE1S GE2S ISS MCS1 MCS1Q0 QA1 QCAL1 QM1 RATO RATO13 RBOR RGN1 RICS RIN RONE RPOR RTWO RIN13 RONE13 RTWO13 SALB SC1 SDA1 SDL1 SGA1 SGB1 SGB1 SGE1 SGF1 SGFC SGK1 SGL1 SS SS2 STA1 PD1S PD2S PD3S MD1S MD2S MD3S DG1S DG2S DG3S PD1M PD2M PD3M MD1M MD2M MD3M DG1M DG2M DG3M MVS MA MVM FILV IAM TA PVM PVS IAS SSTAT QPD1 QPD2 QPD3 QMD1 QMD2 QMD3 QDG1 QDG2 QDG3 QMA QTA QFILV QMV QPV QIA DERR DCNT QPK1 QSA1 PKS1 ASPEC1 H0C FE2XC ISSC RINC ISSN RDEN WDT1 RICSC CSSR G1R G2R ISSR SSR SS2R RATOR RATO13R RBORR RICSR RINR RIN13R RONE RPOR RTWOR
8255XA	-0.792	PTFS PTMS
8255XA	-0.775	SPF1 SPFQ TSCP TSDP
8255XA	0.000	DTEM TEMP TNF
SYSTEM	0.000	TEN TTEN

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

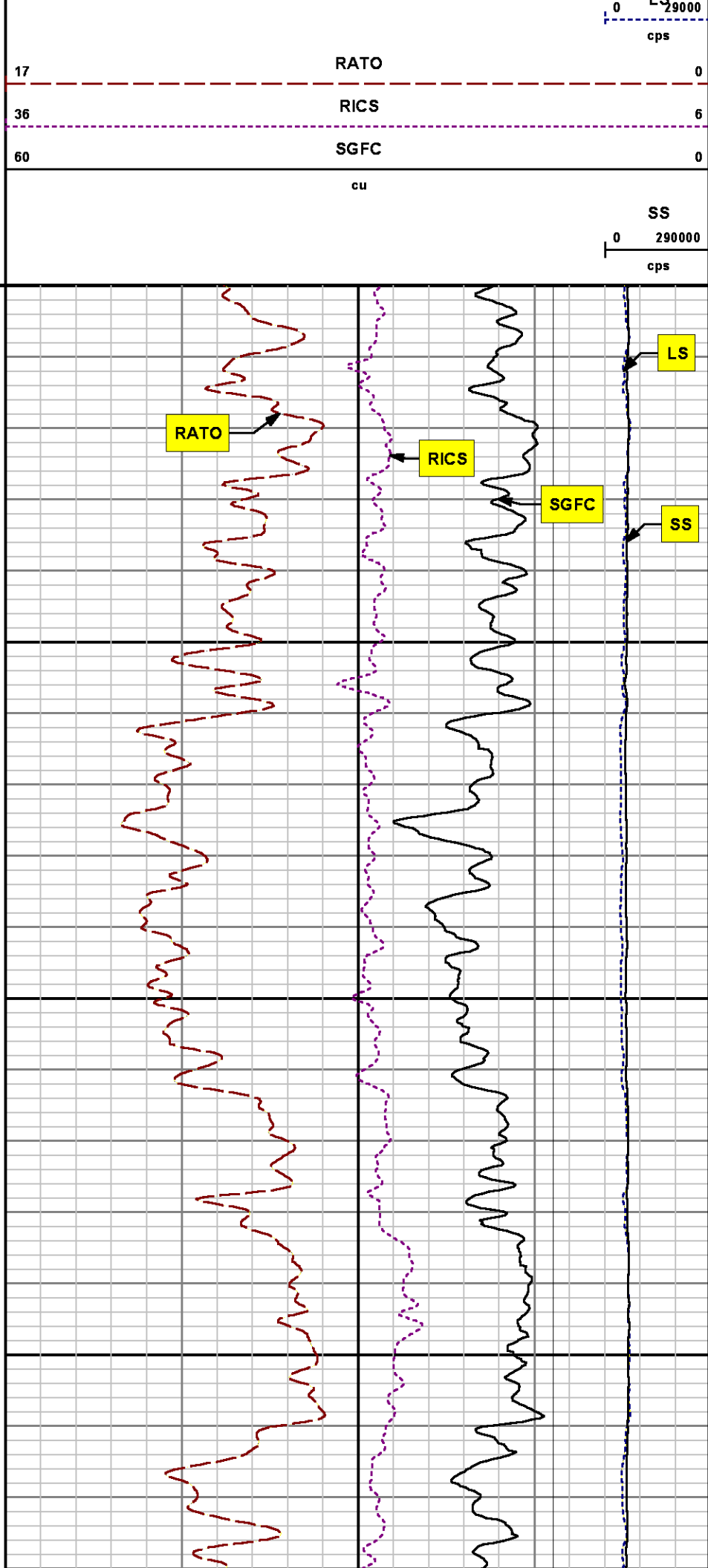
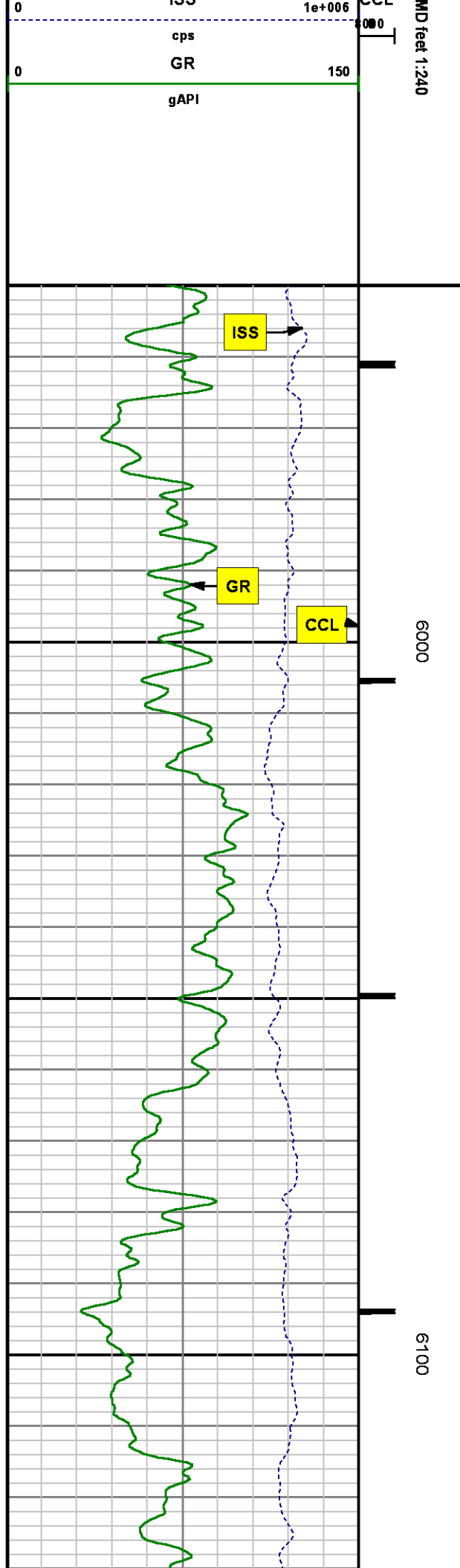
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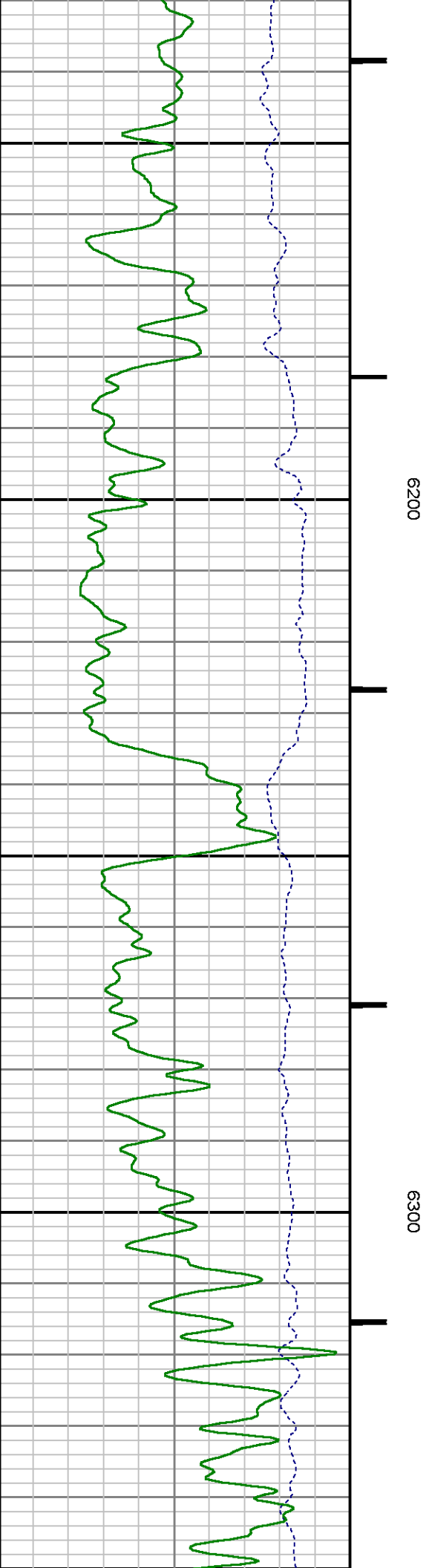
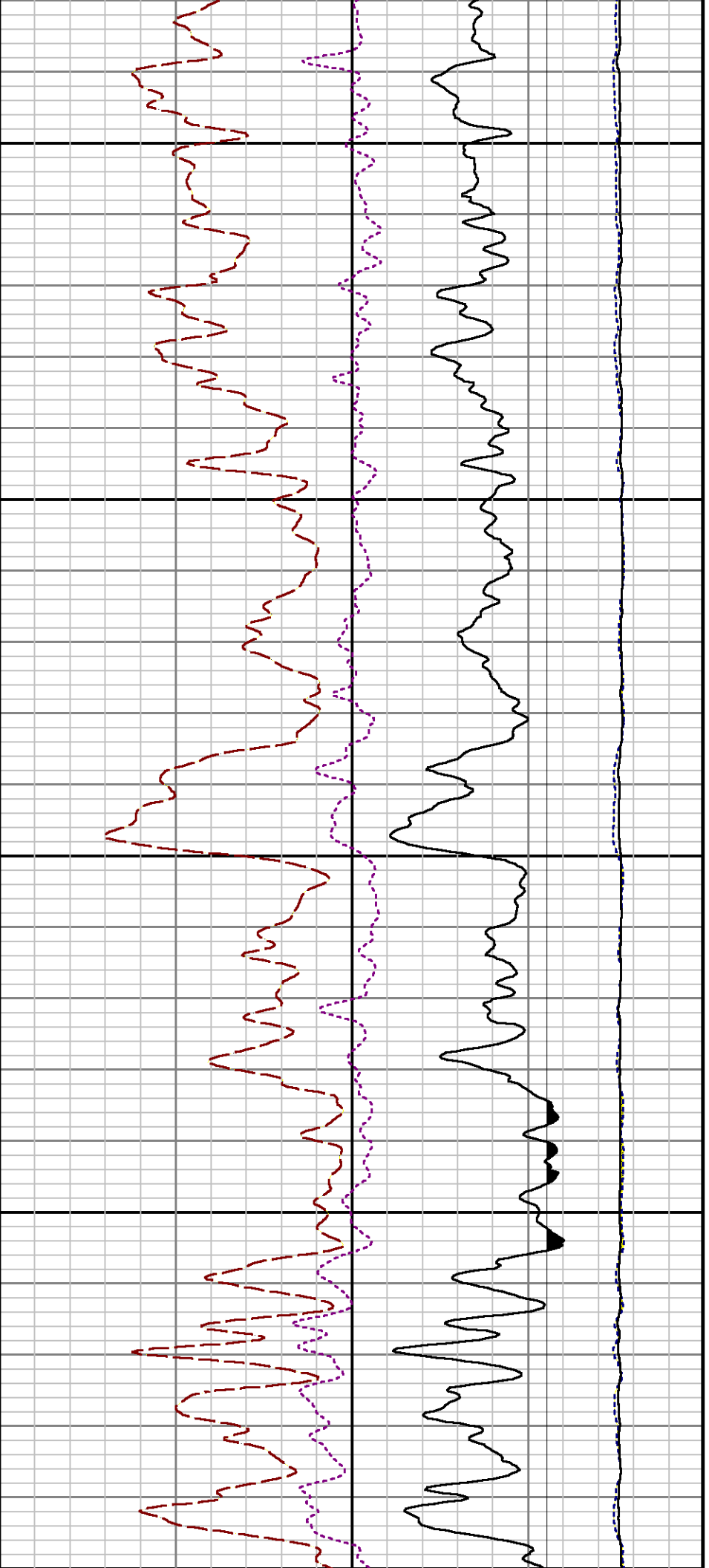
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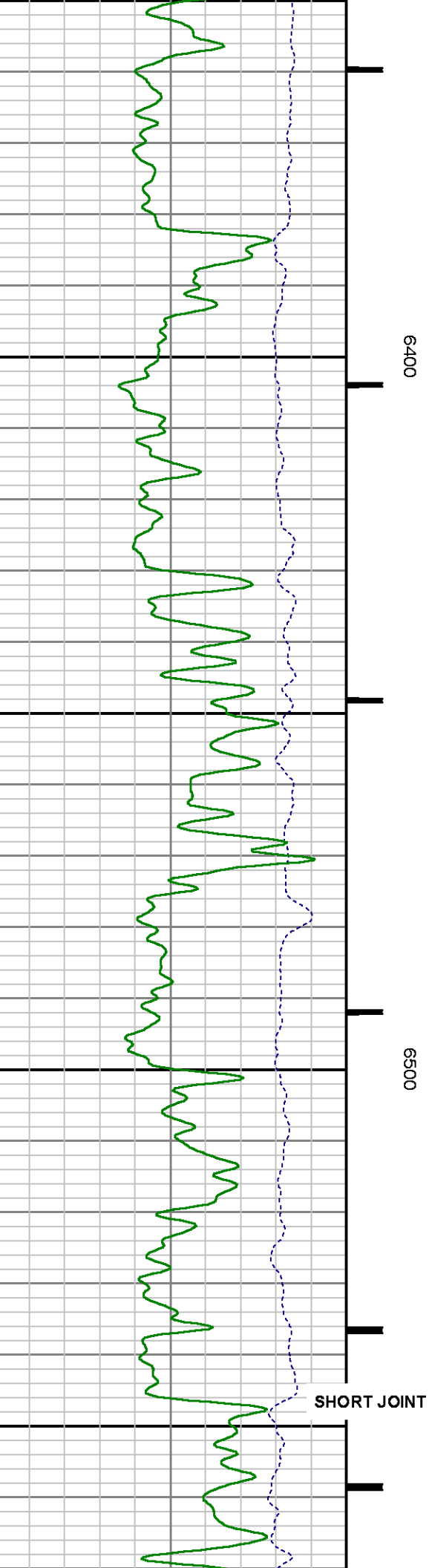
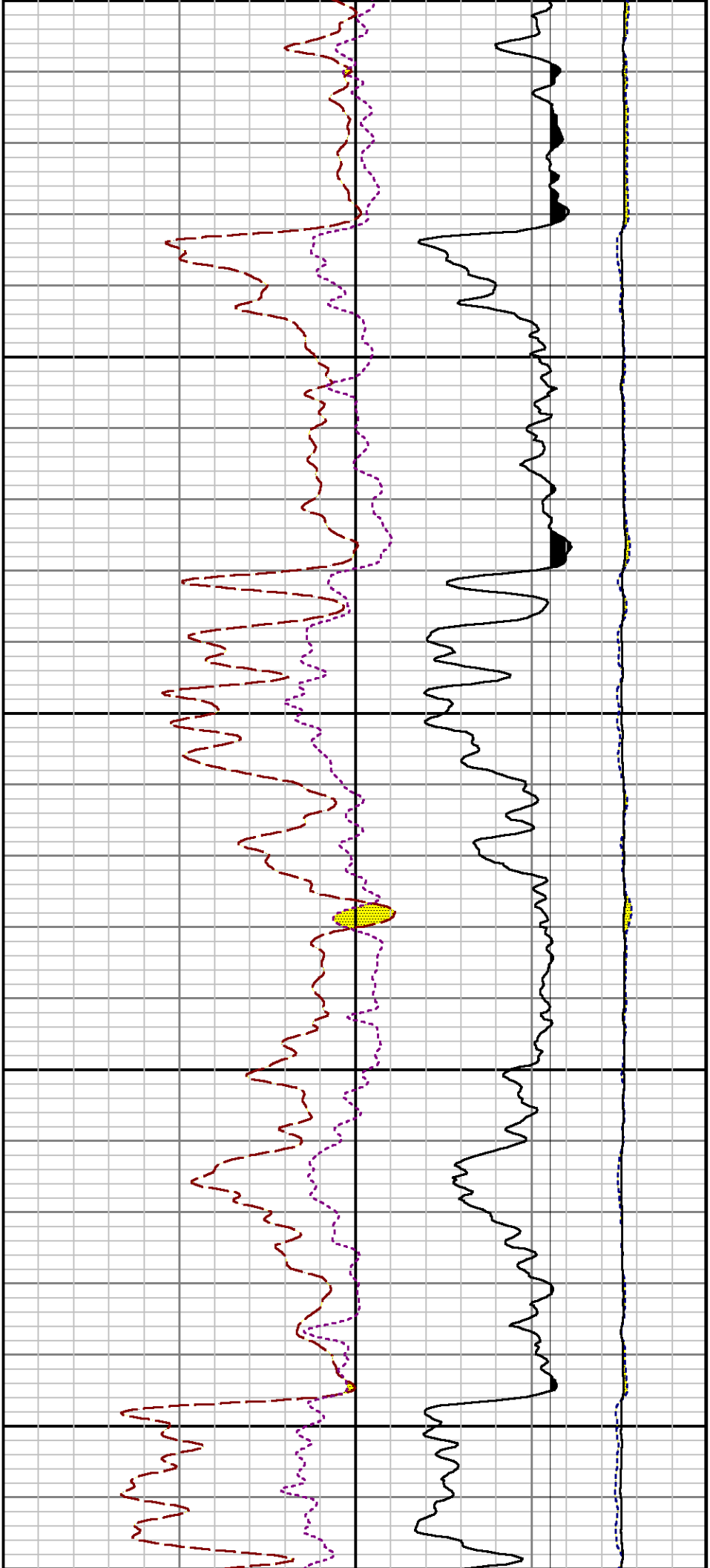
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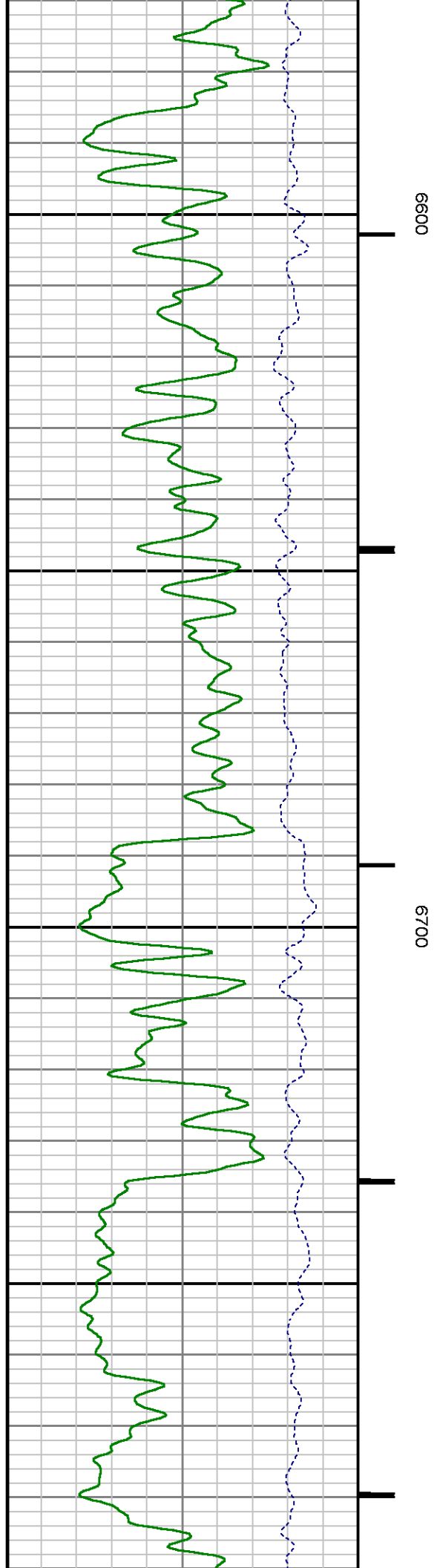
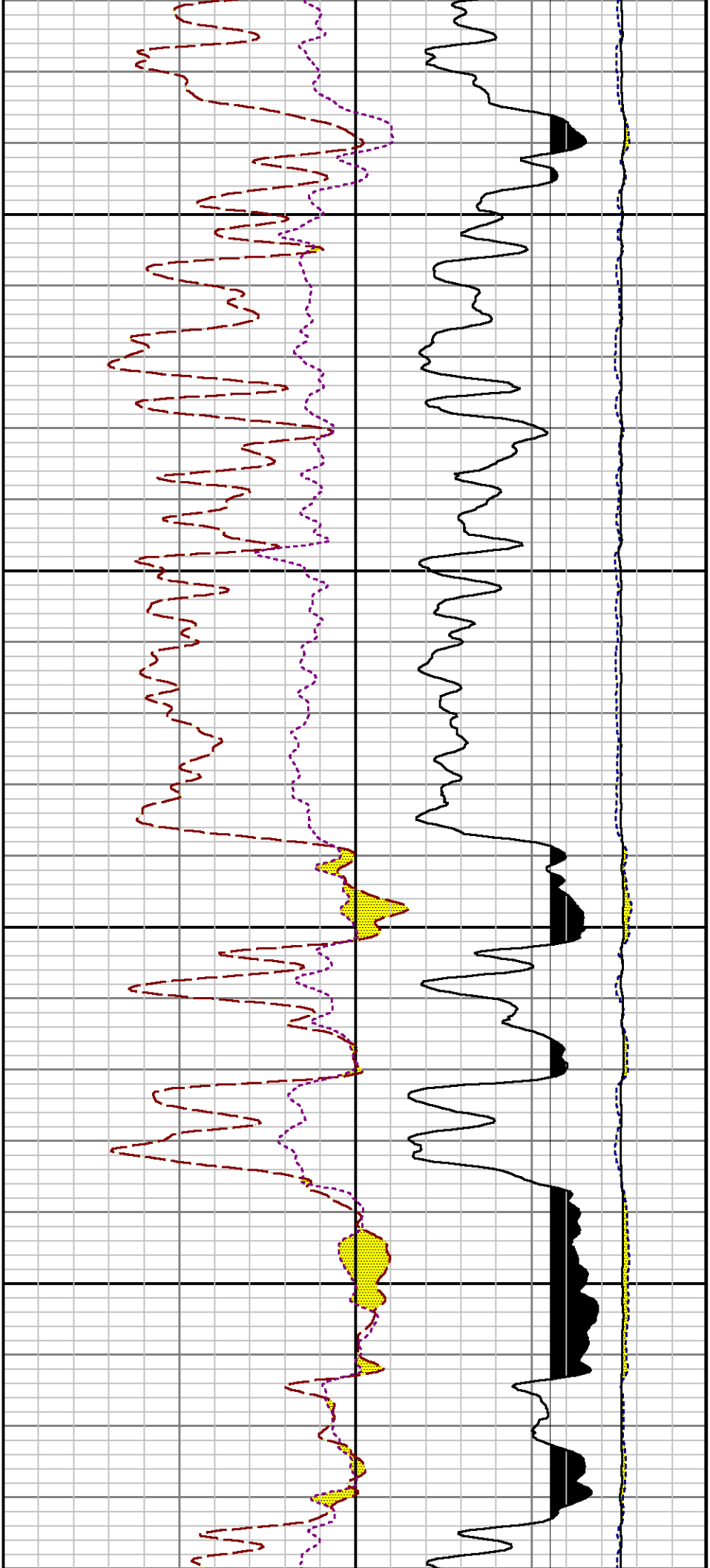
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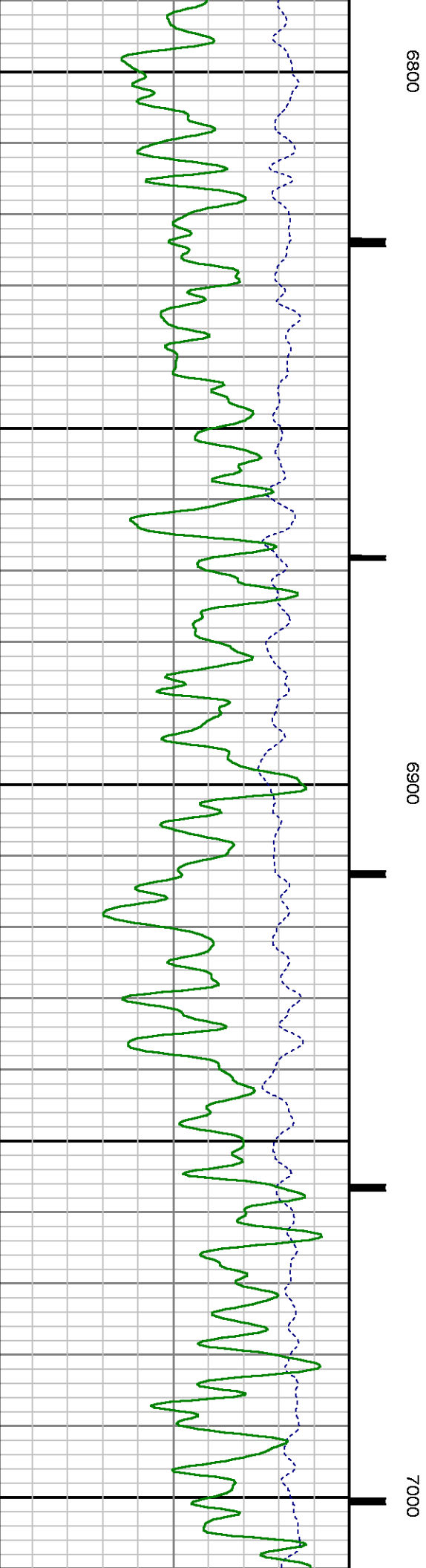
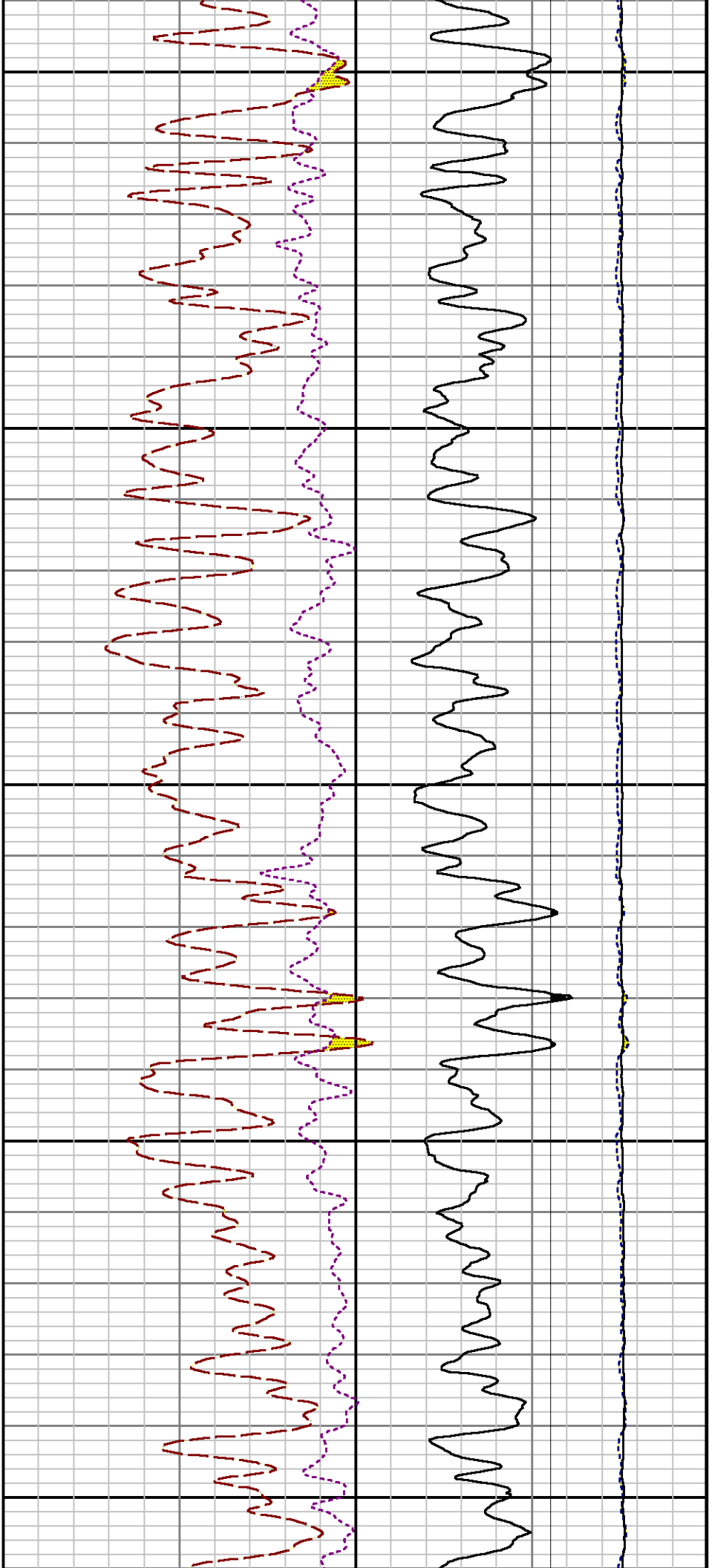
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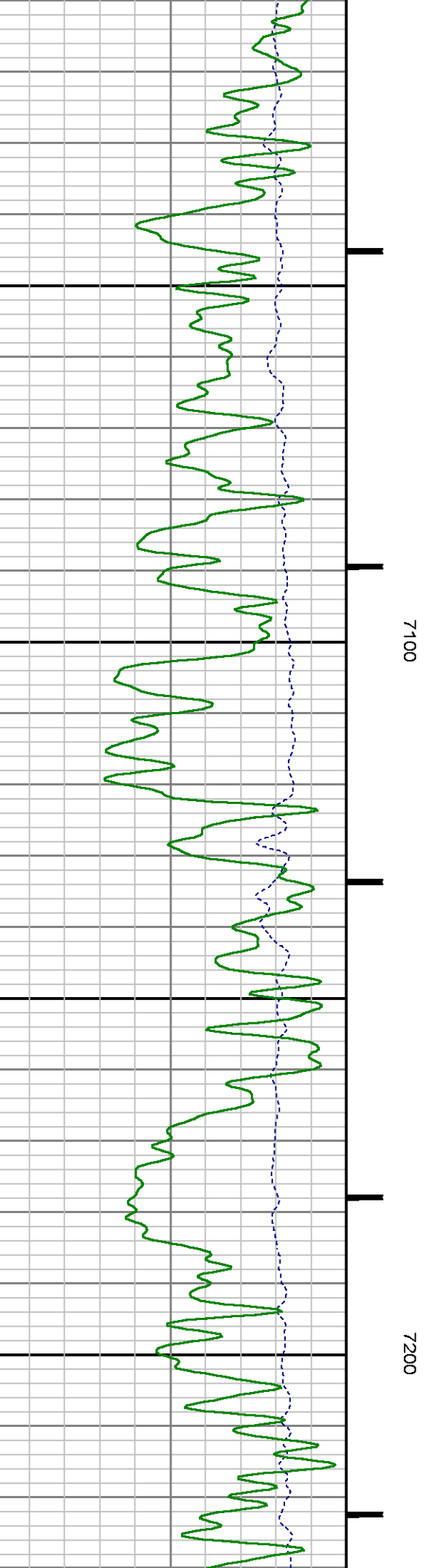
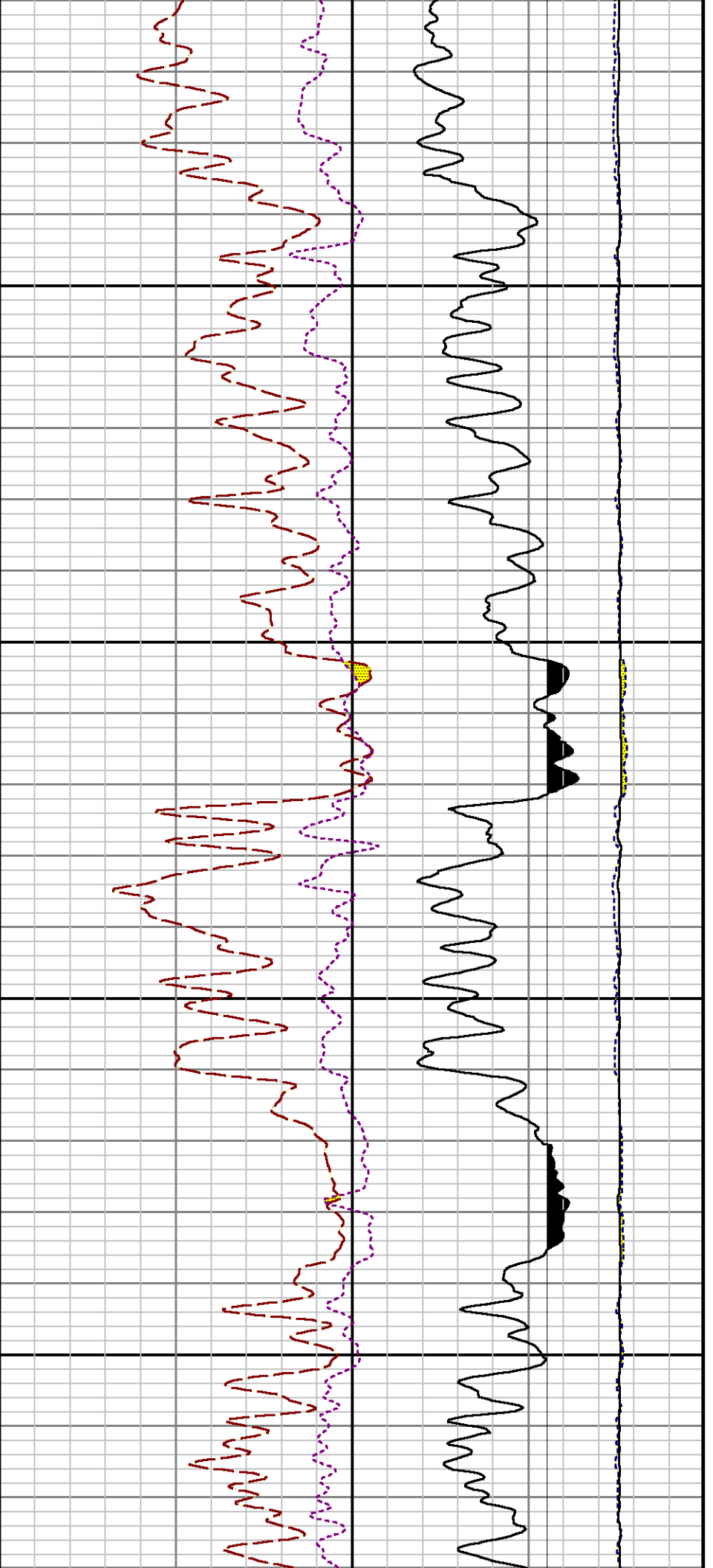


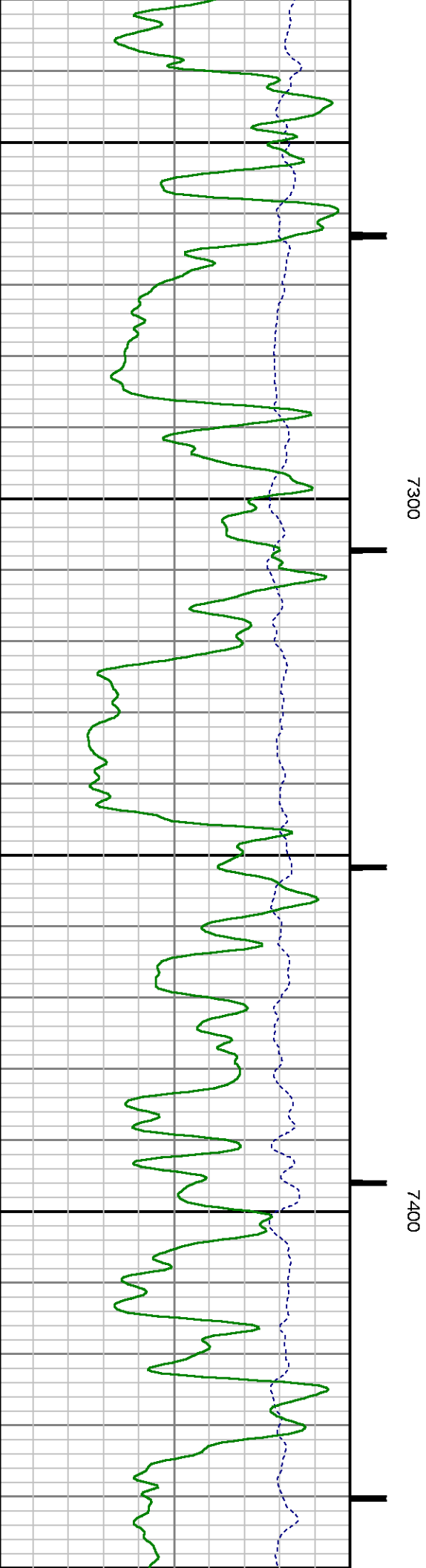
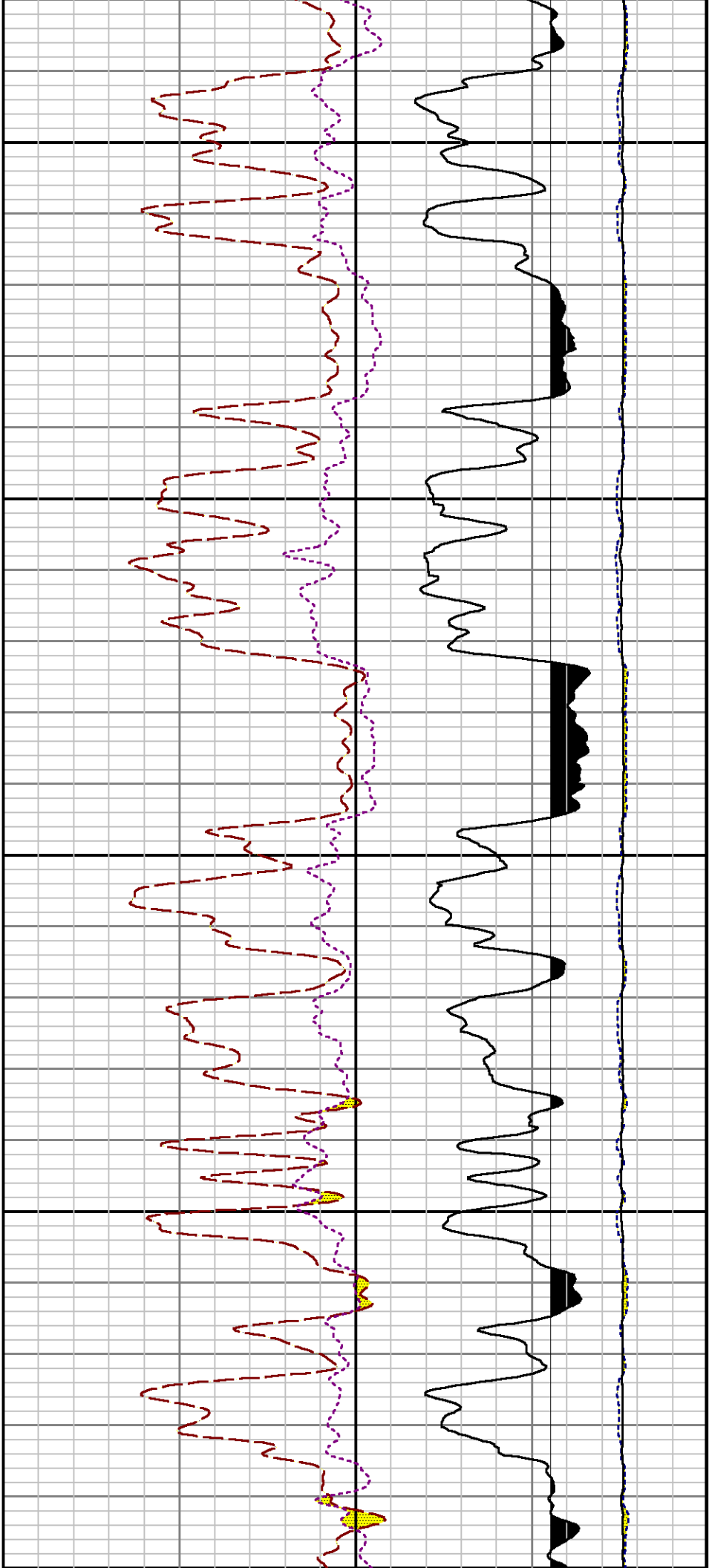


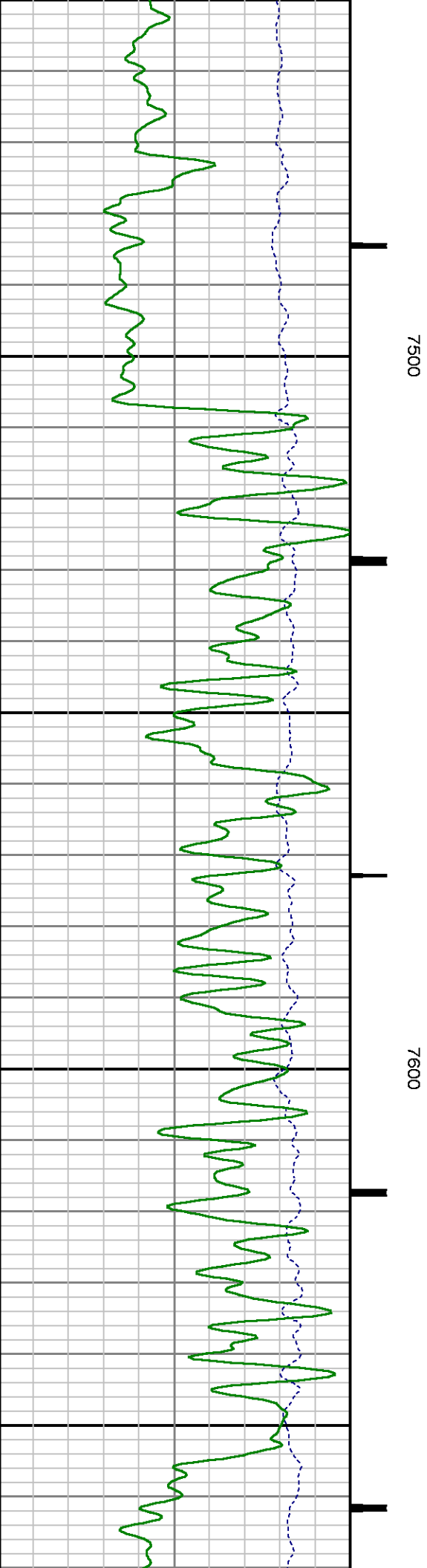
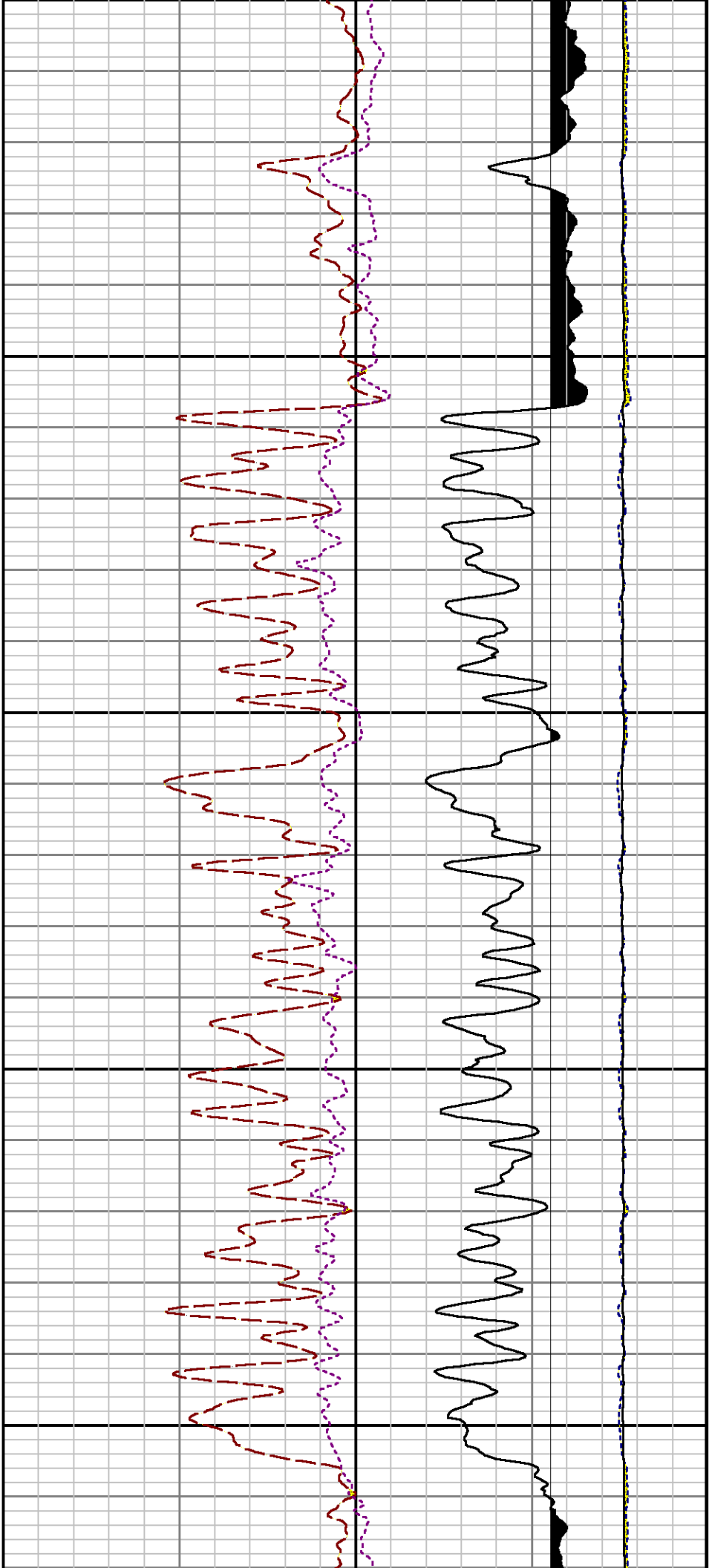


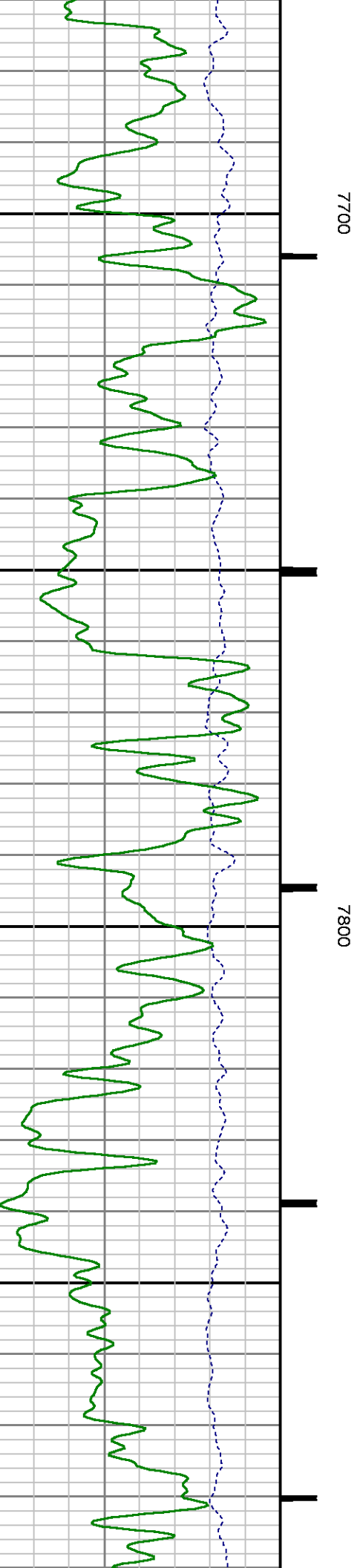
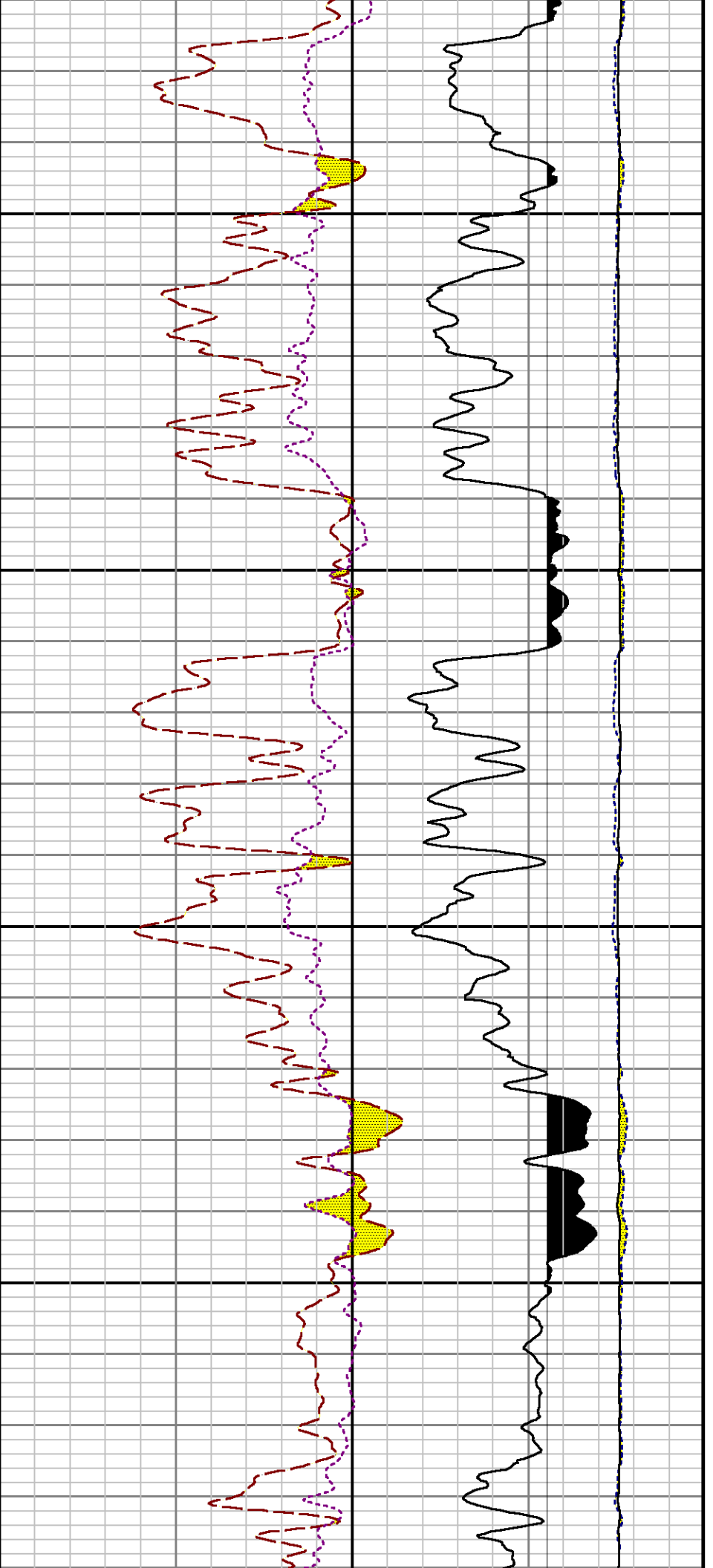


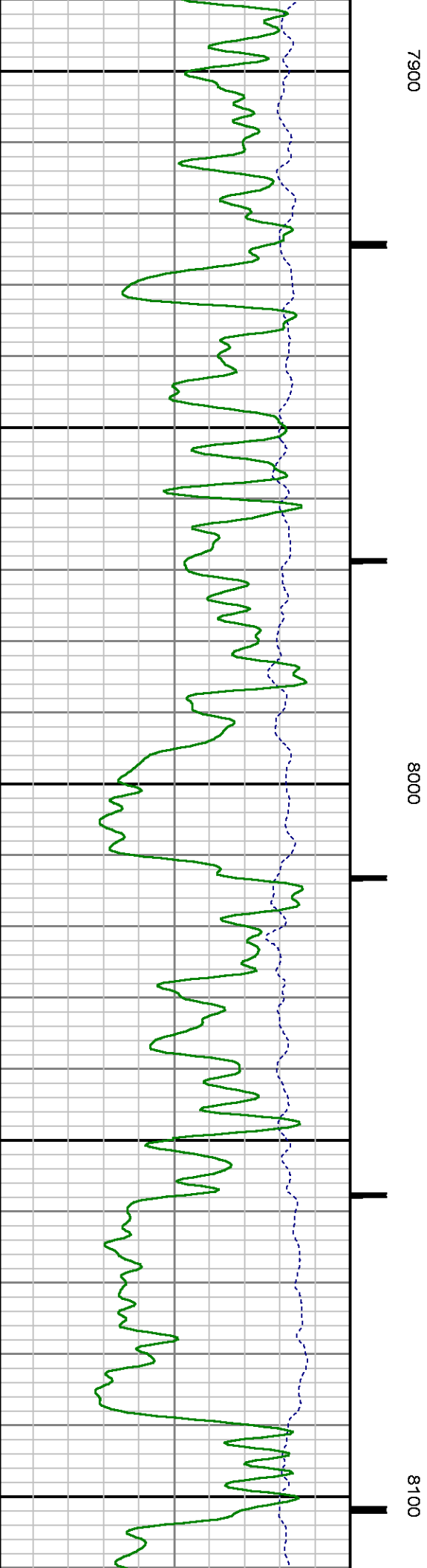
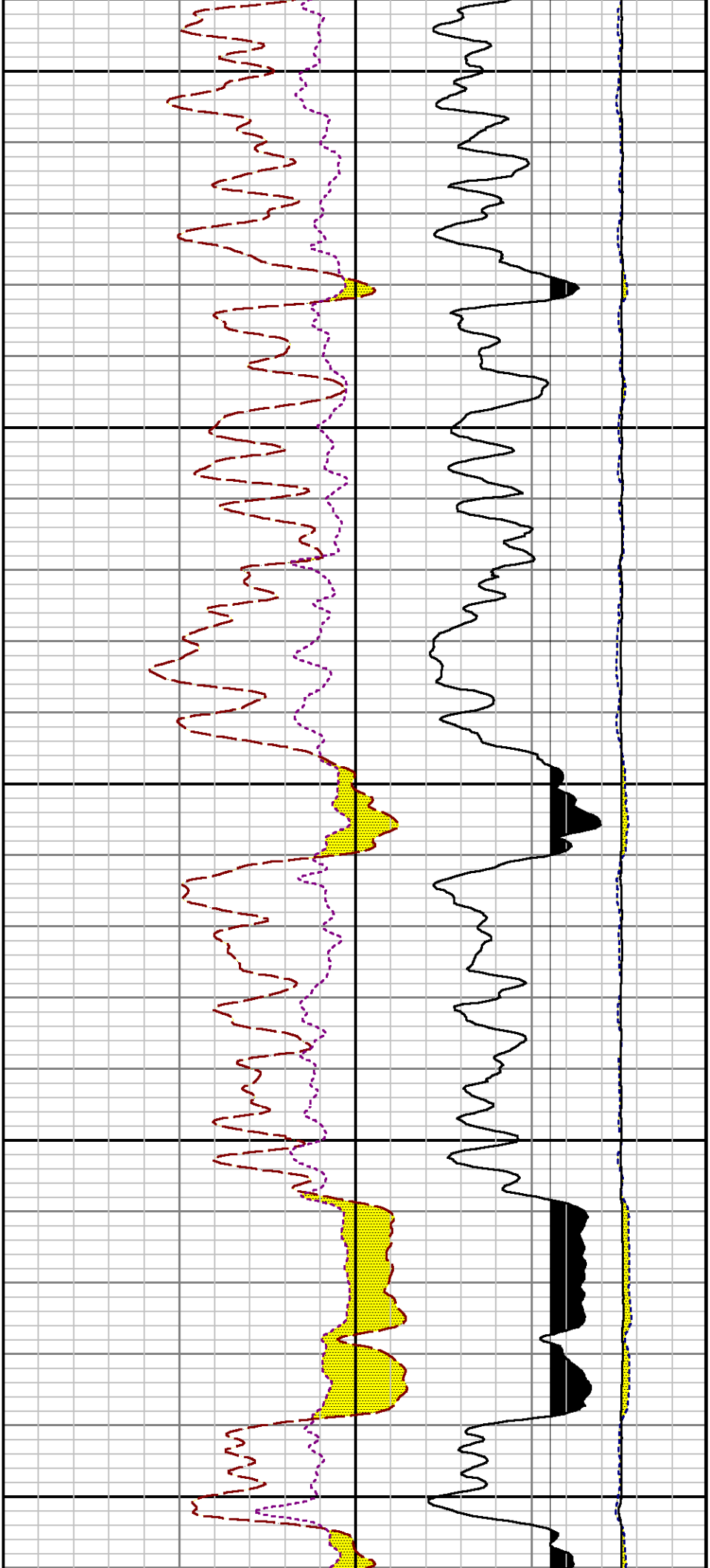


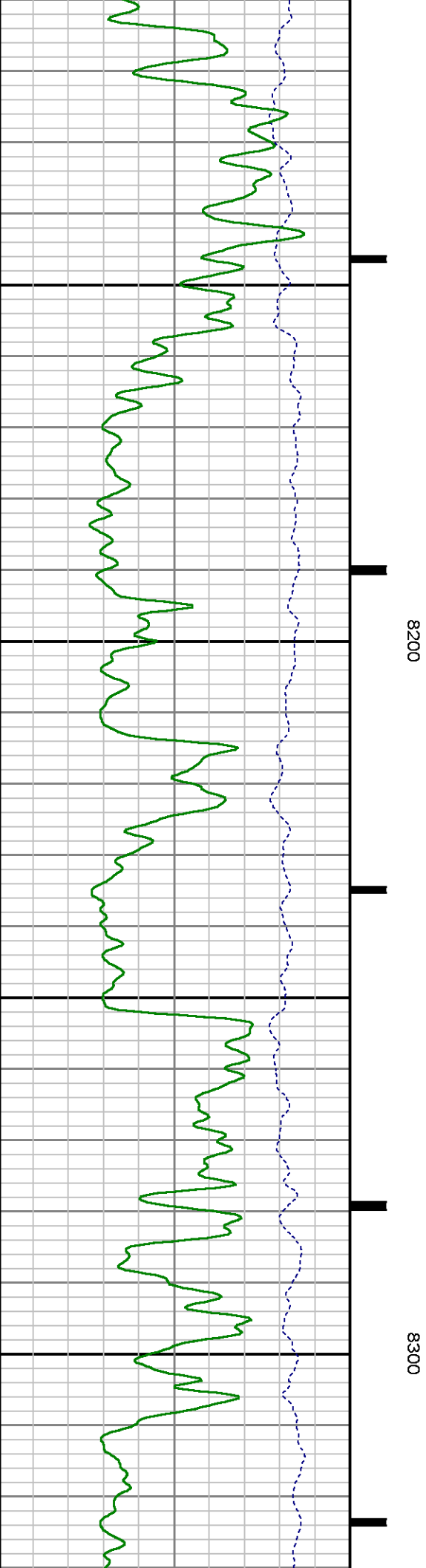
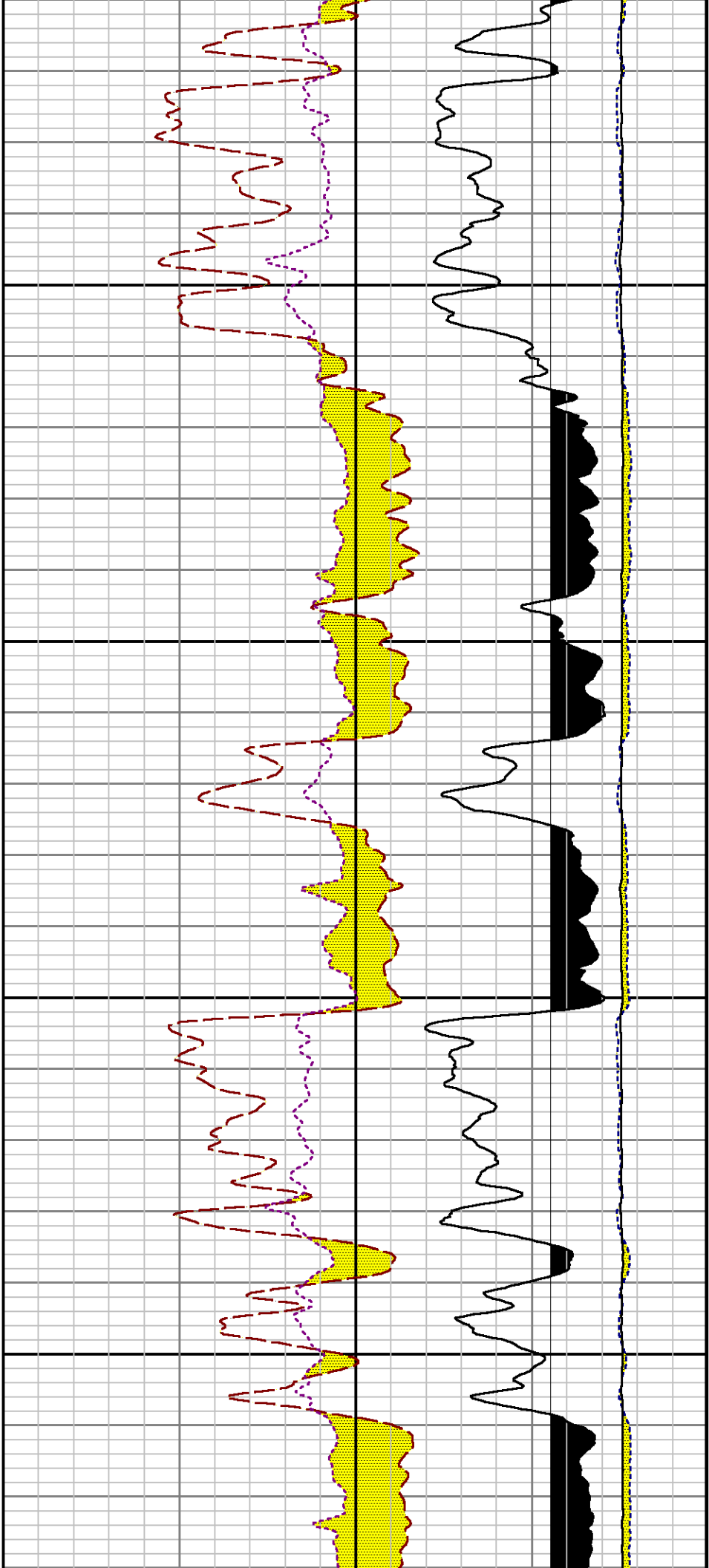


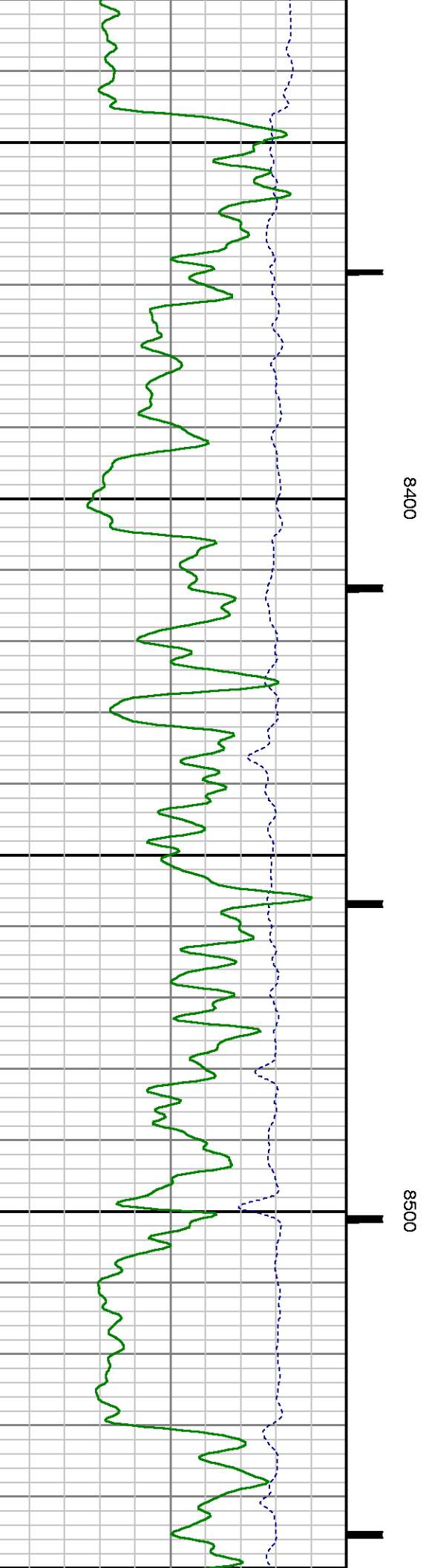
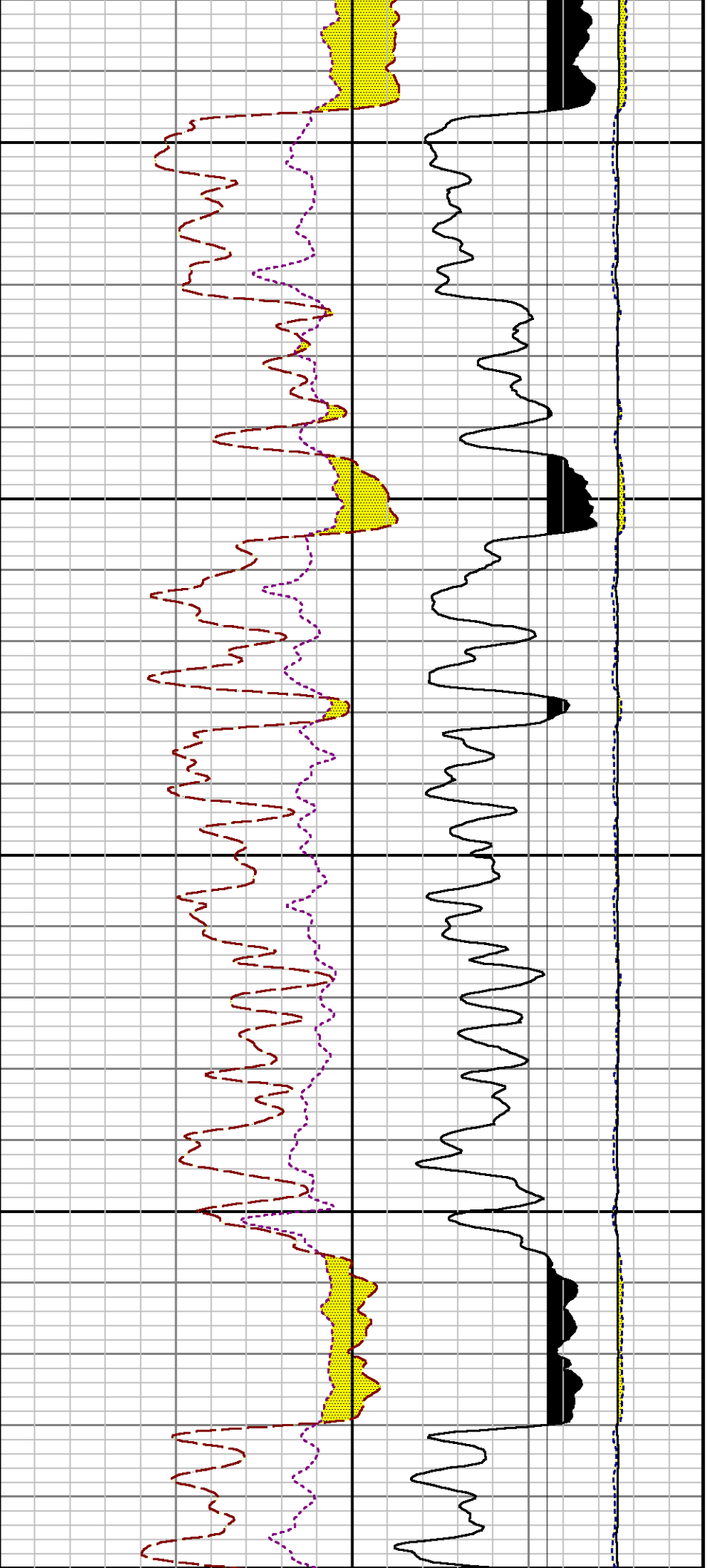


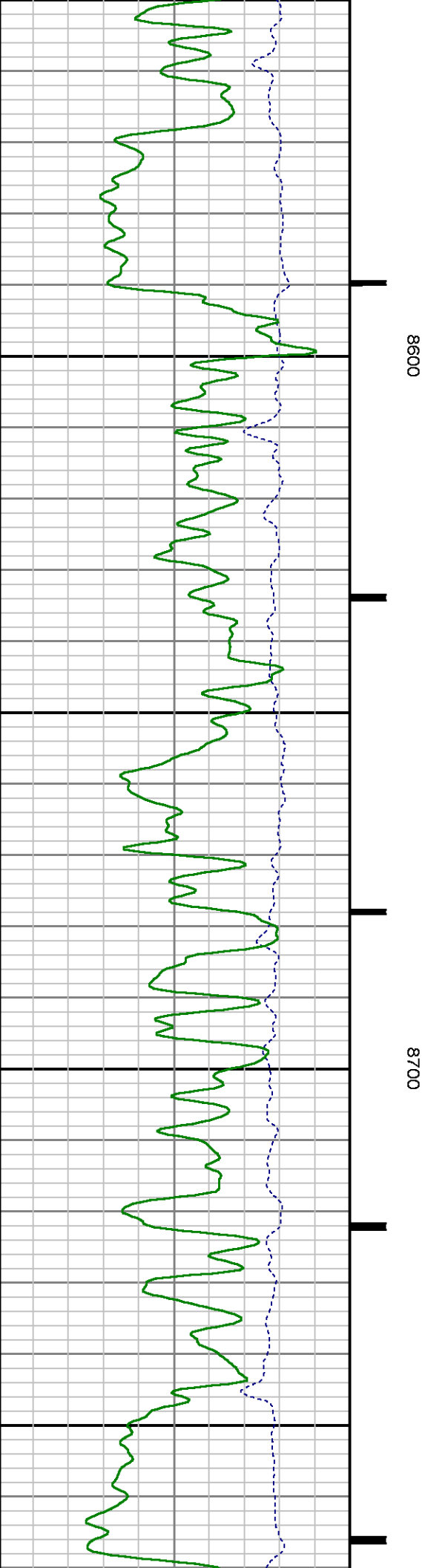
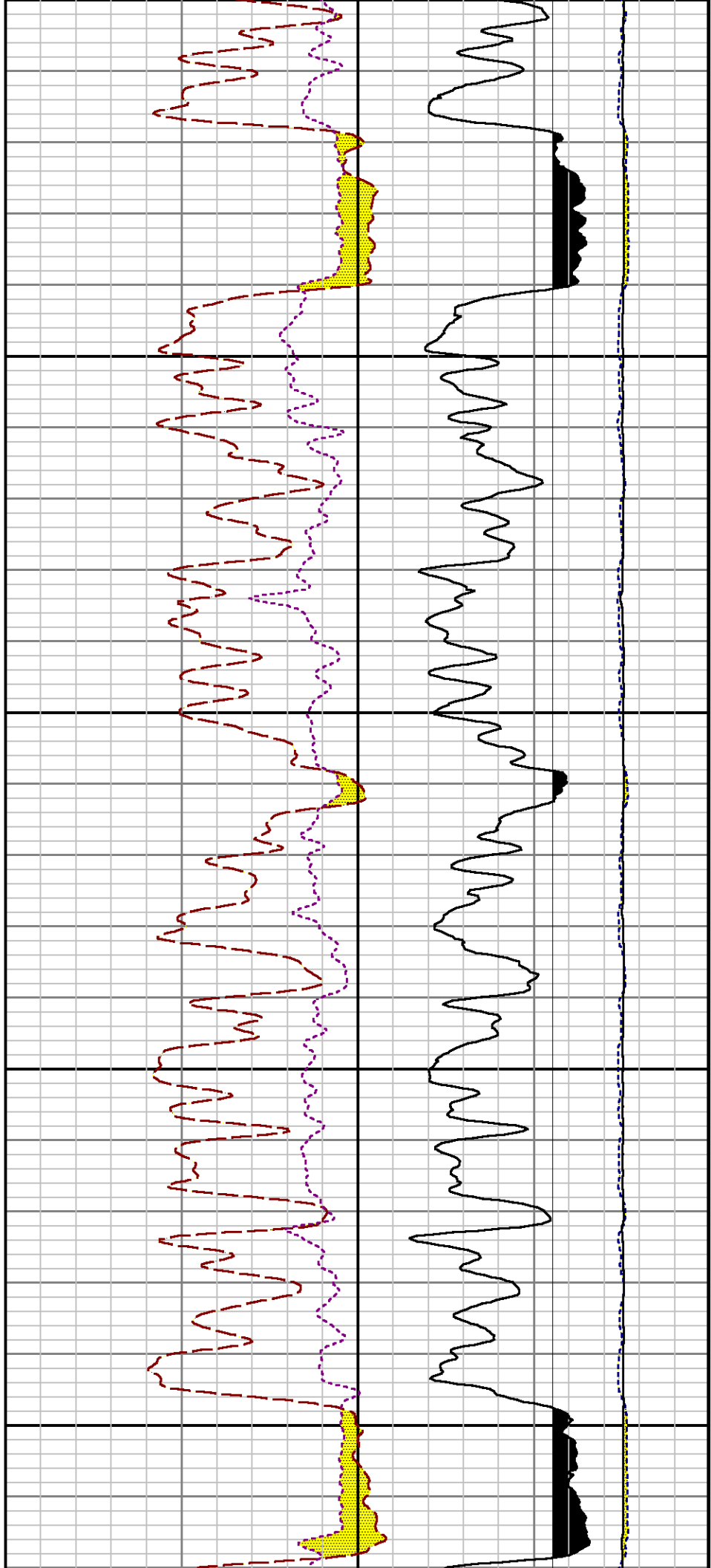




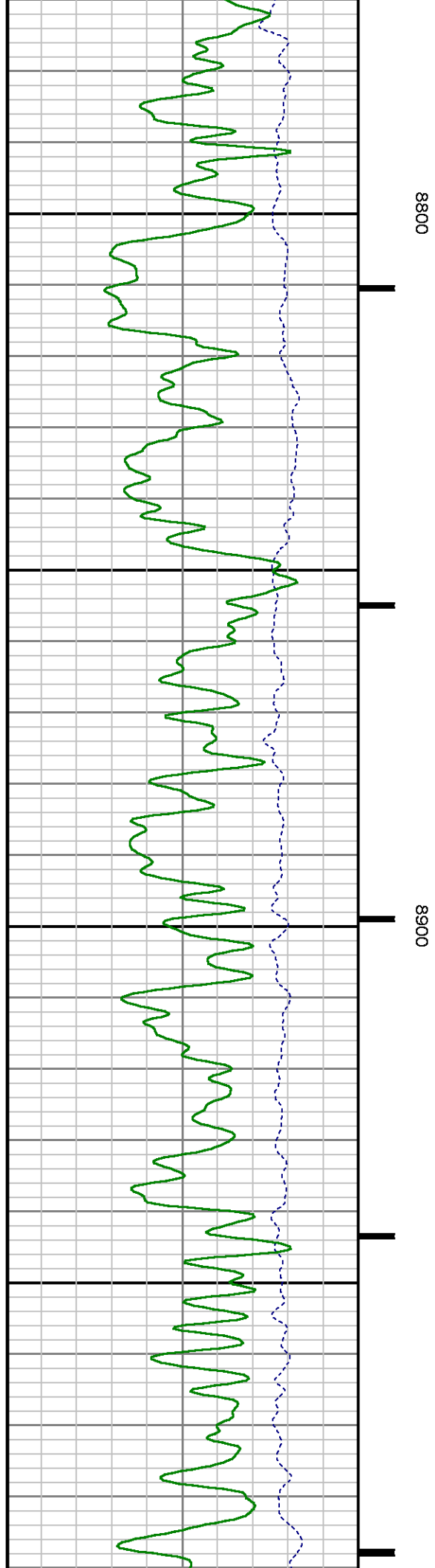
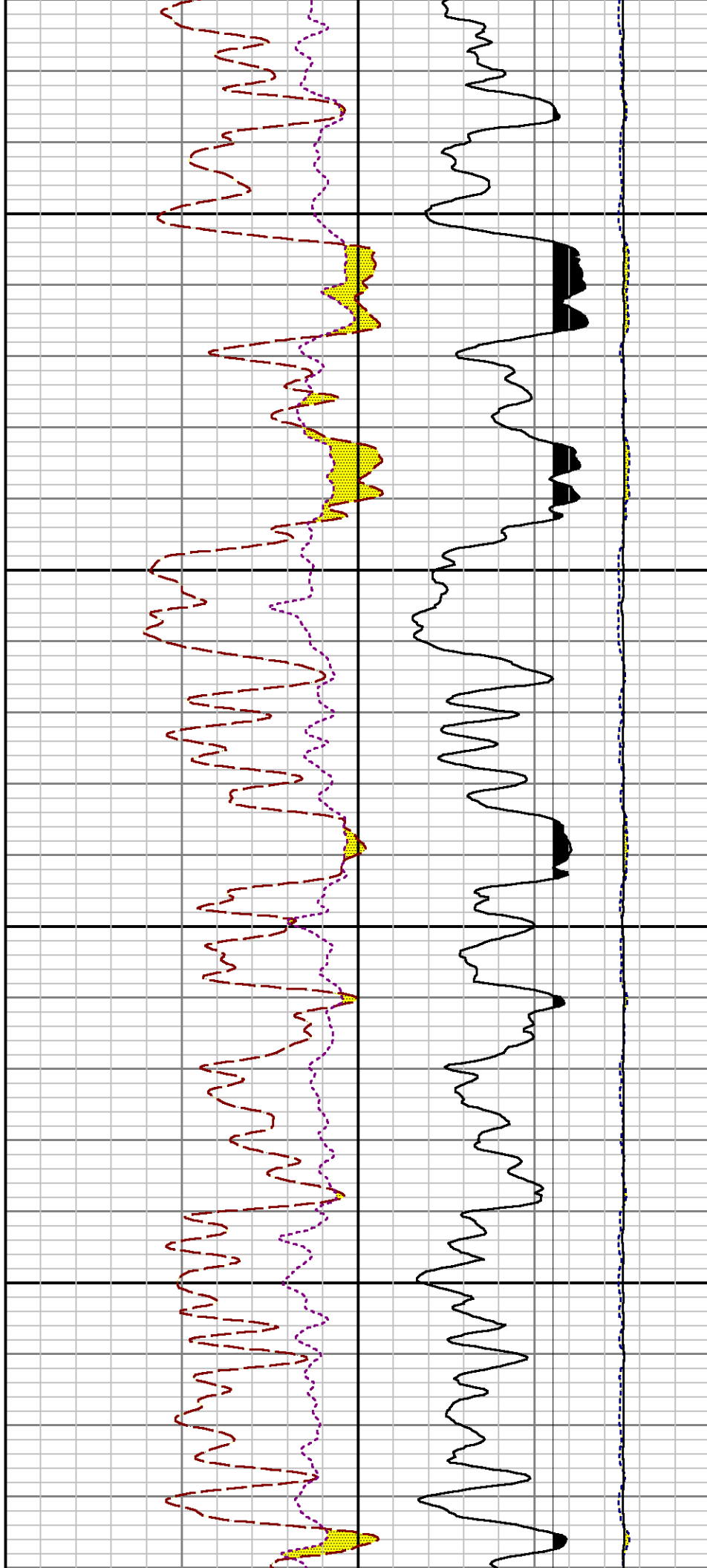


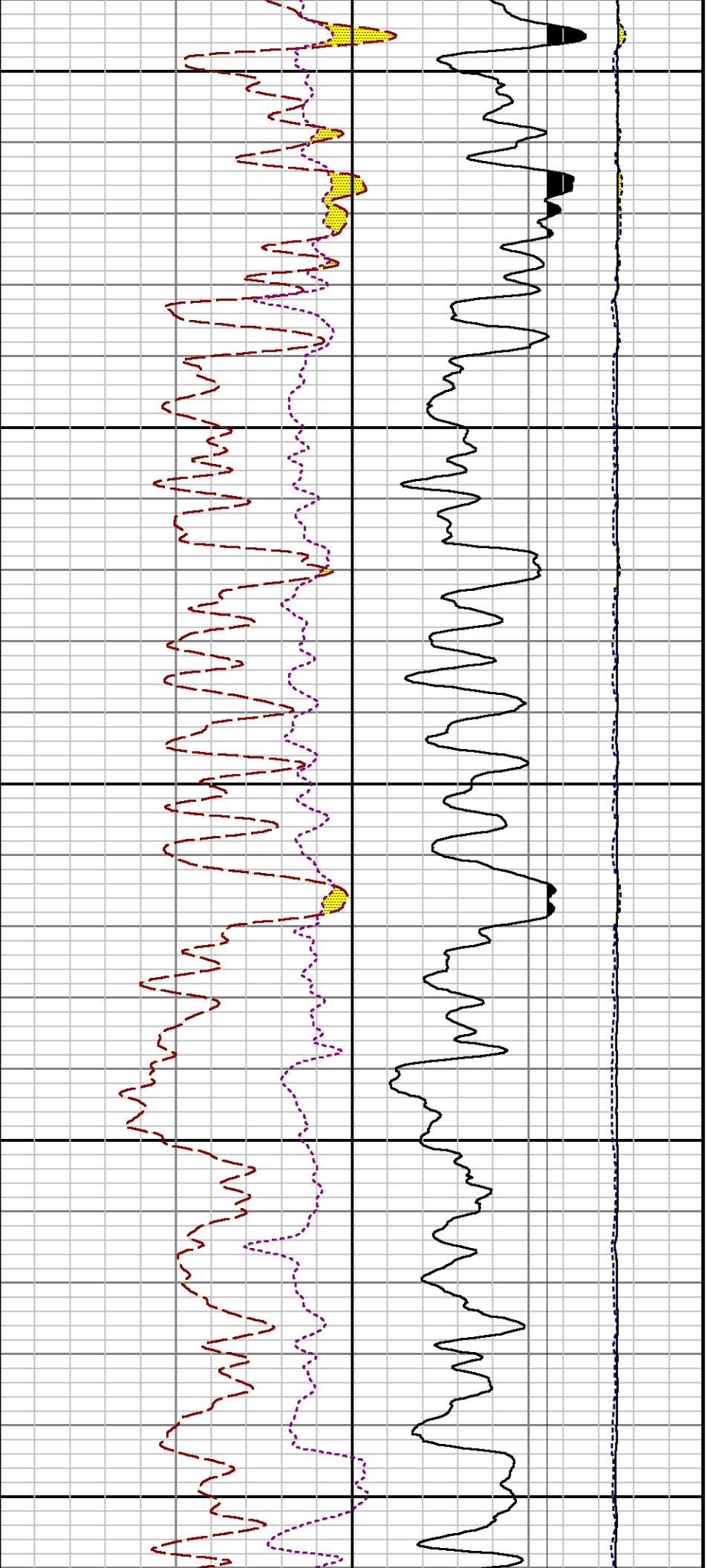








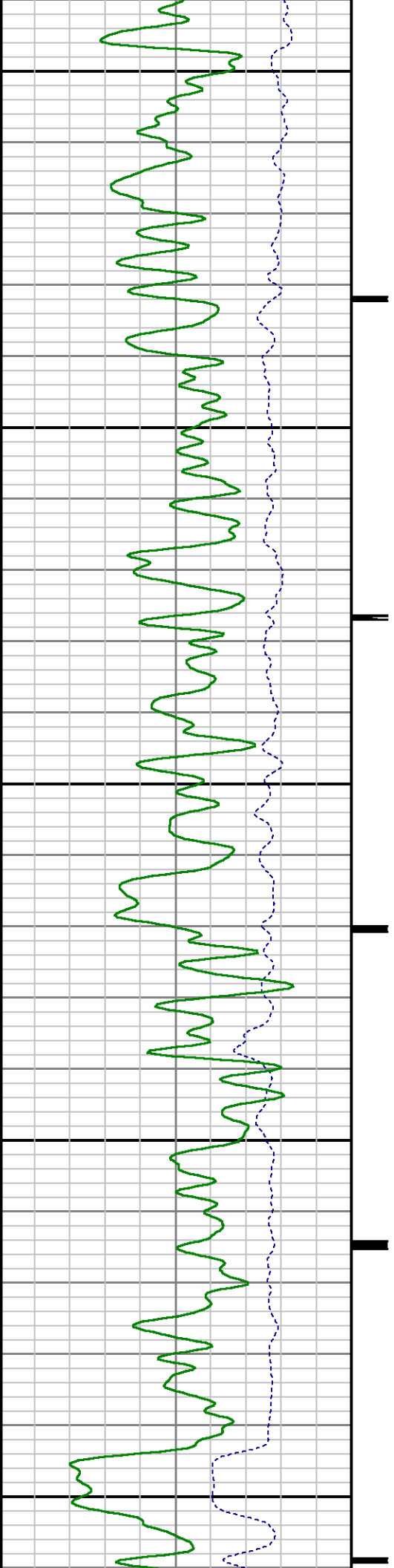


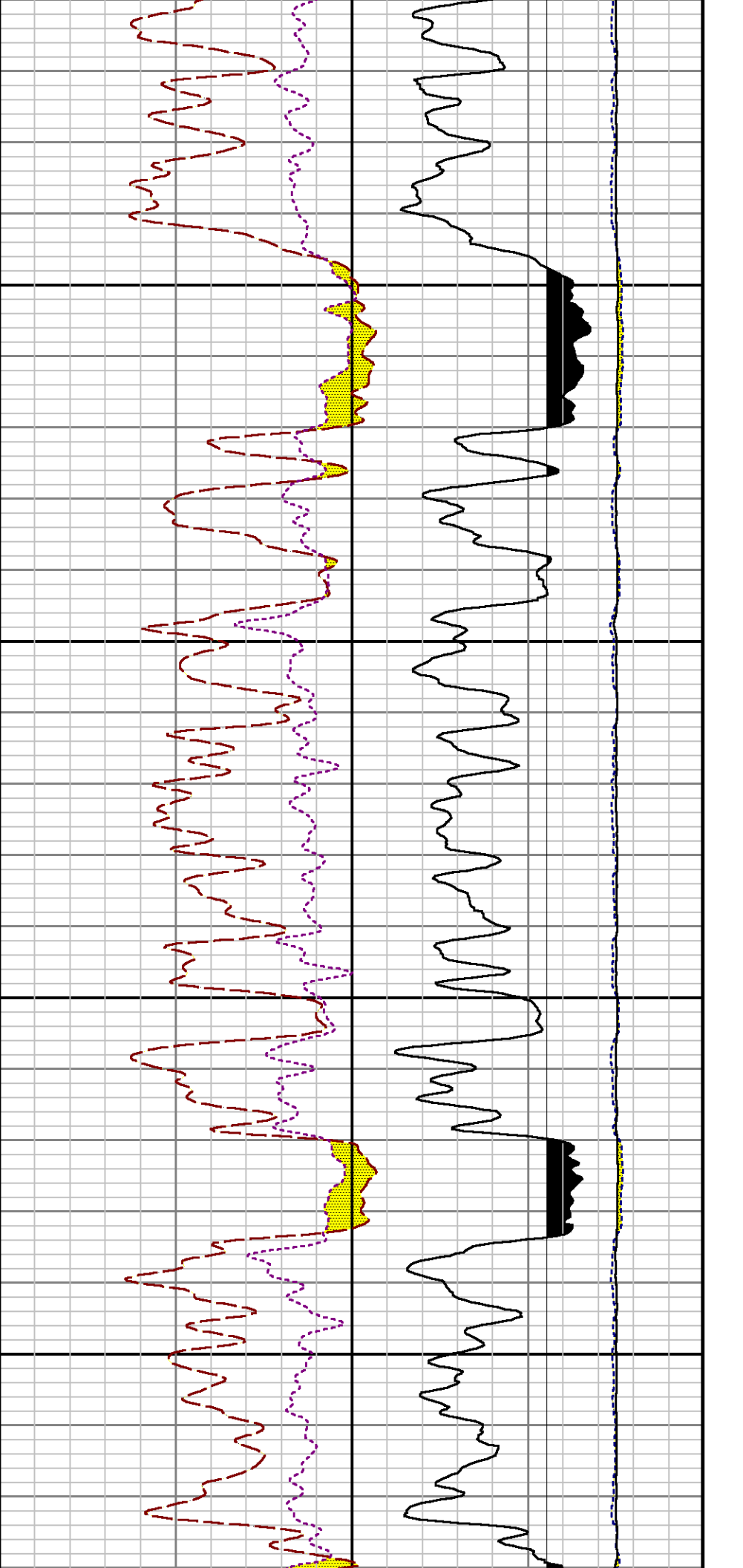


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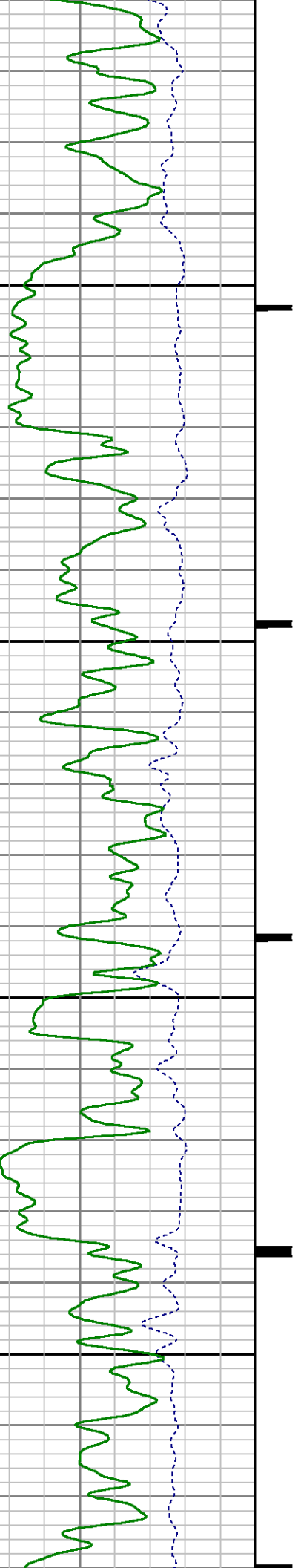
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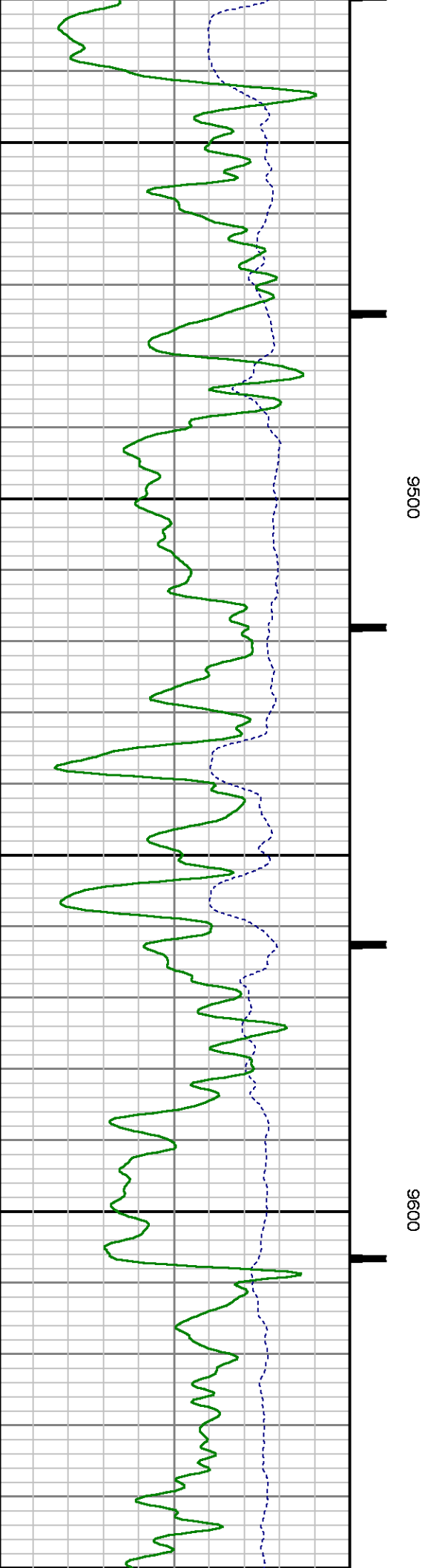
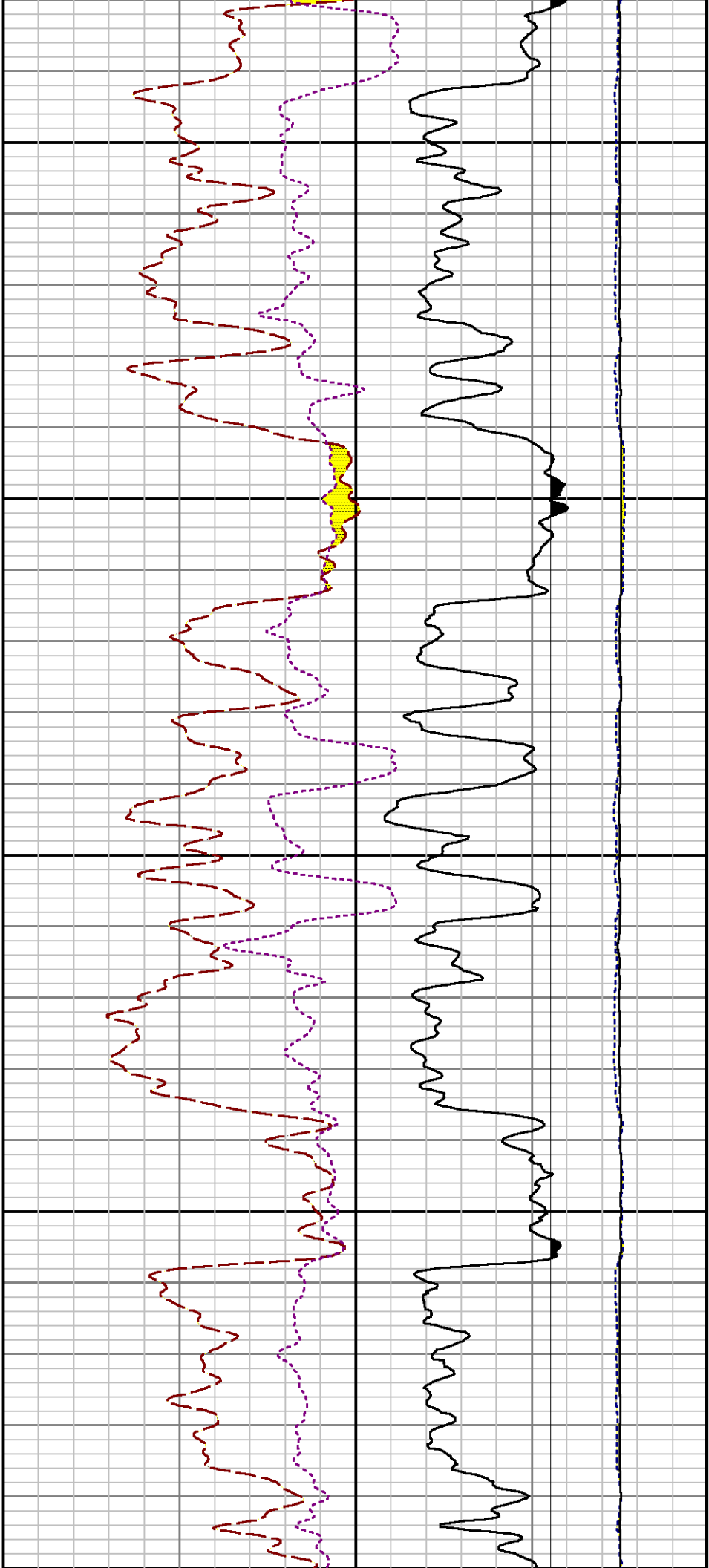


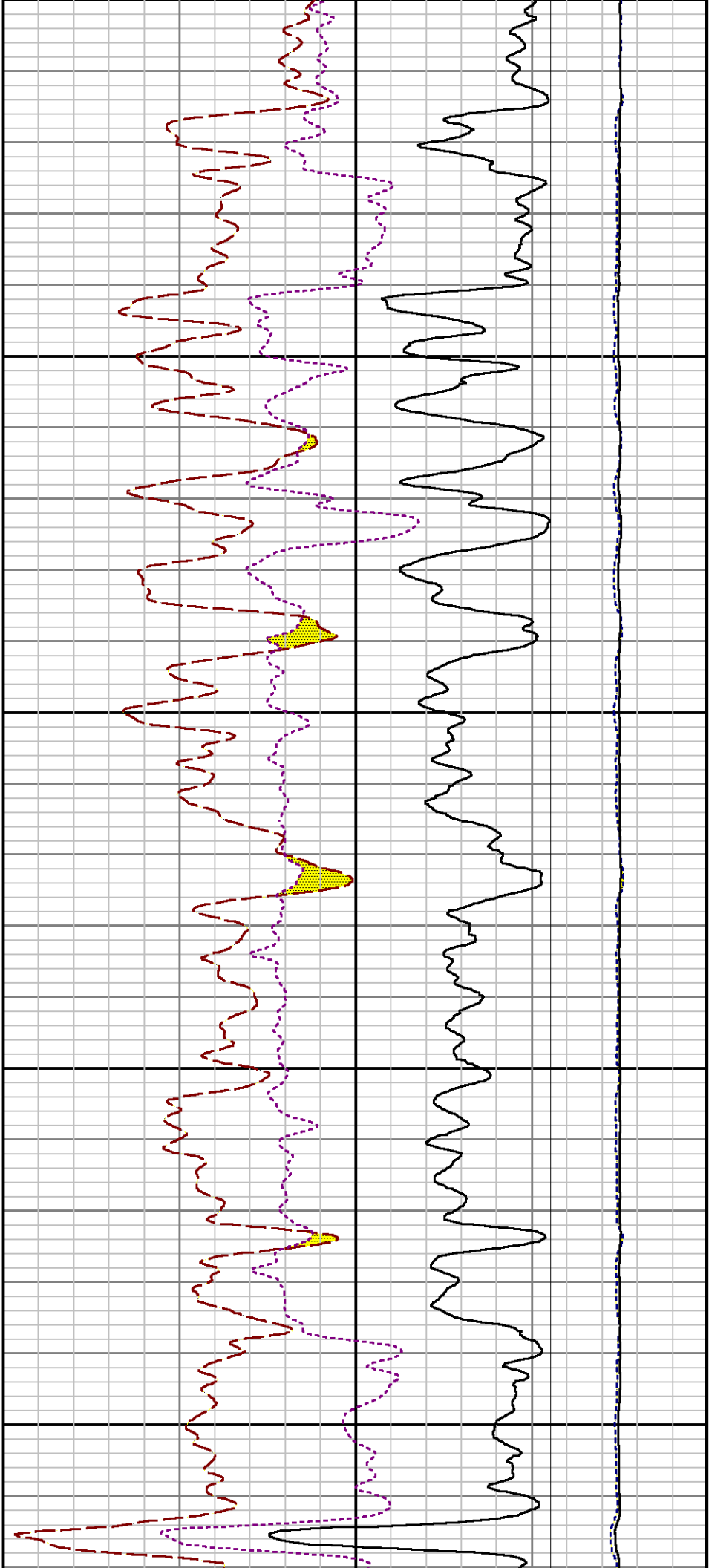


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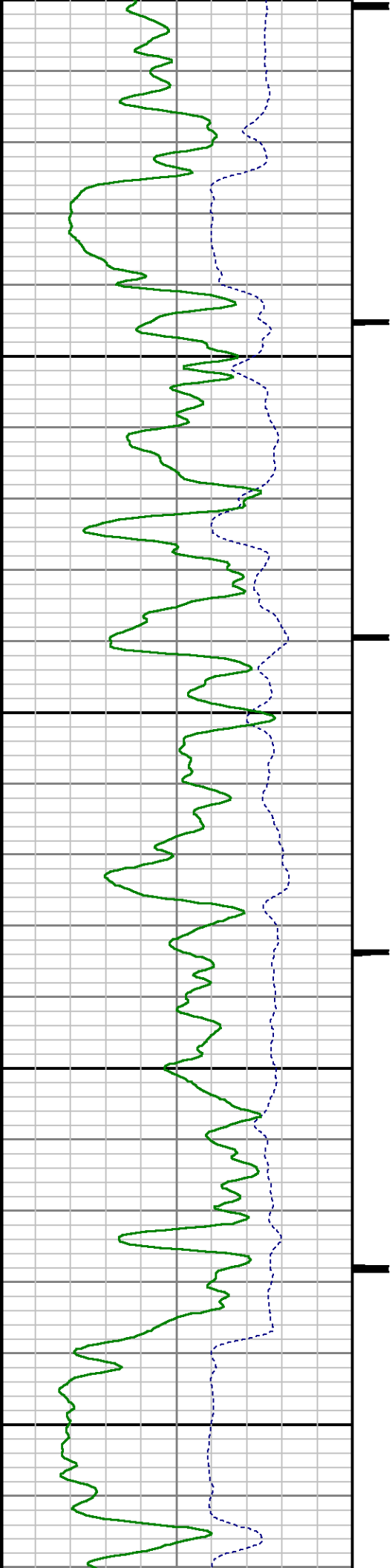


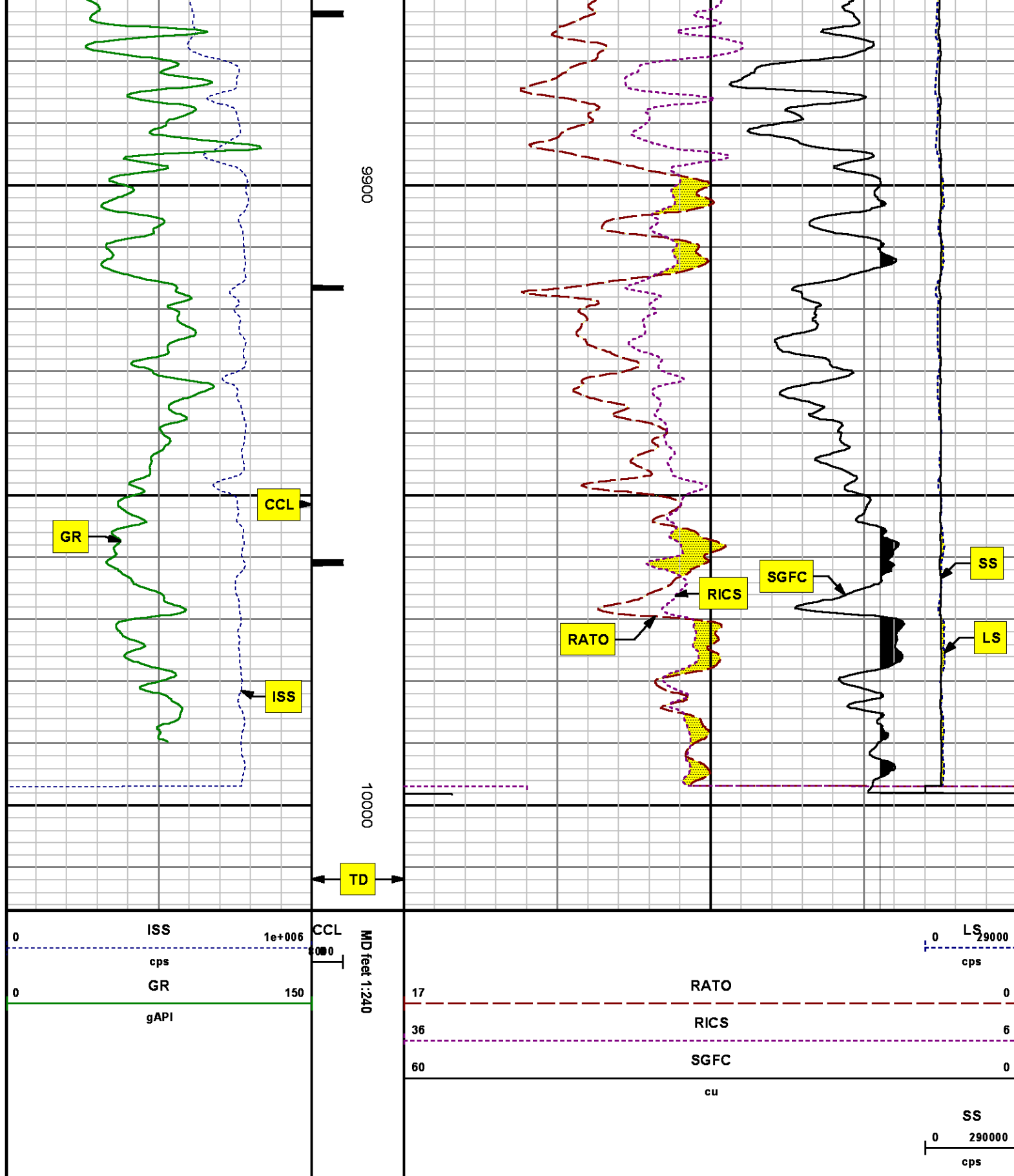




9700

9800





REPEAT SECTION

RNC 3 D MODE

## SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		9169.848	9500.500
PNC Porosity	Borehole Size	8.750	inch	9169.848	9500.500
PNC Porosity	Casing Size	4.500	inch	9169.848	9500.500
PNC Porosity	Gas Filled	Non Gas Filled		9169.848	9500.500
PNC Porosity	Matrix	Sandstone		9169.848	9500.500
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	9169.848	9500.500

## DEPTH OFFSETS

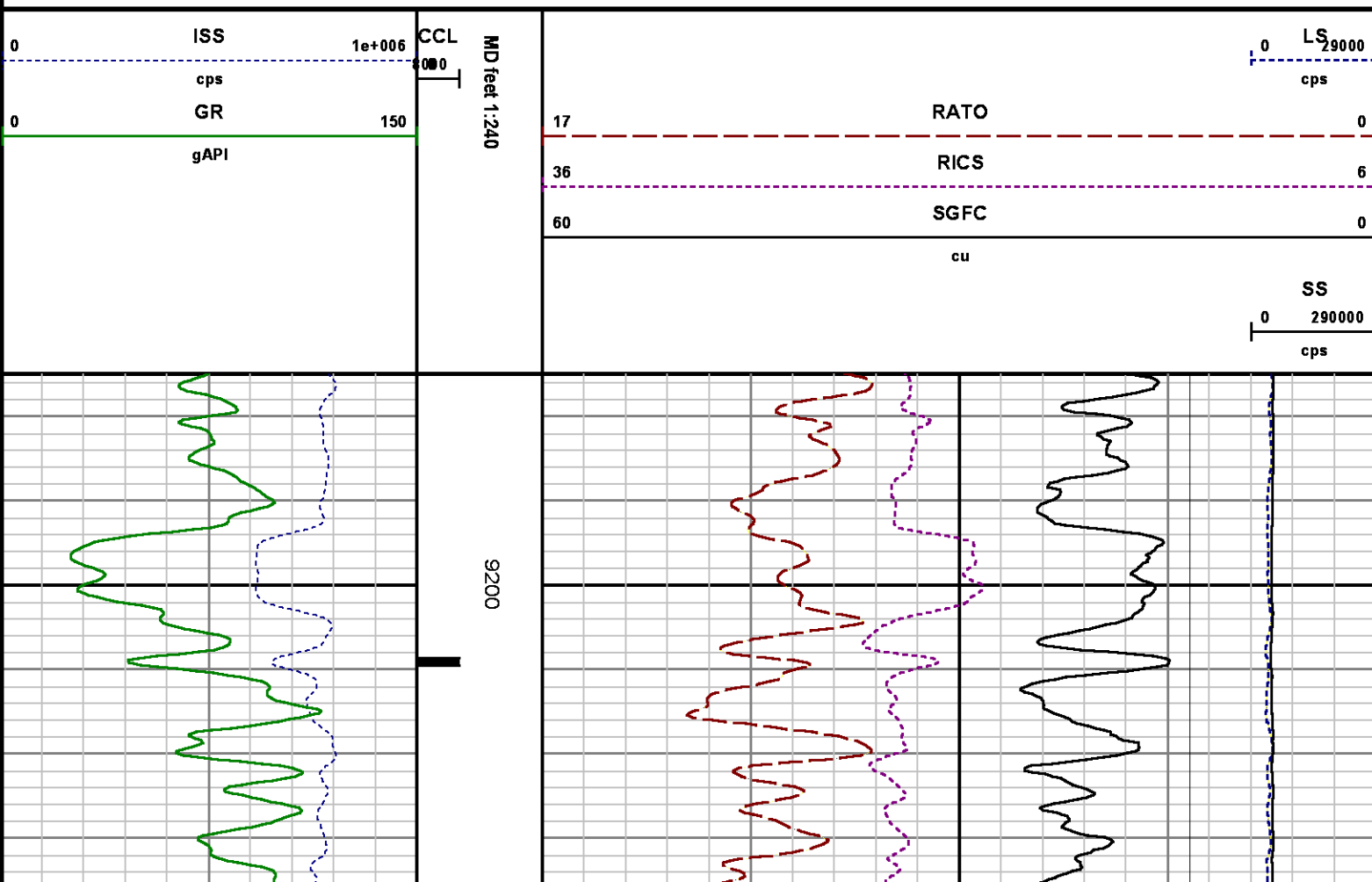
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-26.519	FLTM
8248ED	-24.519	CCL CHV
2812LA	-21.969	GR
8281XA	-12.702	HVC3Q0 SEQ3 AMA3 AML3 BKX CXS CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3 SDL3 SGA3 SGL3 STA3 XS ASPEC3 AMB3 AMF3 CHF3 IXSC IXSN RATO23 RICXC RIN13C RIN23 RIN23C SD3D SG3D SGB3 SGF3 WDT3 CXSR IXSR XSR RICXR
8281XA	-12.291	HVC2Q0 SEQ2 AMA2 AMB2 AMF2 AML2 BKL CHF2 CLS CPT2Q0 CPT2Q2 CPT2Q3 CPT2Q4 ET2 ILS LS MCS2 MCS2Q0 QCAL2 RGN2 RICL RONE23 RTWO23 SDA2 SDL2 SGA2 SGB2 SGF2 SGK2 SGL2 STA2 ASPEC2 ILSC ILSN WDT2 RICLC CLSR ILSR LSR RICLR
8281XA	-12.041	CPRS HVC1Q0 MV SEQ SEQ1 AMA1 AMB1 AME1 AMF1 AML1 BKS CHF1 CSS CORB CORF CPT1Q0 CPT1Q2 CPT1Q2A CPT1Q2B CPT1Q2C CPT1Q3 CPT1Q4 CPT1Q5 ET1 G1 G2 GE1S GE2S ISS MCS1 MCS1Q0 QA1 QCAL1 QM1 RATO RATO13 RBOR RGN1 RICS RIN RONE RPOR RTWO RIN13 RONE13 RTWO13 SALB SC1 SDA1 SDL1 SGA1 SGB1 SGB1 SGE1 SGF1 SGF2 SGK1 SGL1 SS SC2

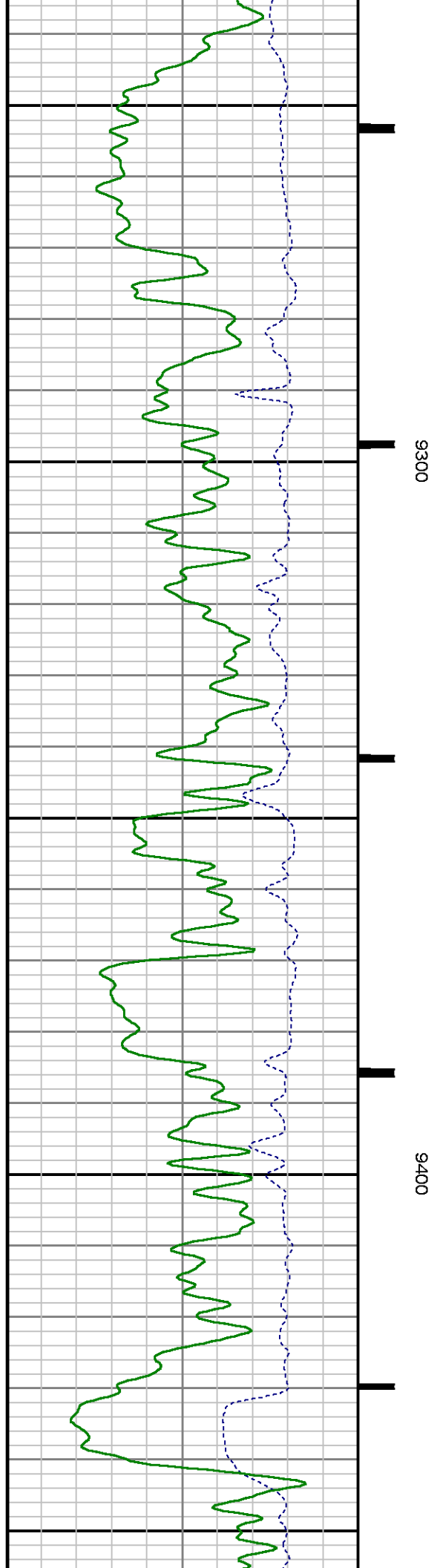
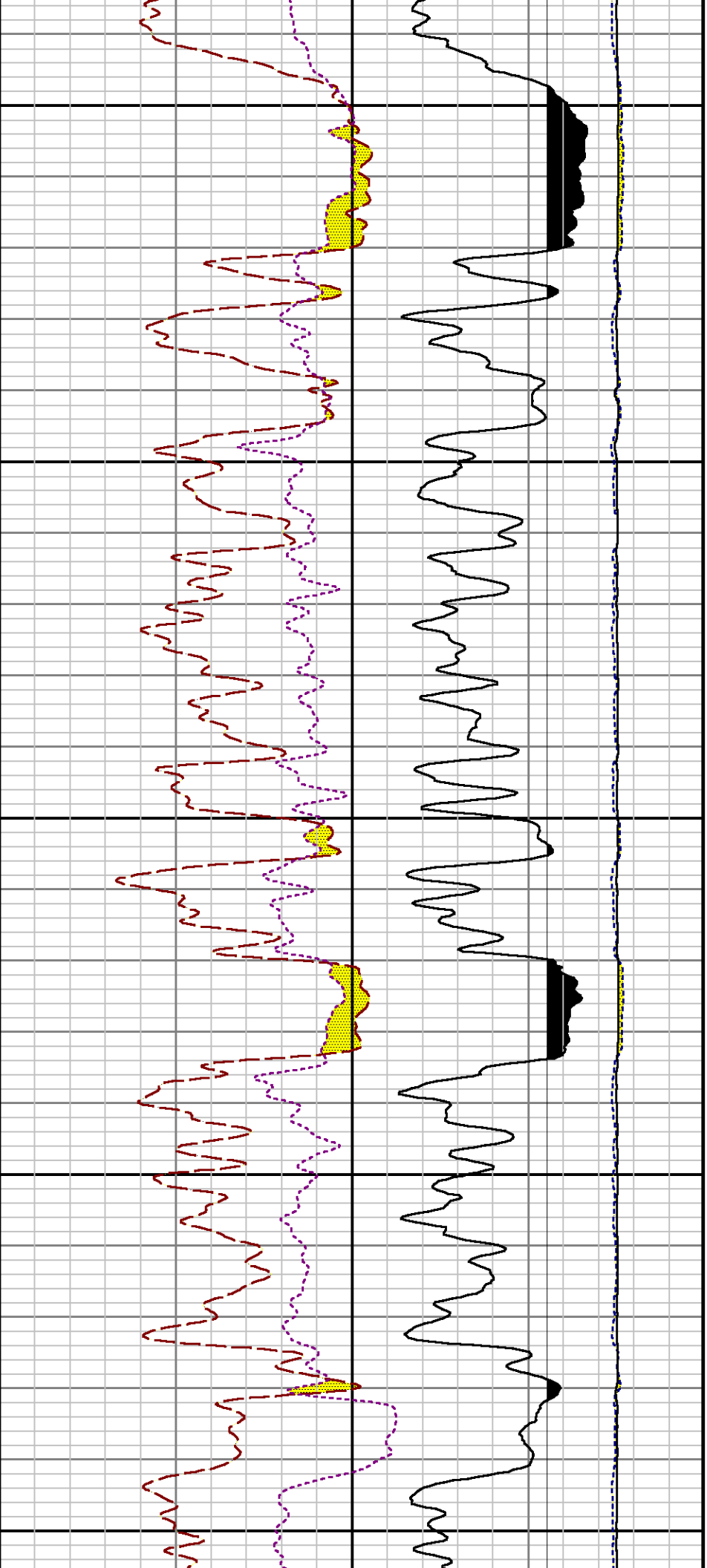
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STA1	PD1S	PD2S	PD3S	MD1S	MD2S
MD3S	DG1S	DG2S	DG3S	PD1M	PD2M
PD3M	MD1M	MD2M	MD3M	DG1M	DG2M
DG3M	MVS	MA	MVM	FILV	IAM
TA	PVM	PVS	IAS	SSTAT	QPD1
QPD2	QPD3	QMD1	QMD2	QMD3	QDG1
QDG2	QDG3	QMA	QTA	QFILV	QMV
QPV	QIA	DERR	DCNT	QPK1	QSA1
PKS1	ASPEC1	H0C	FE2XC	ISSC	RINC
ISSN	RDEN	WDTH1	RICSC	CSSR	G1R
G2R	ISSR	SSR	SS2R	RATOR	RATO13R
RBORR	RICSR	RINR	RIN13R	RONER	RPORR
RTWOR					
PTFS	PTMS				
SPF1	SPFQ	TSCP	TSDP		
DTEM	TEMP	TNF			
TEN	TTEN				

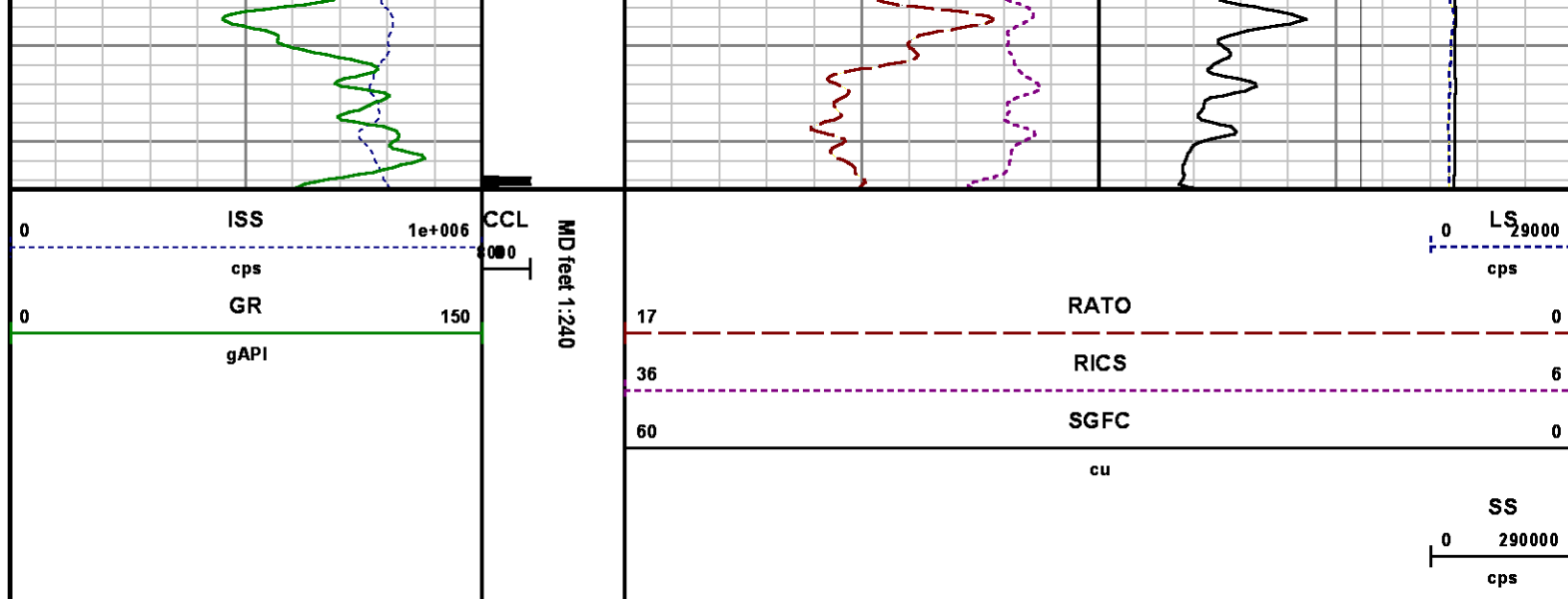
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8255XA	-0.775
8255XA	0.000
SYSTEM	0.000

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Plotted by : PlotMgr, v5.4.504  
Company : WPX ENERGY  
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Interval : 9175.00 - 9475.00 feet UP  
Created : 5/13/2014 12:49:56 PM









## CALIBRATION SUMMARY

PNC

Calibration File: C:\case\calver\PNC\55528.cal

### PNC 3D CALIBRATION SUMMARY

**DATE/TIME PERFORMED:** Mon Apr 28 09:59:59 2014      **TOOL SERIES:** 8281XA      **ASSET:** 555      **SEQ:** 28

**Calibrator #**

2437XB GJSHOP

**Source #**

8281AA 11765054

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	811508	121.00	2347.00	2278.00	2241.00	110.62	7.00	0.9846
Interpolated	1300000	143.31	2318.28	2276.39	2237.74			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	811508	6877.25	1084.60	148.19	25.74	0.14	24.34	0.28
					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	811508	173131.64	27245.19	91206.62	32486.00	8514.36	55168.79	13602.94
Fit Quality %		1.06	1.20	1.11	1.05	1.06	0.97	1.04

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	811508	1.43	4.69	29.79	14.71	10.71	3.82	4.06
		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 %		0.11	0.28	0.24	0.17	0.06	0.03	0.05
Reduced	1414078	1.43	4.70	29.86	14.75	10.71	3.82	4.05
		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

## GAMMA RAY

Calibration File: C:\case\calver\GR\38219.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sat Apr 19 16:31:28 2014 TOOL SERIES: 2812LA ASSET: 382 SEQ: 19

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K	51.88	260.02	1.009	52.34	262.34	210.00

Verification File: C:\case\calver\GR\38219.VP

### PRIMARY VERIFICATION

DATE/TIME PERFORMED: Sat Apr 19 16:38:08 2014 TOOL SERIES: 2812LA ASSET: 382 SEQ: 19

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA612	51.54	263.60	1.009	52.00	265.95	213.95

## TEMPERATURE

Calibration File: C:\case\calver\TEMP\77456813.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: FEB 13 2014 TOOL SERIES: 8255XA ASSET: 774568 SEQ: 13

	T(0)	T(1)	T(2)	T(3)	T(4)	T(5)
Coefficients	-9.274653e+000	1.055639e-001	2.143764e-006	-2.782846e-010	0.000000e+000	0.000000e+000

# TOOL DIAGRAM

## OTA SHORT CABLE HEAD

### PCM POWER SUPPLY

Series 8250EA  
Mnemonic PCM  
Diameter 1.70"  
Weight 18.00 lb  
Length 3.86'  
Temp Rating 350.00 °F

### TELEMETRY / CCL

Series 8248EA  
Mnemonic PCM  
Diameter 1.70"  
Weight 20.00 lb  
Length 4.46'  
Measure Point 1.00' CCL MP  
Temp Rating 350.00 °F  
Press Rating 15000.00 PSI

### SONDEX GAMMA RAY

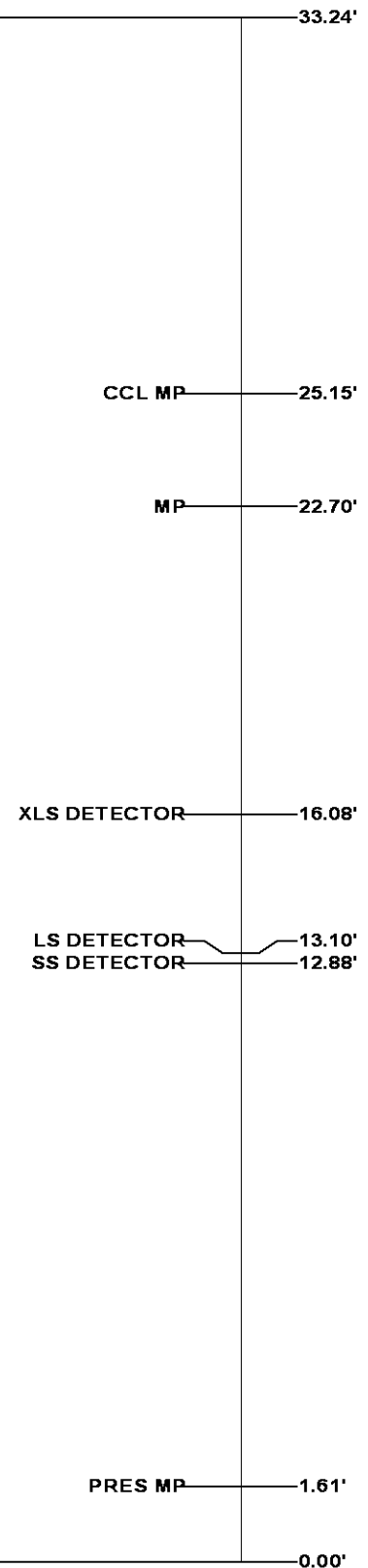
Series 2812LA  
Mnemonic SNDX  
Diameter 1.69"

## RESERVOIR PERFORMANCE MONITOR

Series 8281XA  
Mnemonic RPM  
Diameter 1.70"  
Weight 75.00 lb  
Length 18.58'  
Measure Point 9.49' SS DETECTOR  
Measure Point 9.72' LS DETECTOR  
Measure Point 12.69' XLS DETECTOR  
Temp Rating 350.00 °F  
Press Rating 20000.00 PSI

## TEMPERATURE / PRESSURE



Series 8255XA  
Mnemonic SRPL  
Diameter 1.70"  
Weight 13.00 lb  
Length 3.30'



Total Length: 33.24'

Total Weight: Not Available

Max Diameter: 0' 1.70"

<div></div> <div>Baker Atlas</div> <div></div>	Company	WPX ENERGY			File No:	CH085759
	Well	FEDERAL NER 434-32				
	Field	RULISON			API No:	05045217780000
	County	GARFIELD	State	CO		
Location		Elevations				
SHL: 168' FNL & 2598' FWL (5 7S 93W)		KB	7629 ft	32 6S 93W		
BHL: 346' FSL & 1766' FEL (32 6S 93W)		DF		RU 23-S PAD		
SEC 32 TWP 6S RGE 93W		GL	7603 ft	NABORS 576		