



Baker Atlas

# RESERVOIR PERFORMANCE MONITOR

File No: CH082084	Company Well Field County	WPX ENERGY FEDERAL RU 41-5 RULISON GARFIELD	State CO
API No: 05045217820000	Location SHL: 211' FNL & 2611' FNL BHL: 333' FNL & 703' FEL SEC 5 TWP 7S RGE 9SW		
5 7S 9SW RU 23-5 PAD MABORS 576	Other Services BOND LOG		Elevations KB 7628 ft DF GL 7602 ft
Permanent Datum Log Measured From Drill Measured From	GL KB KB	Elevation 26 ft Above P. D.	

Date	15/FEB/14	
Run	ONE	
Service Order	US625286	
Depth Driller	10297 ft	
Depth Logger	10238 ft	
Bottom Logged Interval	10228 ft	
Top Logged Interval	6146 ft	
Time Started	8:00	
Time Finished	17:00	
Operator Rig Time	9 HOURS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	NA	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	242 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	14/FEB/14	
Equipment No.	4271	GRAND JCT.
Recorded By	NEWELL	
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	1129 ft
8.75 In	1129 ft	10304 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 In			0 ft	1129 ft
4.5 In	11.6 lbm/ft	HCP-110	0 ft	10304 ft

Remarks

All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 2/14/2014 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 6 feet.

Logged In PNC-3D mode.

RPM tool failed at 6850', so the backup RPM was used to log the remaining interval. The two files were spliced together at 6900'

BHT = 242 °F  
SJ = 7006'-7027'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	PCM	8250EA	10408796	FREE
1	1	TEL/CCL	8248ED	10296408	FREE
1	1	GR	2812LA	10274385	FREE
1	1	RPM	8281EA	10425671	FREE
1	1	RPM	8283PA	10169251	FREE
1	1	RPM	8283FA	10460082	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		6110.000	6900.000
PNC Porosity	Borehole Size	8.750	inch	6110.000	6900.000
PNC Porosity	Casing Size	4.500	inch	6110.000	6900.000
PNC Porosity	Gas Filled	Non Gas Filled		6110.000	6900.000
PNC Porosity	Matrix	Sandstone		6110.000	6900.000
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	6110.000	6900.000
PNC Porosity	Borehole	Cased		6900.000	10232.750
PNC Porosity	Borehole Size	8.750	inch	6900.000	10232.750
PNC Porosity	Casing Size	4.500	inch	6900.000	10232.750
PNC Porosity	Gas Filled	Non Gas Filled		6900.000	10232.750
PNC Porosity	Matrix	Sandstone		6900.000	10232.750
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	6900.000	10232.750

# 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	RAT023
		RICXC	RIN13C	RIN23	RIN23C	SD3D	SG3D
		SGB3	SGF3	WDTH3	CXSR	IXSR	XSR
		RICXR					
		HVC2Q0	SEQ2	AMA2	AMB2	AMF2	AML2
		BKL	CHF2	CLS	CPT2Q0	CPT2Q2	CPT2Q3
8281XA	-12.291	CPT2Q4	ET2	ILS	LS	MCS2	MCS2Q0
		QCAL2	RGN2	RICL	RONE23	RTW023	SDA2
		SDL2	SGA2	SGB2	SGF2	SGK2	SGL2
		STA2	ASPEC2	ILSC	ILSN	WDTH2	RICLC
		CLSR	ILSR	LSR	RICLR		
		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
8281XA	-12.041	MCS1Q0	QA1	QCAL1	QM1	RAT0	RAT013
		RBOR	RGN1	RICS	RIN	RONE	RPOR
		RTW0	RIN13	RONE13	RTW013	SALB	SC1
		SDA1	SDL1	SGA1	SGB1	SGBC	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	HOC	FE2XC	ISSC	RINC
		ISSN	RDEN	WDTH1	RICSC	CSSR	G1R
		G2R	ISSR	SSR	SS2R	RAT0R	RAT013R
		RBORR	RICSR	RINR	RIN13R	RONER	RPORR
		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

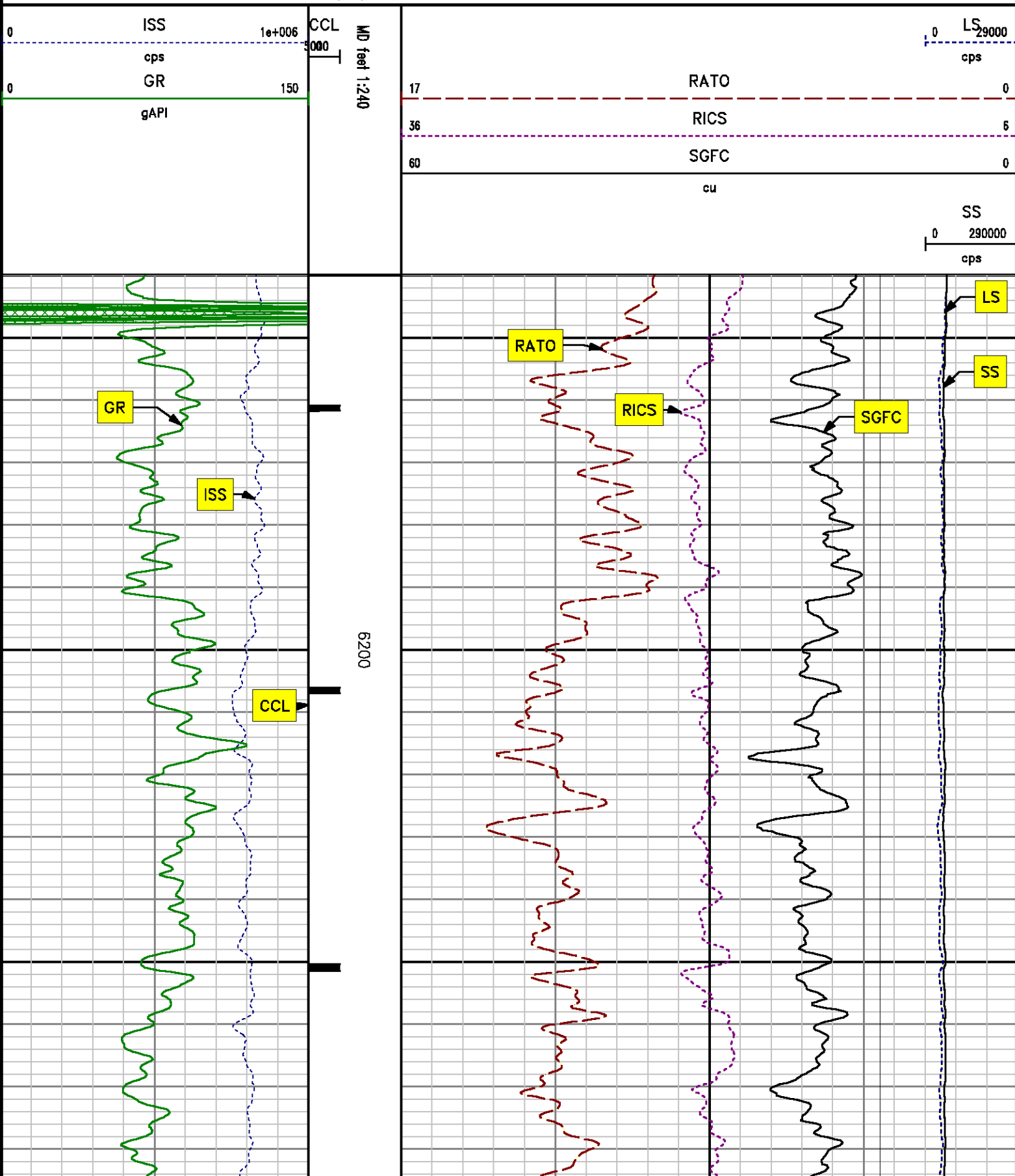
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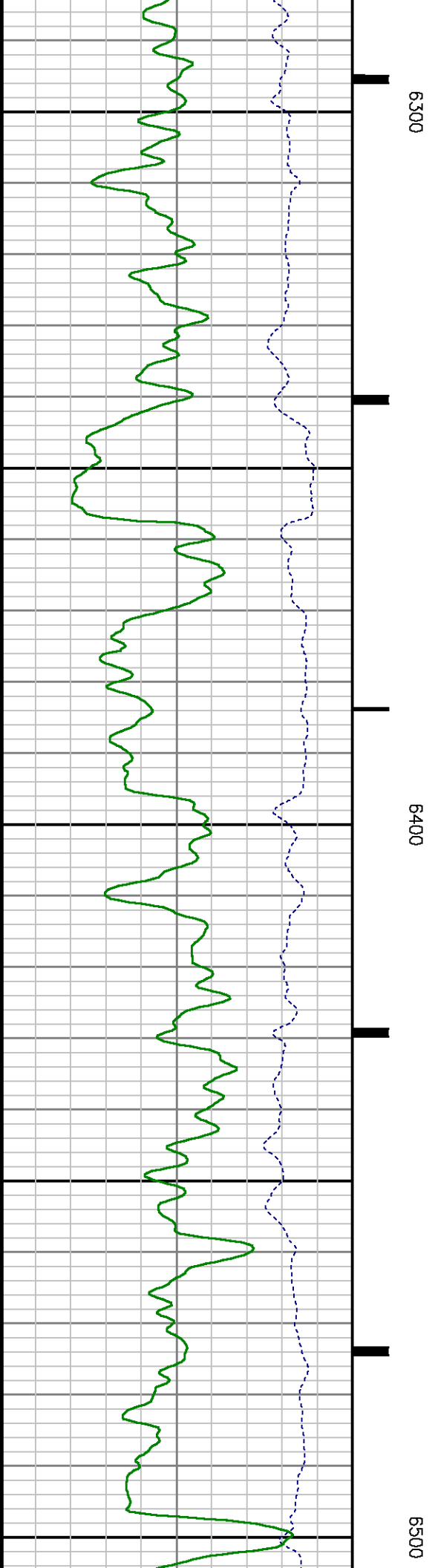
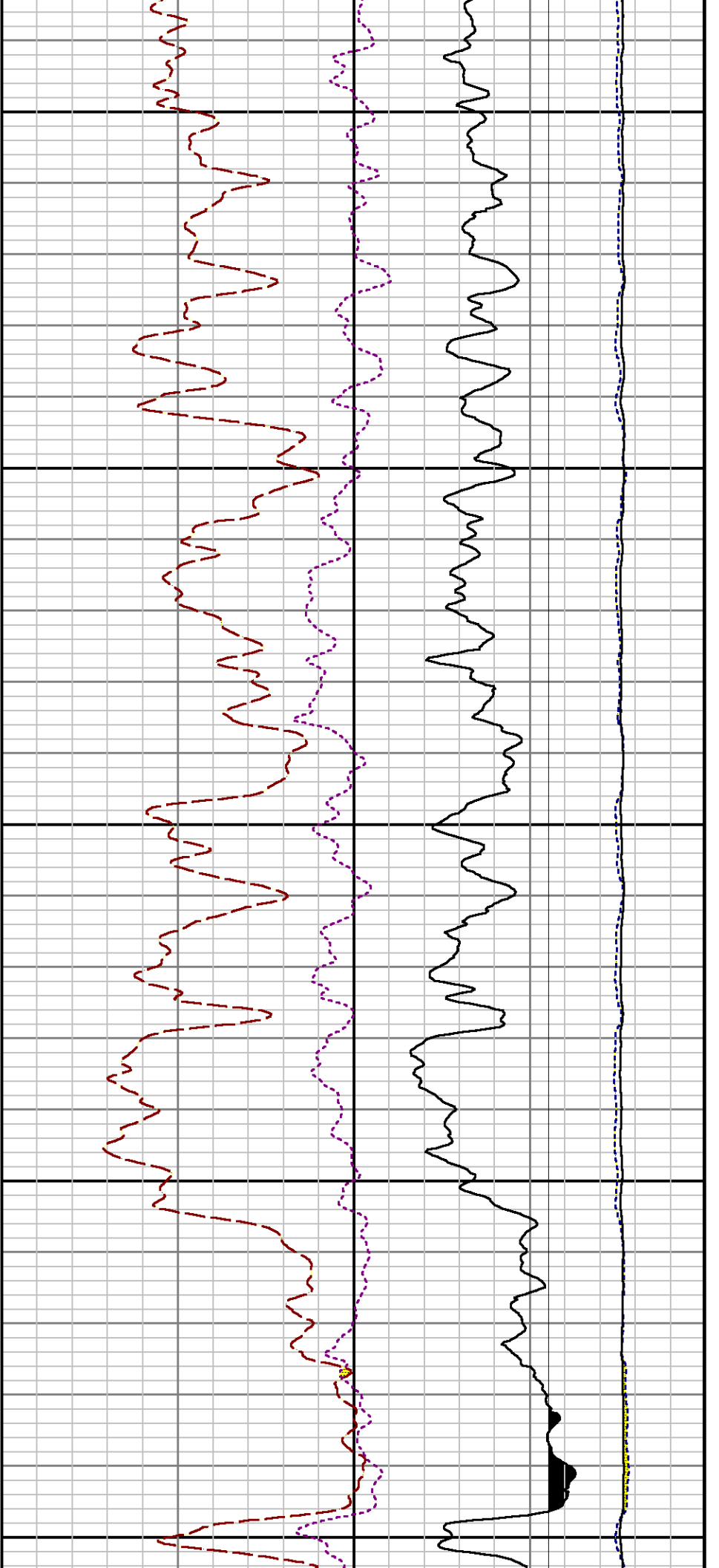
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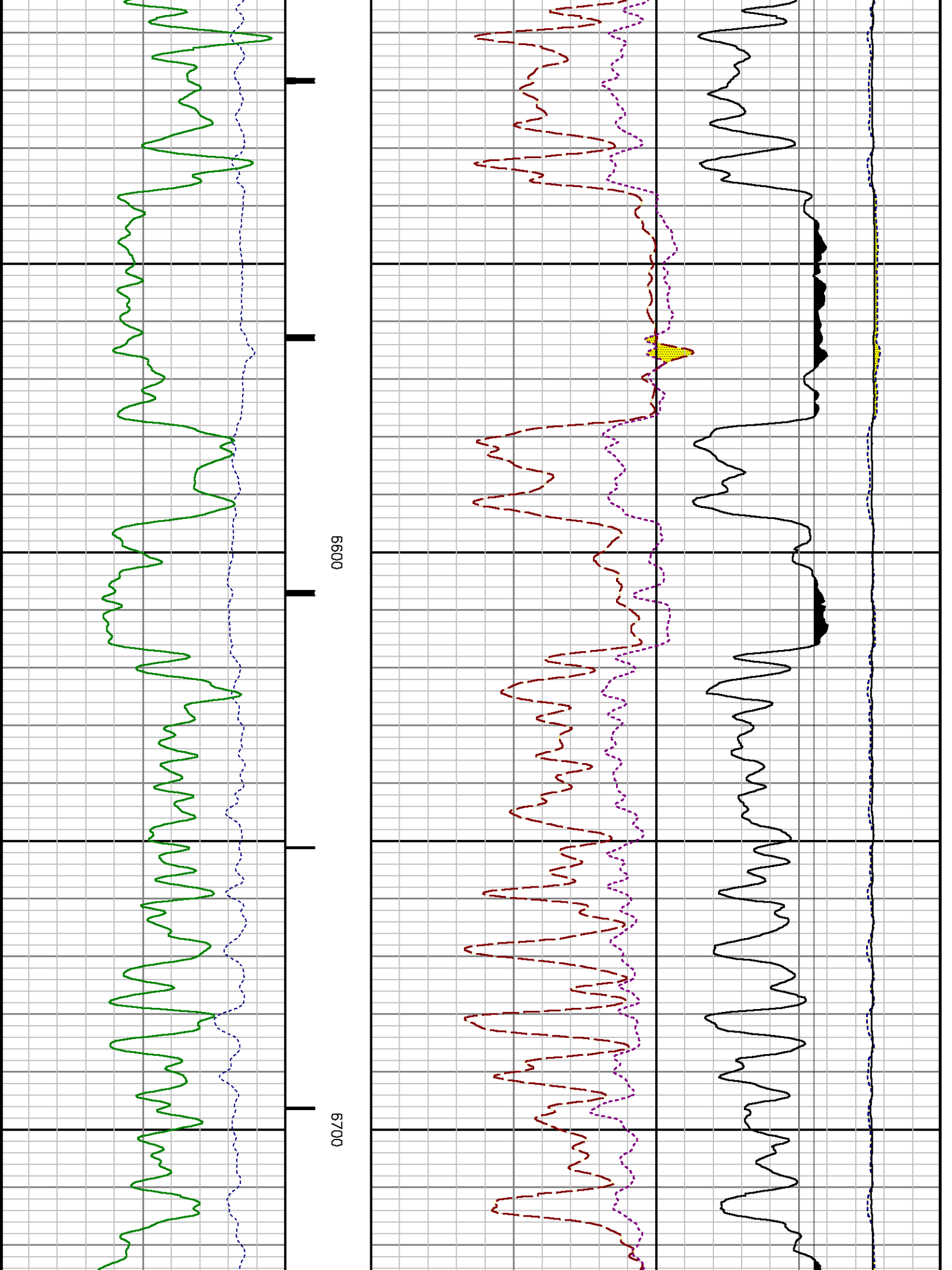
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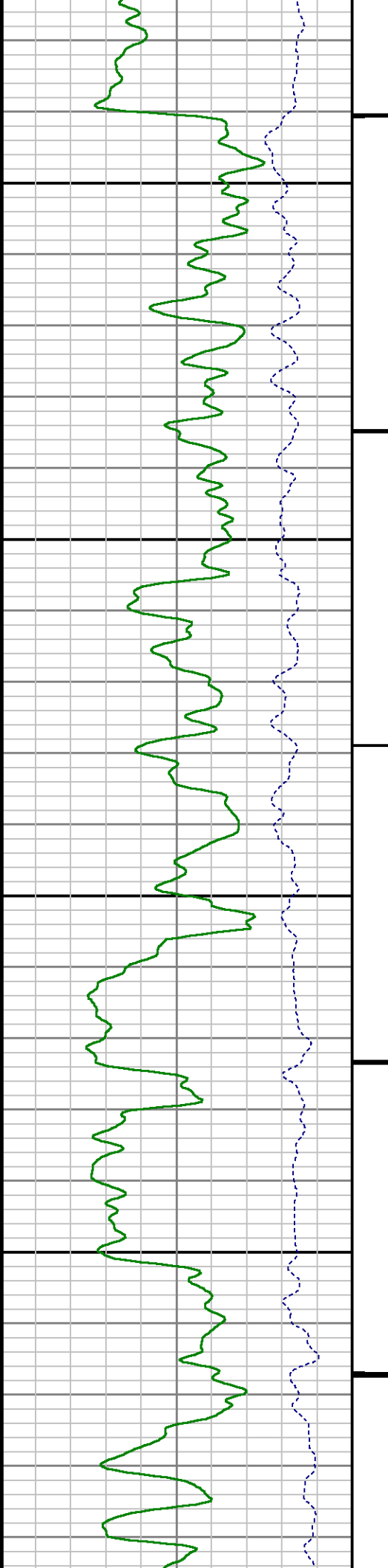
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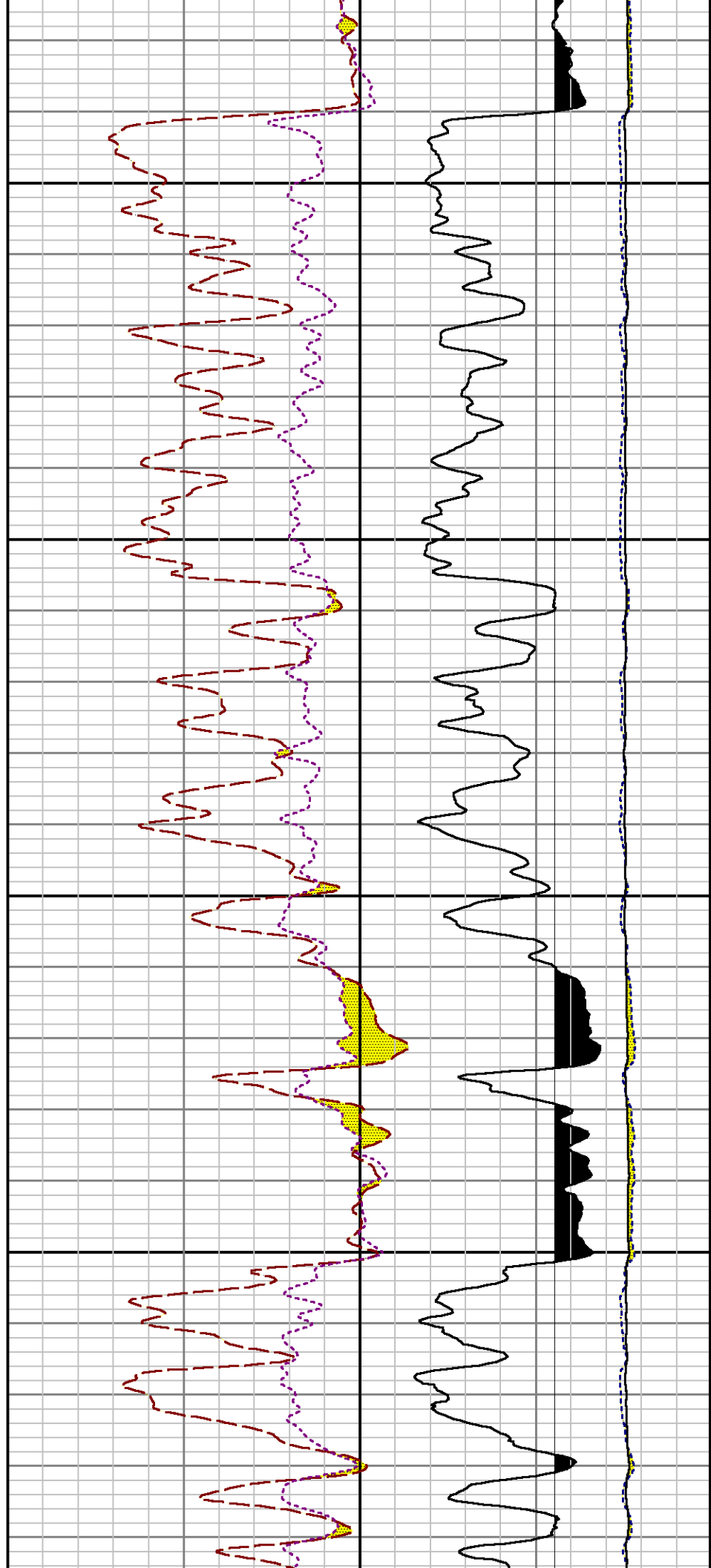


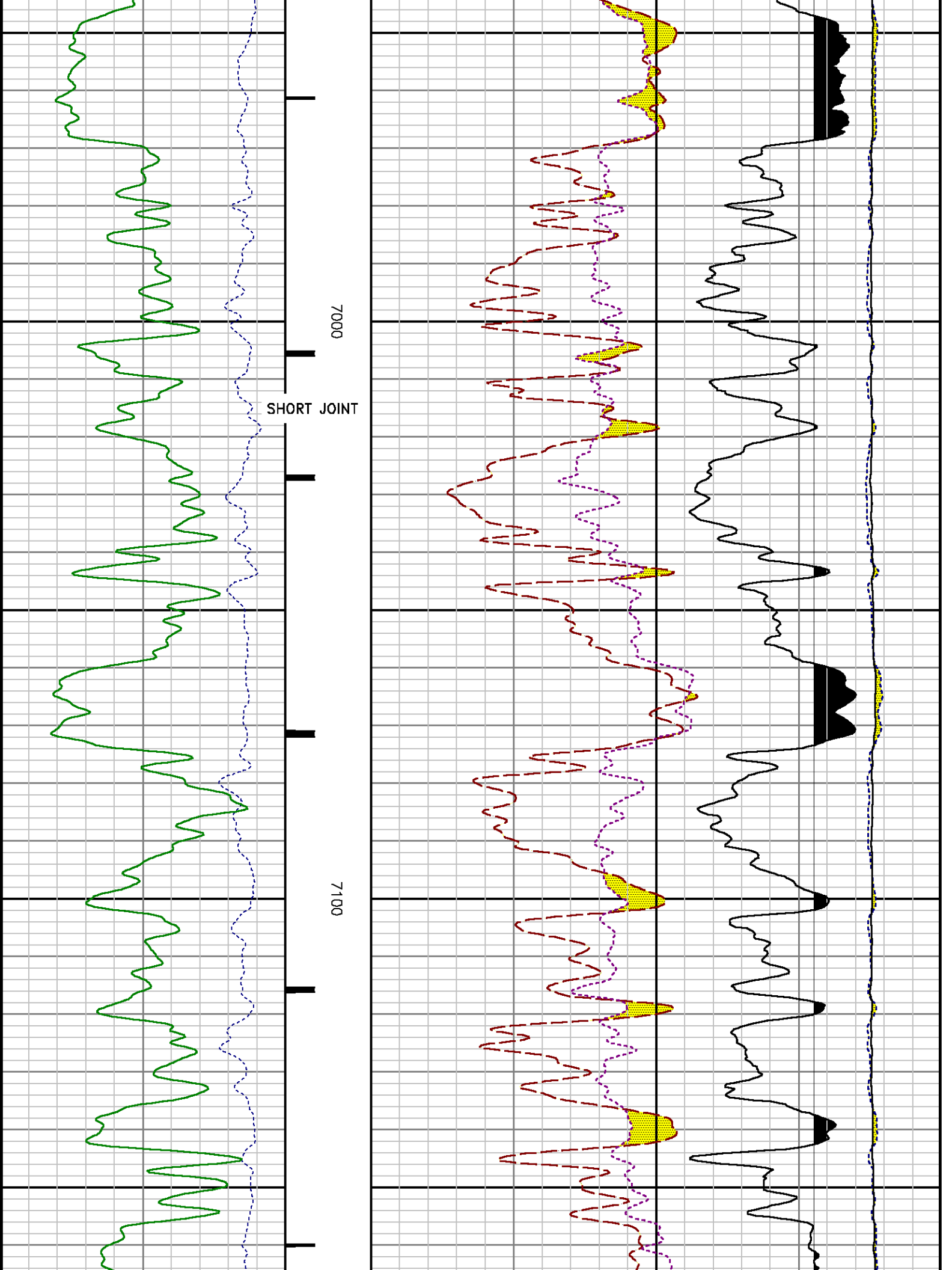


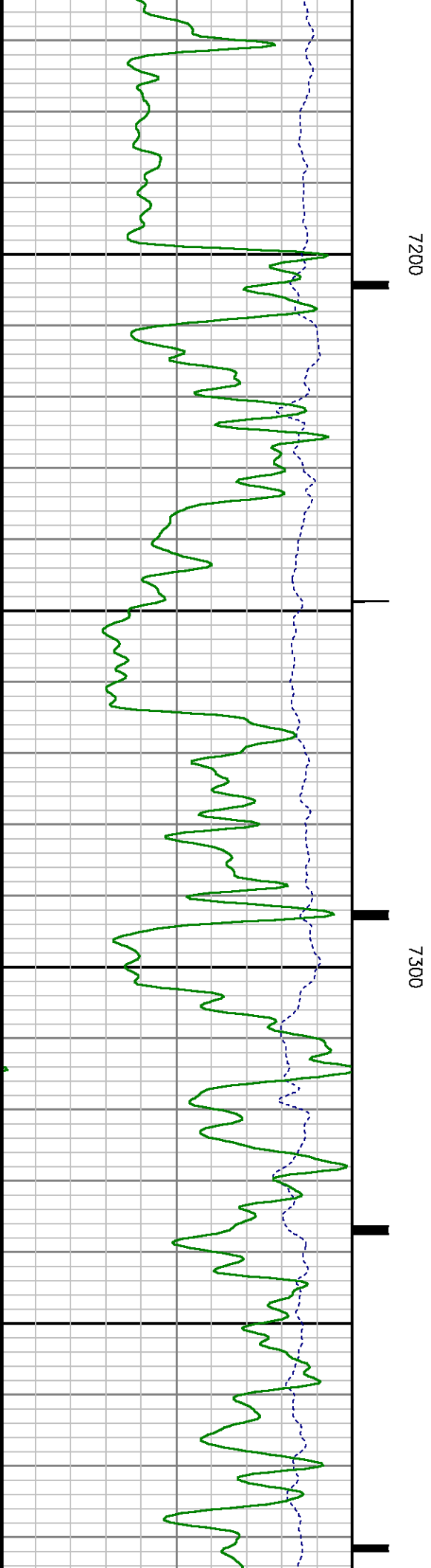
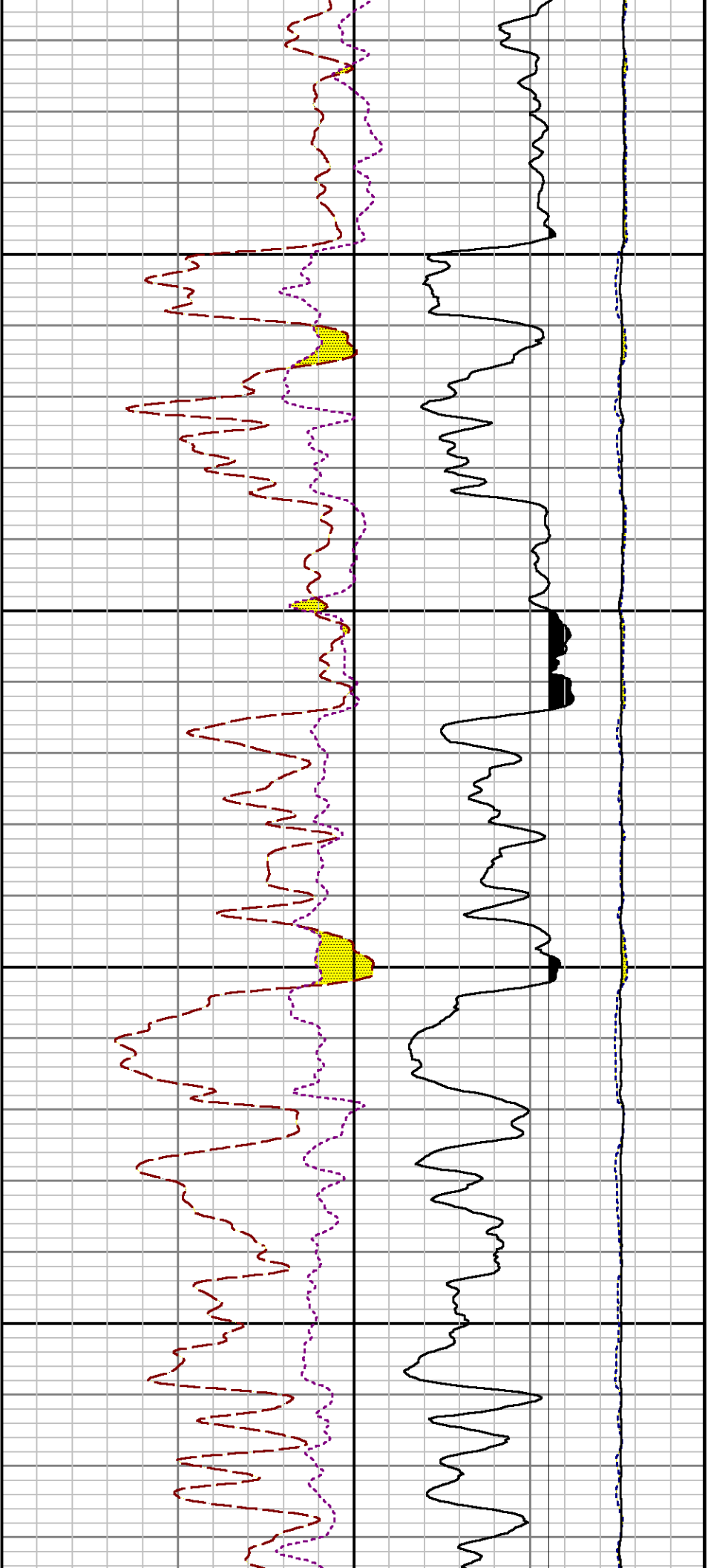


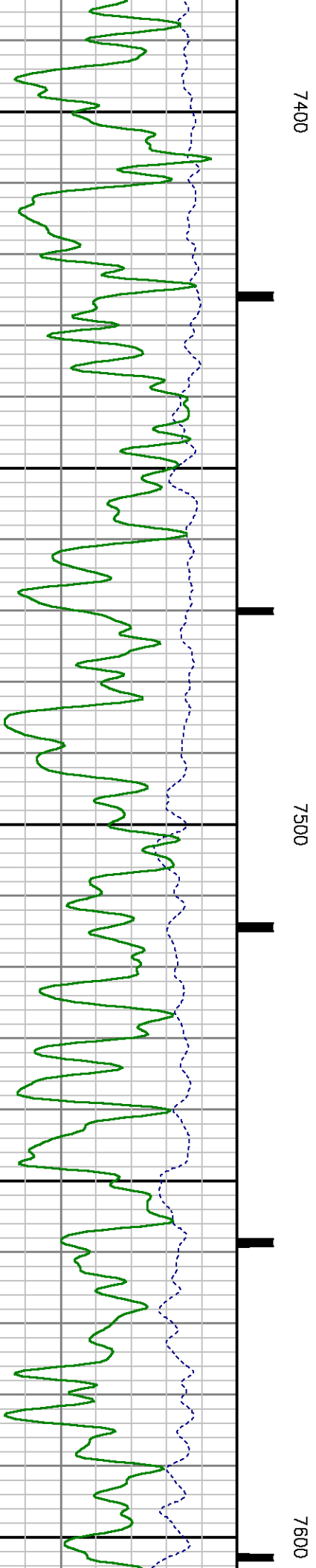
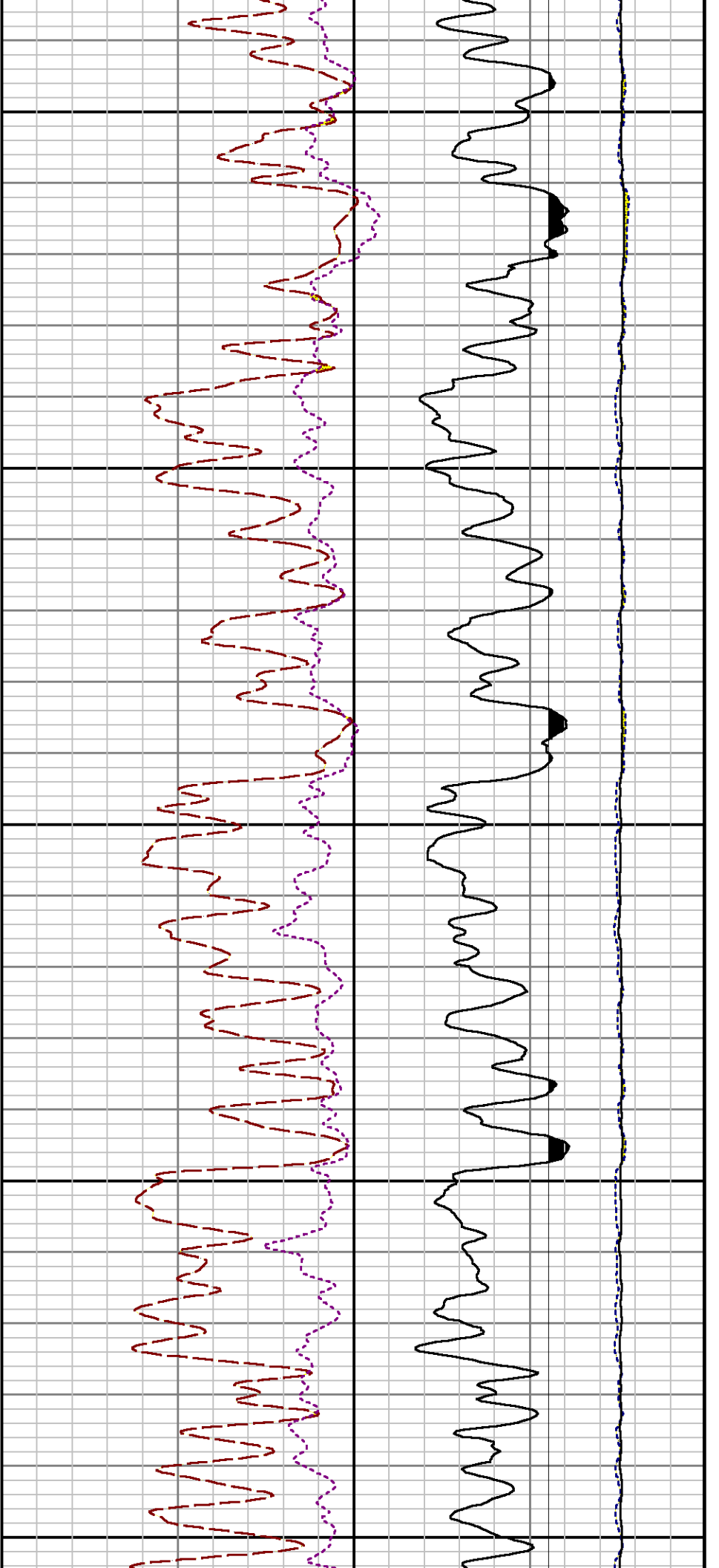
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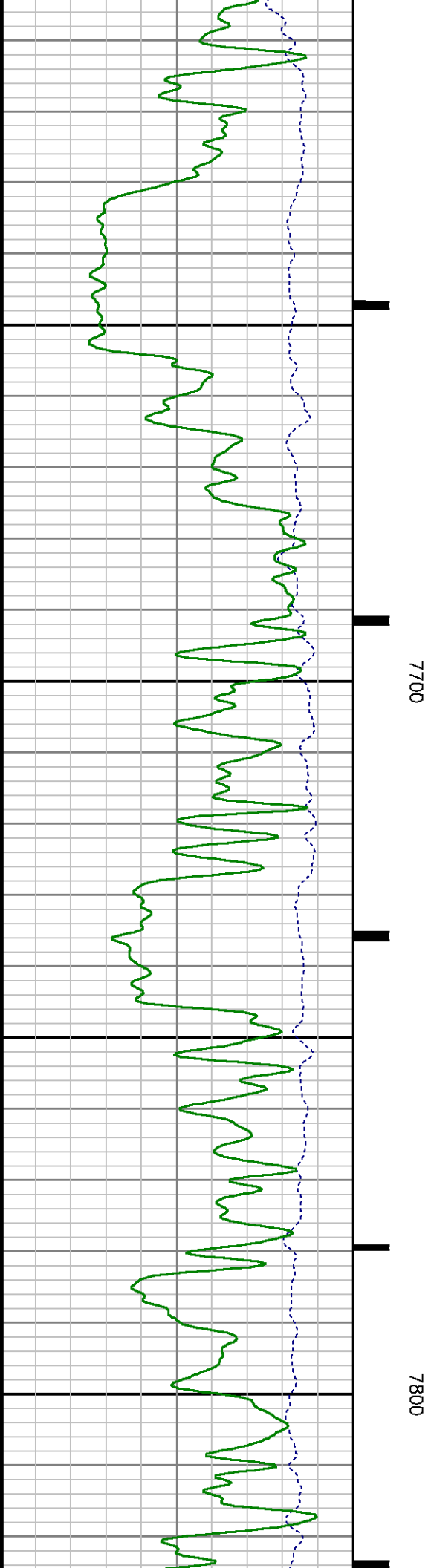
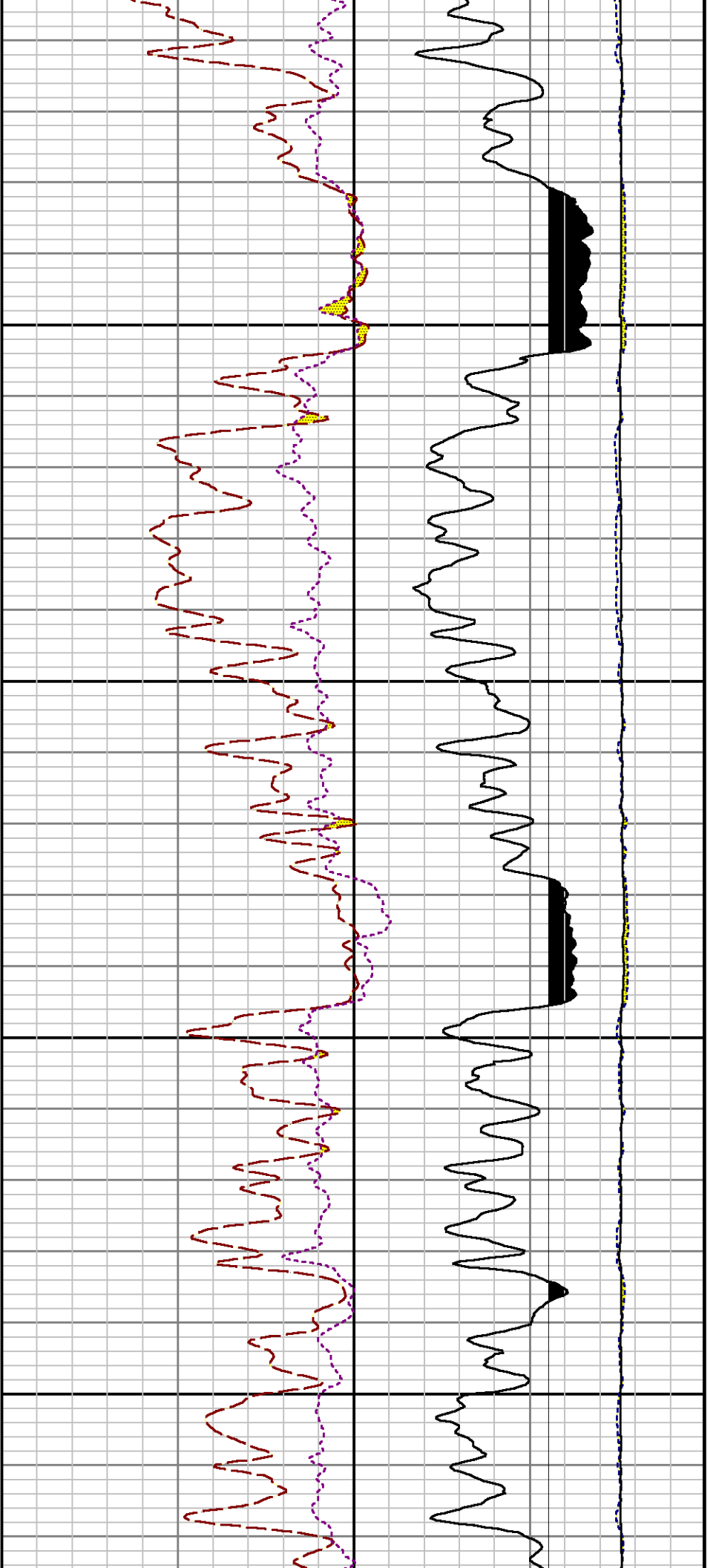
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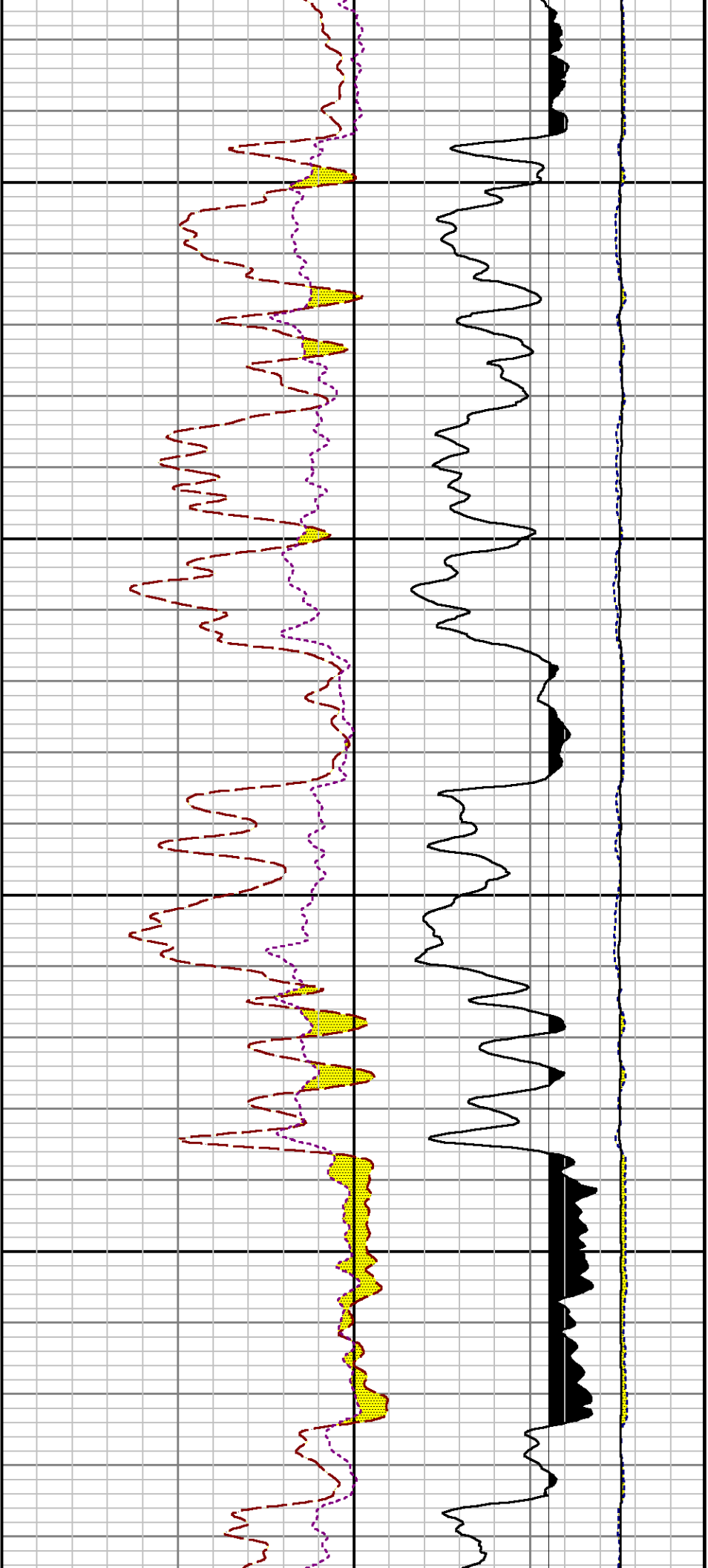






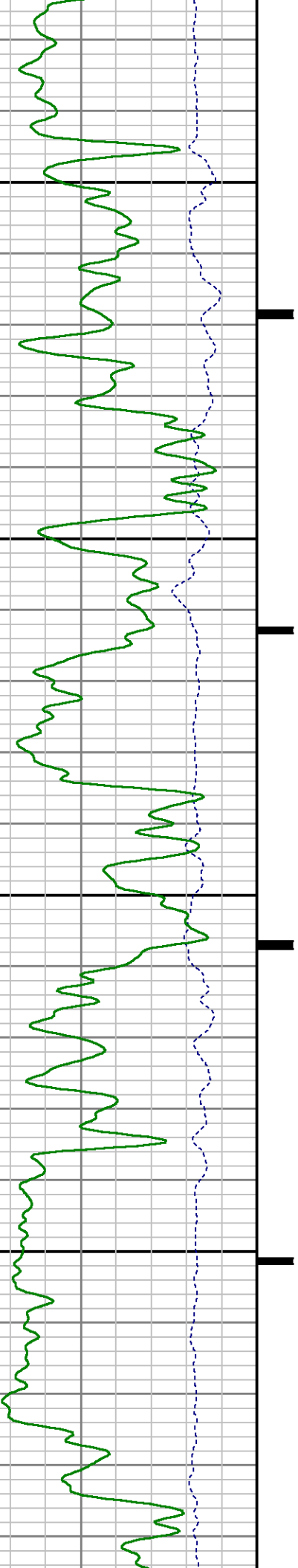


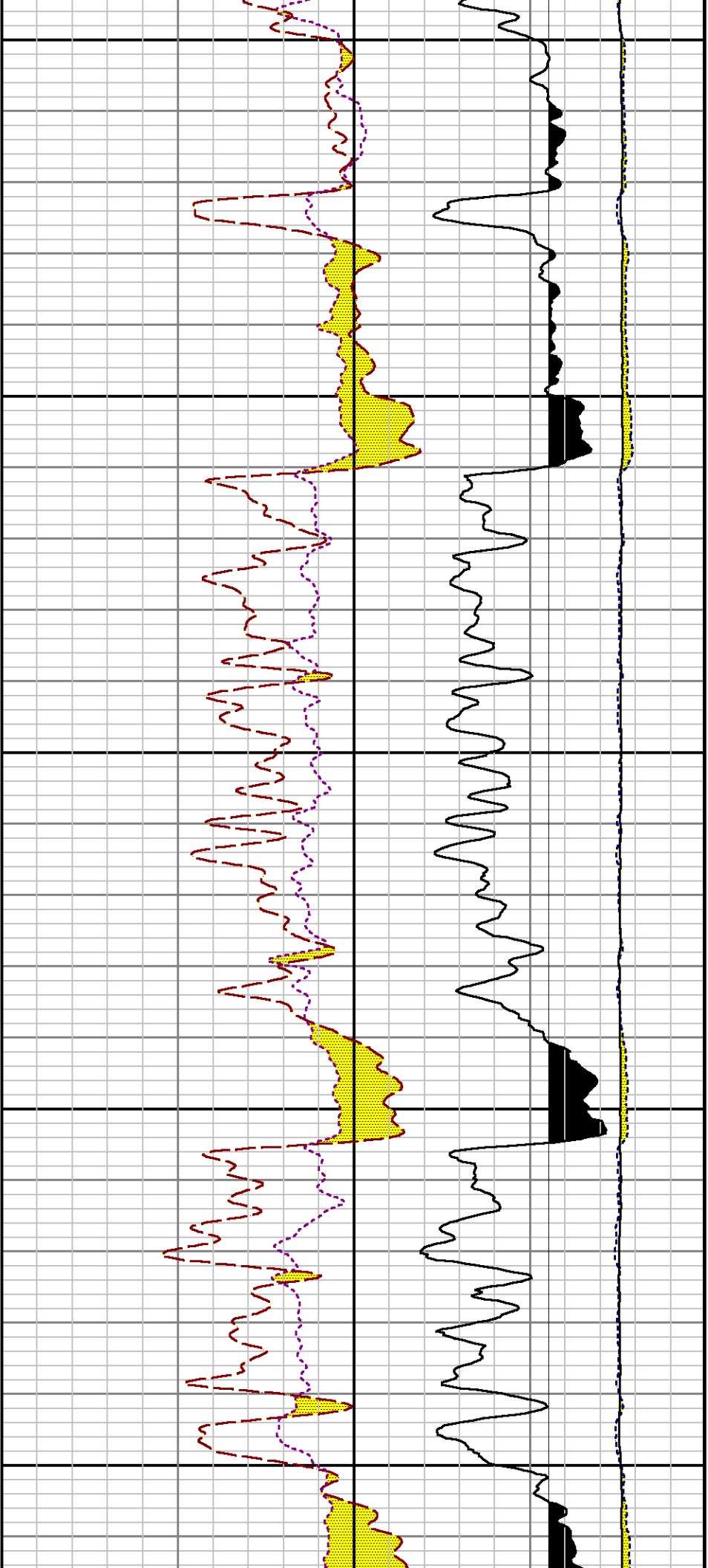




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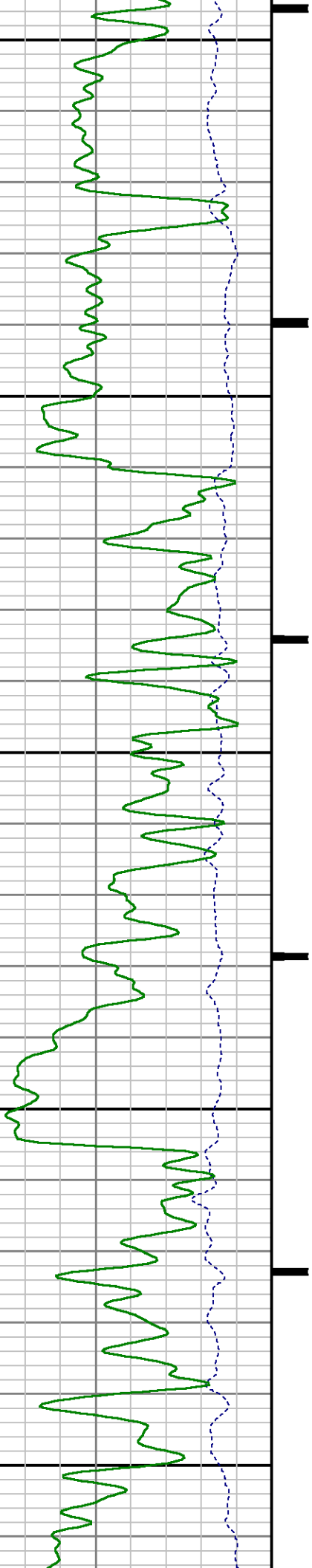
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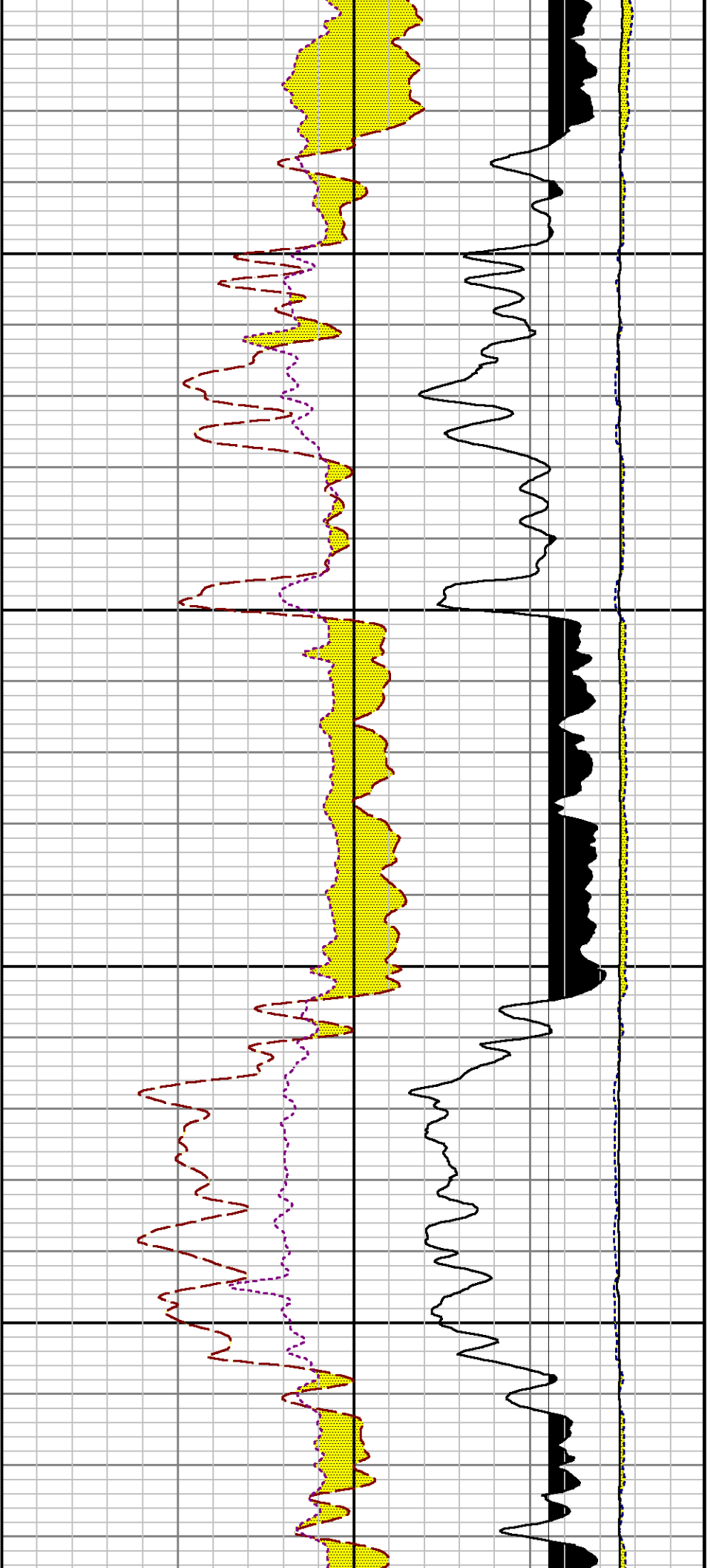




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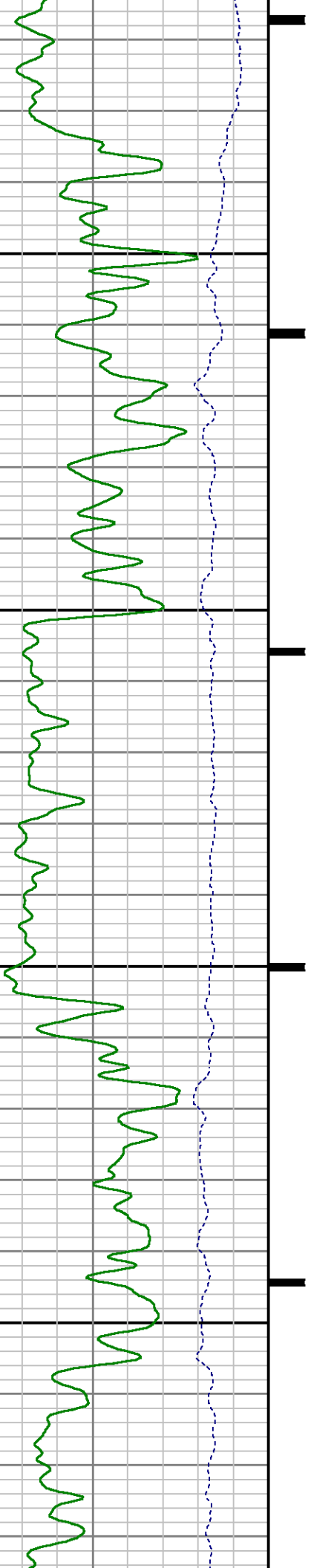
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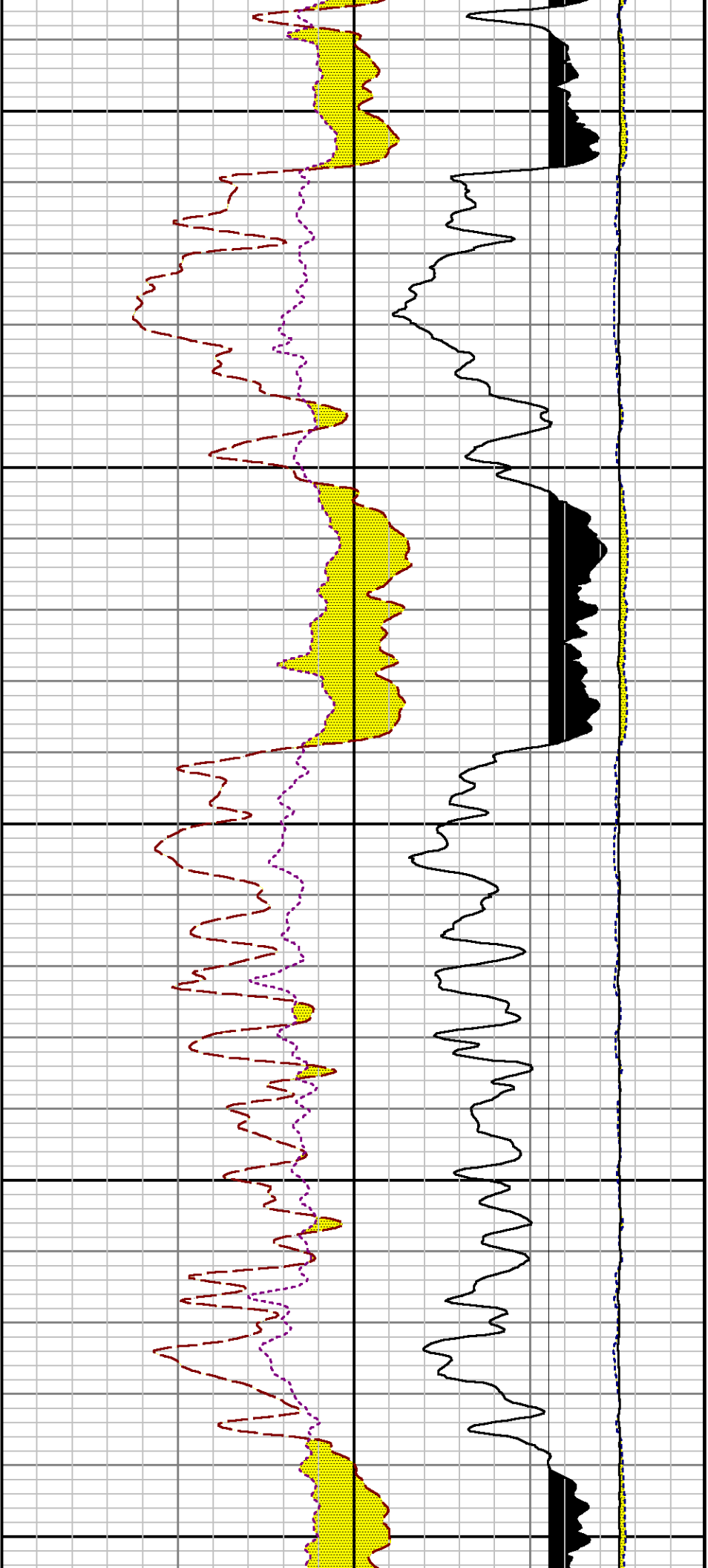




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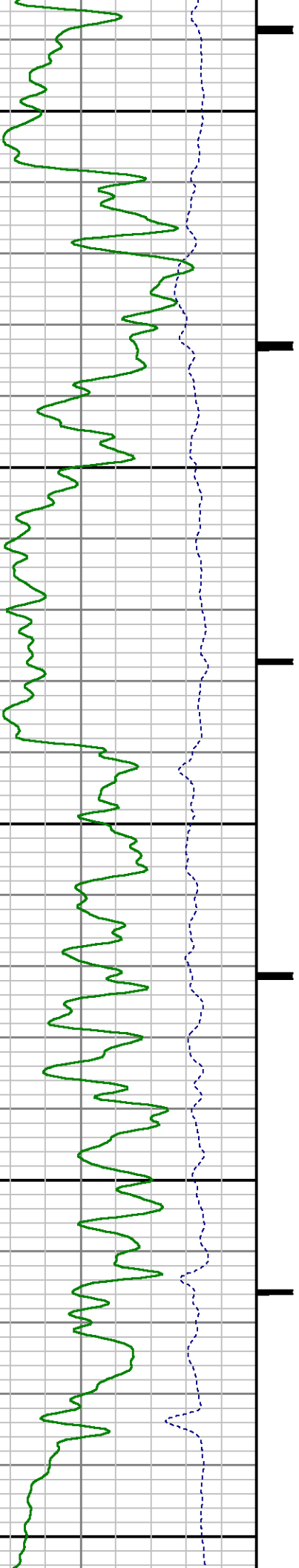


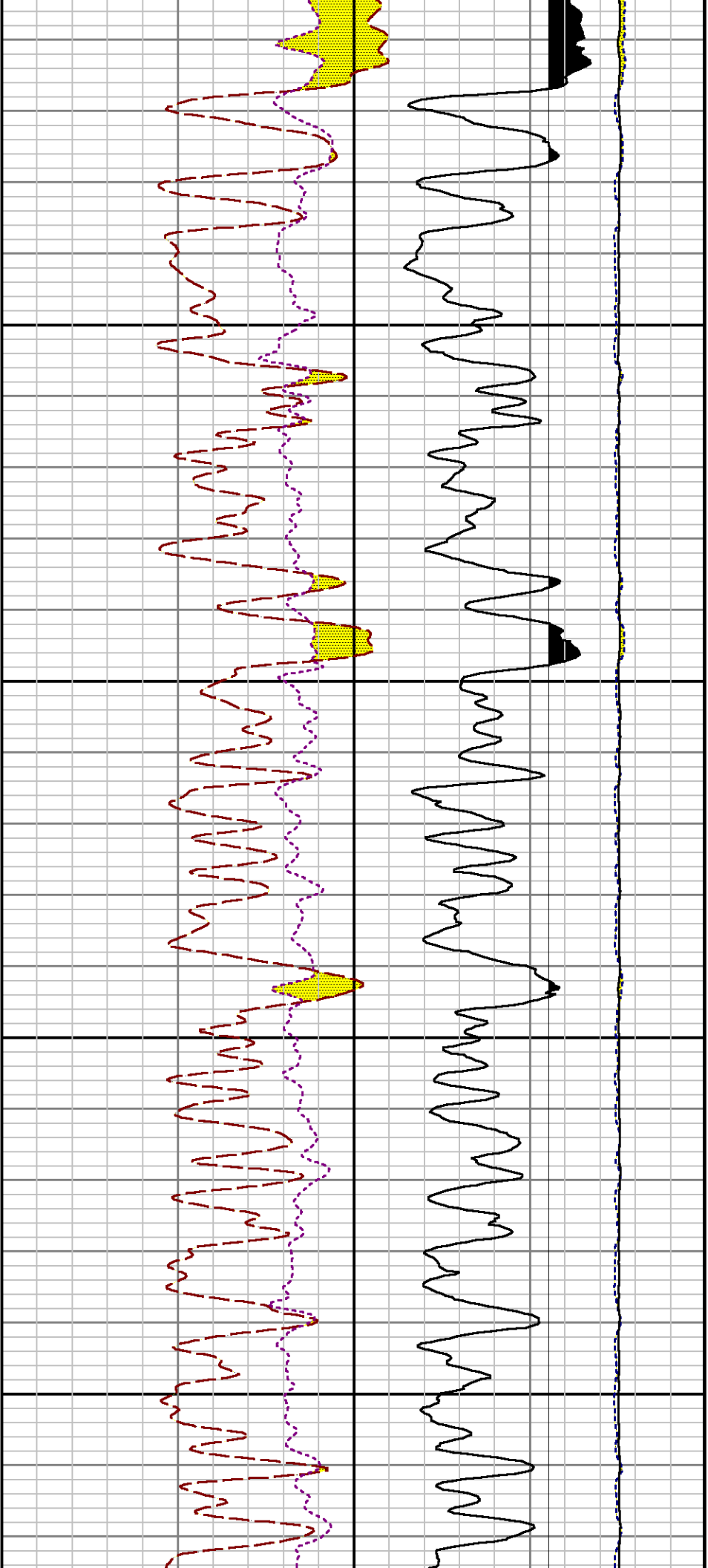


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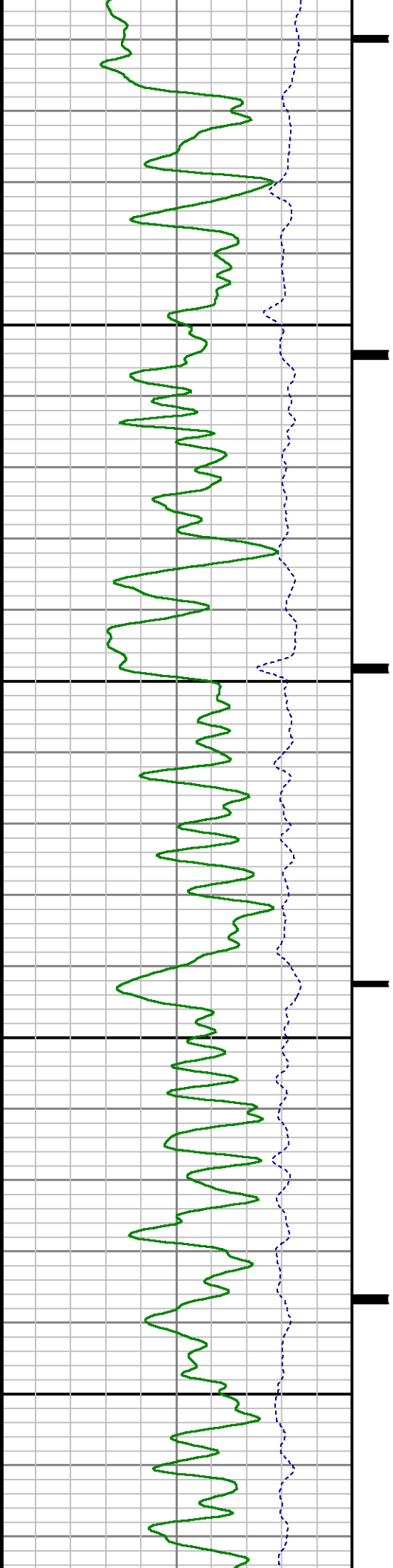
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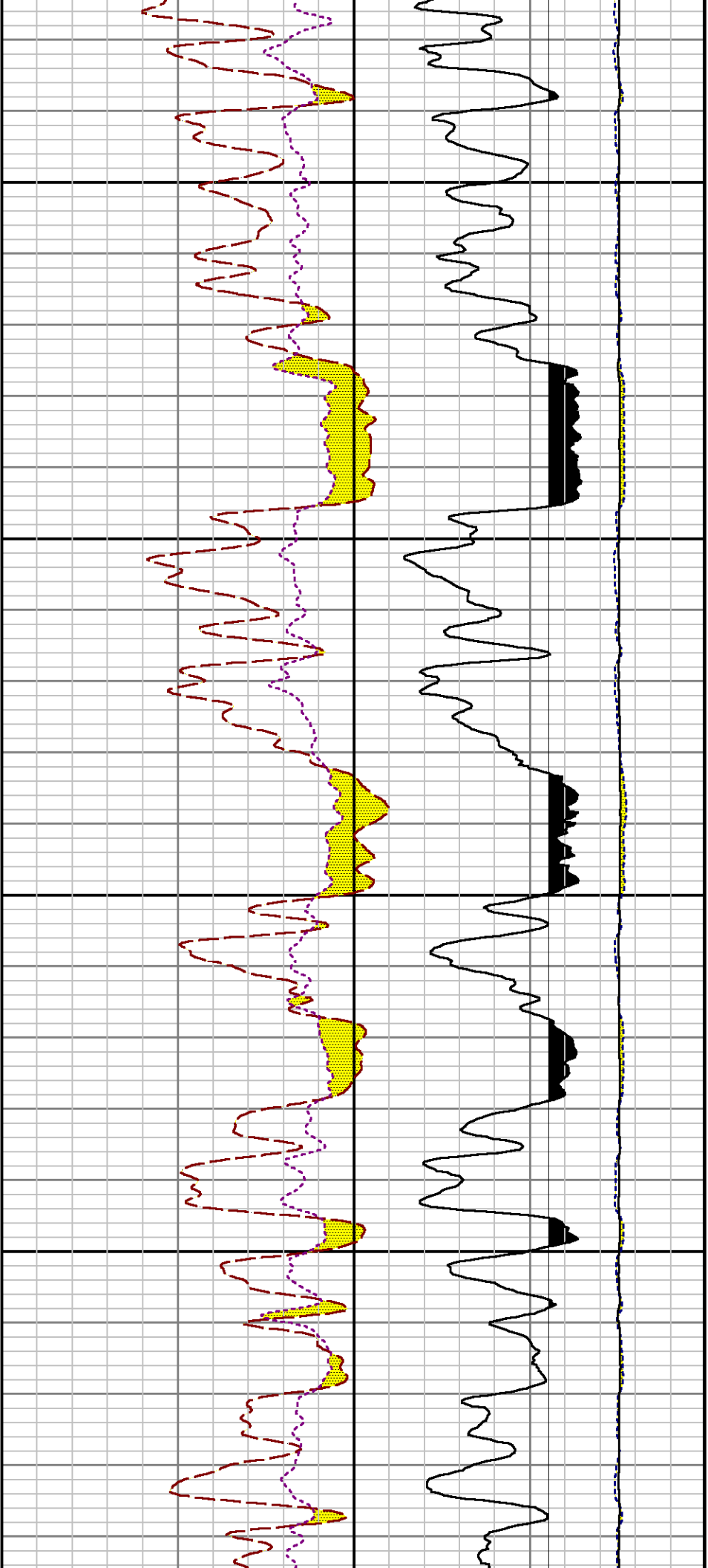




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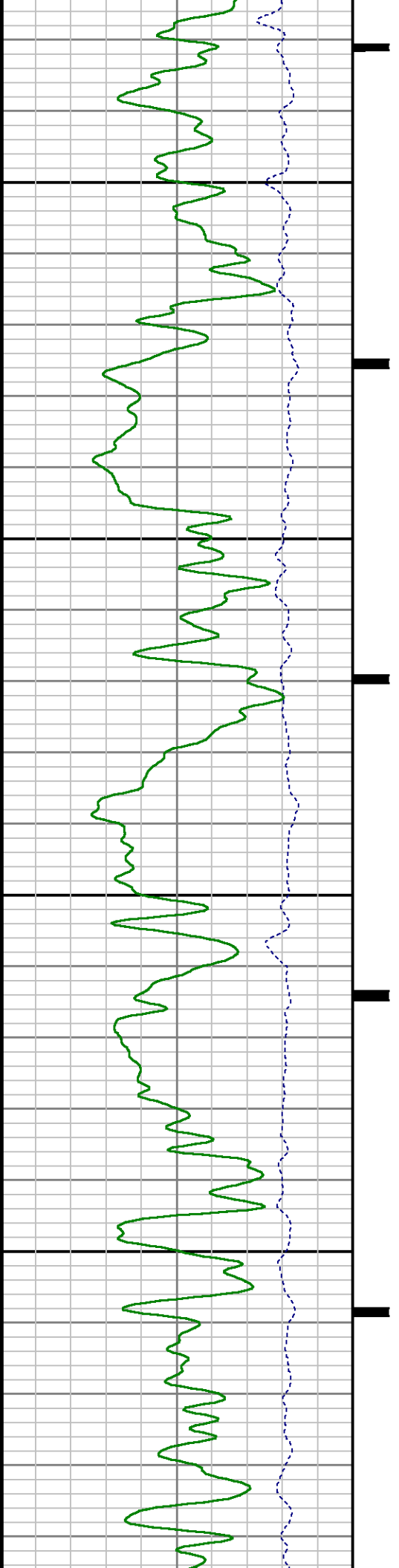
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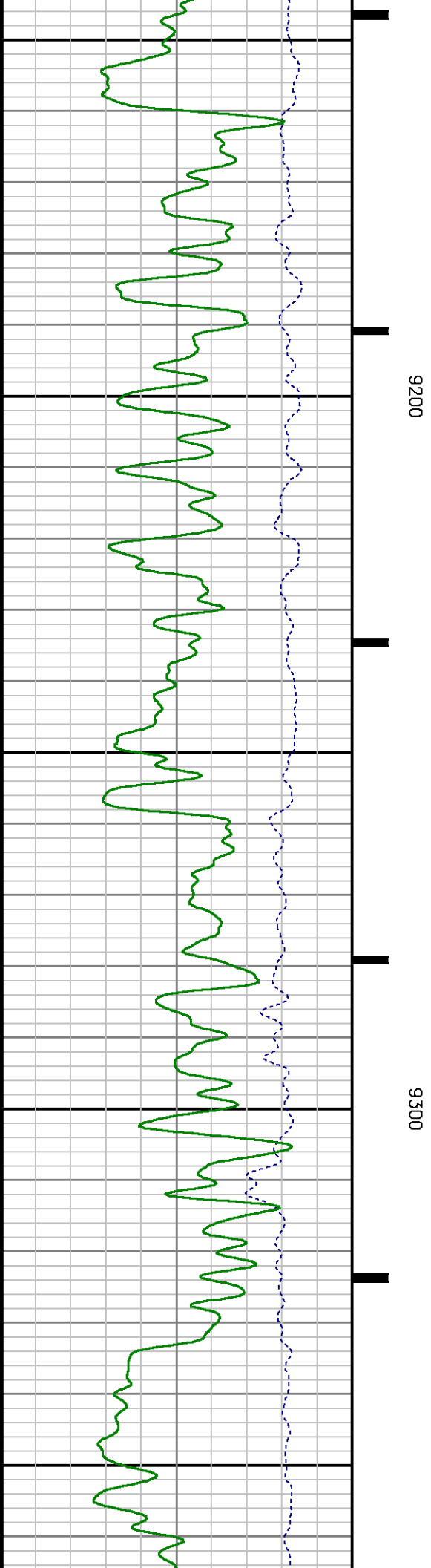
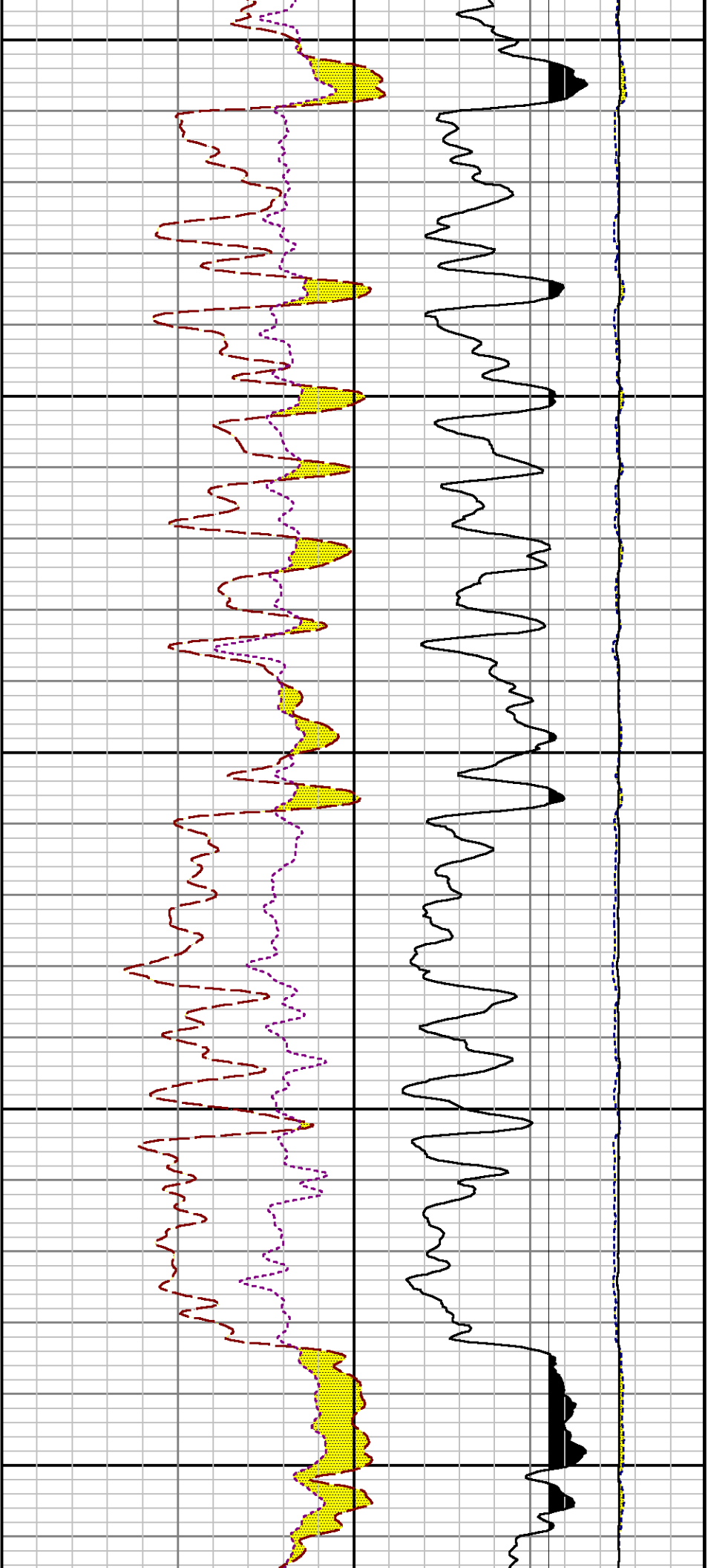


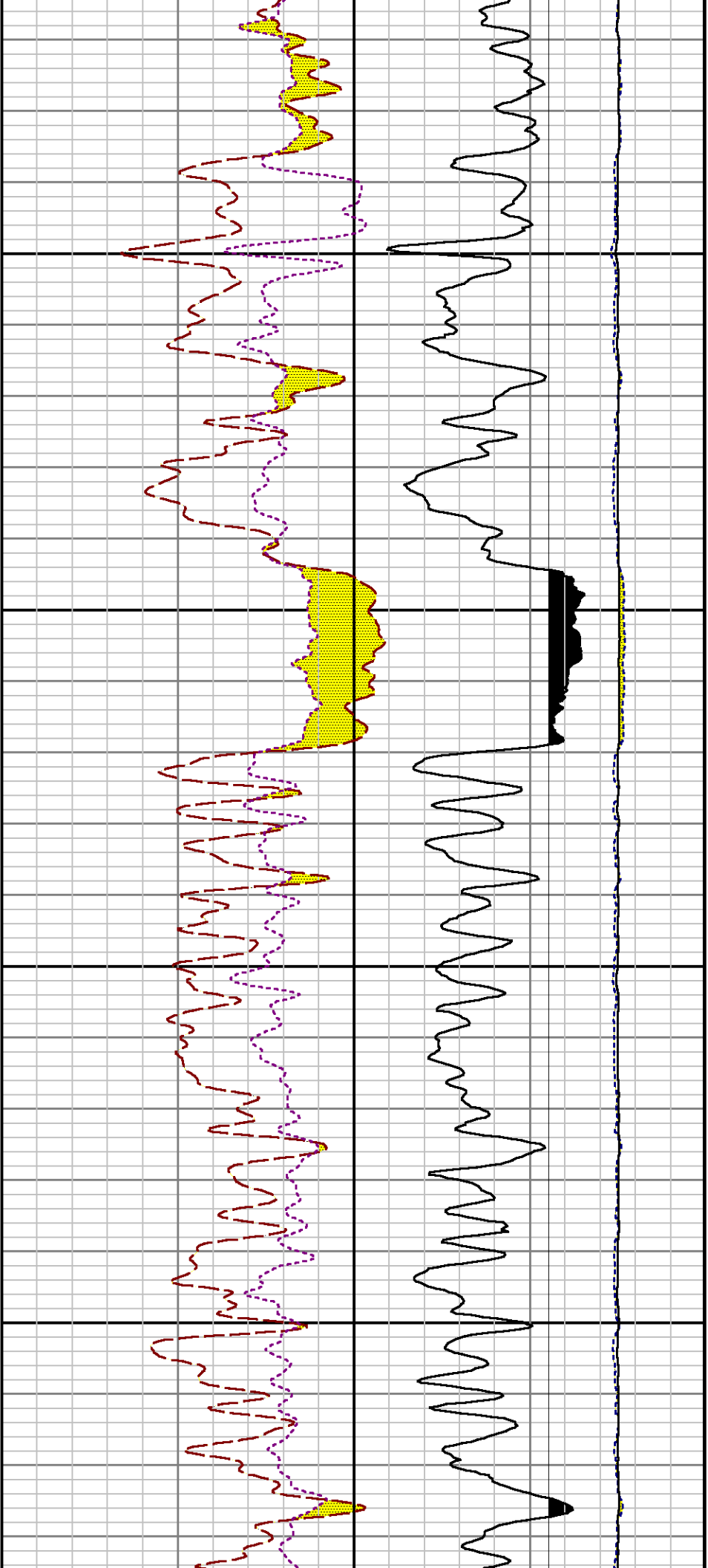


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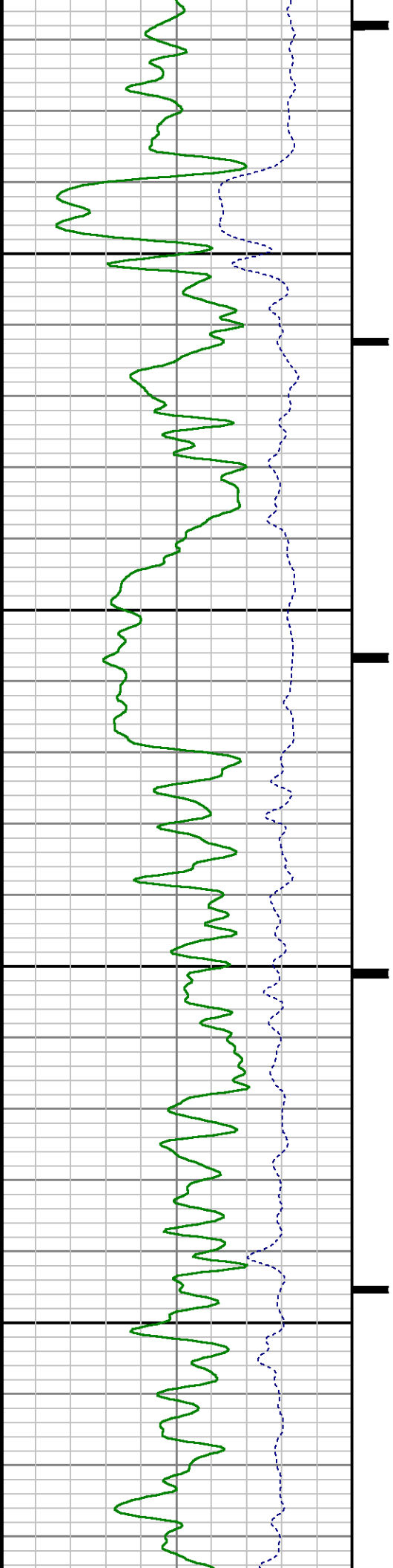


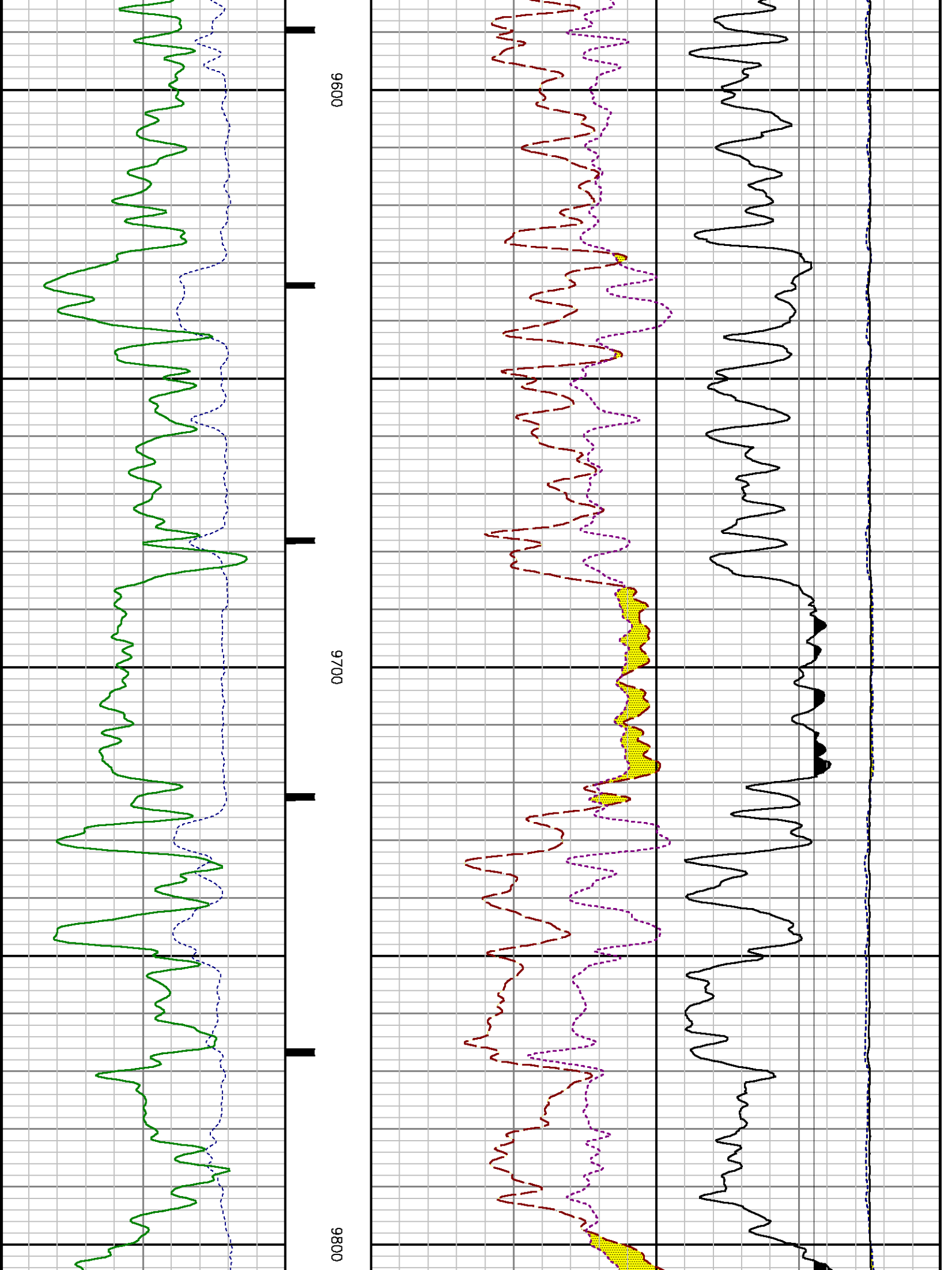


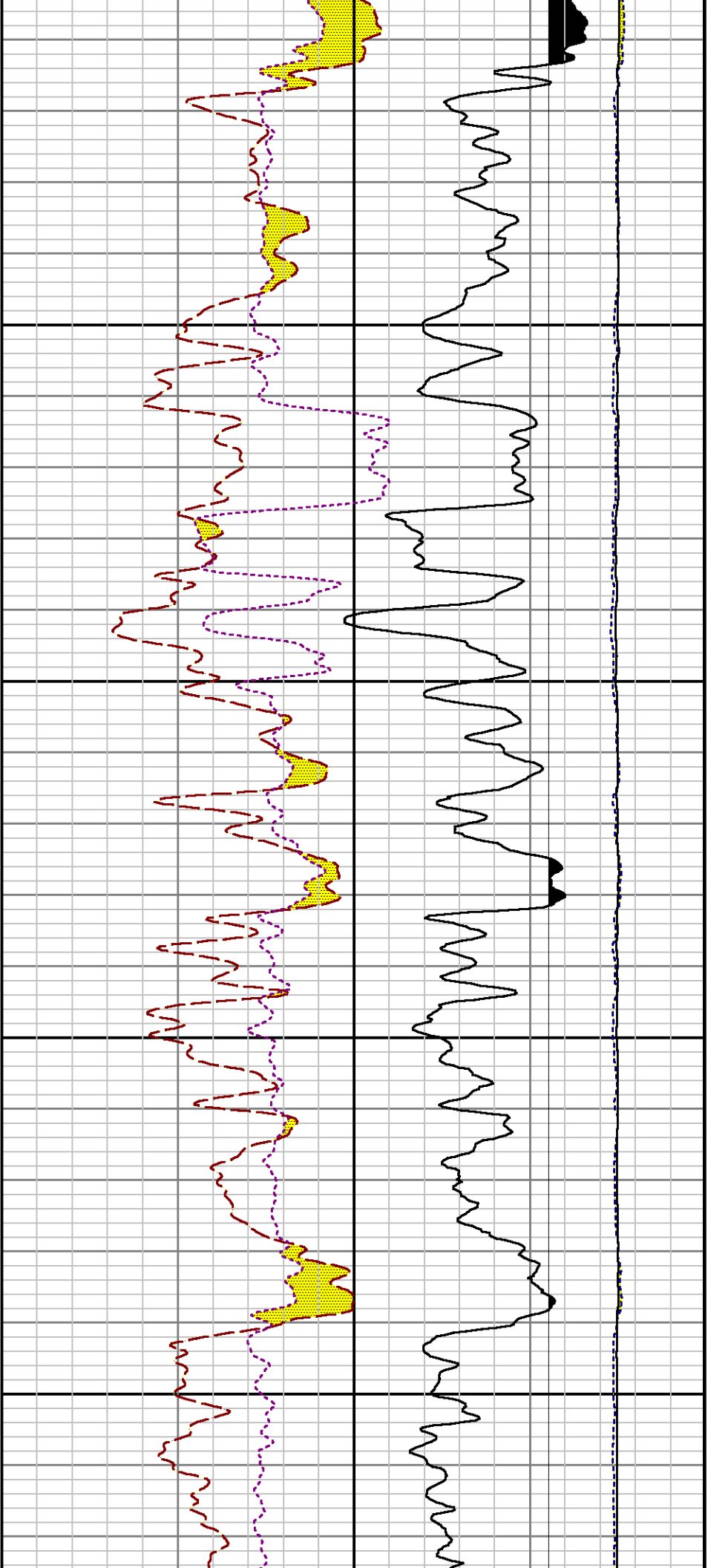


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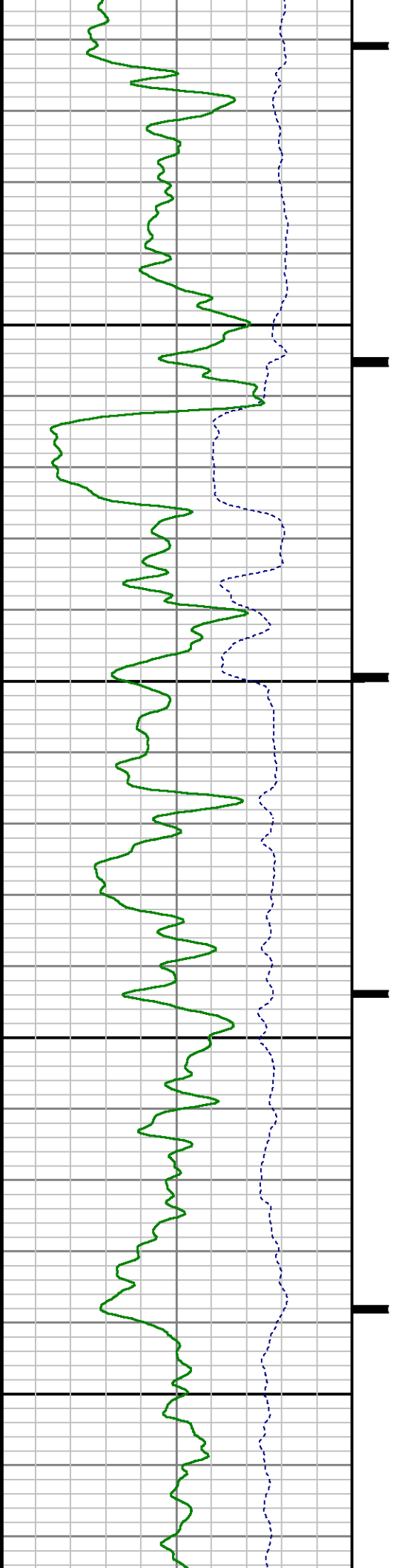


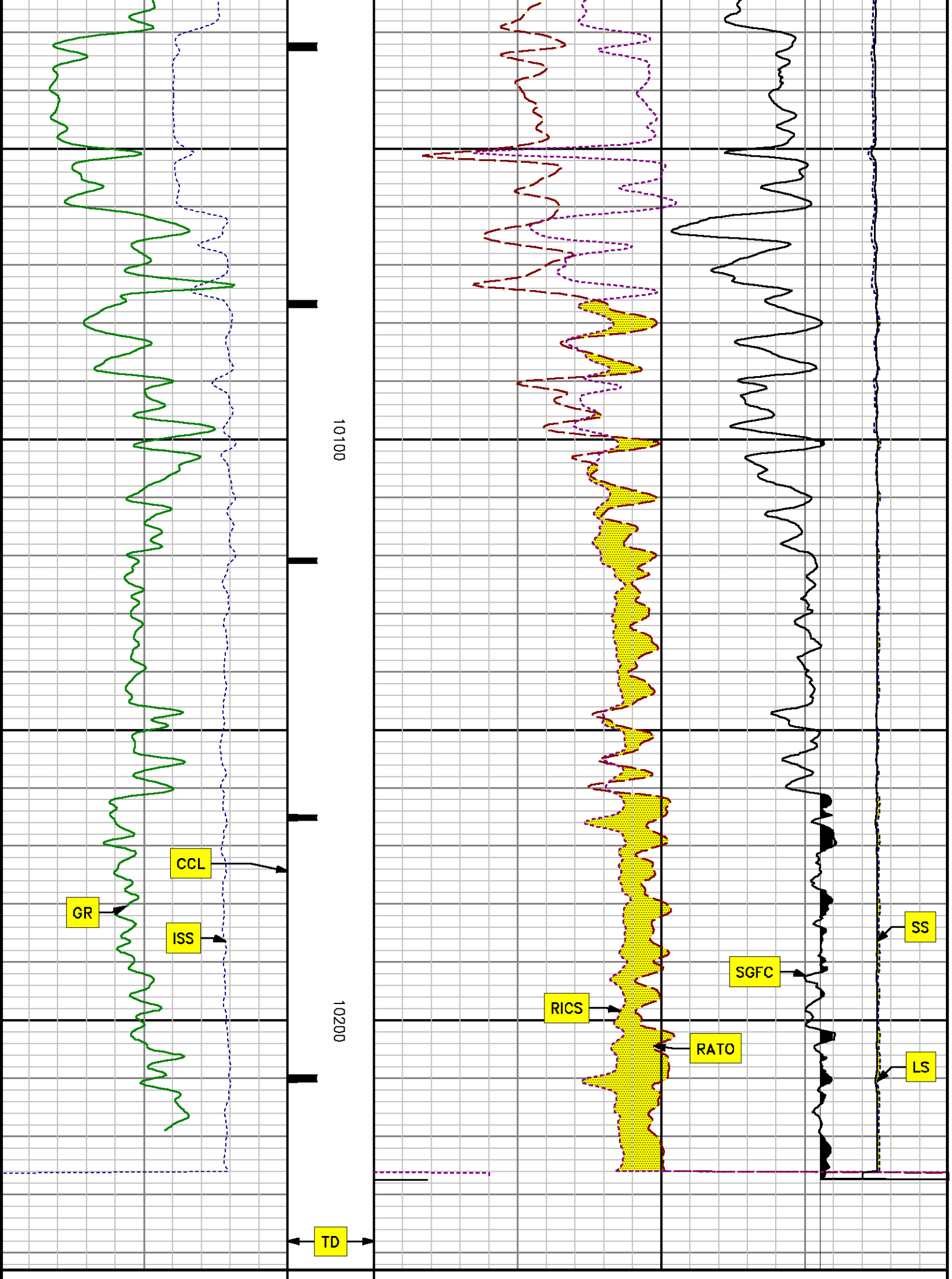


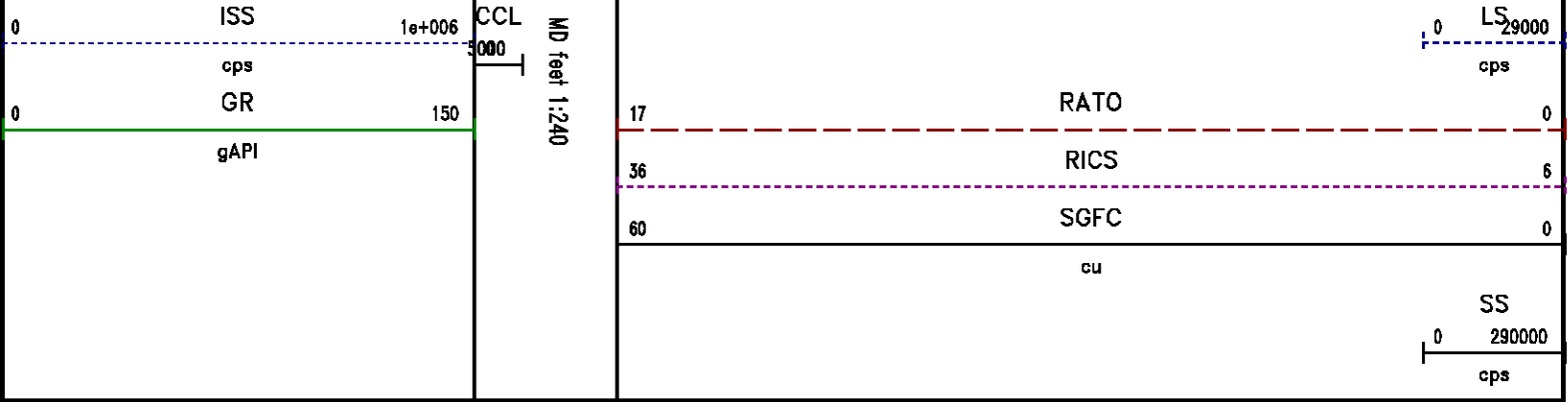


9900

10000







*REPEAT SECTION  
PNC 3-D MODE*

**SPL PROCESSING**

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		9382.750	9709.000
PNC Porosity	Borehole Size	8.750	inch	9382.750	9709.000
PNC Porosity	Casing Size	4.500	inch	9382.750	9709.000
PNC Porosity	Gas Filled	Non Gas Filled		9382.750	9709.000
PNC Porosity	Matrix	Sandstone		9382.750	9709.000
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	9382.750	9709.000

**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	RAT023
		RICXC	RIN13C	RIN23	RIN23C	SD3D	SG3D
		SCB3	SCF3	WDTH3	CYSP	LYSP	YSP

8281XA -12.291

RICXR  
HVC2Q0 SEQ2 AMA2 AMB2 AMF2 AML2  
BKL CHF2 CLS CPT2Q0 CPT2Q2 CPT2Q3  
CPT2Q4 ET2 ILS LS MCS2 MCS2Q0  
QCAL2 RGN2 RICL RONE23 RTW023 SDA2  
SDL2 SGA2 SGB2 SGF2 SGK2 SGL2  
STA2 ASPEC2 ILSCL ILSN WOTH2 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  
RTW0 RIN13 RONE13 RTW013 SALB SC1  
SDA1 SDL1 SGA1 SGB1 SGBC 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 HOC FE2XC ISSC RINC  
ISSN RDEN WOTH1 RICSC CSSR G1R  
G2R ISSR SSR SS2R RATOR RATO13R  
RBORR RICSR RINR RIN13R RONE RPORR  
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

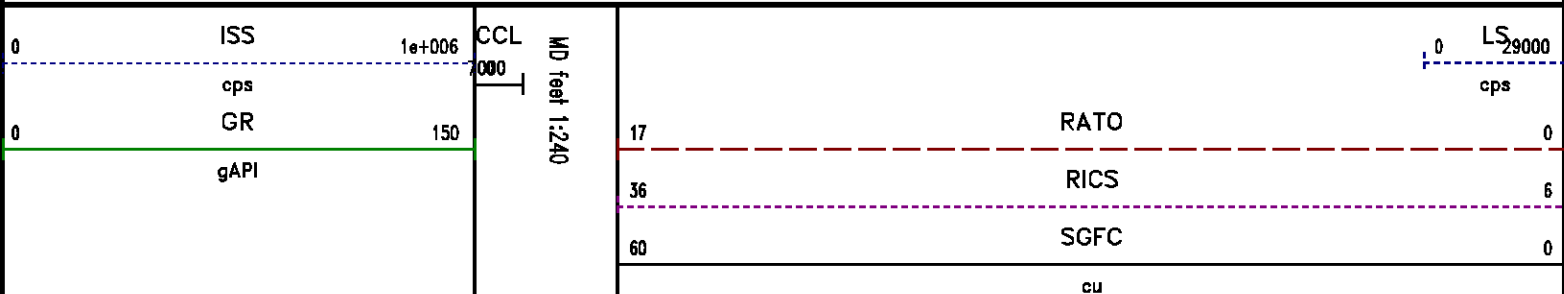
Well : FEDERAL RU 41-5

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Mode : PlotMgr 5.4.504

Interval : 9385.00 - 9685.00 feet UP

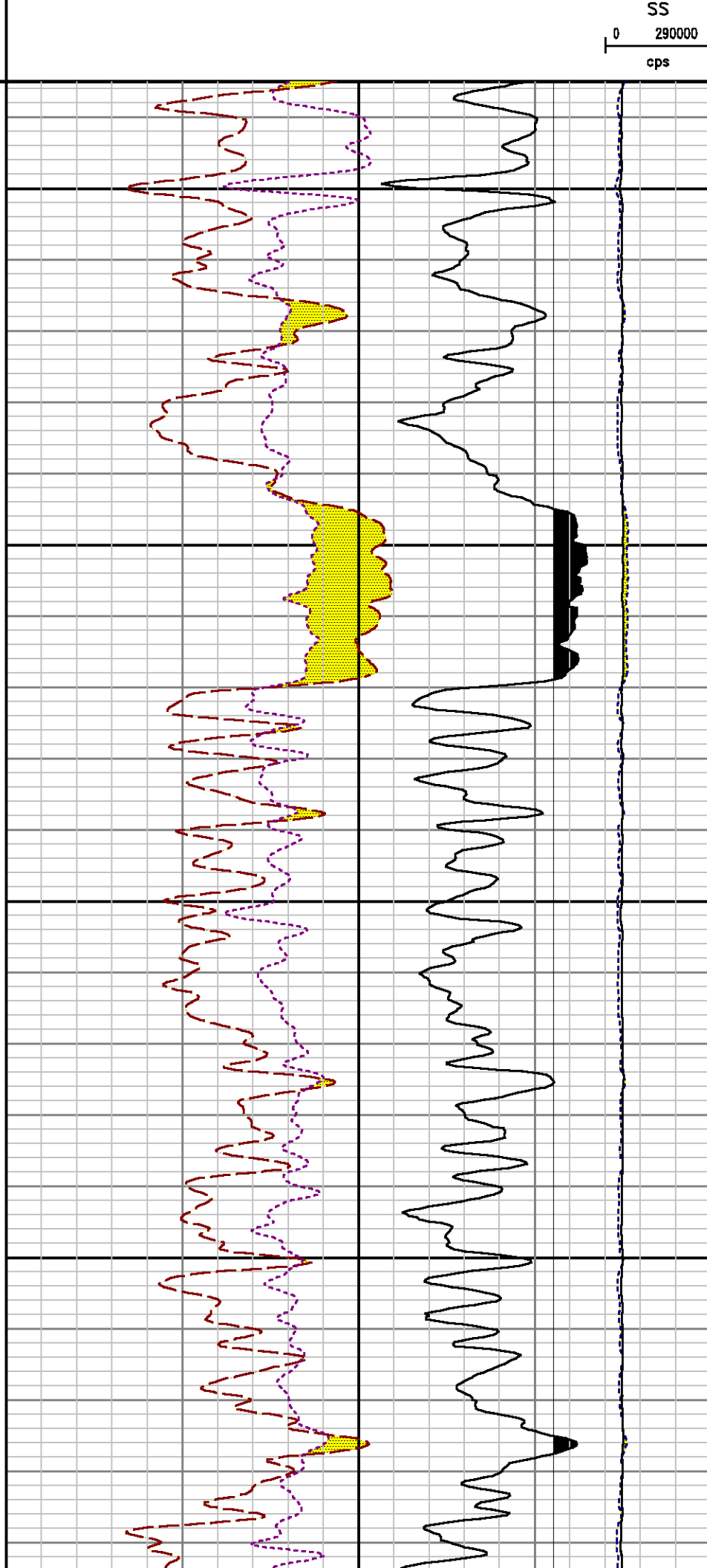
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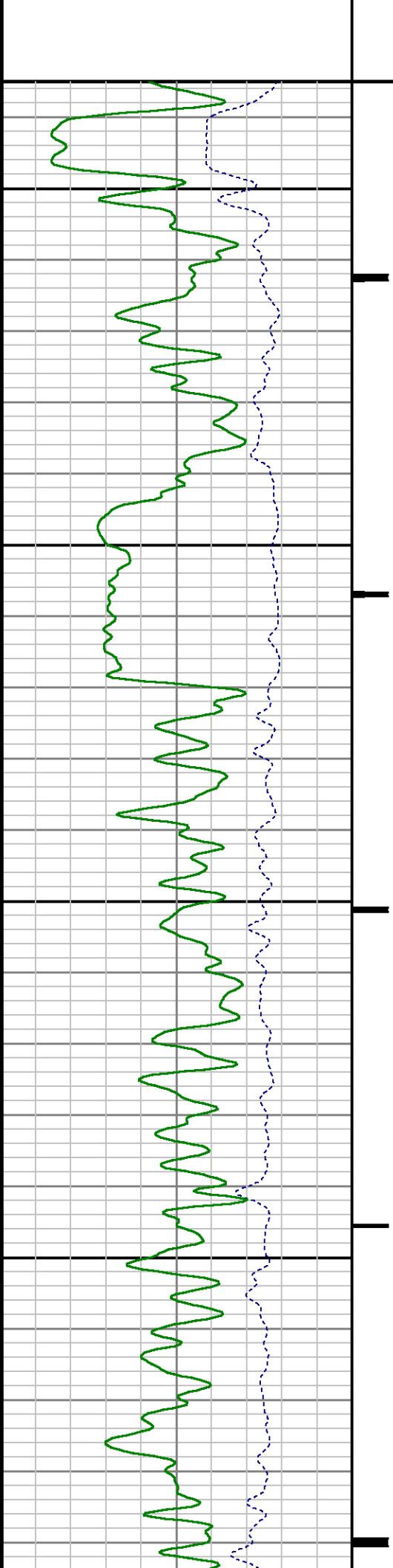
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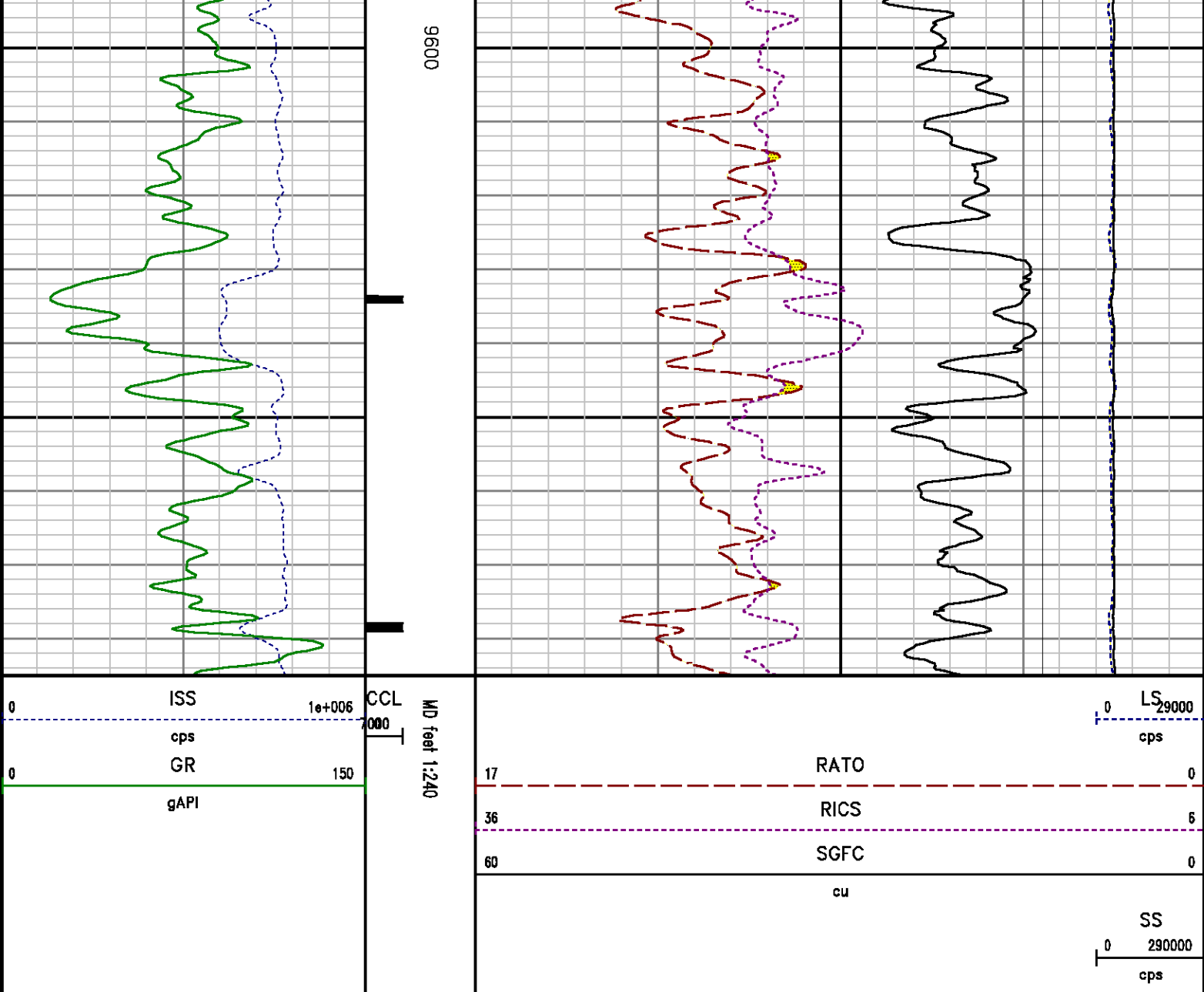
cps



9400

9500





## CALIBRATION SUMMARY

PNC

Calibration File: C:\case\calver\PNC\251FH.cal

PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue Jan 21 14:14:04 2014 TOOL SERIES: 8281XA ASSET: 251 SEQ: EH

Calibrator #

Source #

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	804911	129.00	2313.00	2304.00	2313.00	106.91	7.00	0.9748
Interpolated	1300000	149.98	2308.60	2303.10	2315.23			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	804911	9329.67	1513.09	183.86	25.81	0.14	24.40	0.29
					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	804911	165875.88	25875.52	86169.01	30677.75	7973.89	52147.47	12773.55
Fit Quality %		0.79	0.65	0.62	0.64	0.77	0.56	0.80

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	804911	1.43	4.85	31.11	15.44	10.81	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 %		0.02	0.19	0.11	0.05	0.10	0.10	0.17
Reduced	1392102	1.43	4.87	31.19	15.46	10.81	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

# PNC #2

Calibration File: C:\case\calver\PNC\55501.cal

## PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Fri Feb 14 10:06:45 2014 TOOL SERIES: 8281XA ASSET: 555 SEQ: 01

Calibrator #

GJSHOP GJSHOP

Source #

8281AA 11765054

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	829720	122.00	2327.00	2273.00	2234.00	128.01	7.00	0.9689
Interpolated	1300000	142.76	2304.01	2271.75	2233.84			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	829720	8254.34	1264.54	181.94	25.76	0.14	24.38	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	829720	176096.14	27490.53	92898.02	33075.26	8527.33	56237.73	13651.16
Fit Quality %		0.89	0.87	0.81	0.82	0.79	0.73	0.84

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	829720	1.43	4.71	30.18	14.75	10.90	3.88	4.12
		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 %		0.09	0.22	0.26	0.22	0.03	0.06	0.03
Reduced	1412637	1.43	4.75	30.38	14.89	10.89	3.88	4.12
		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\385TN.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Feb 12 17:24:19 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: TN

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	27.64	256.80	0.916	25.33	235.33	210.00

Verification File: C:\case\calver\GR\385TN.VP

### PRIMARY VERIFICATION

DATE/TIME PERFORMED: Wed Feb 12 17:29:20 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: TN

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	28.29	252.82	0.916	25.92	231.69	205.76

## 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

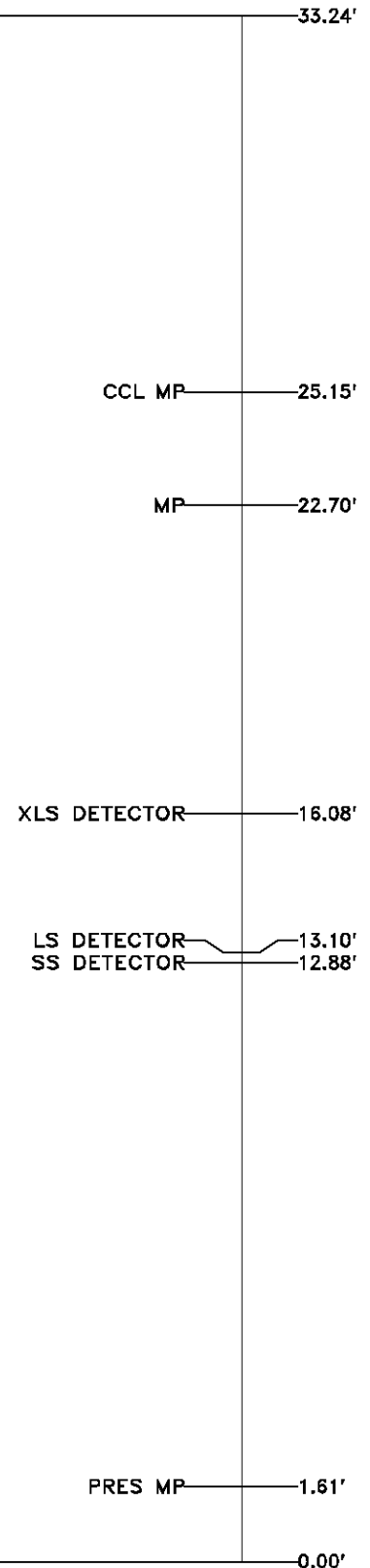
Series 2812LA  
Mnemonic SNDX  
Diameter 1.69"

## 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

Total Weight: Not Available  
Max Diameter: 0' 1.70"



Company

WPX ENERGY

Well

FEDERAL RU 41-5

Field

RULISON

County

GARFIELD

State

CO

File No:

CH082084

API No:

05045217820000

Location

SHL: 211' FNL & 2611' FWL

BHL: 333' FNL & 703' FEL

Elevations

KB 7628 ft

DF

GL 7602 ft

5 7S 93W

RU 23-5 PAD

NABORS 576

SEC 5

TWP 7S

RGE 93W

CASE

Baker Atlas