



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: CH082079 Company WPX ENERGY

Well BOSELY SG 311-27

API No: GRAND VALLEY

County GARFIELD State CO

05045221300000

## Location

SHL: 598' FNL & 1974' FWL

BHL: 435' FNL & 134' FWL

SEC 2 TWP 7S RGE 96W

## Other Services

BOND LOG

27 7S 96W  
SG 21-27 PAD  
AZTEC 1000

Permanent Datum 6L Elevation 5258 ft

Log Measured From KB 25 ft Above P. D.

Drill Measured From KB Elevations KB 5253 ft DF GL 5258 ft

Date 02/FEB/14

Run ONE

Service Order US625100

Depth Driller 5789 ft

Depth Logger 5752 ft

Bottom Logged Interval 5742 ft

Top Logged Interval 1645 ft

Time Started 7:00

Time Finished 13:00

Operator Rig Time 6 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 184 degF

Reference Log BAKER HUGHES BOND LOG

Reference Log Date 01/FEB/14

Equipment No. 4271 Location GRAND JCT.

Recorded By NEWELL

Witnessed By DUSTIN WELSH

- 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	1645 ft
8.75 in	1645 ft	5807 ft

## Casing Record

Size	Weight	Grade	From	To
9.625 in			0 ft	1645 ft
4.5 in	11.6 lbm/ft	1-80	0 ft	5807 ft

## Remarks

All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 2/01/2014 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 7 feet.

Logged In PNC-3D mode.

BHT = 184 °F

SJ = 3483'-3507'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	PCM	8250EA	10314363	FREE
1	1	TEL/CCL	8248ED	Z120493	FREE
1	1	GR	2812LA	10274385	FREE
1	1	RPM	8281EA	10273848	FREE
1	1	RPM	8283PA	10160383	FREE
1	1	RPM	8281FA	10401926	FREE
0	0				

*MAIN SECTION*  
*PNC 3-D MODE*

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		1609.750	5758.906
PNC Porosity	Borehole Size	8.750	inch	1609.750	5758.906
PNC Porosity	Casing Size	4.500	inch	1609.750	5758.906
PNC Porosity	Gas Filled	Non Gas Filled		1609.750	5758.906
PNC Porosity	Matrix	Sandstone		1609.750	5758.906
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	1609.750	5758.906

DEPTH OFFSETS  
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-26.519	FLTM
8248ED	-24.519	CCL CHV
8250EA	-24.519	PC

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					
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	RTW023	SDA2
		SDL2	SGA2	SGB2	SGF2	SGK2	SGL2
		STA2	ASPEC2	ILSC	ILSN	WDTH2	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	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	RATOR	RAT013R
		RBORR	RICSR	RINR	RIN13R	RONER	RPORR
		RTWDR					
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

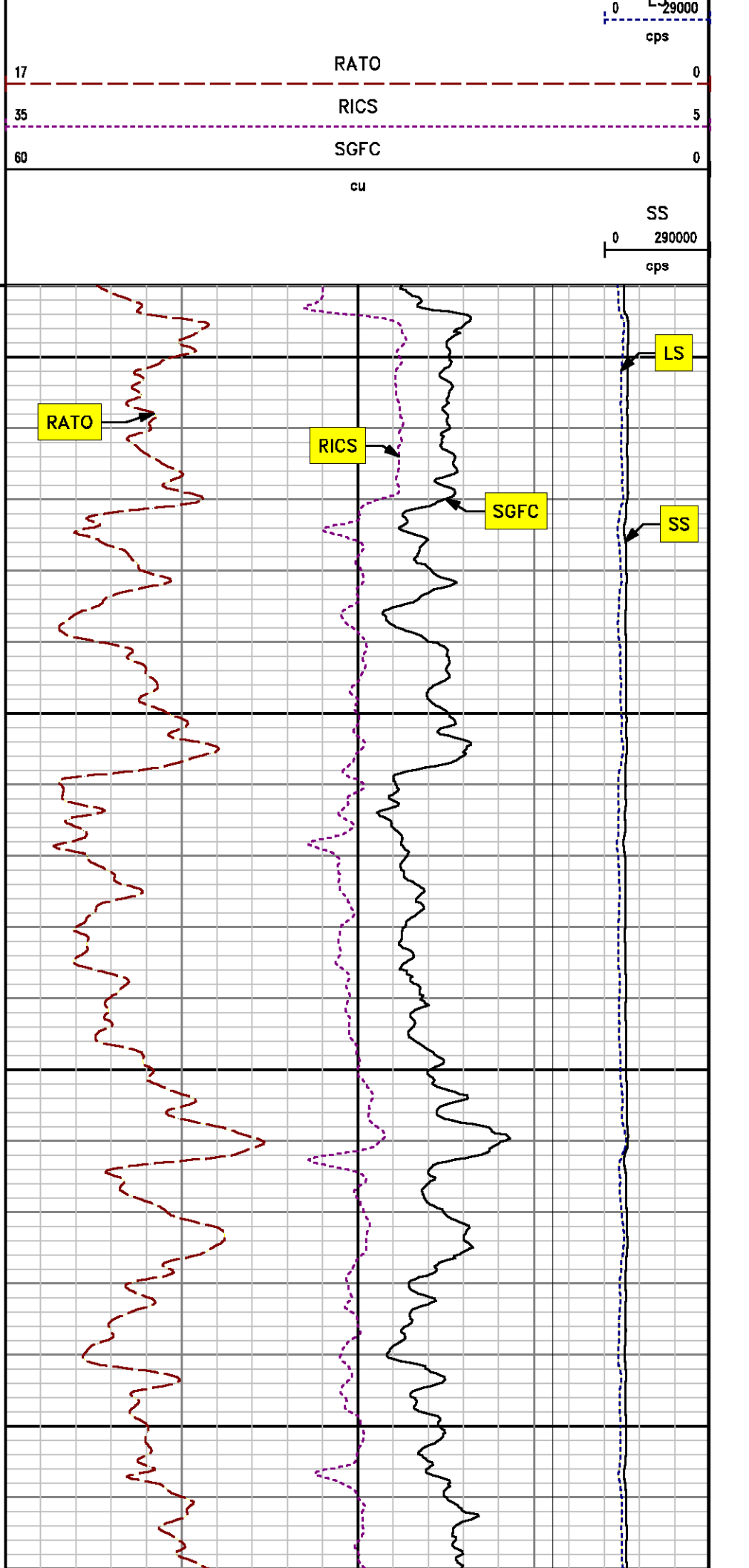
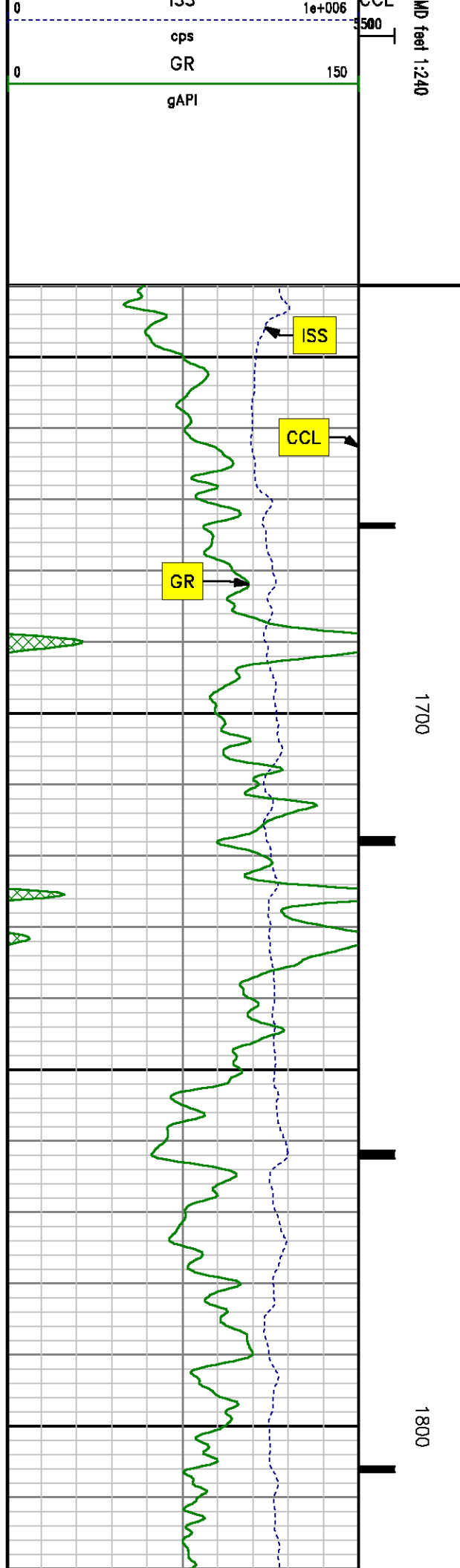
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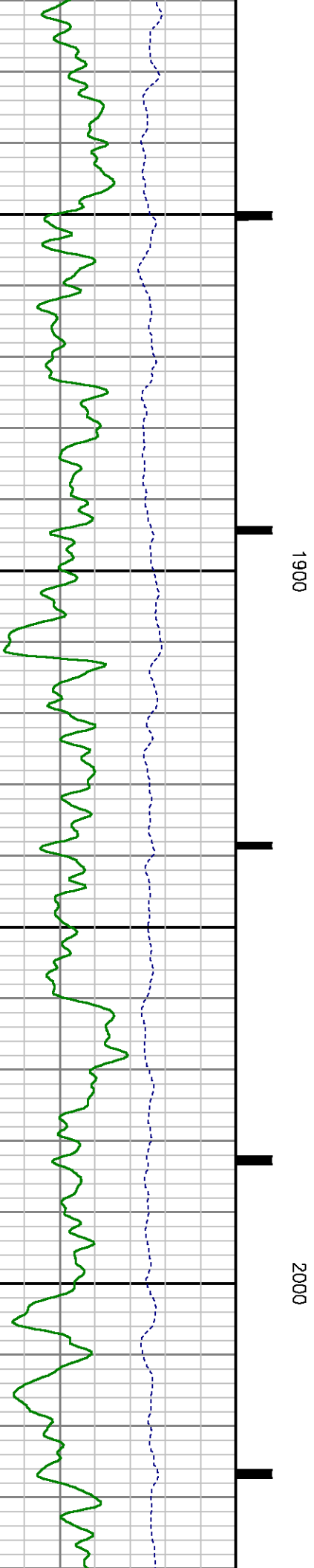
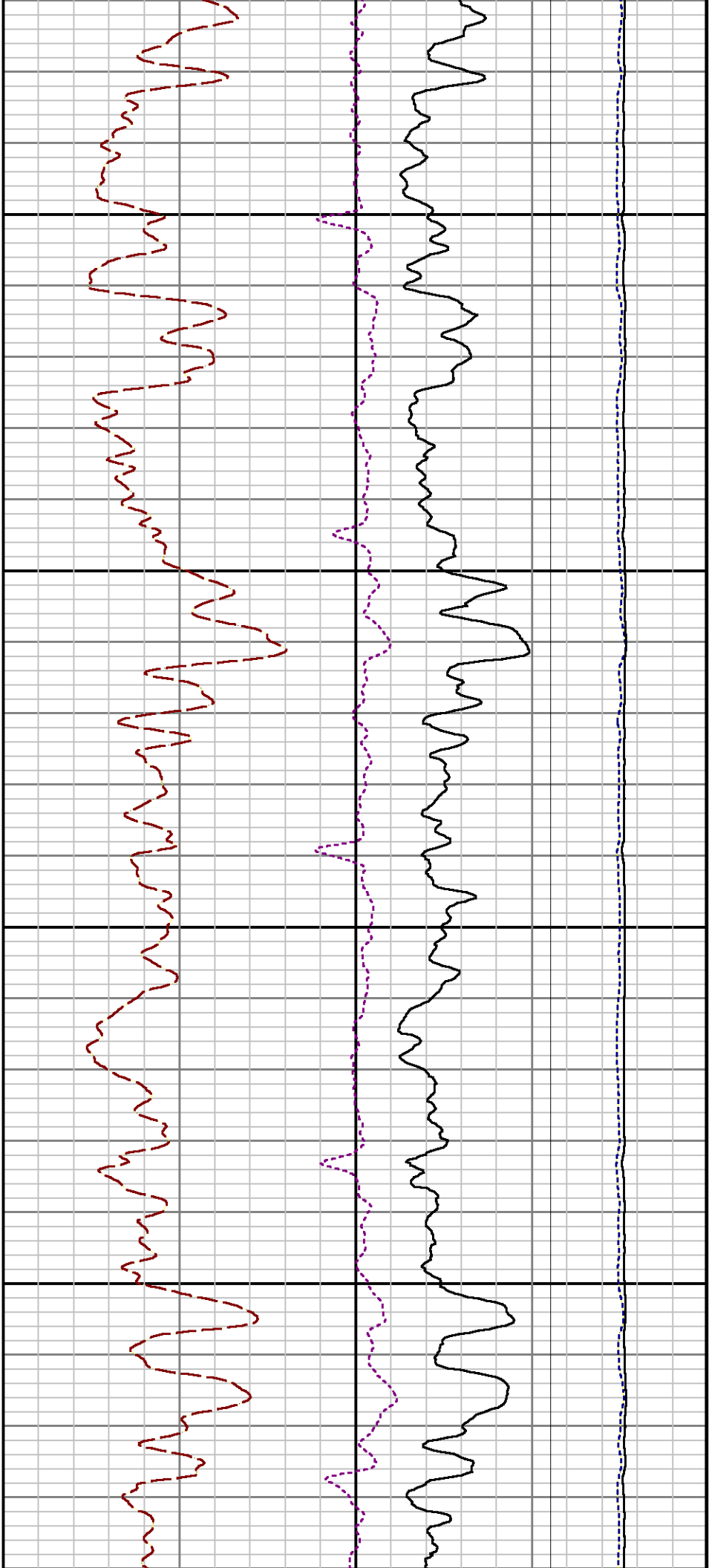
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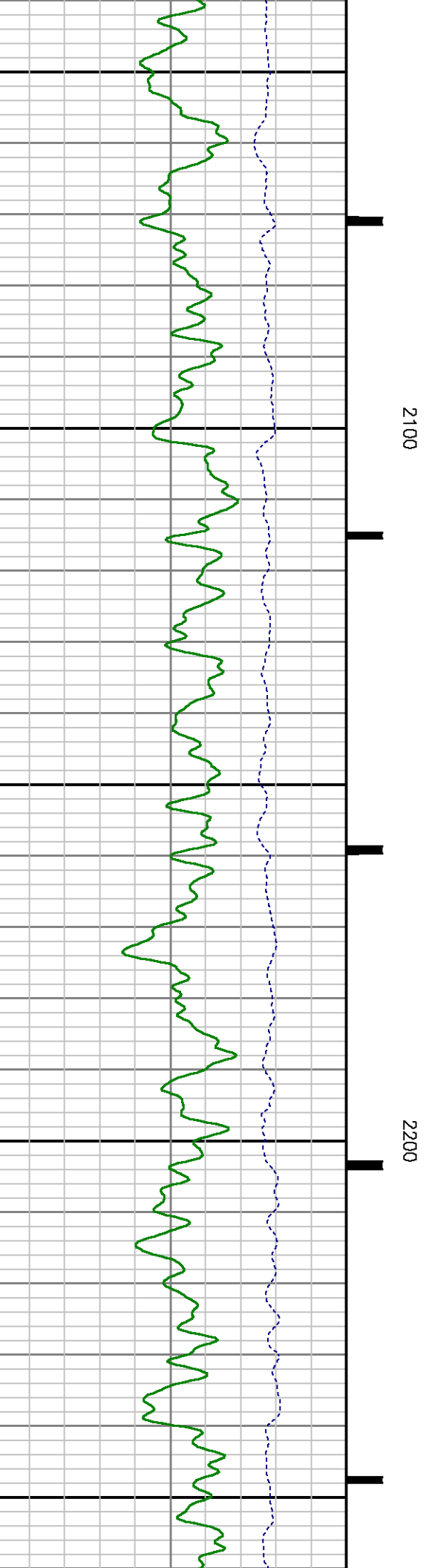
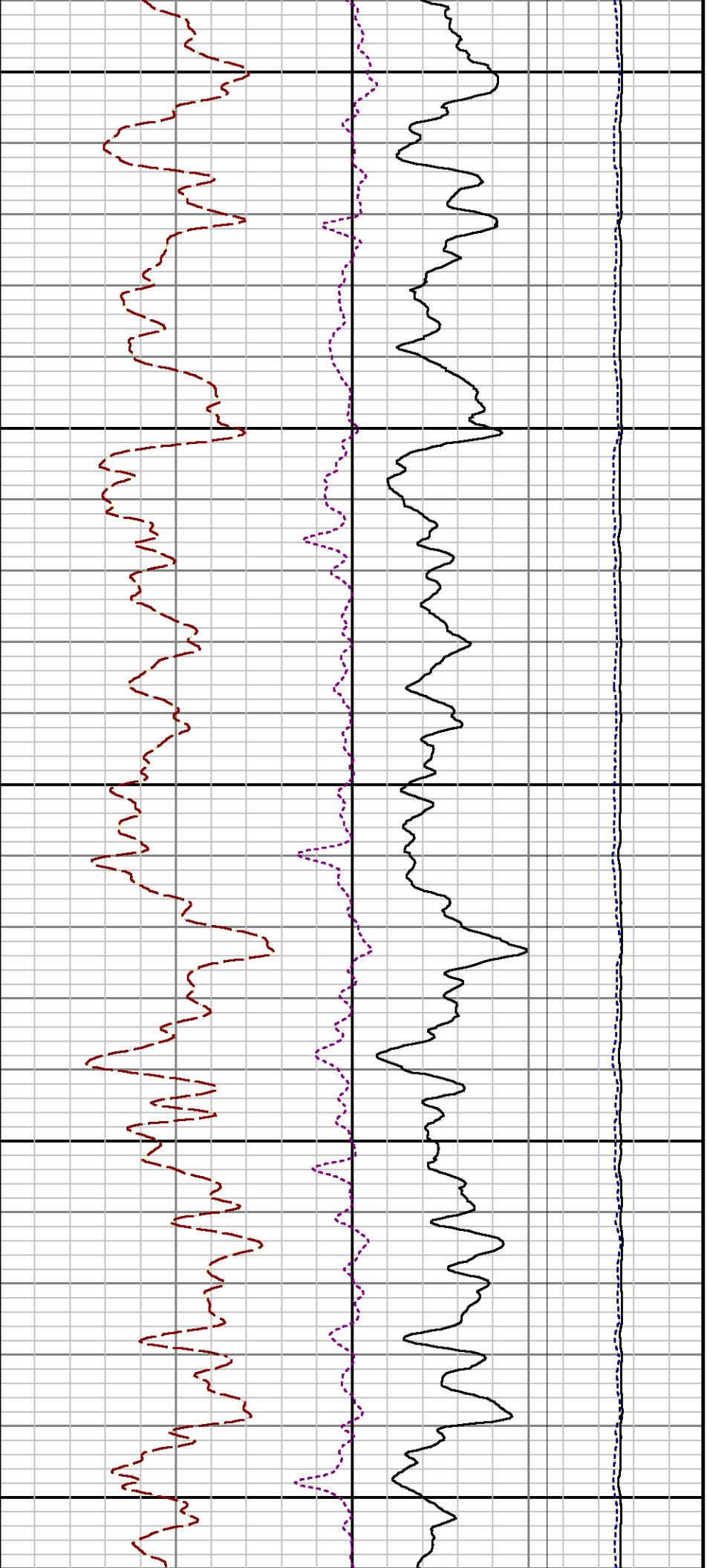
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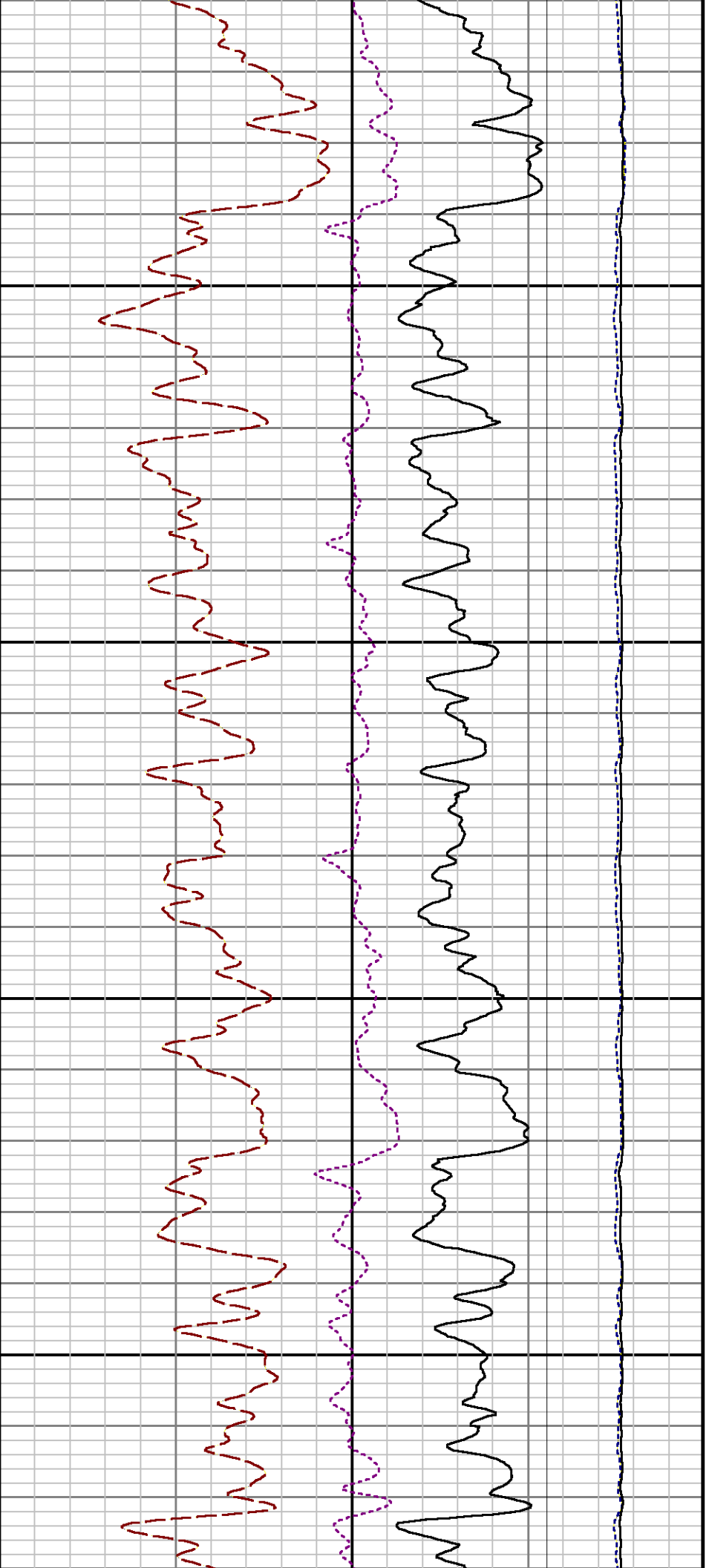
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Created : 2/2/2014 1:53:29 PM



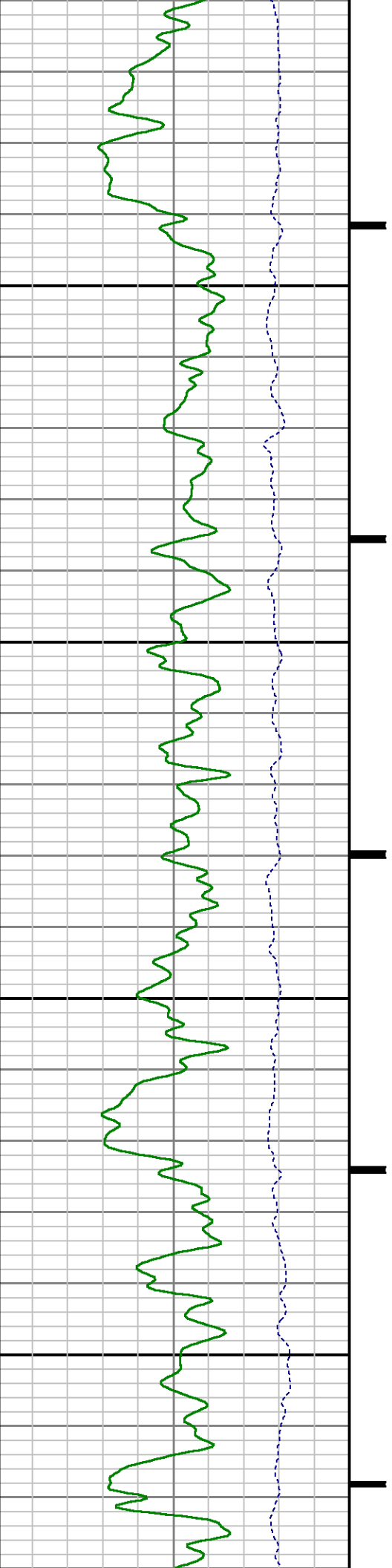


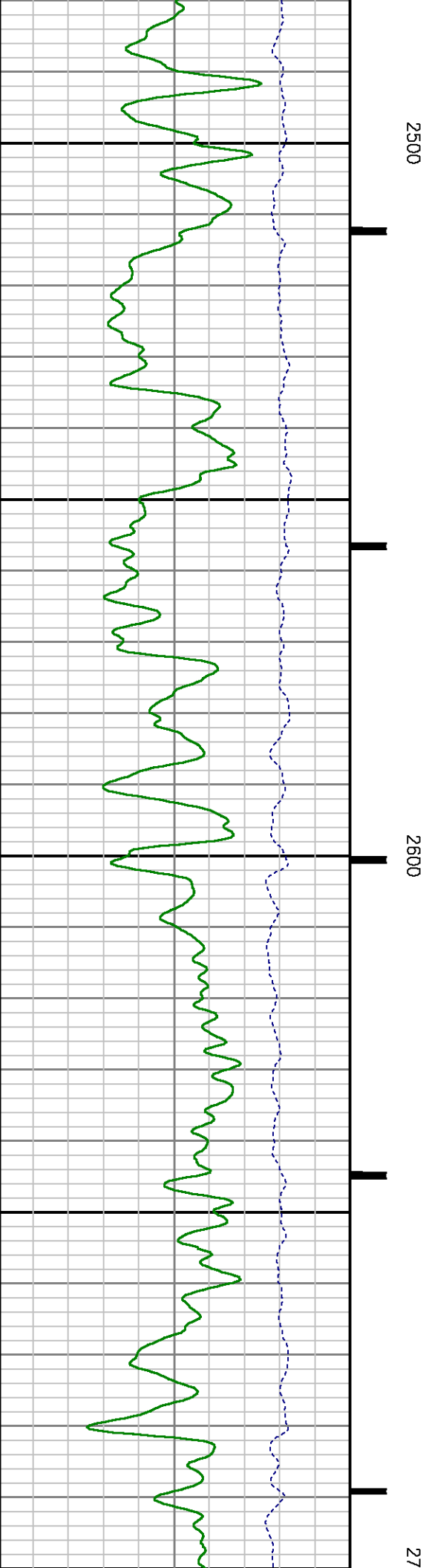
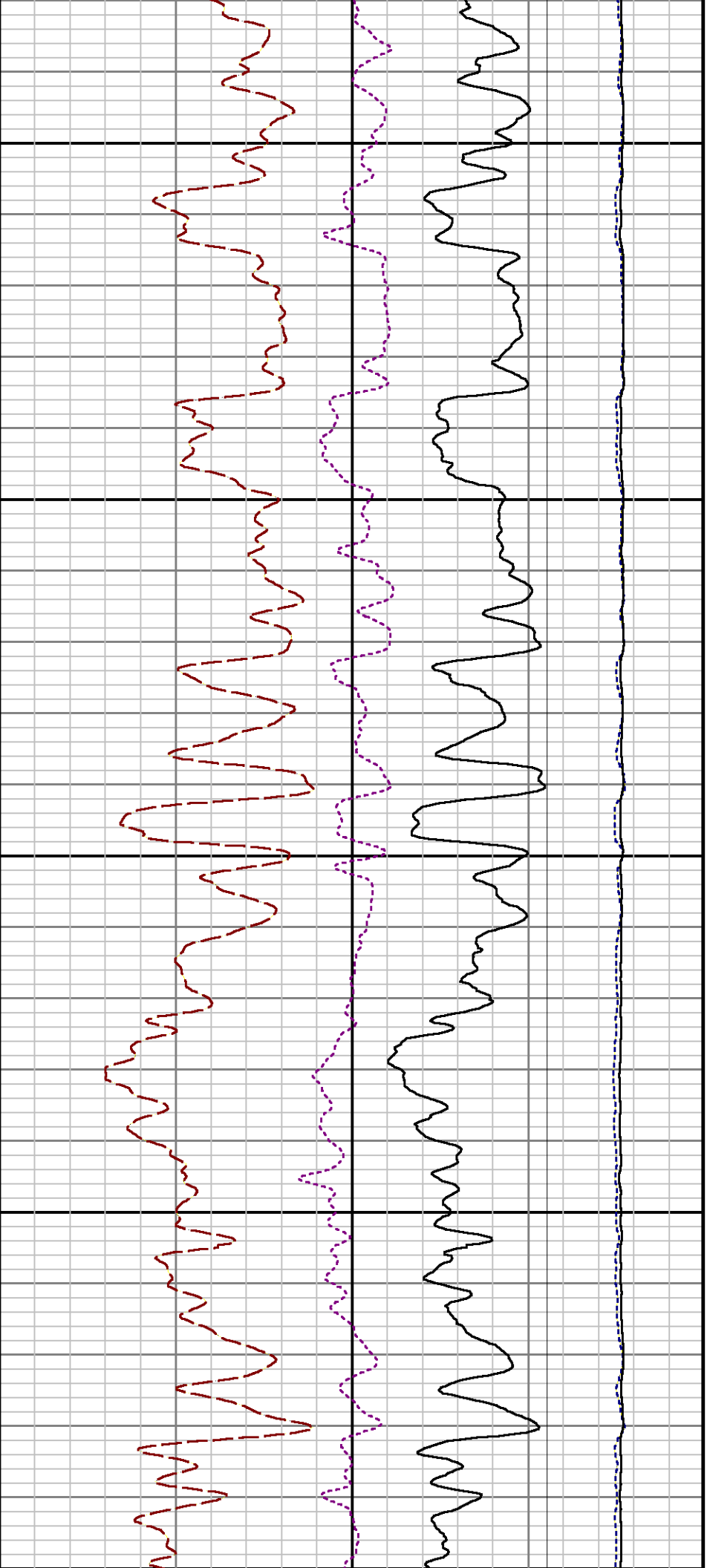




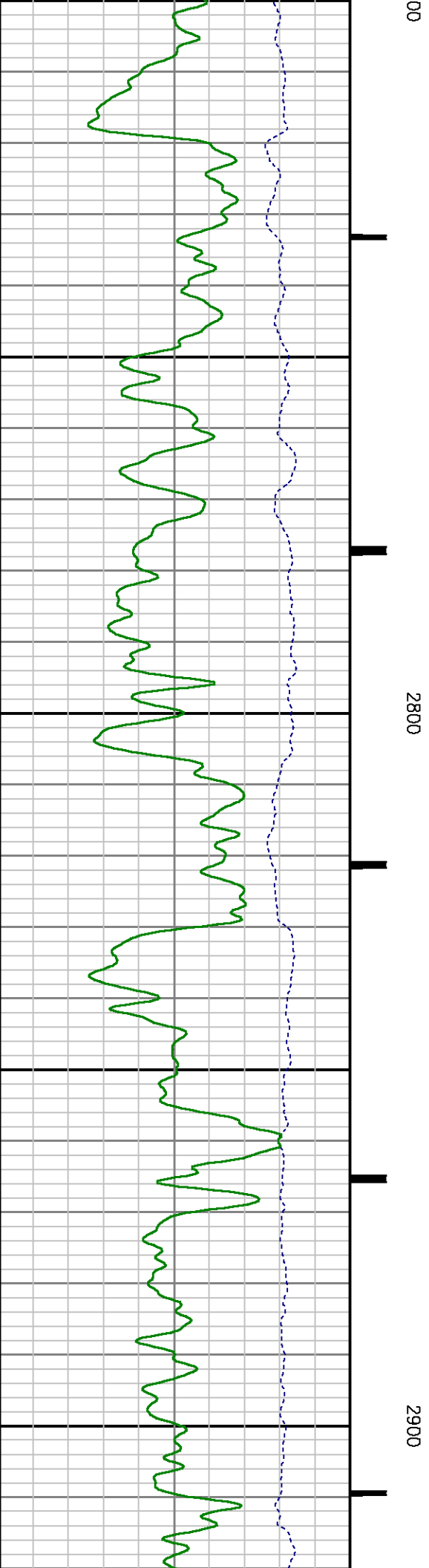
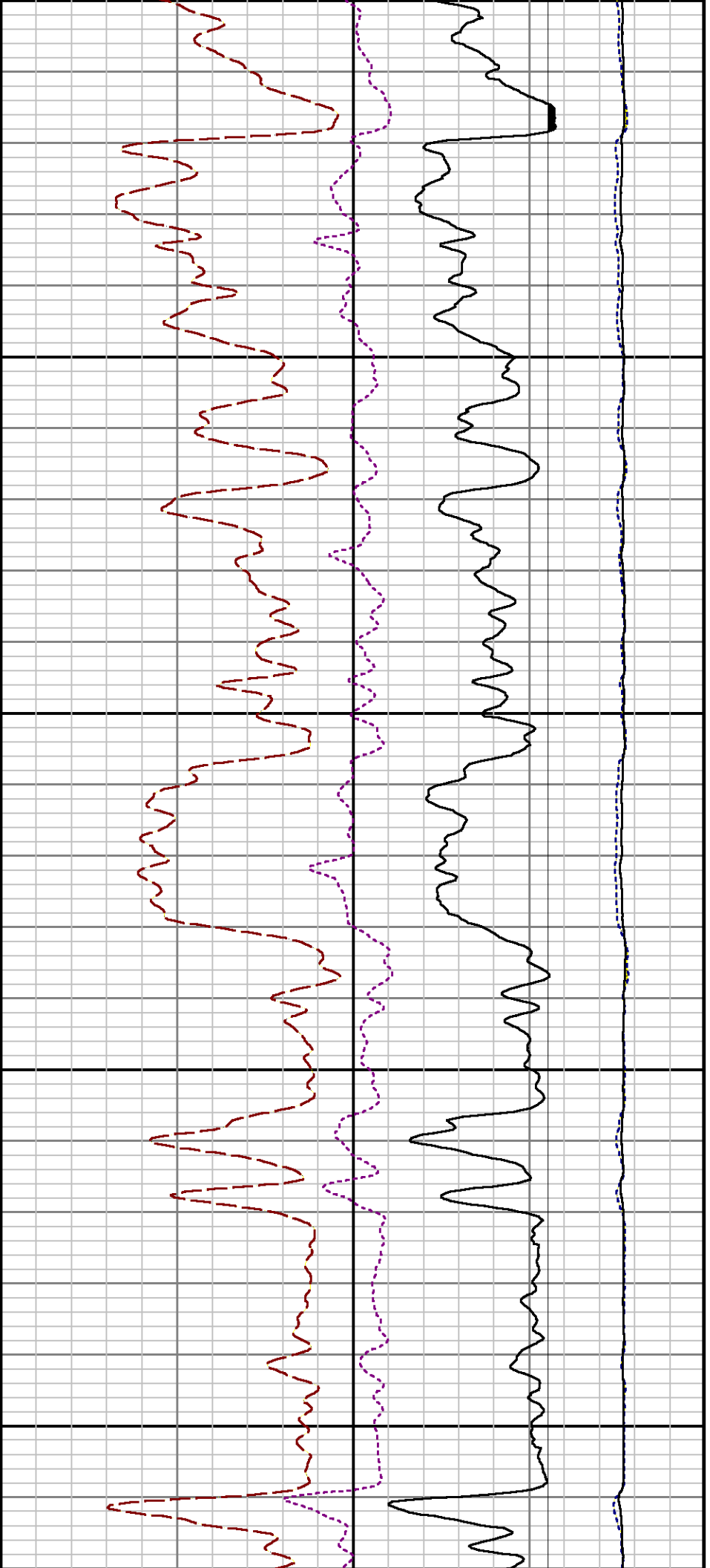
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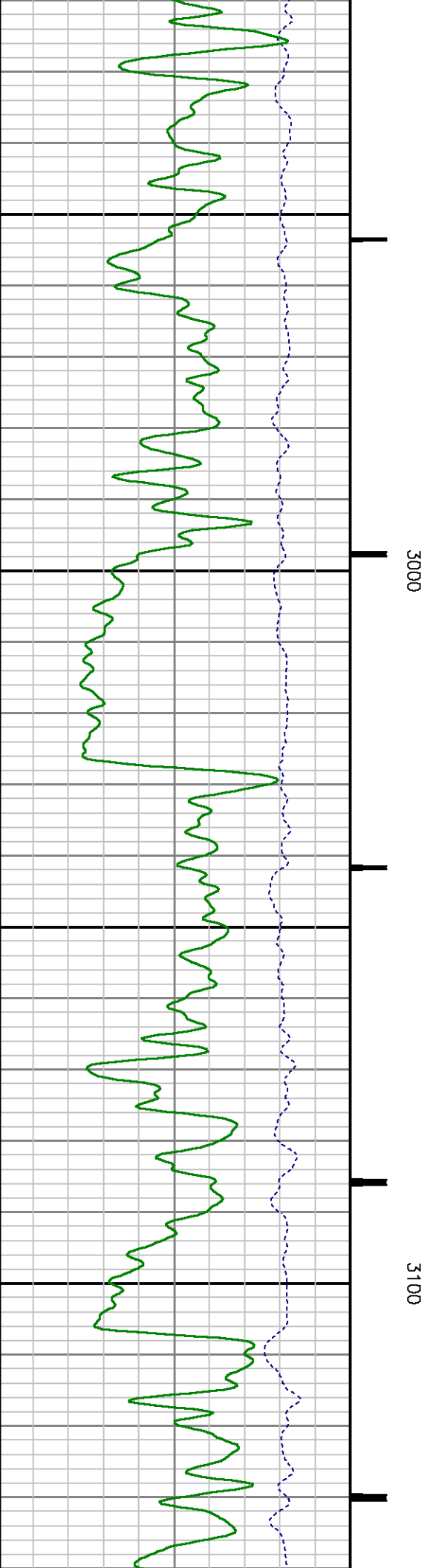
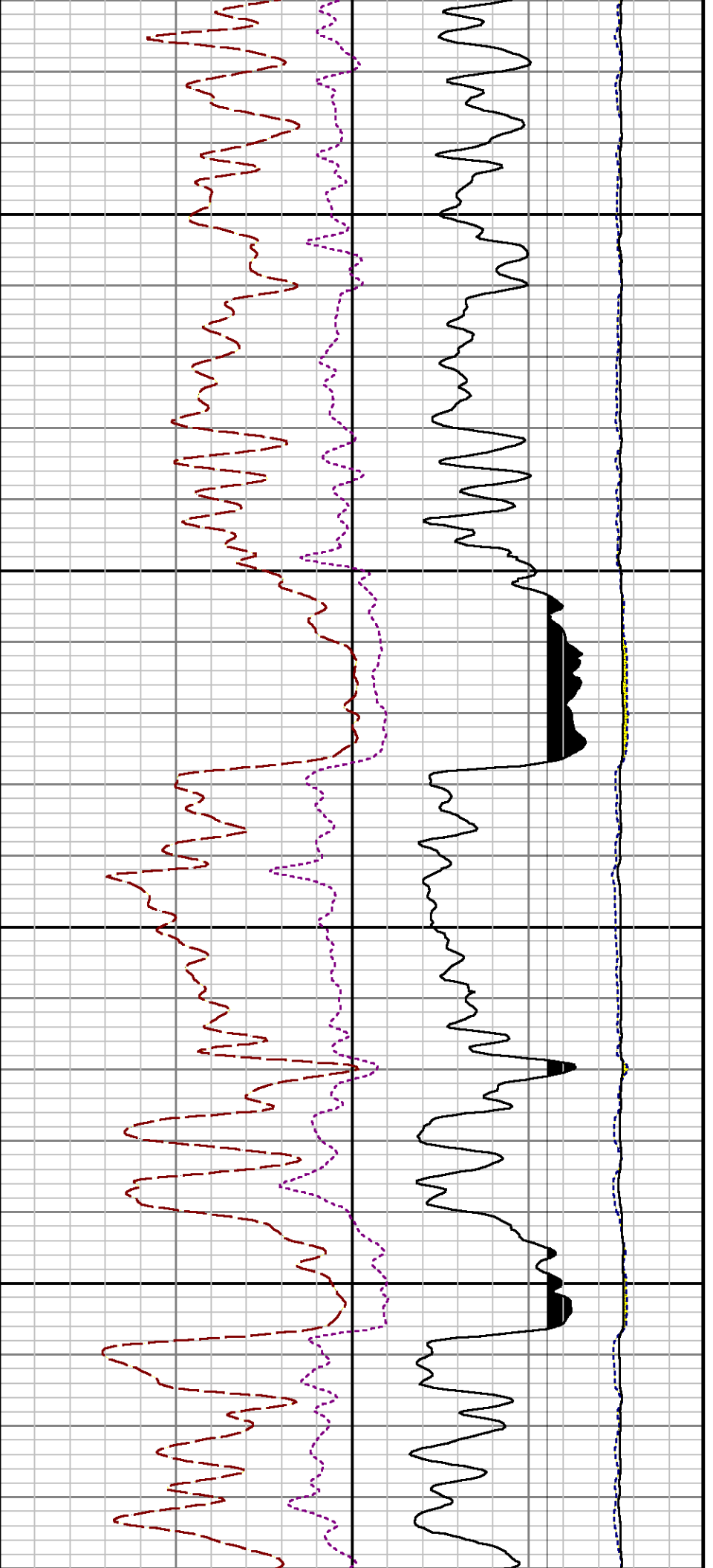
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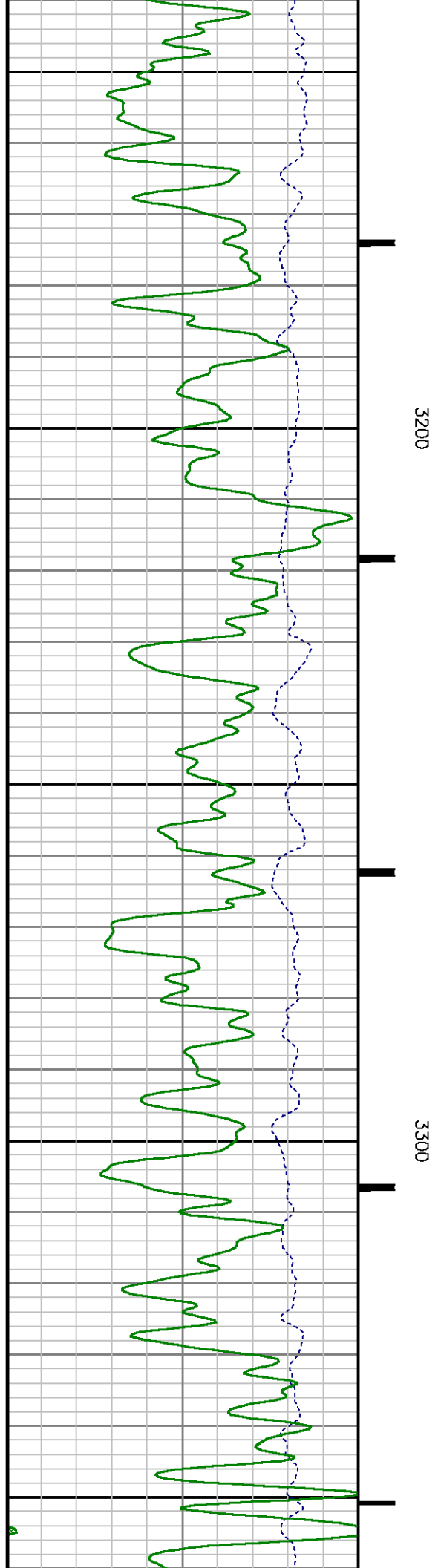
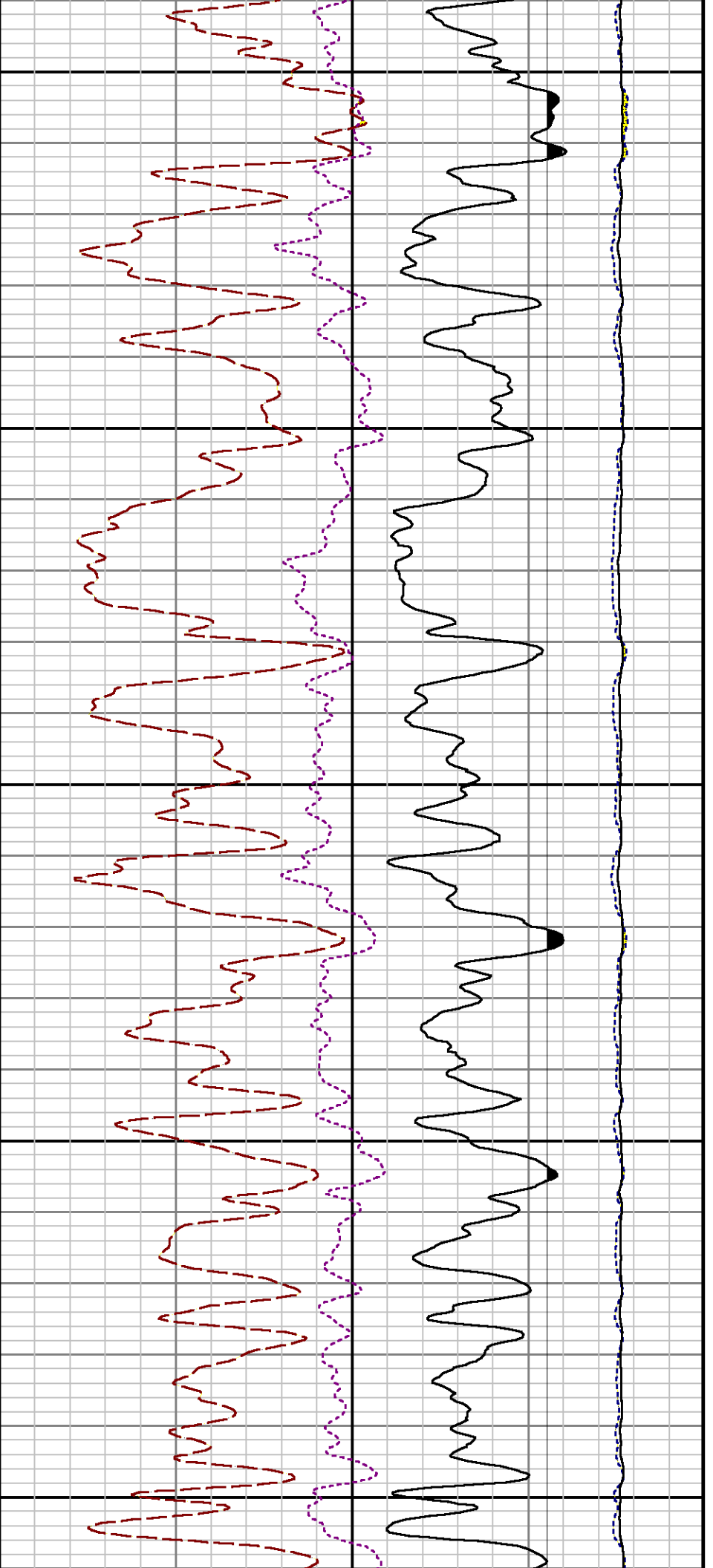


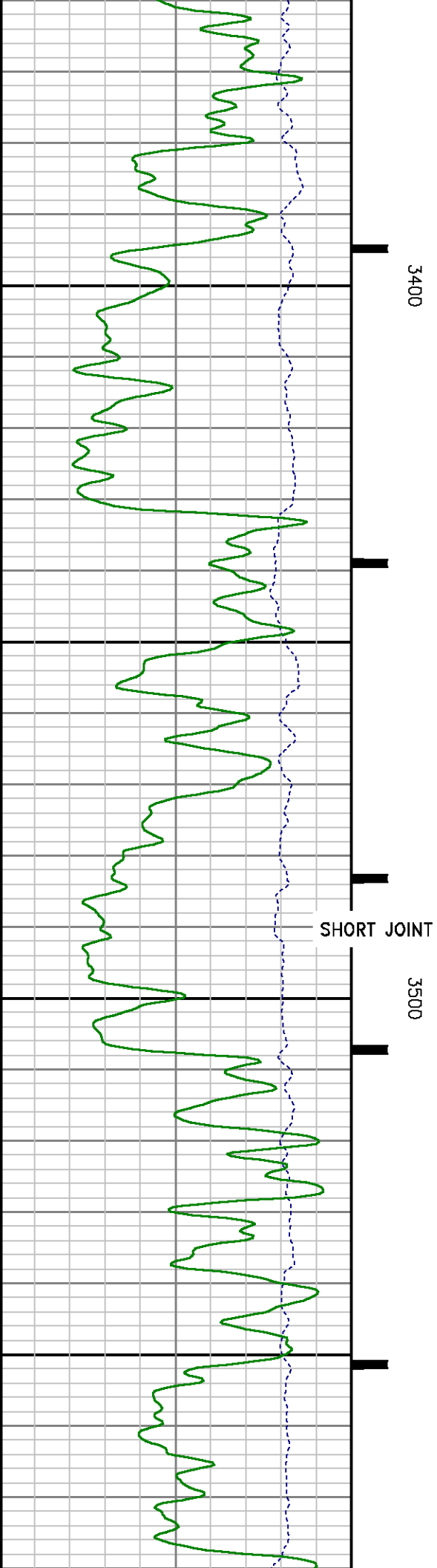
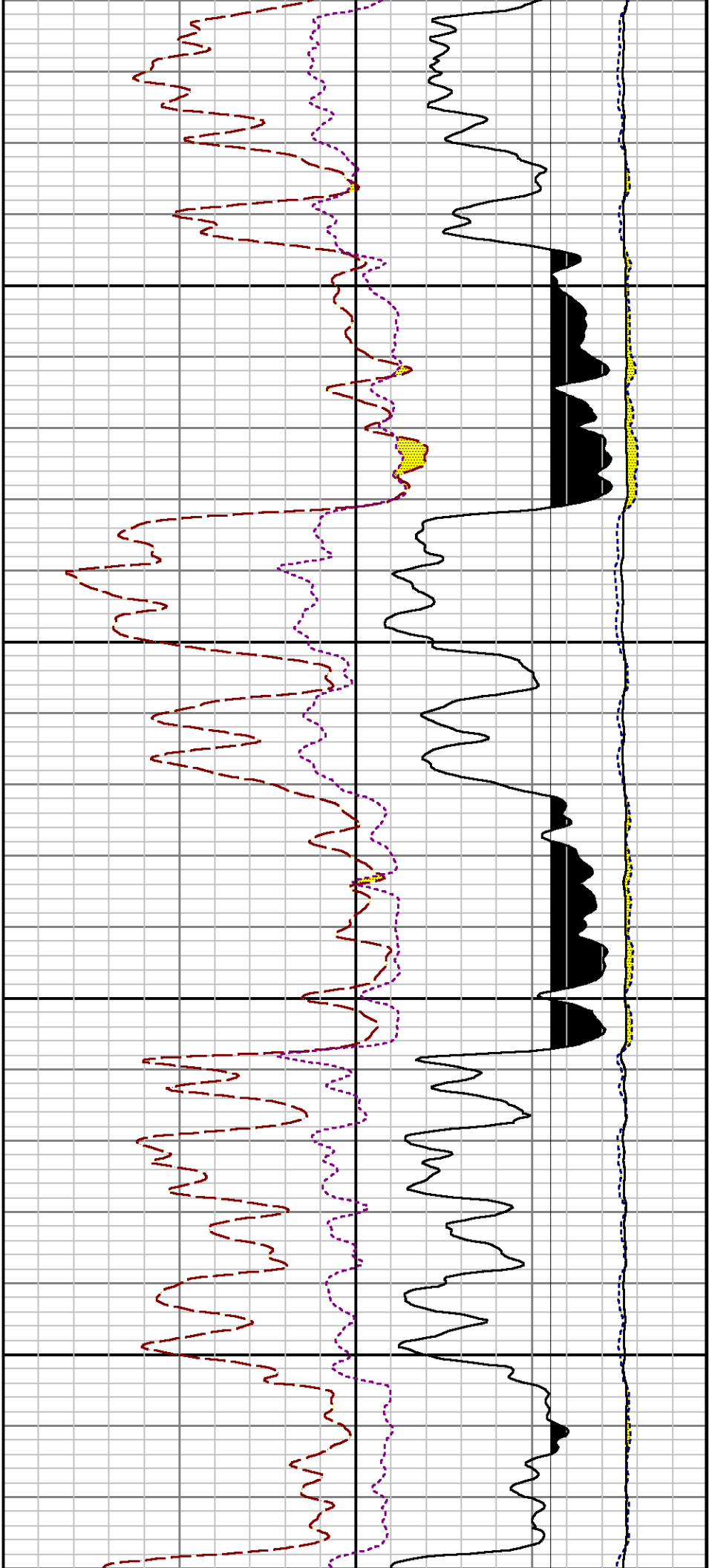


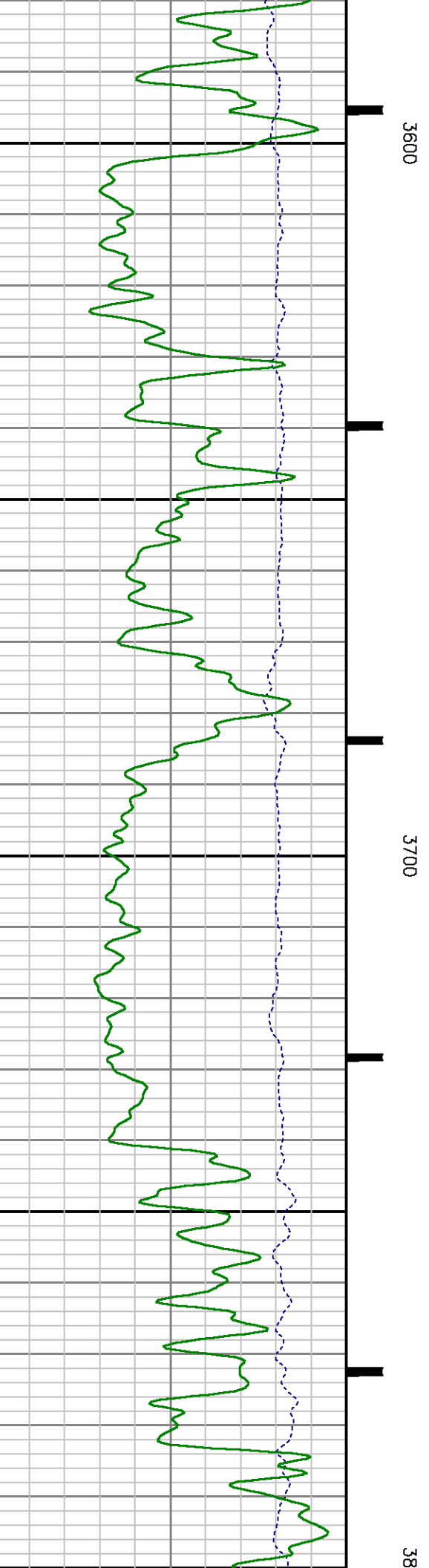
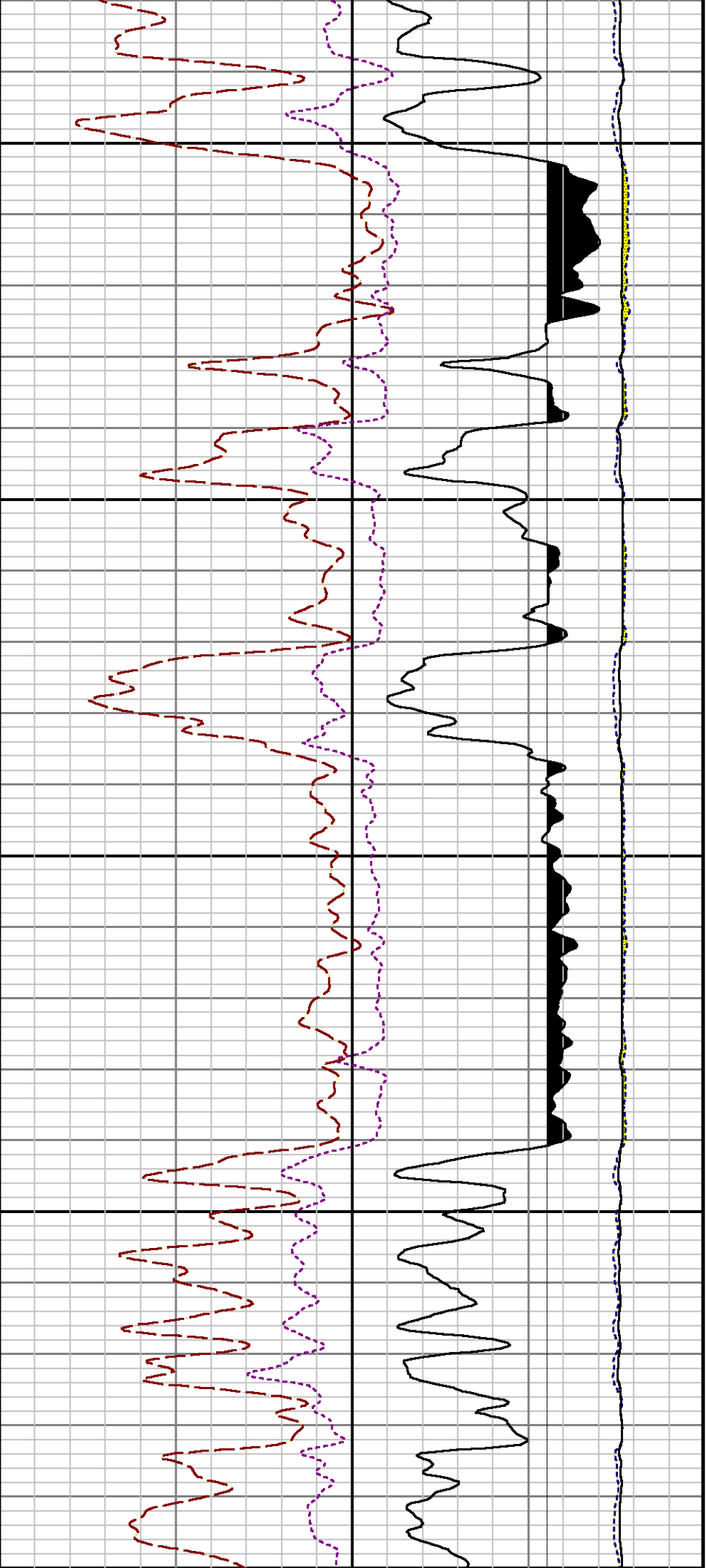


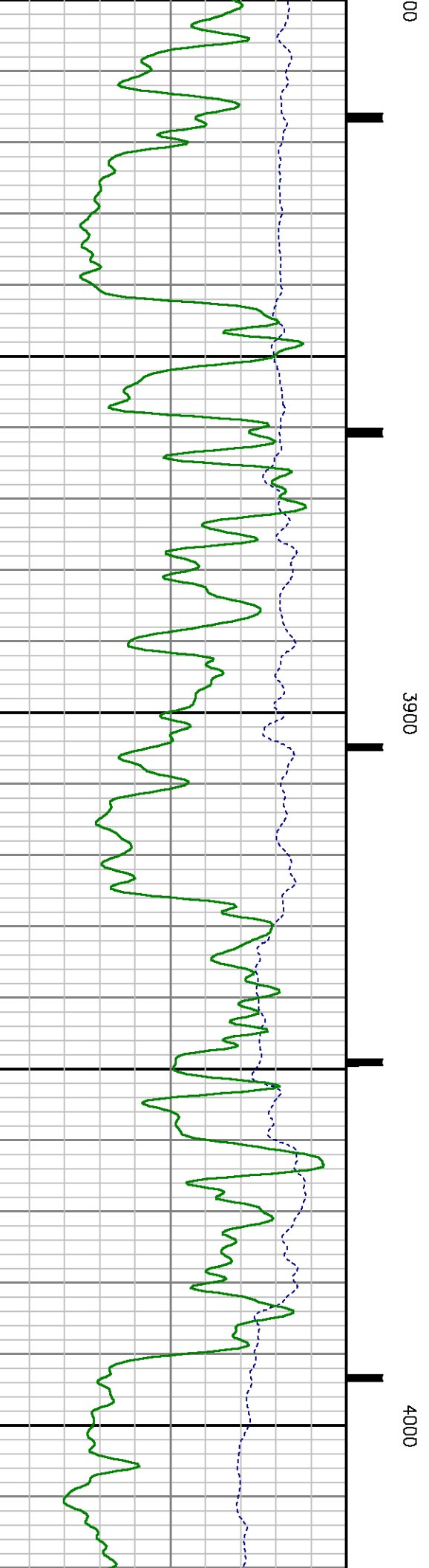
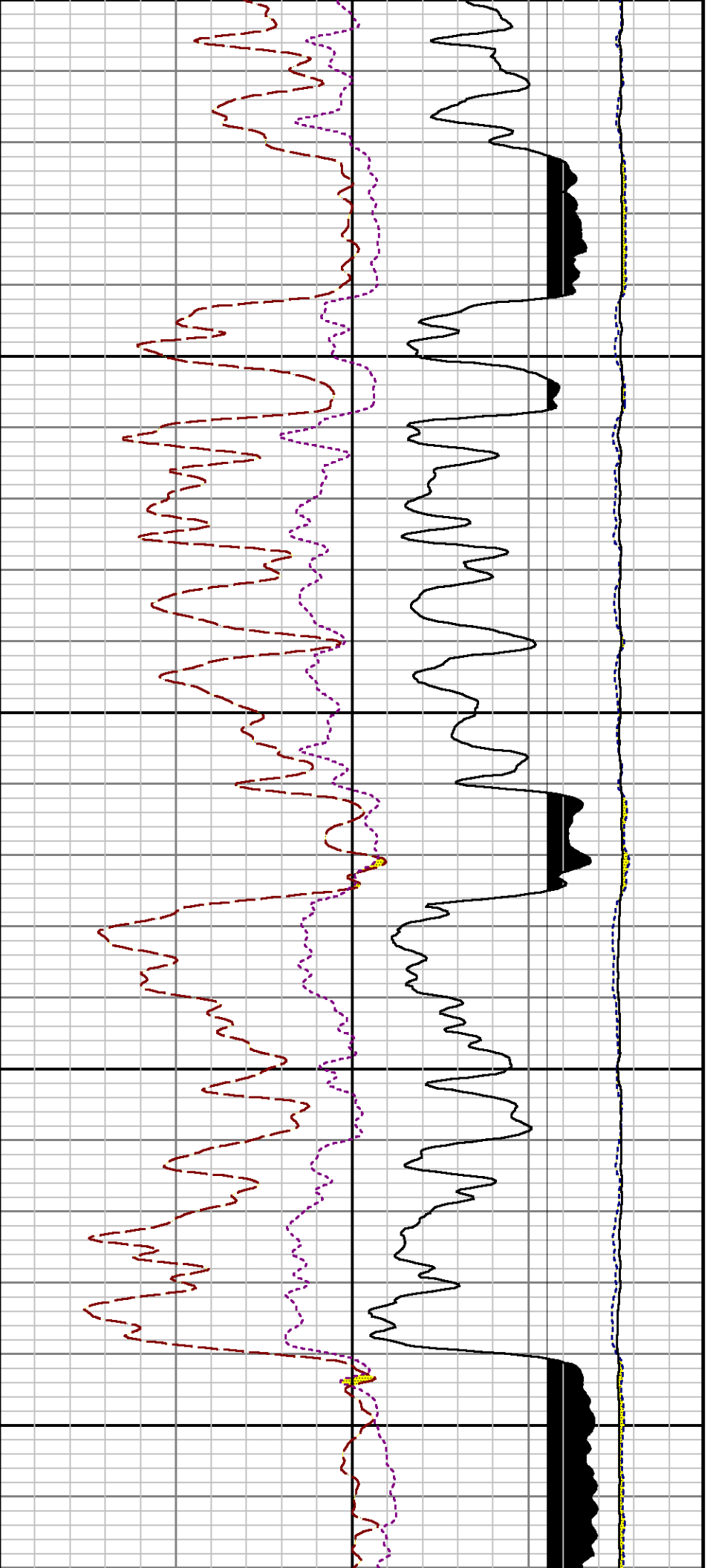


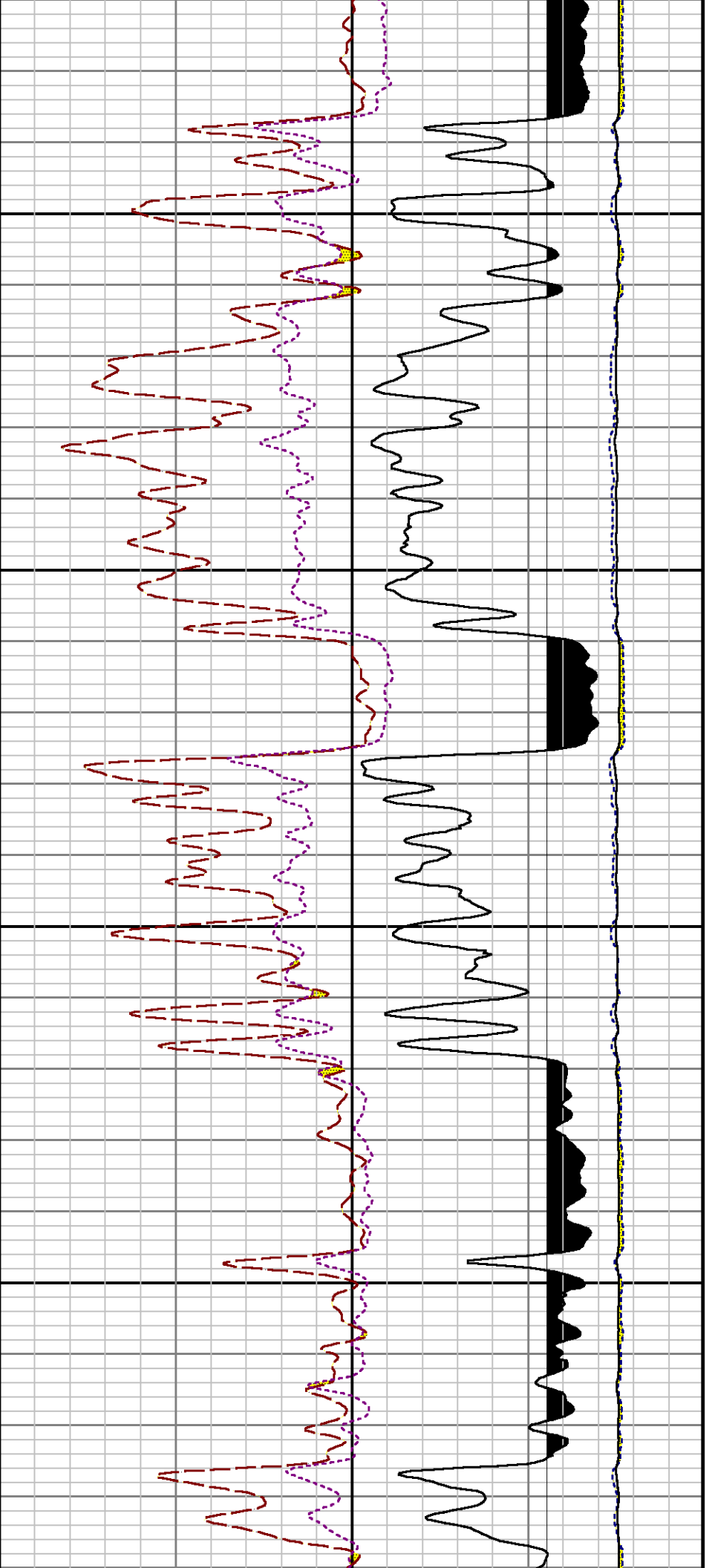






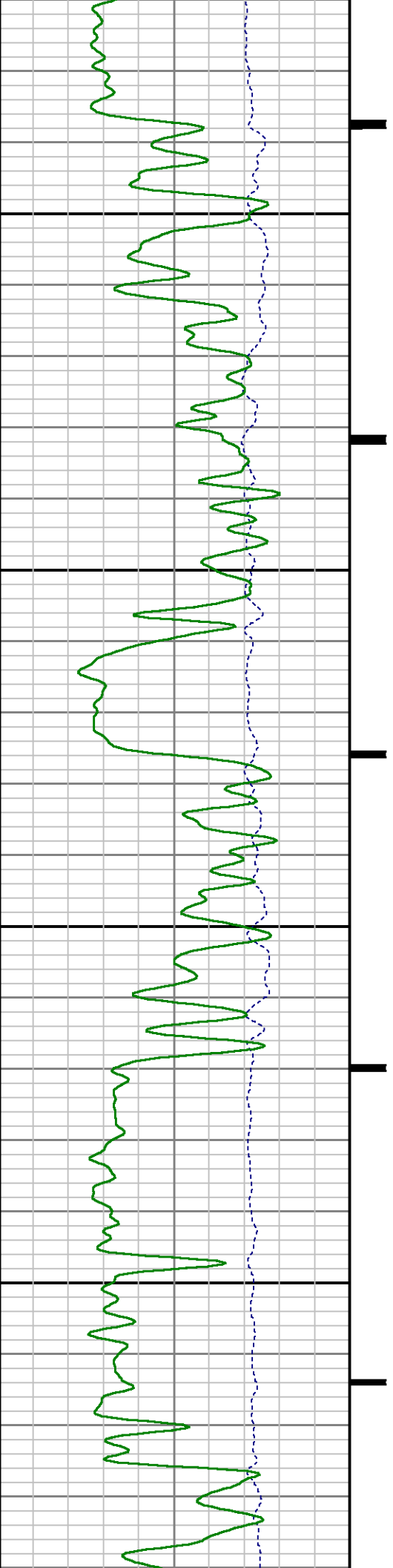


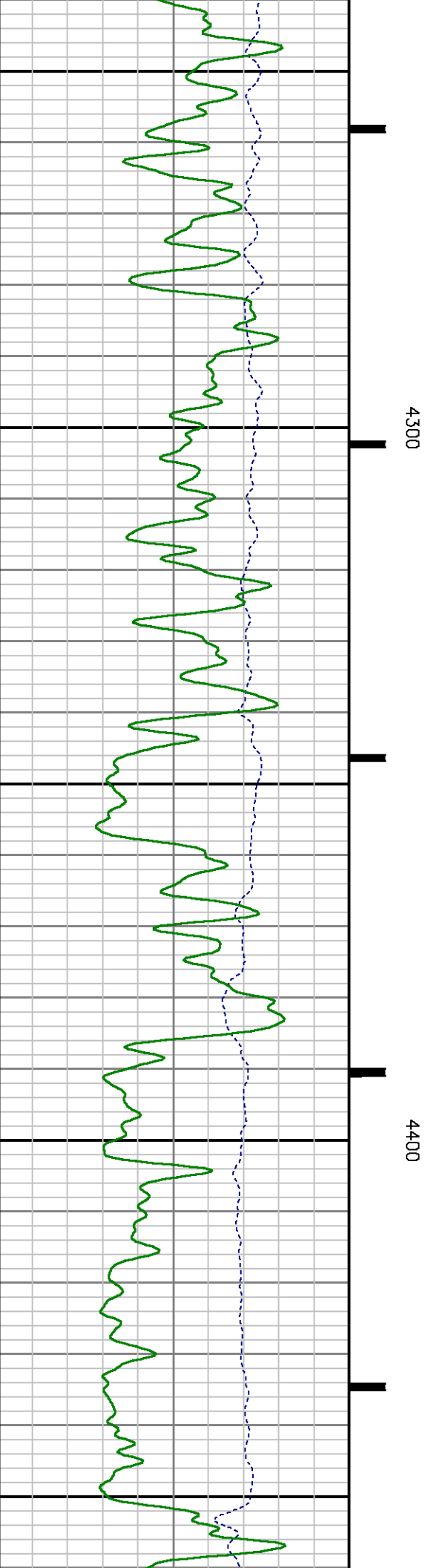
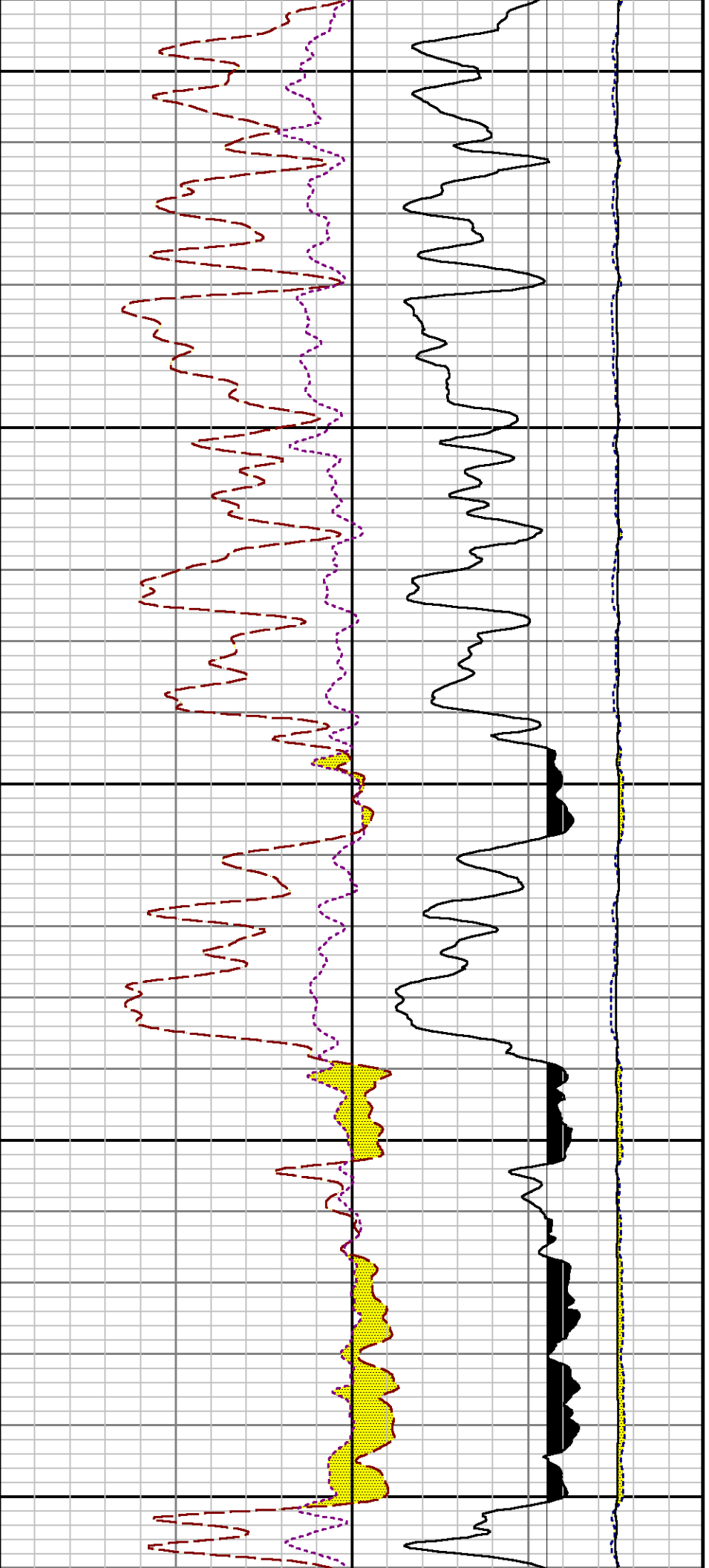




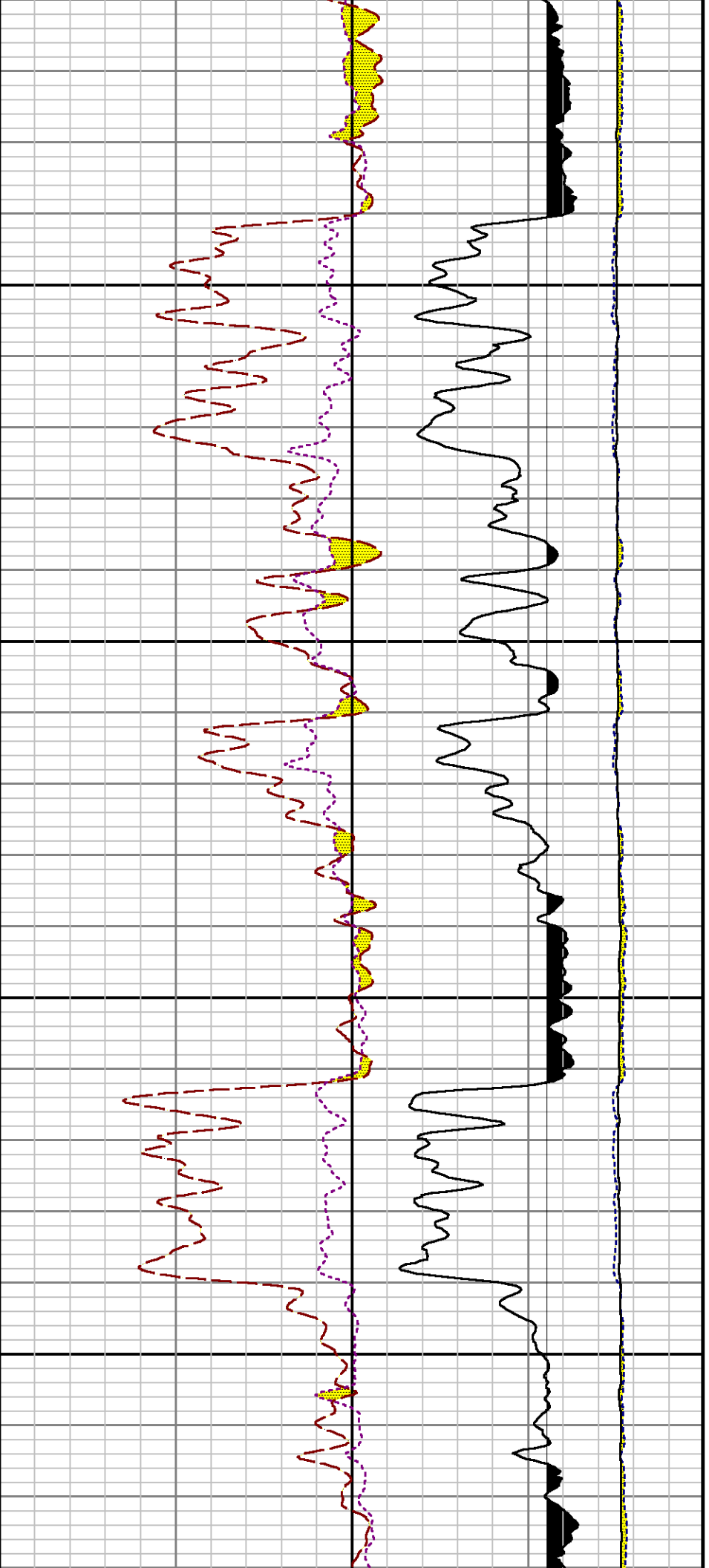
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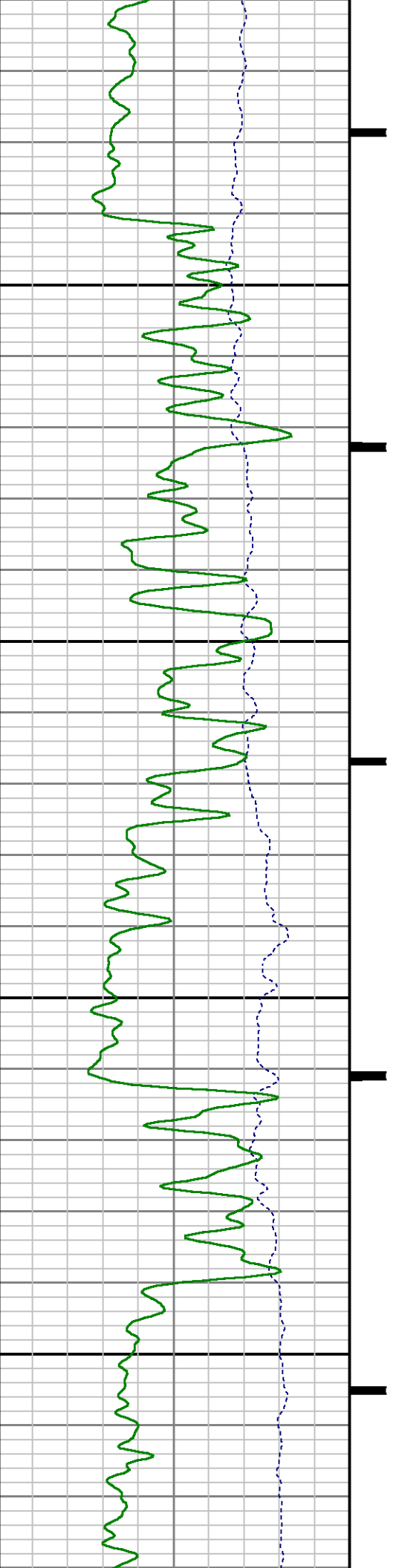


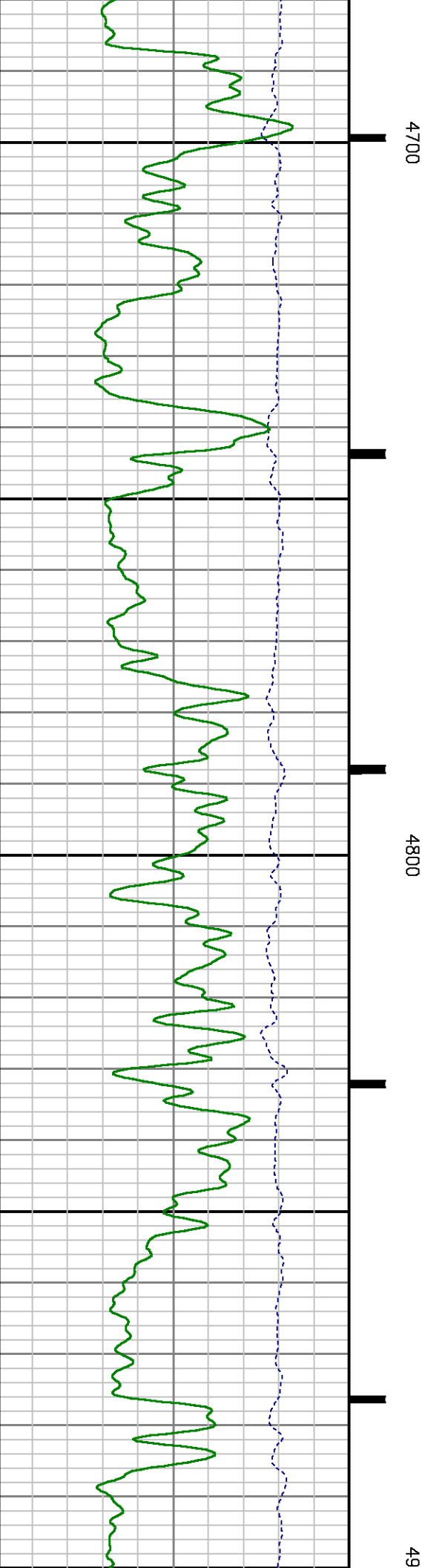
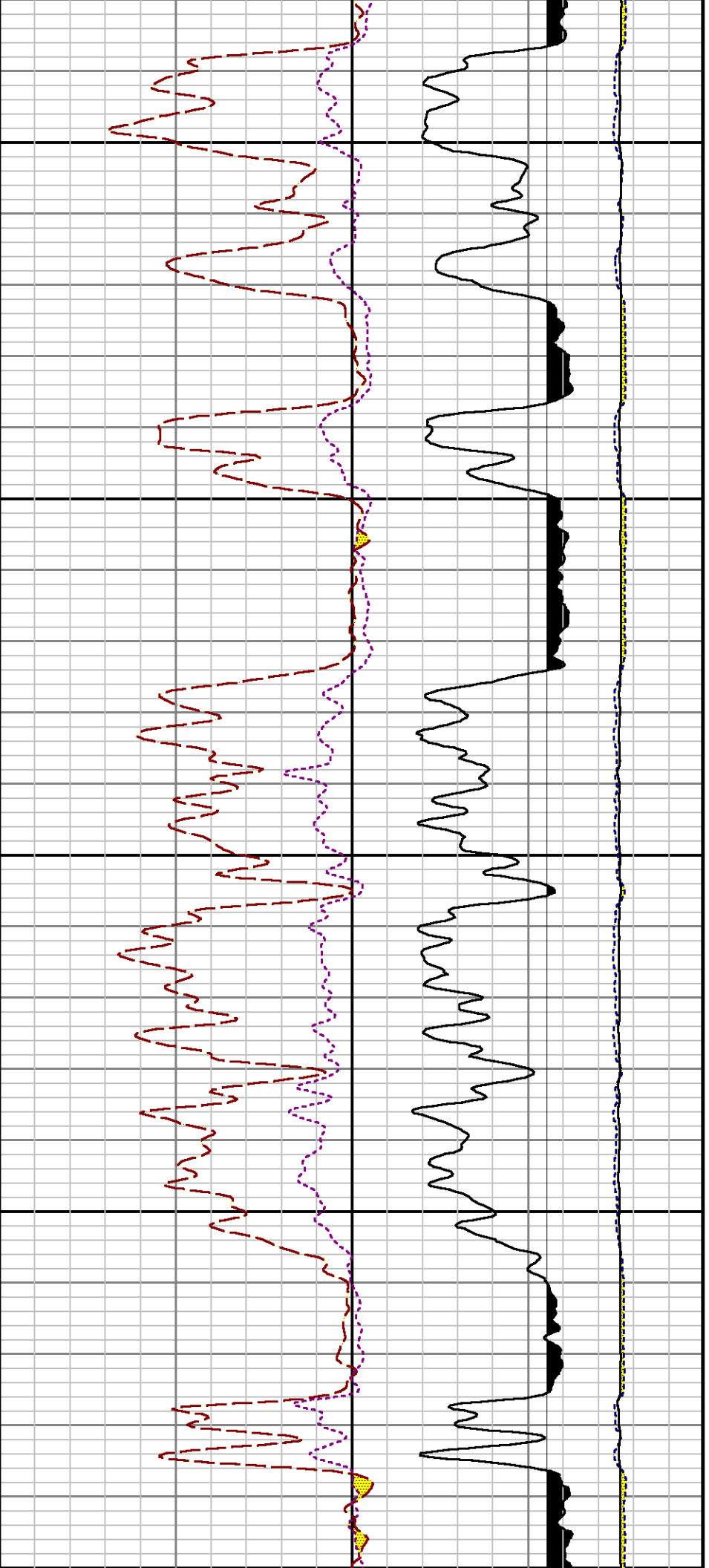


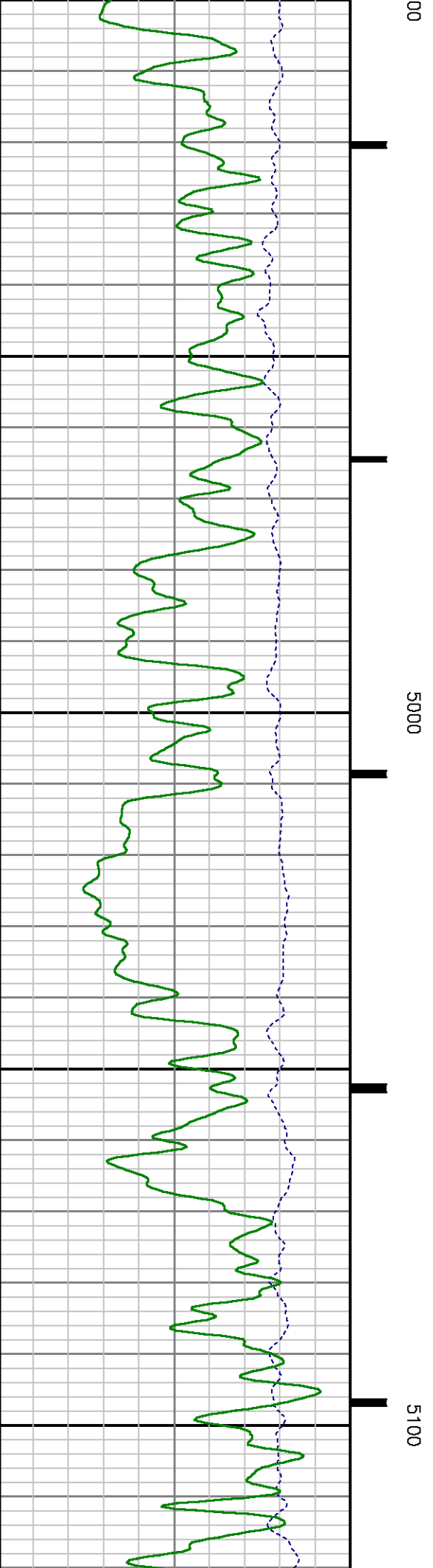
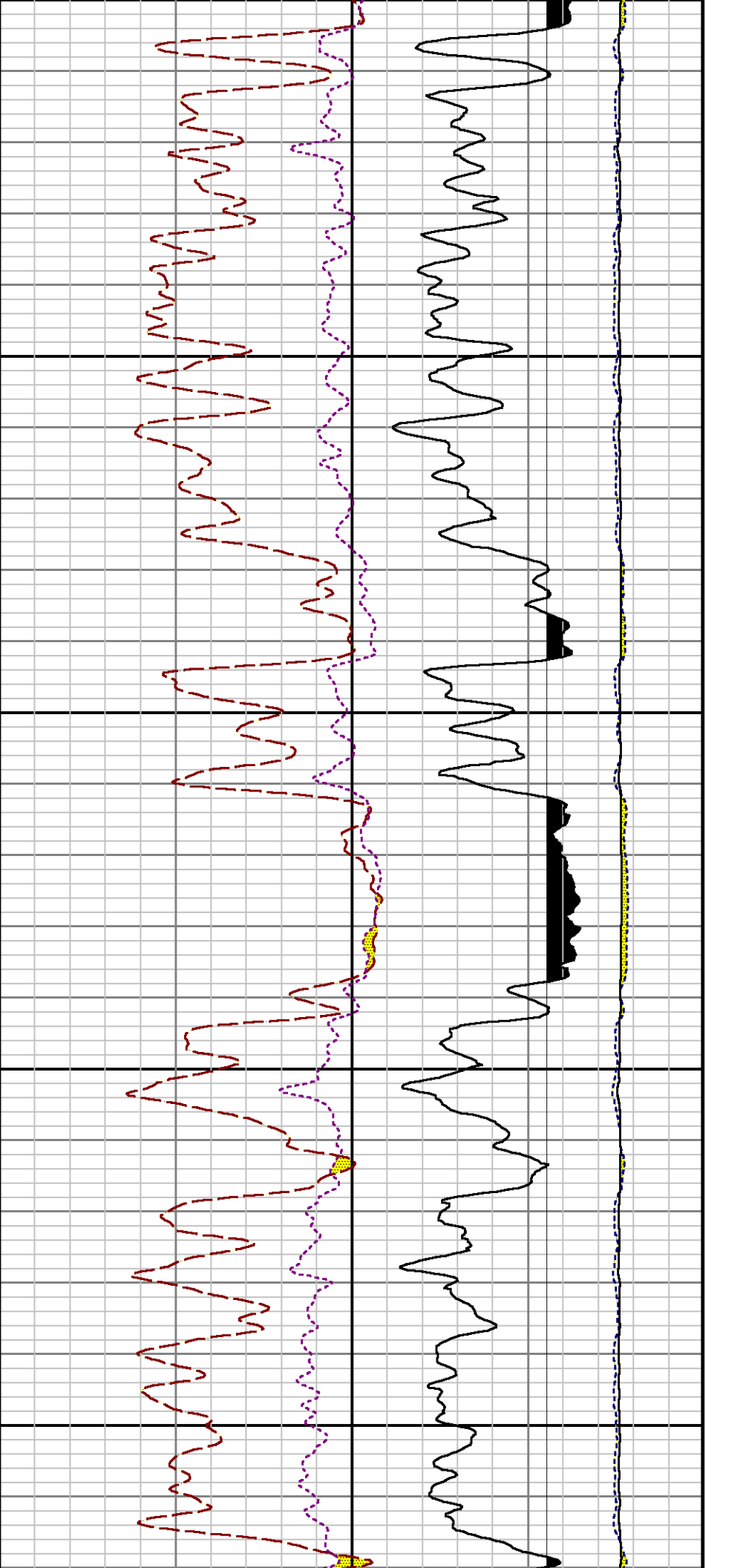


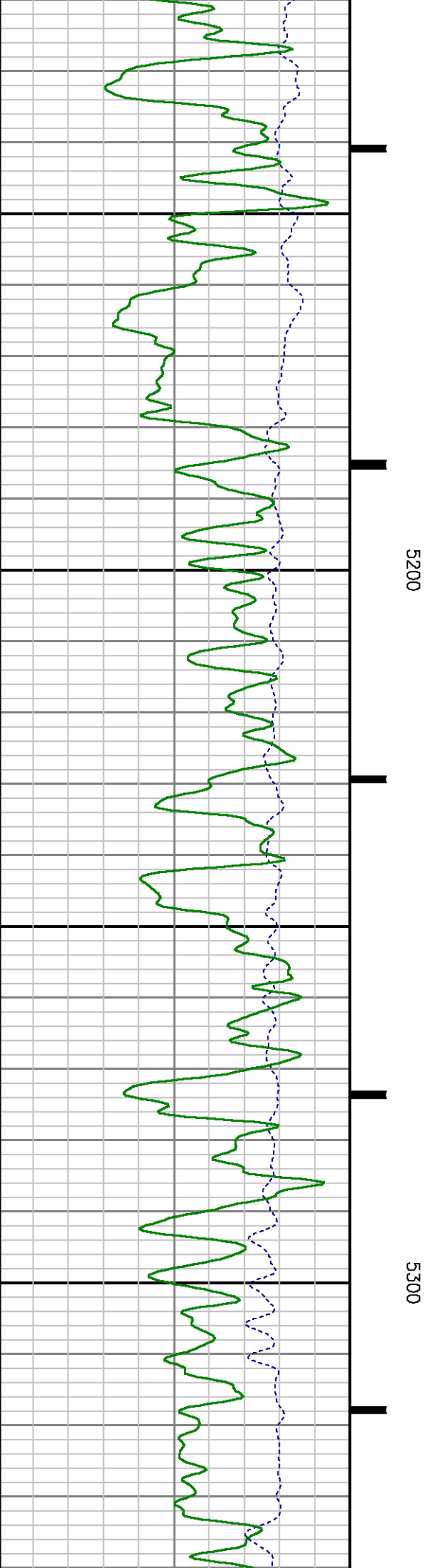
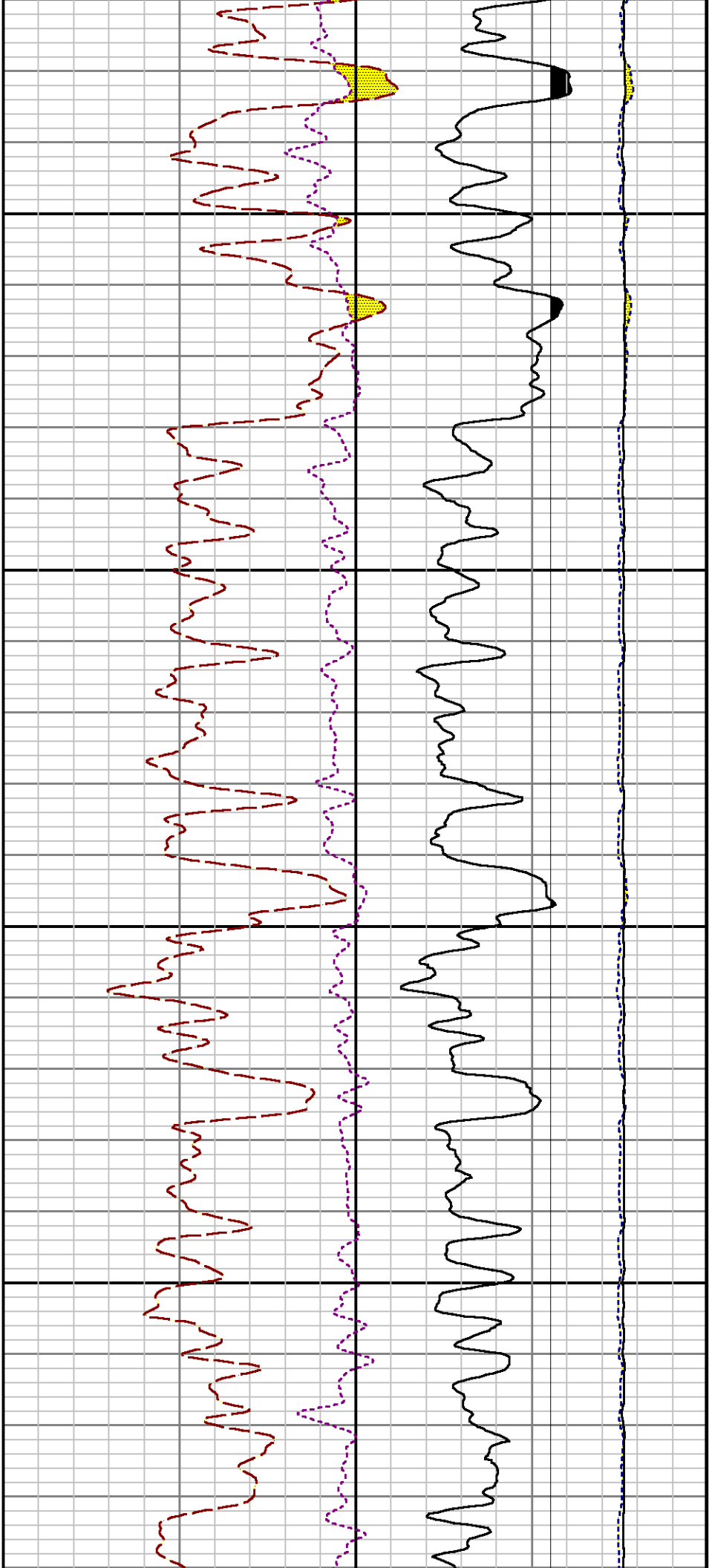
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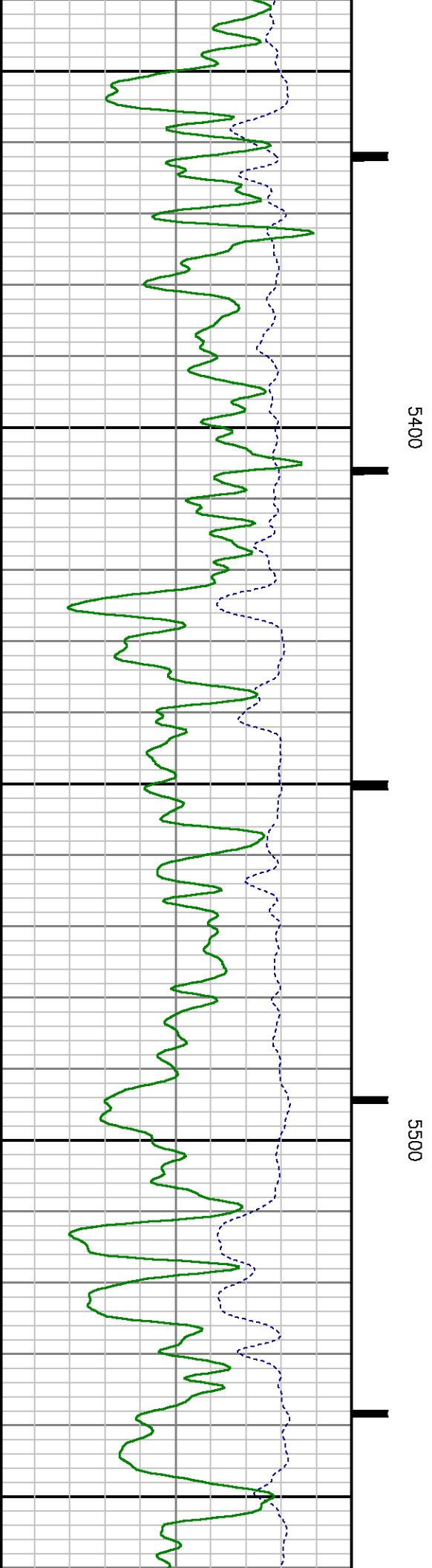
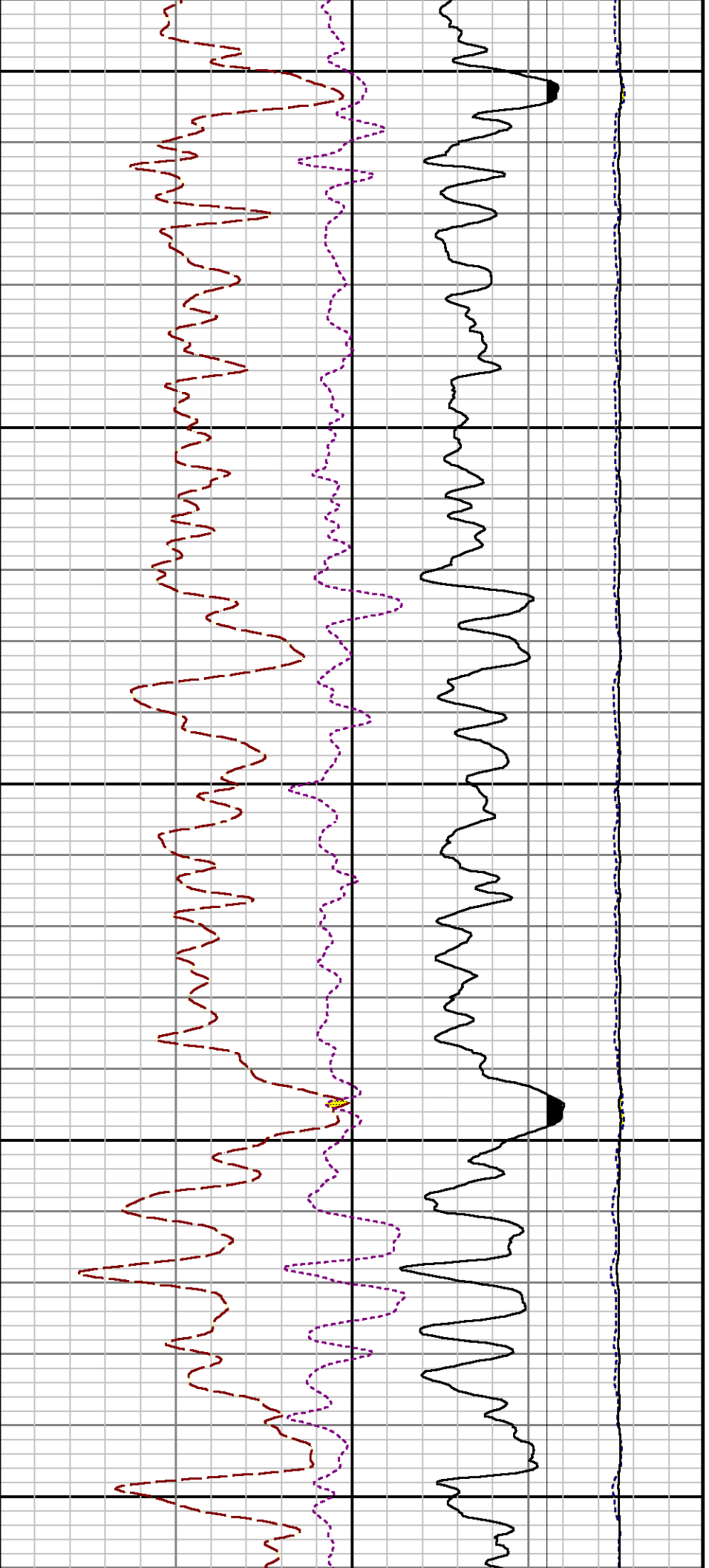
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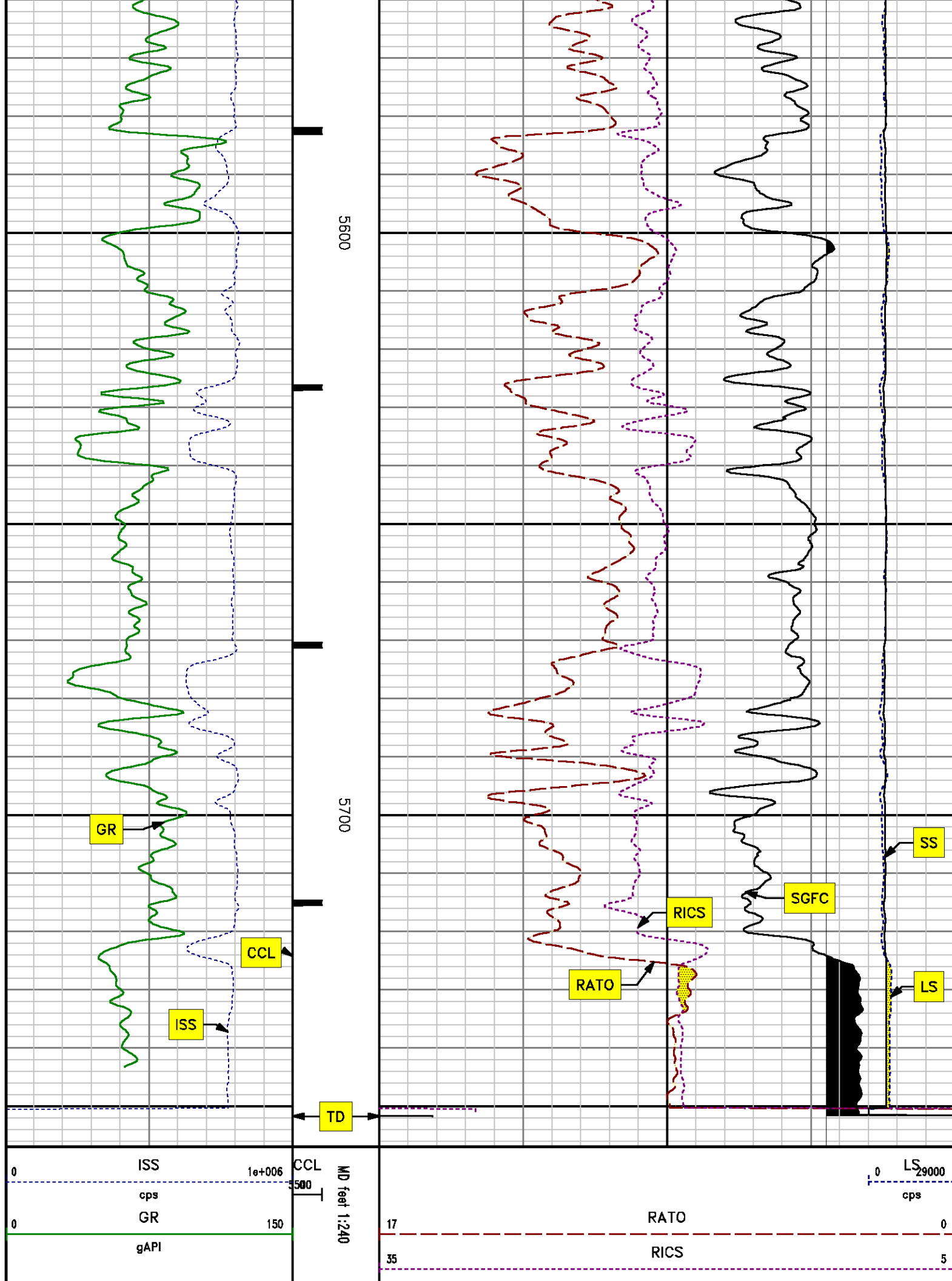












# *REPEAT SECTION*

## *PNC 3-D MODE*

SPL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		4931.780	5258.780
PNC Porosity	Borehole Size	8.750	inch	4931.780	5258.780
PNC Porosity	Casing Size	4.500	inch	4931.780	5258.780
PNC Porosity	Gas Filled	Non Gas Filled		4931.780	5258.780
PNC Porosity	Matrix	Sandstone		4931.780	5258.780
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	4931.780	5258.780

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					
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	RTW023	SDA2

8281XA

-12.041

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
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	RATOR	RAT013R
RBORR	RICSR	RINR	RIN13R	RONER	RPORR
RTWOR					
PTFS	PTMS				
SPF1	SPFQ	TSCP	TSDP		
DTEM	TEMP	TNF			
TEN	TTEN				

8255XA

-0.792

8255XA

-0.775

8255XA

0.000

SYSTEM

0.000

Created by : RPM9, v5.3.1.0

Plotted by : PlotMgr, v5.4.504

Company : WPX ENERGY

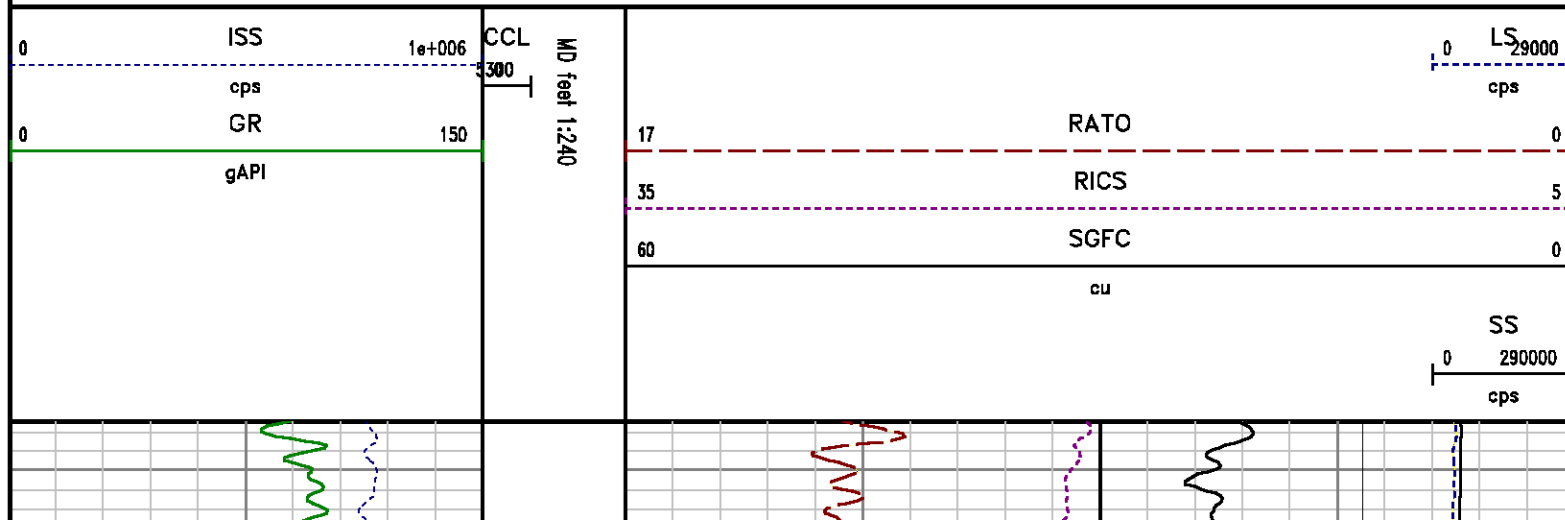
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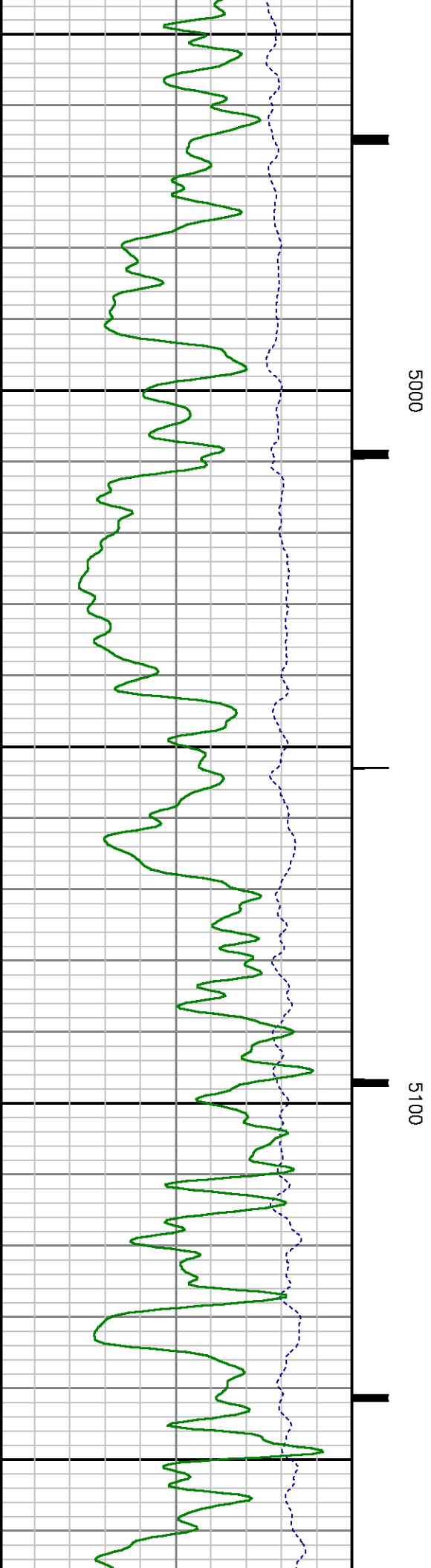
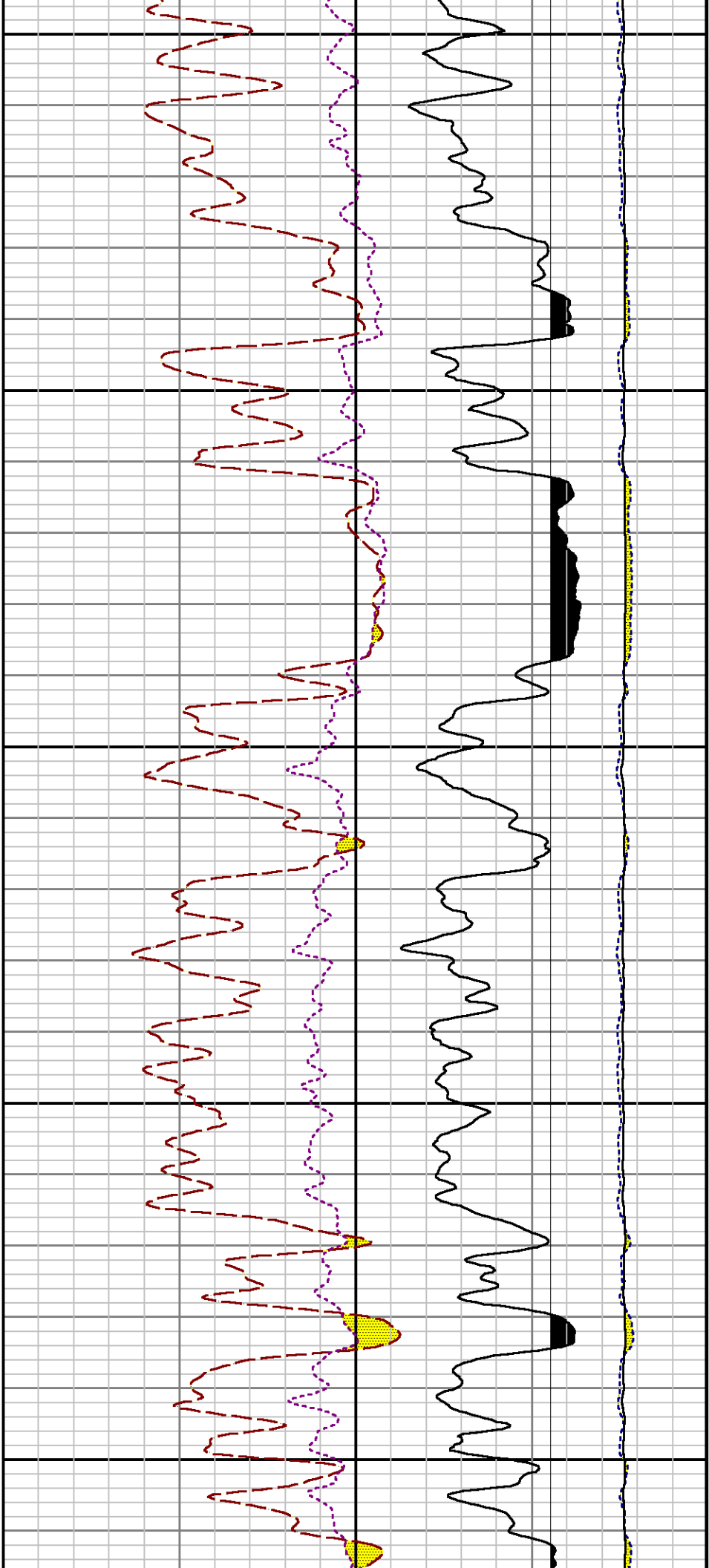
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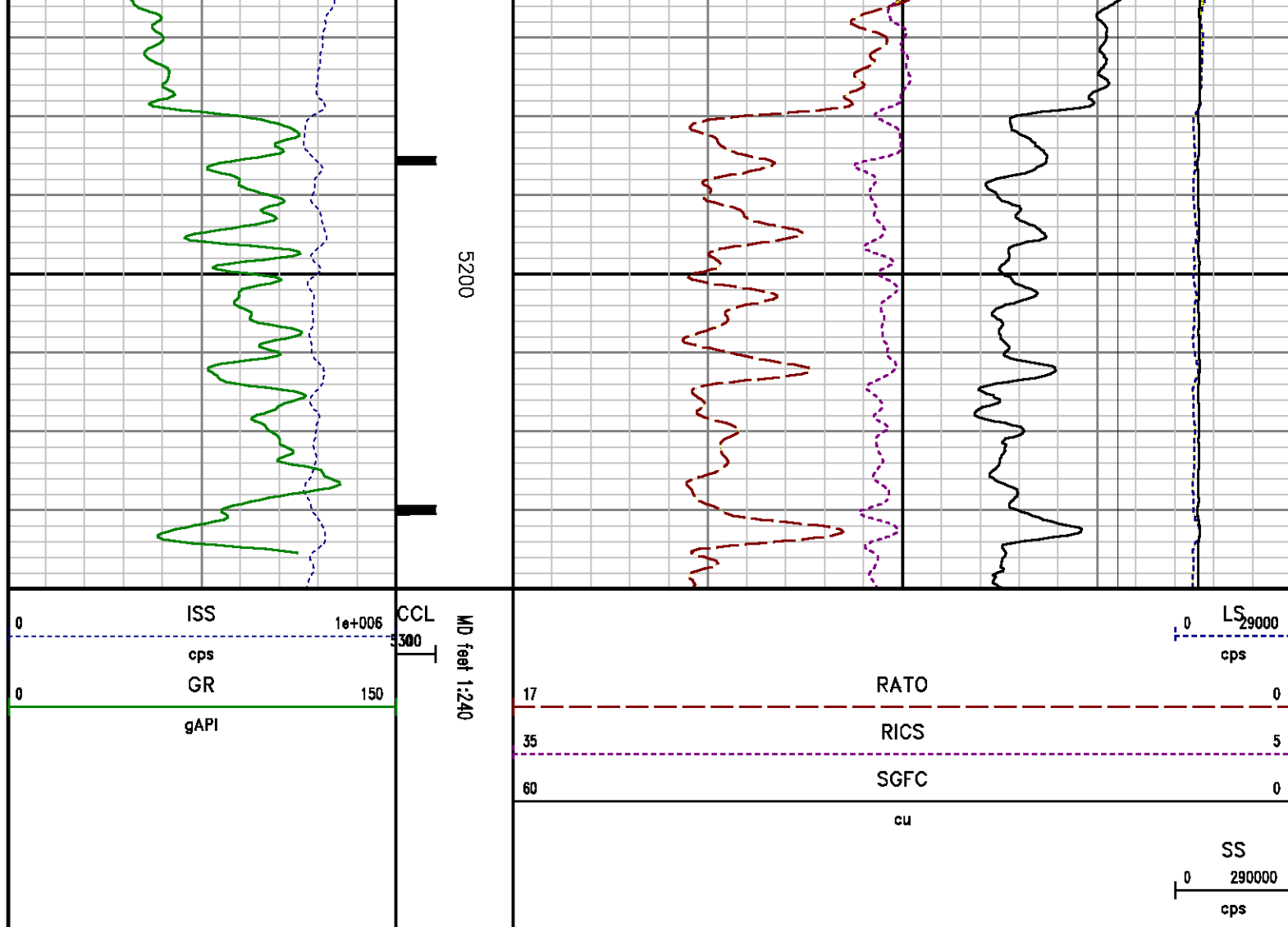
Interval : 4935.00 - 5240.00 feet UP

Created : 2/2/2014 8:24:11 AM









## CALIBRATION SUMMARY

PNC

Calibration File: C:\case\calver\PNC\383J7.cal

### PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Fri Jan 17 14:45:45 2014 TOOL SERIES: 8281XA ASSET: 383 SEQ: J7

Calibrator #

gj shop

Source #

8281AA 10160601

ISS

Mtr Vlt  
(V)

SS Gain

LS Gain

XLS Gain

EA Temp  
(degF)

Sync Delay  
(usec)

RCAL

Raw Data

813333

120.00

2186.00

2253.00

2214.00

102.25

7.00

0.0076

Raw Data	813732	129.00	2186.00	2233.00	2214.00	102.23	7.00	0.9976
Interpolated	1300000	152.88	2183.97	2239.94	2207.92			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	813732	6611.93	1055.83	146.56	25.82	0.14	24.39	0.27
					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	813732	178243.73	27579.47	92675.66	32979.46	8738.46	56027.18	14002.62
Fit Quality %		0.47	0.52	0.93	0.91	0.54	0.86	0.52

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	813732	1.43	4.57	29.51	14.52	10.61	3.77	4.00
		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 %		0.07	0.27	0.24	0.14	0.24	0.23	0.21
Reduced	1403031	1.43	4.59	29.68	14.59	10.62	3.78	4.00
		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\385J9.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Jan 09 15:25:11 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: J9

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA612	62.82	283.64	0.951	59.74	269.74	210.00

Verification File: C:\case\calver\GR\38512.VP

### PRIMARY VERIFICATION

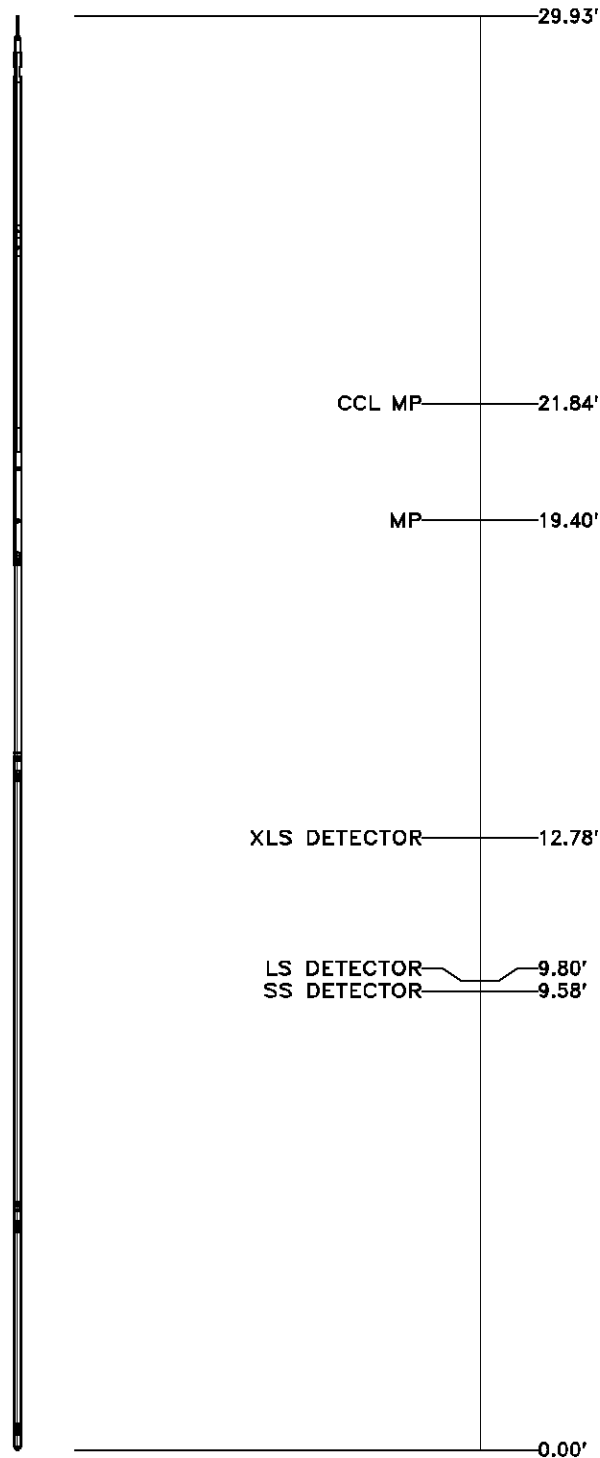
DATE/TIME PERFORMED: Thu Dec 12 12:07:31 2013 TOOL SERIES: 2812LA ASSET: 385 SEQ: 12

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	64.02	300.02	0.898	57.51	269.51	212.00

## TOOL DIAGRAM

<b>OTA SHORT CABLE HEAD</b>	
<b>PCM POWER SUPPLY</b>	
Series	8250EA
Mnemonic	PCM
Diameter	1.70"
Weight	18.00 lb
Length	3.86'
Temp Rating	350.00 °F
<b>TELEMETRY / CCL</b>	
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
<b>SONDEX GAMMA RAY</b>	
Series	2812LA
Mnemonic	SNDX
Diameter	1.69"

<b>RESERVOIR PERFORMANCE MONITOR</b>	
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



Total Length: 29.93'  
 Total Weight: Not Available  
 Max Diameter: 0' 1.70"



CASE

Location

SHL: 598' FNL & 1974' FWL

BHL: 435' FNL & 134' FWL

SEC 2 TWP 7S RGE 96W

Elevations

KB 5283 ft

DF

GL 5258 ft

27 7S 96W

SG 21-27 PAD

AZTEC 1000