



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: CH090685	Company Well Field County	WPX ENERGY FEDERAL NER 424-32 RULISON GARFIELD	State COLORADO
API No: 05045217660000	Location SHL: 117' FWL x 2583' FWL SEC 5 7S 93W BHL: 649' FSL x 2229' FWL SEC 32 6S 93W		Other Services RPM
32 6S 93W RU 23-5 PAD NABORS 676	SEC 32 TWP 6S RGE 93W		
Permanent Datum Log Measured From Drill Measured From	GL KB KELLY BUSHING	Elevation 26 ft Above P. D.	Elevations KB 7629 ft DF GL 7603 ft

Date	22/SEP/14	
Run	ONE	
Service Order	US090685	
Depth Driller	10043 ft	
Depth Logger	10031 ft	
Bottom Logged Interval	10021 ft	
Top Logged Interval	5934 ft	
Time Started	0900	
Time Finished	1600	
Operator Rig Time	7 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	105 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	250 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	22/SEP/14	
Equipment No.	44271	GRAND JCT
Recorded By	FLOYD RENEAU	
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	26 ft	1106 ft
8.75 in	1106 ft	10043 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			26 ft	1106 ft
4.5 in	11.6 lbm/ft	I-80	26 ft	10043 ft

Remarks
All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 9/22/2014 at the client's request.
The amount of linear shift is -2 feet.
Logged in PNC-3D mode.
BHT = 250°F
SJ = 6527'-6550'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	TEMP	8255XA	Z120516	FREE
1	1	RPM	8281FA	10191667	FREE
1	1	RPM	8281PA	10169251	FREE
1	1	RPM	8281EA	10273848	FREE
1	1	GR	2812LA	10274385	FREE
1	1	TEL/CCL	8248ED	10460262	FREE
1	1	PCM	8250EA	10586851	FREE

MAIN SECTION  
PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		5907.940	10032.853
PNC Porosity	Borehole Size	8.750	inch	5907.940	10032.853
PNC Porosity	Casing Size	4.500	inch	5907.940	10032.853
PNC Porosity	Gas Filled	Non Gas Filled		5907.940	10032.853
PNC Porosity	Matrix	Sandstone		5907.940	10032.853
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	5907.940	10032.853

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

8281XA

-12.291

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

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 WDT3 RICL  
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 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 H0C FE2XC ISSC RINC  
ISSN RDEN WDT3 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 NER 424-32

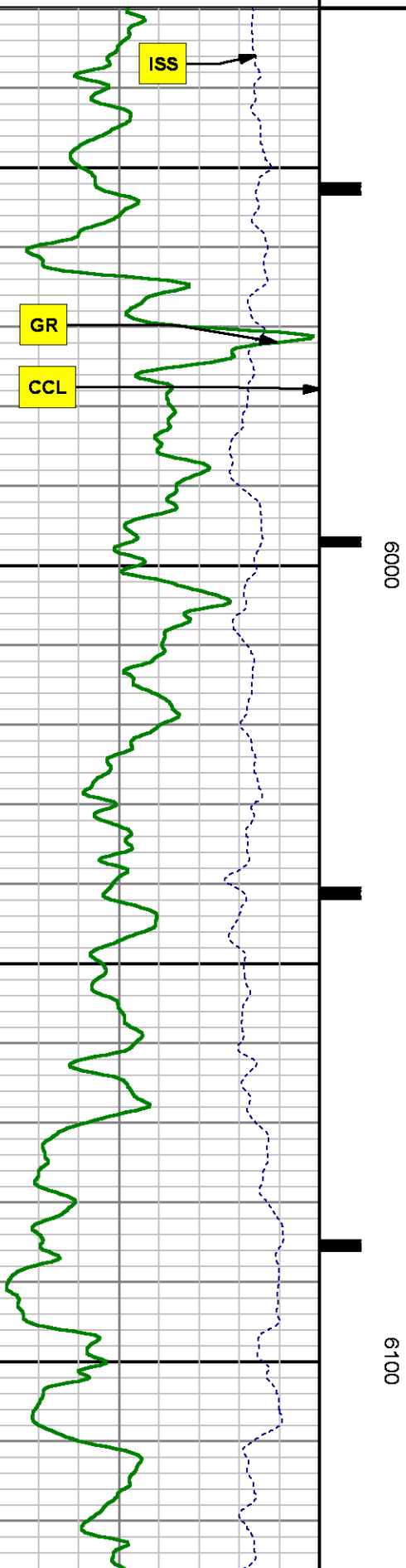
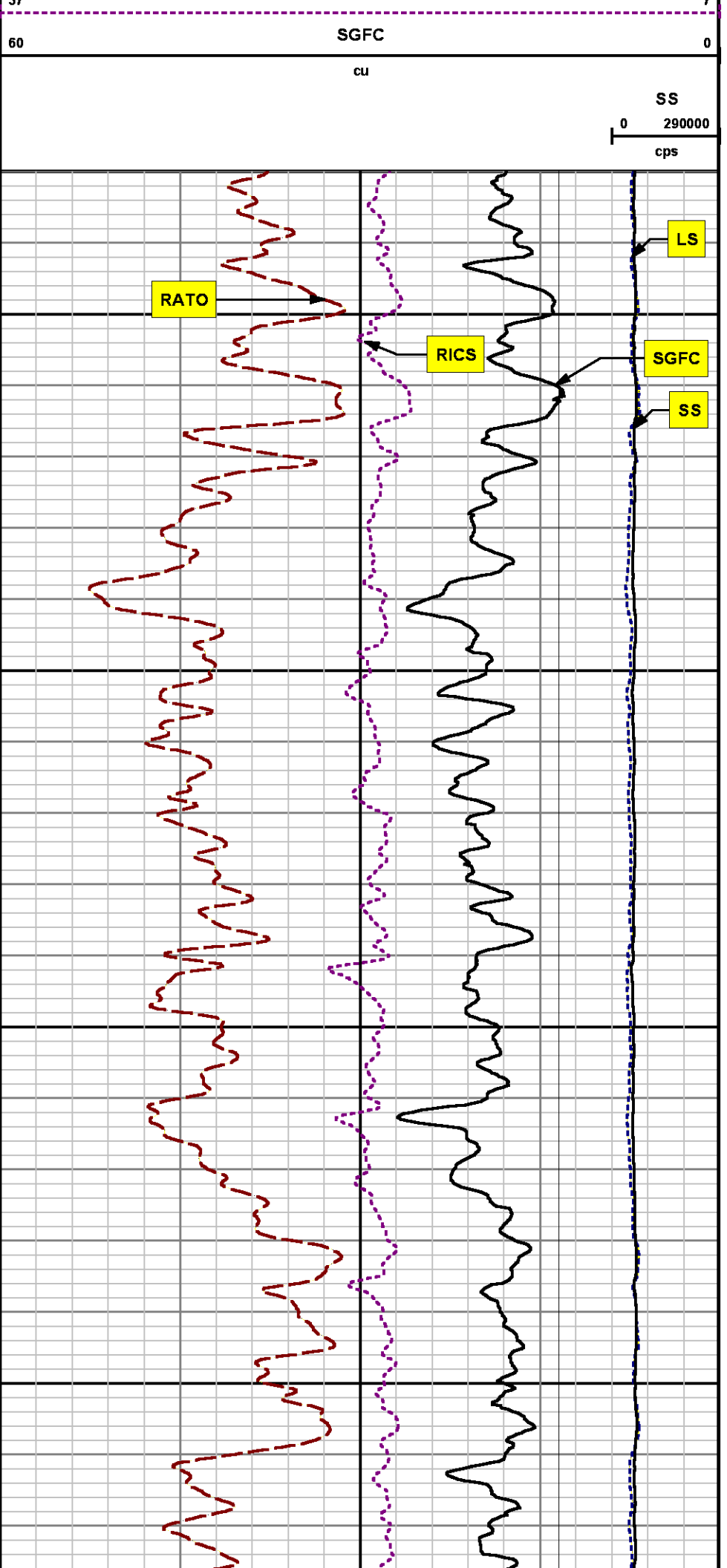
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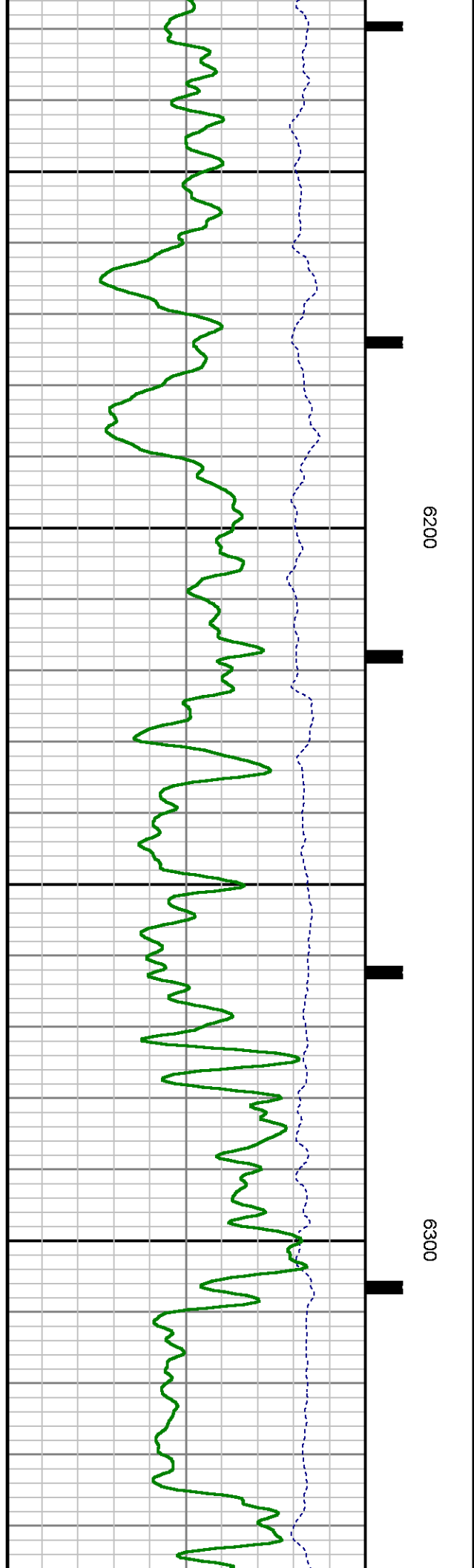
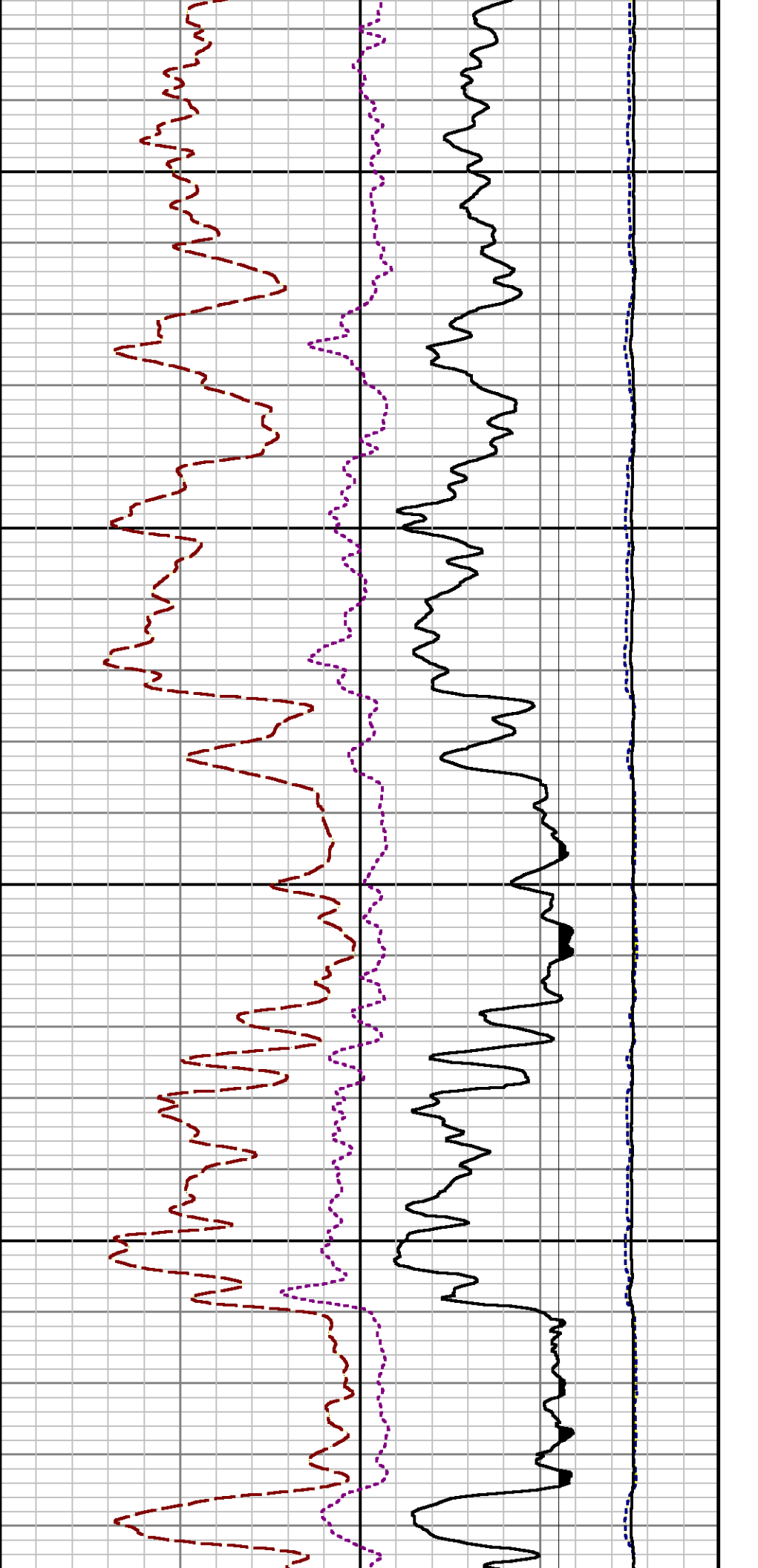
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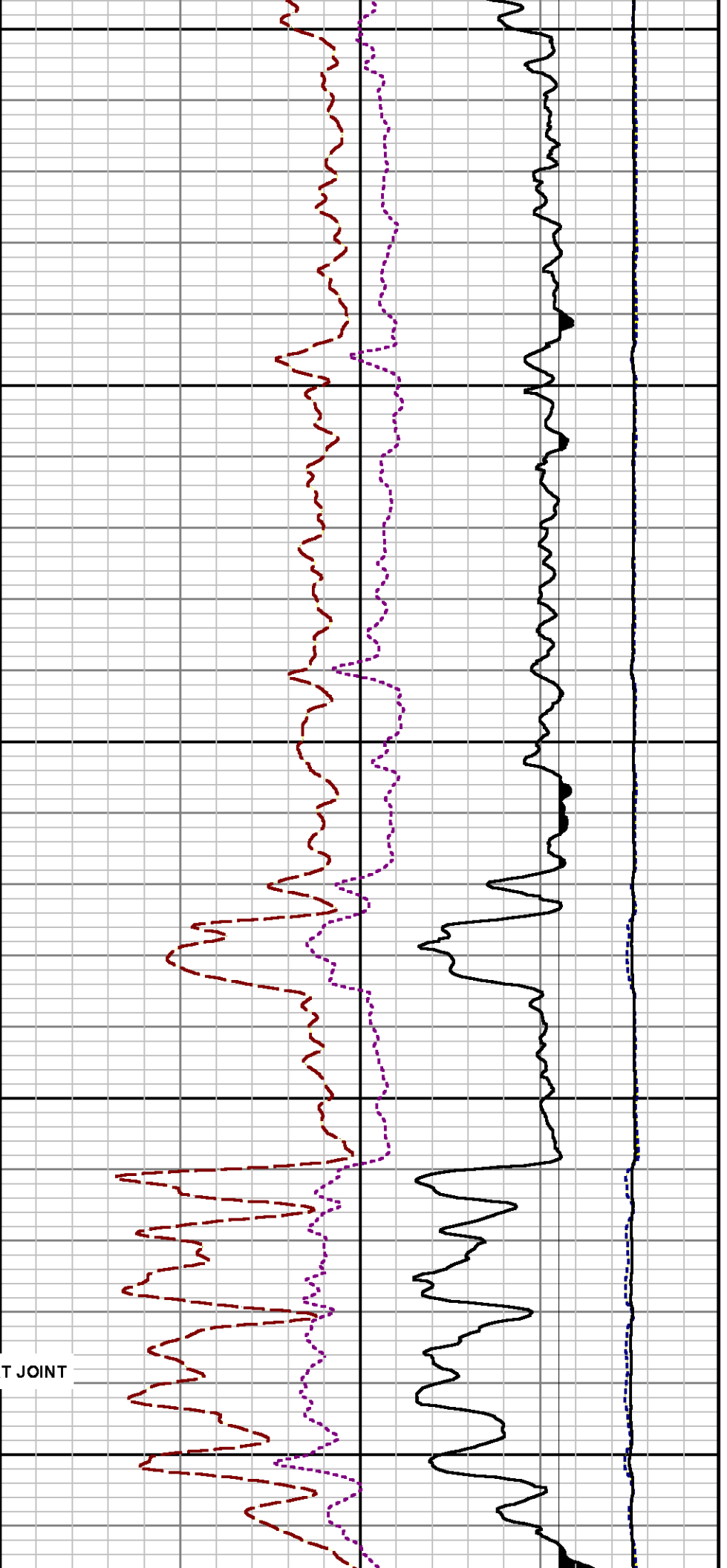
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Created : 9/22/2014 11:29:32 AM

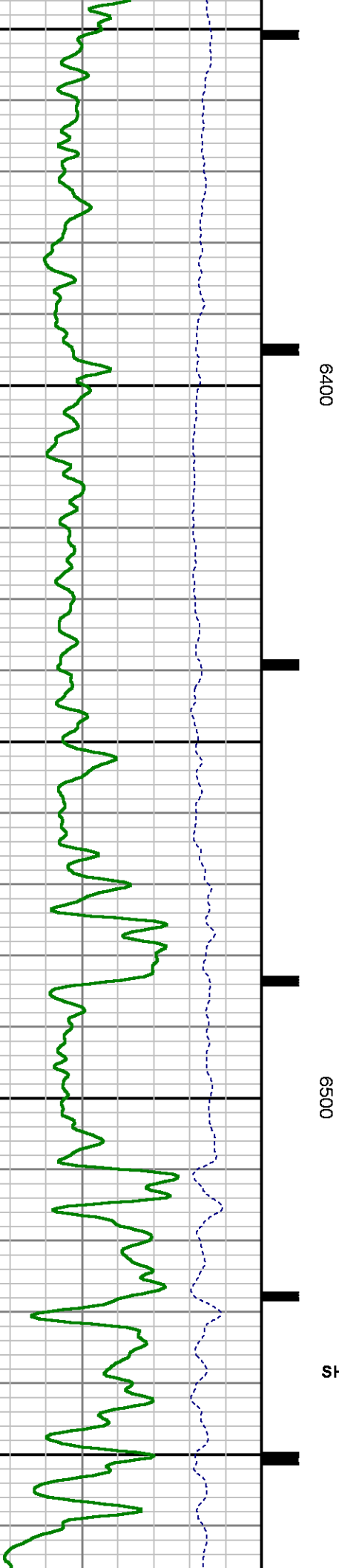


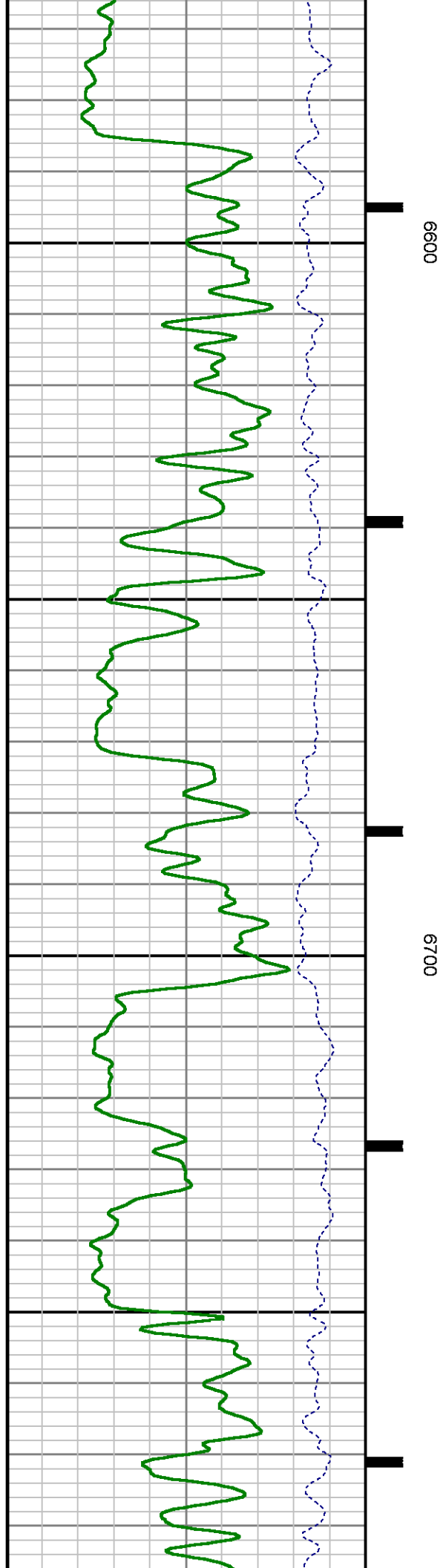
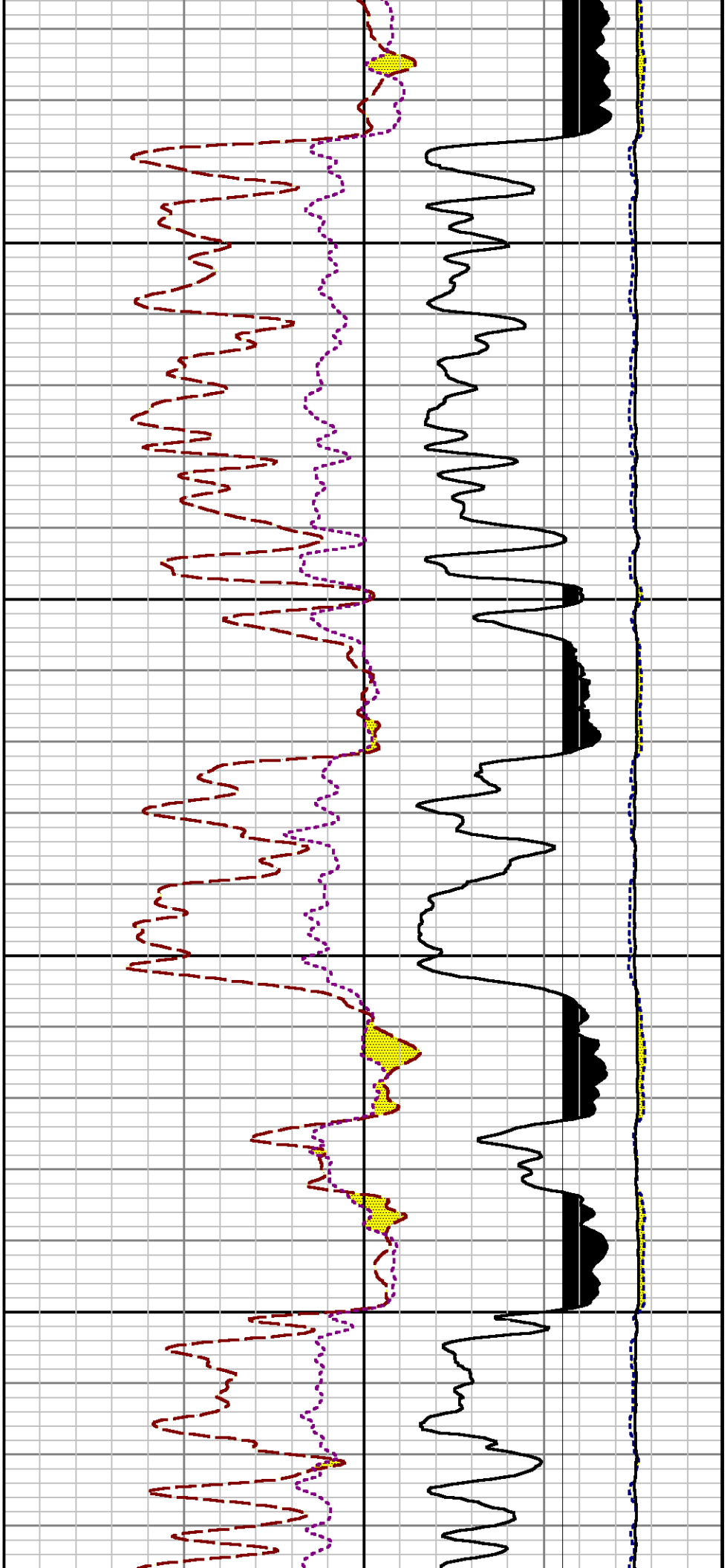


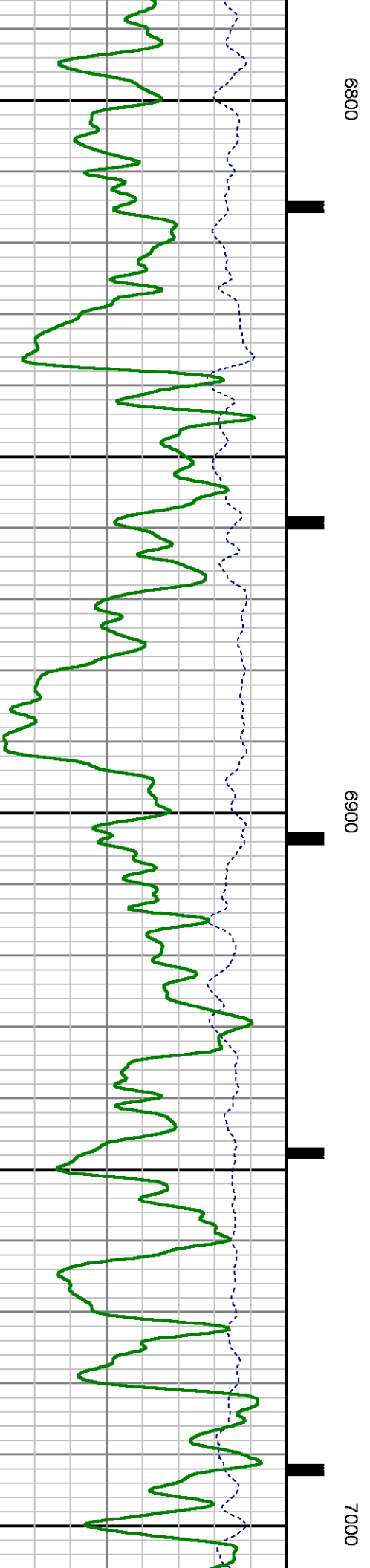
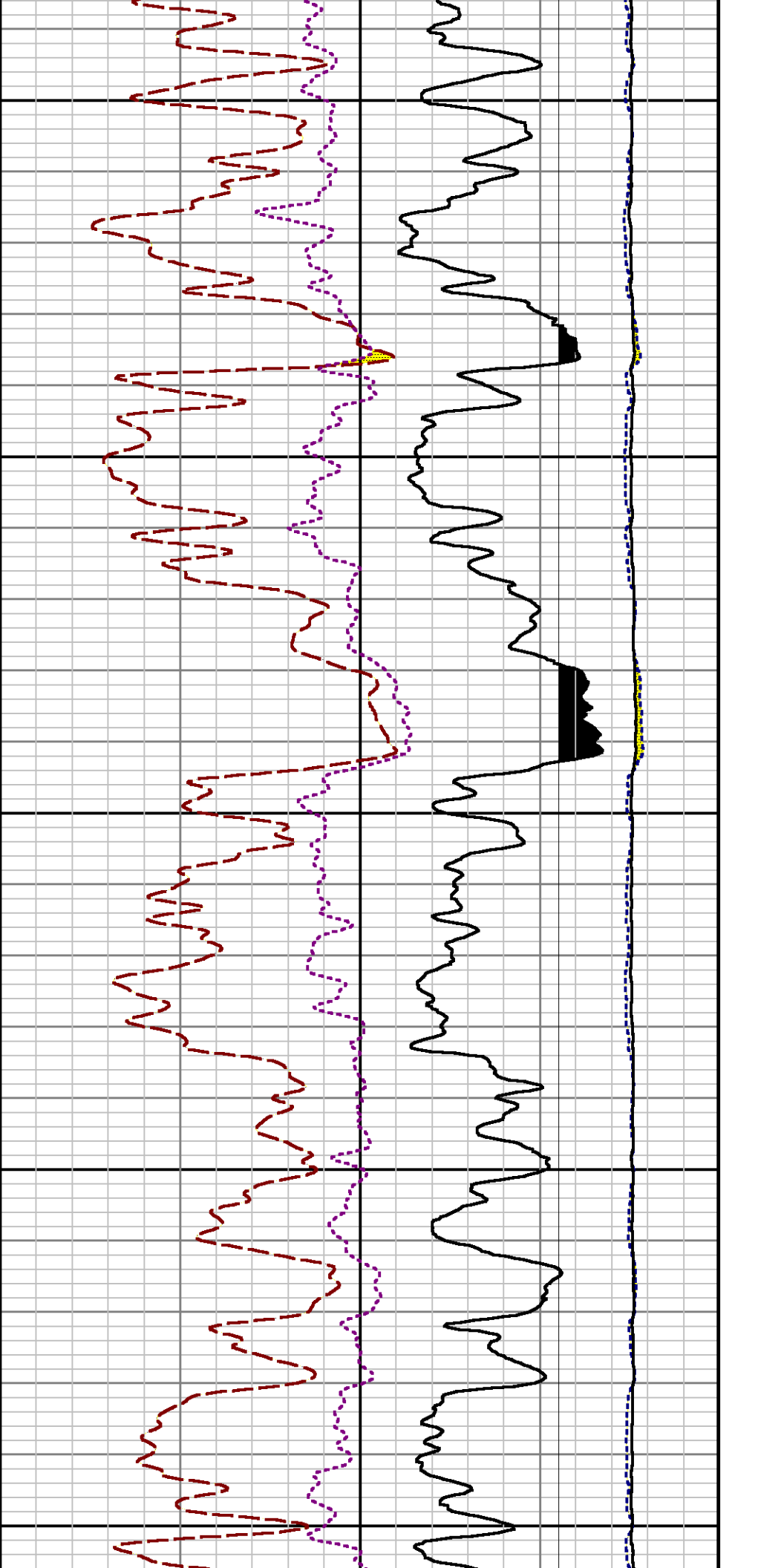




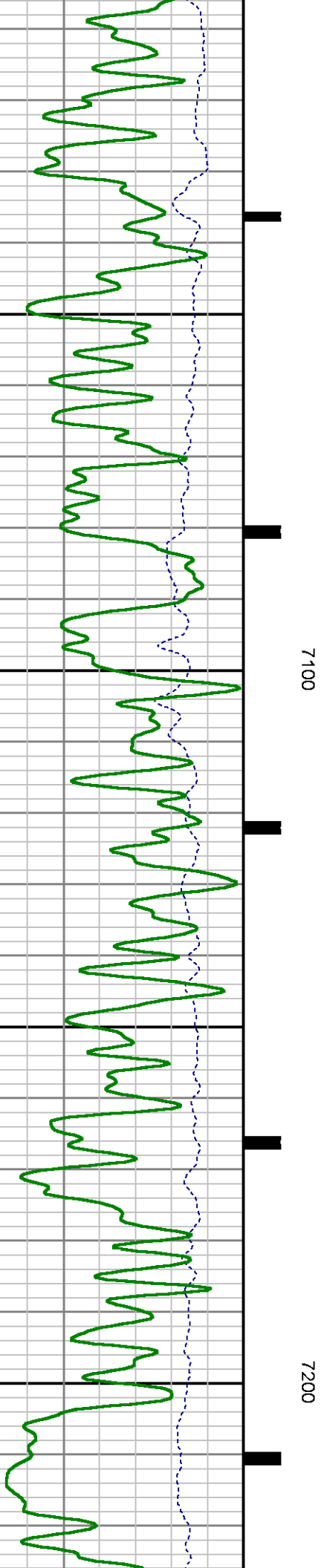
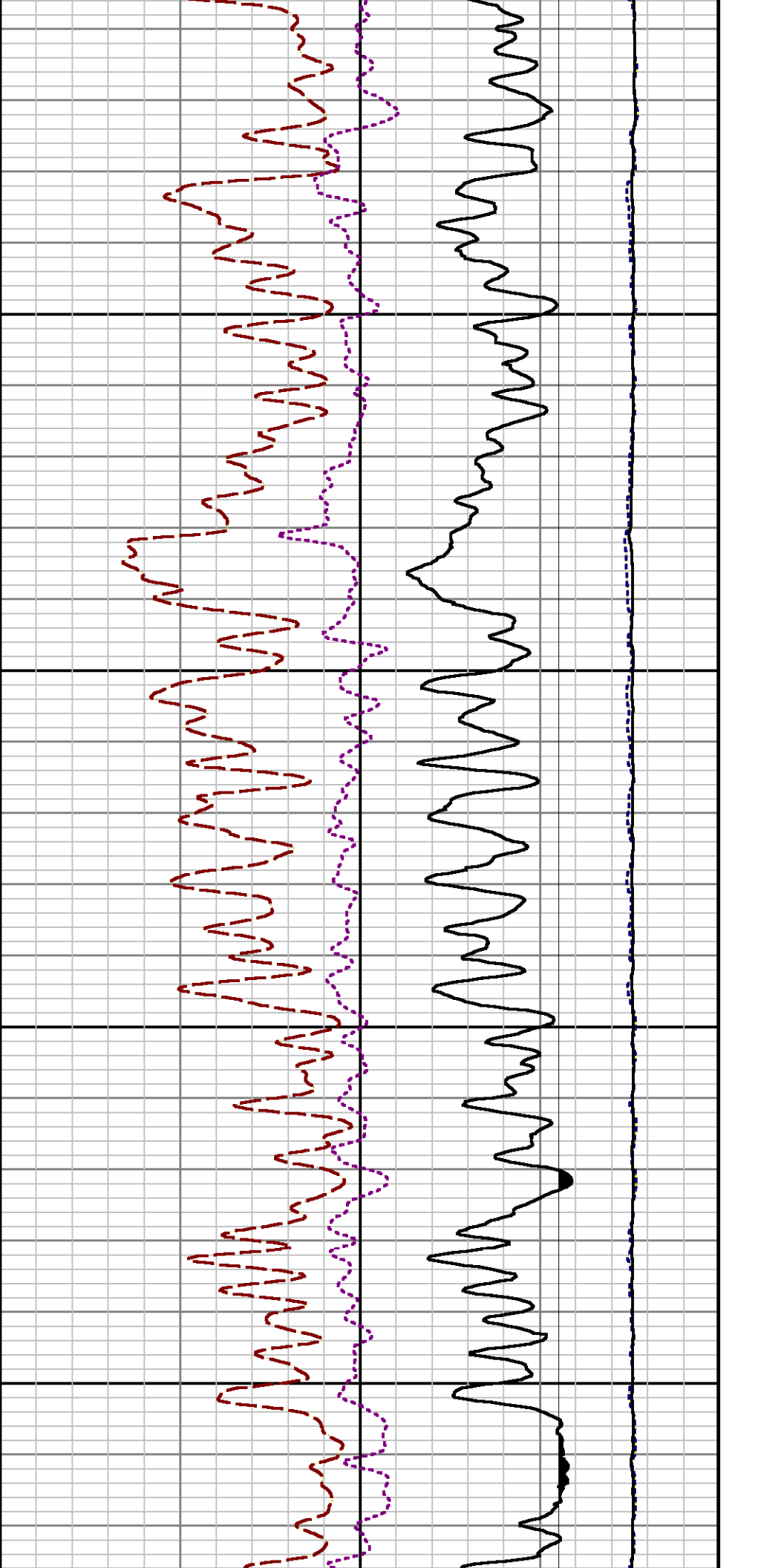
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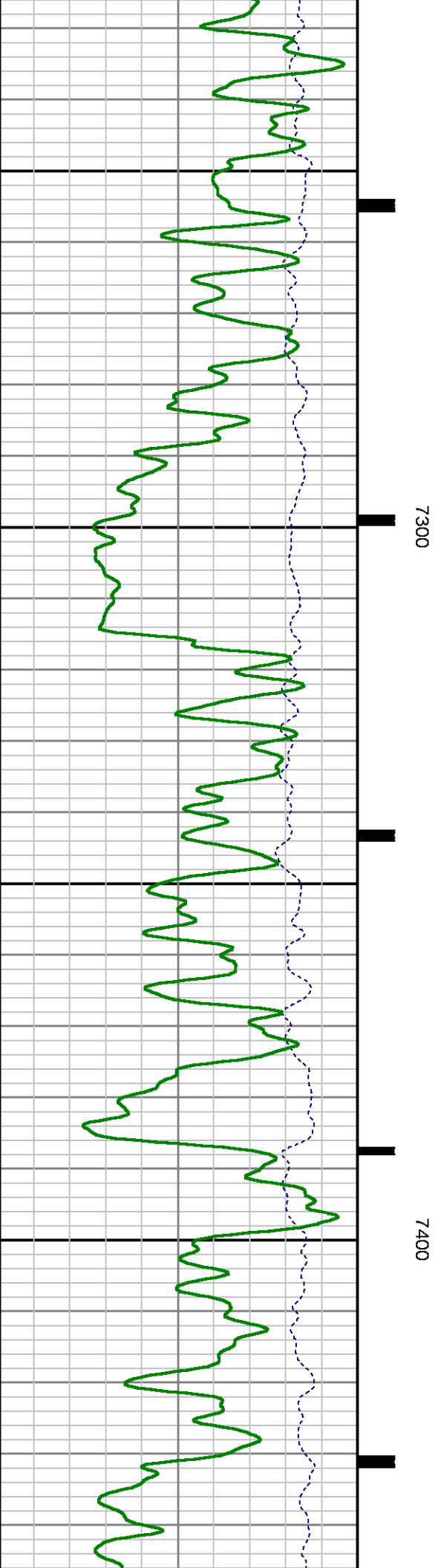
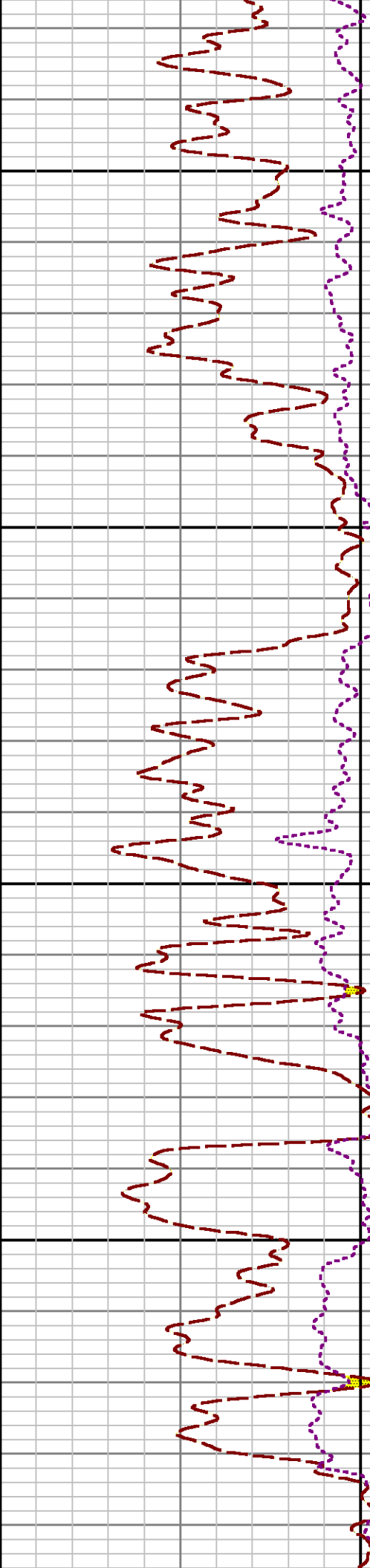
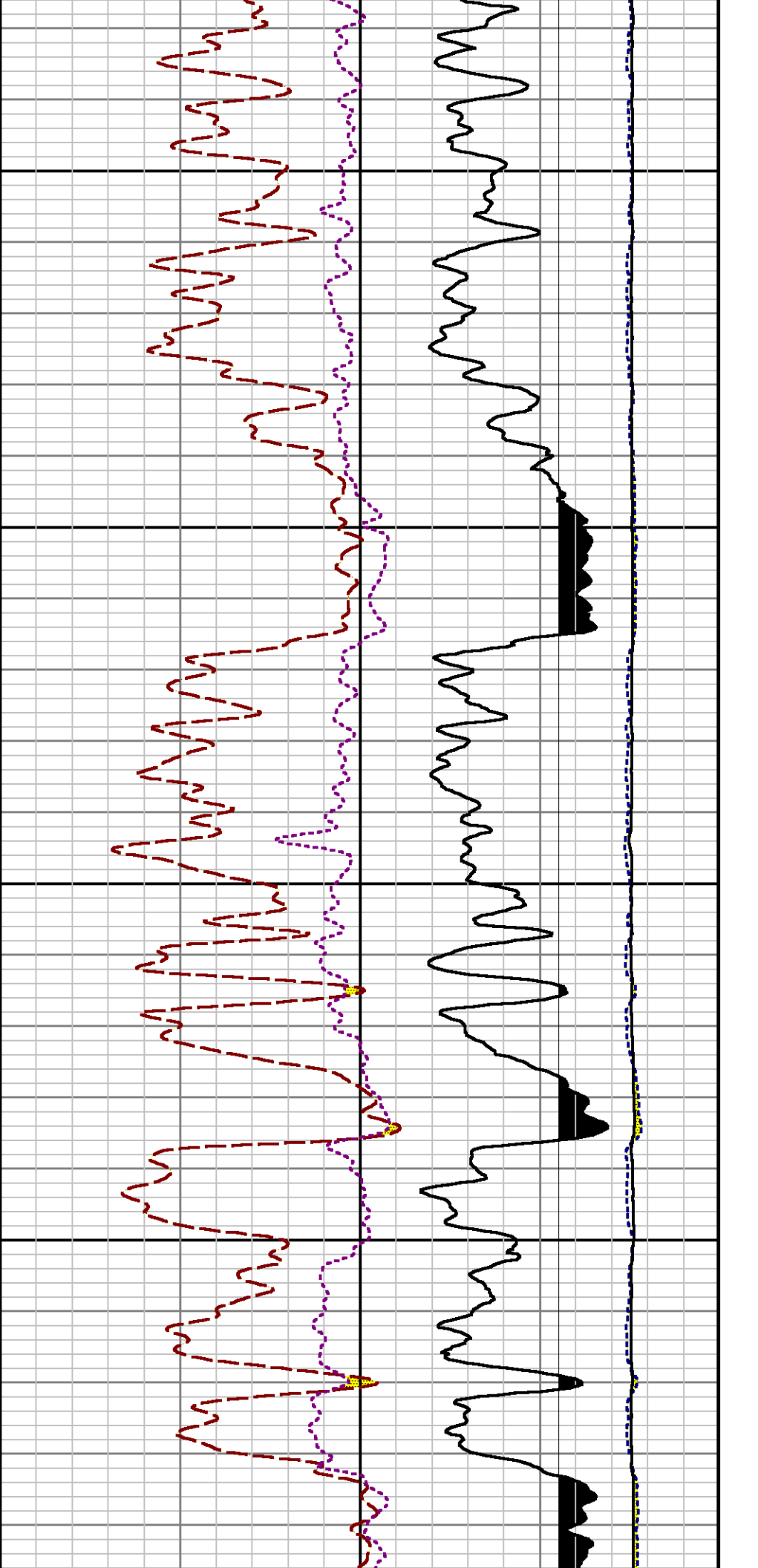


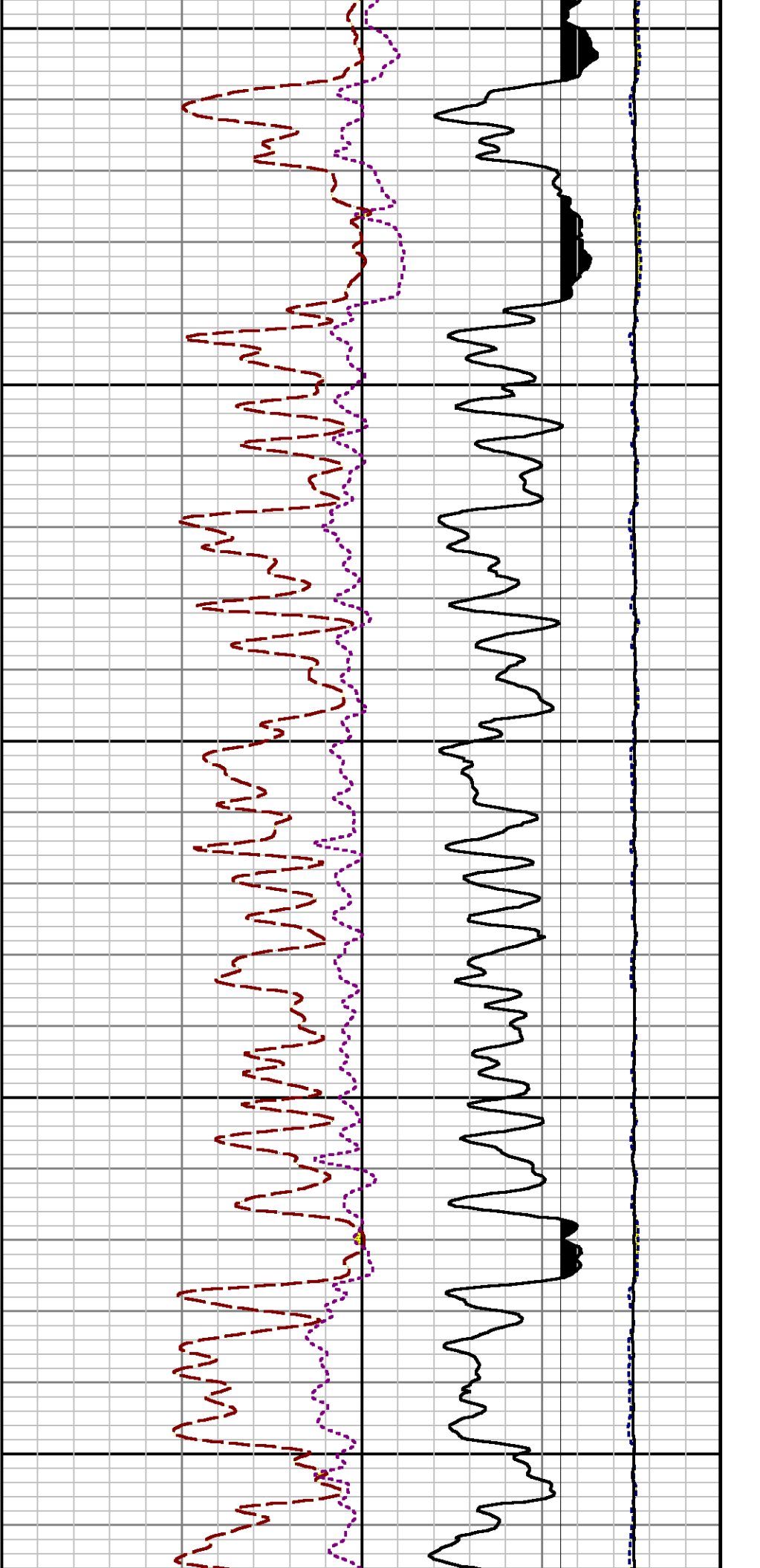






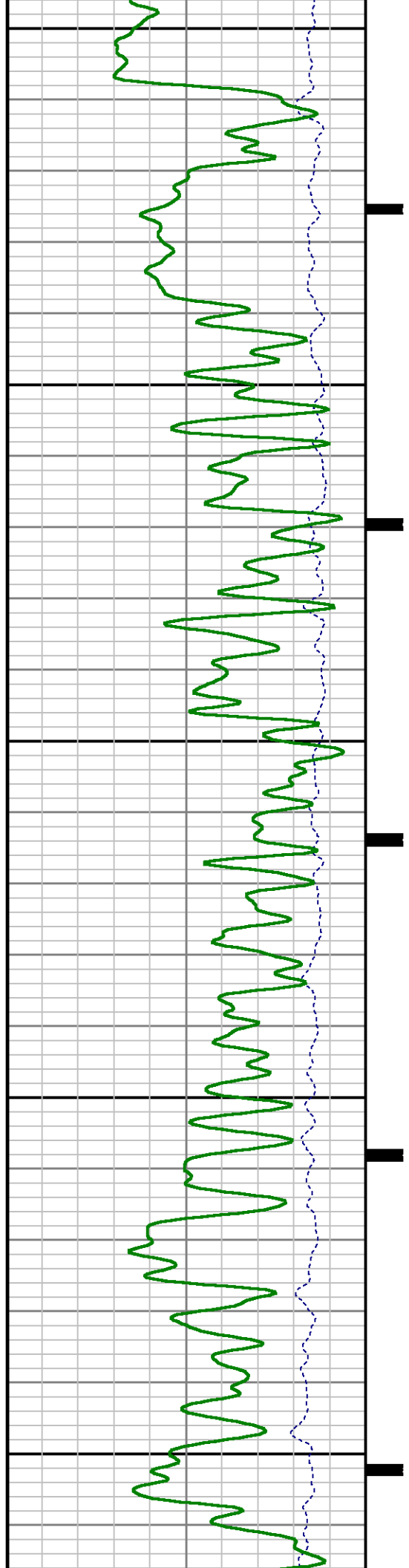


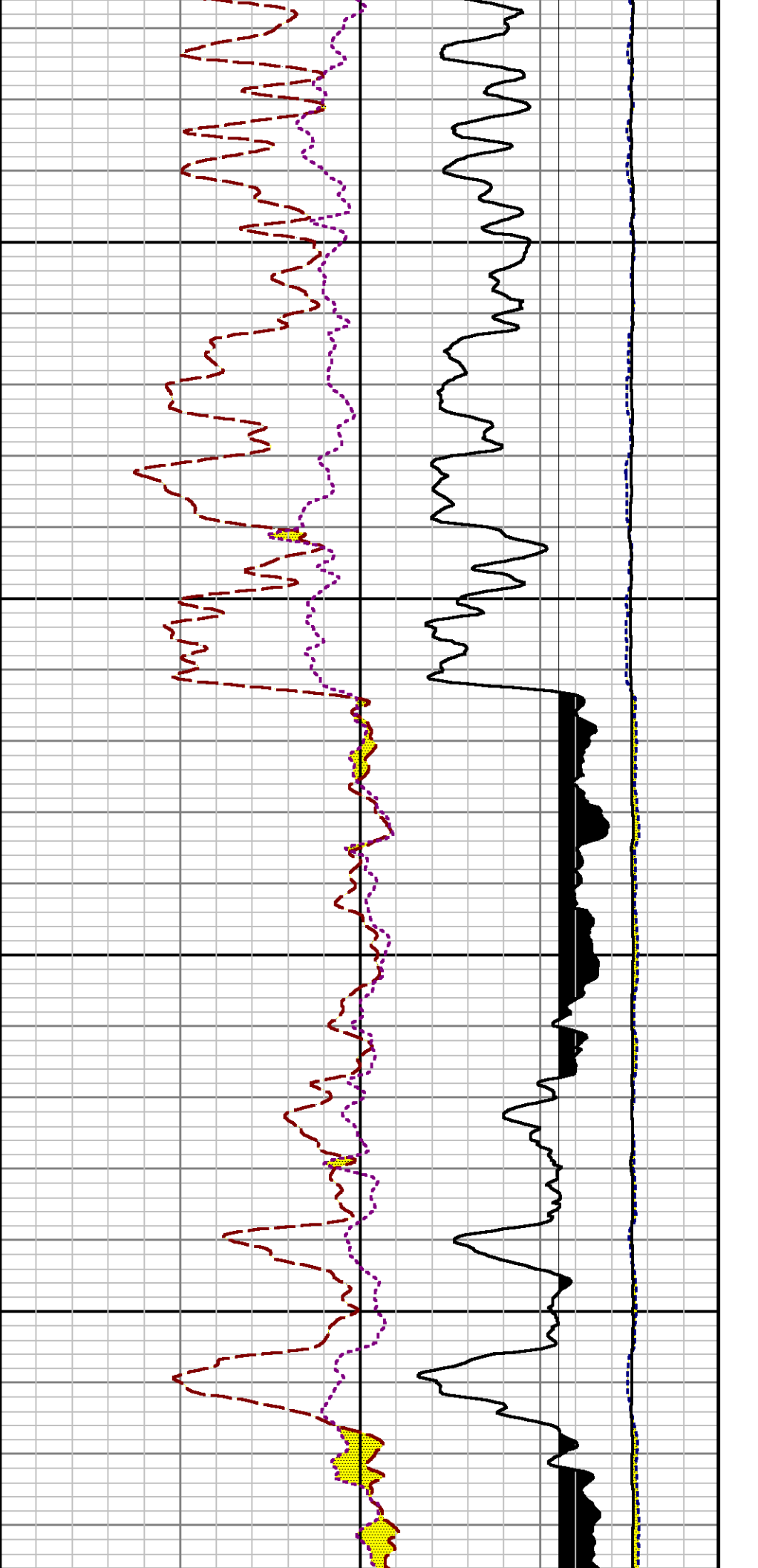




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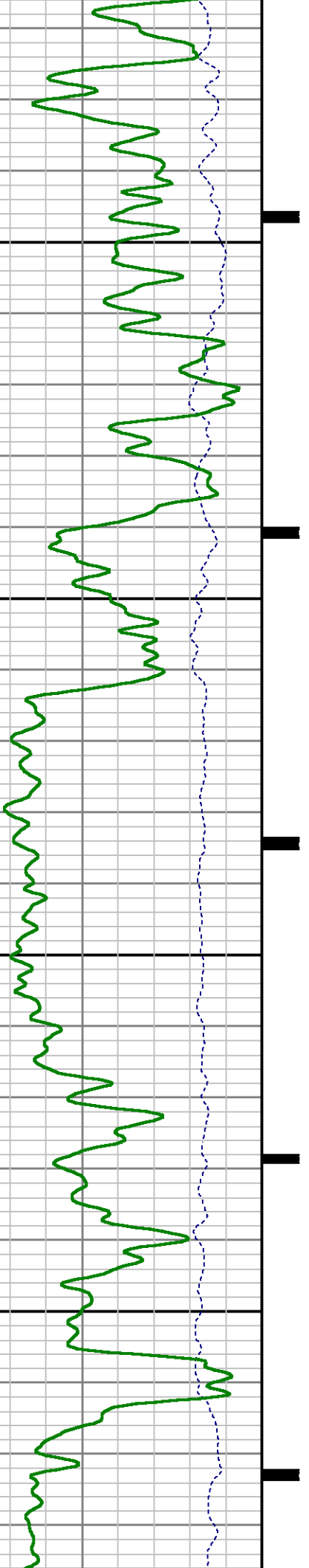
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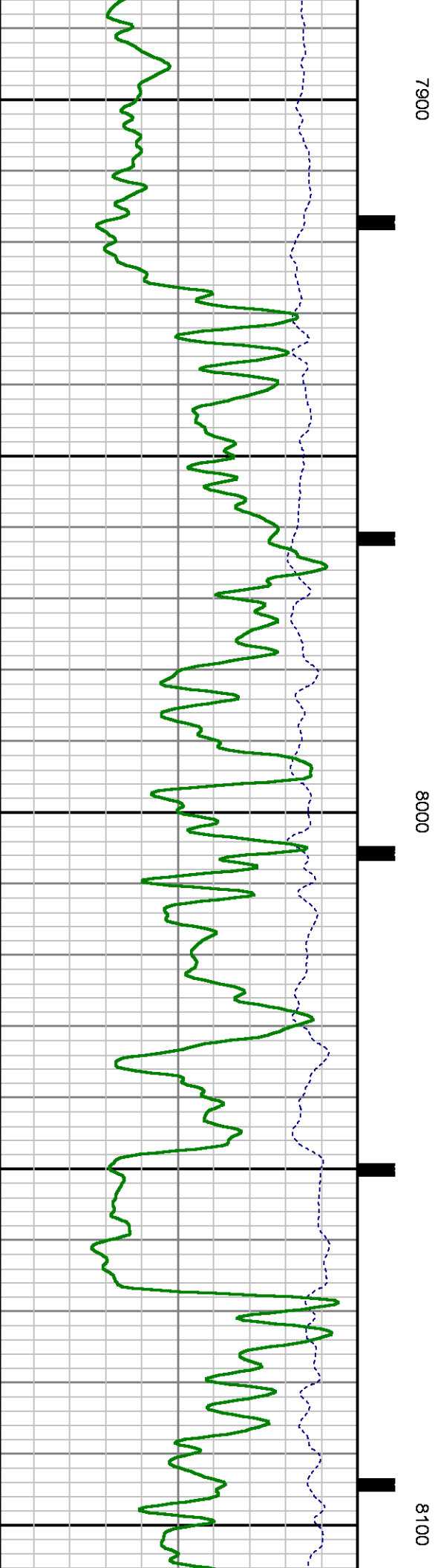
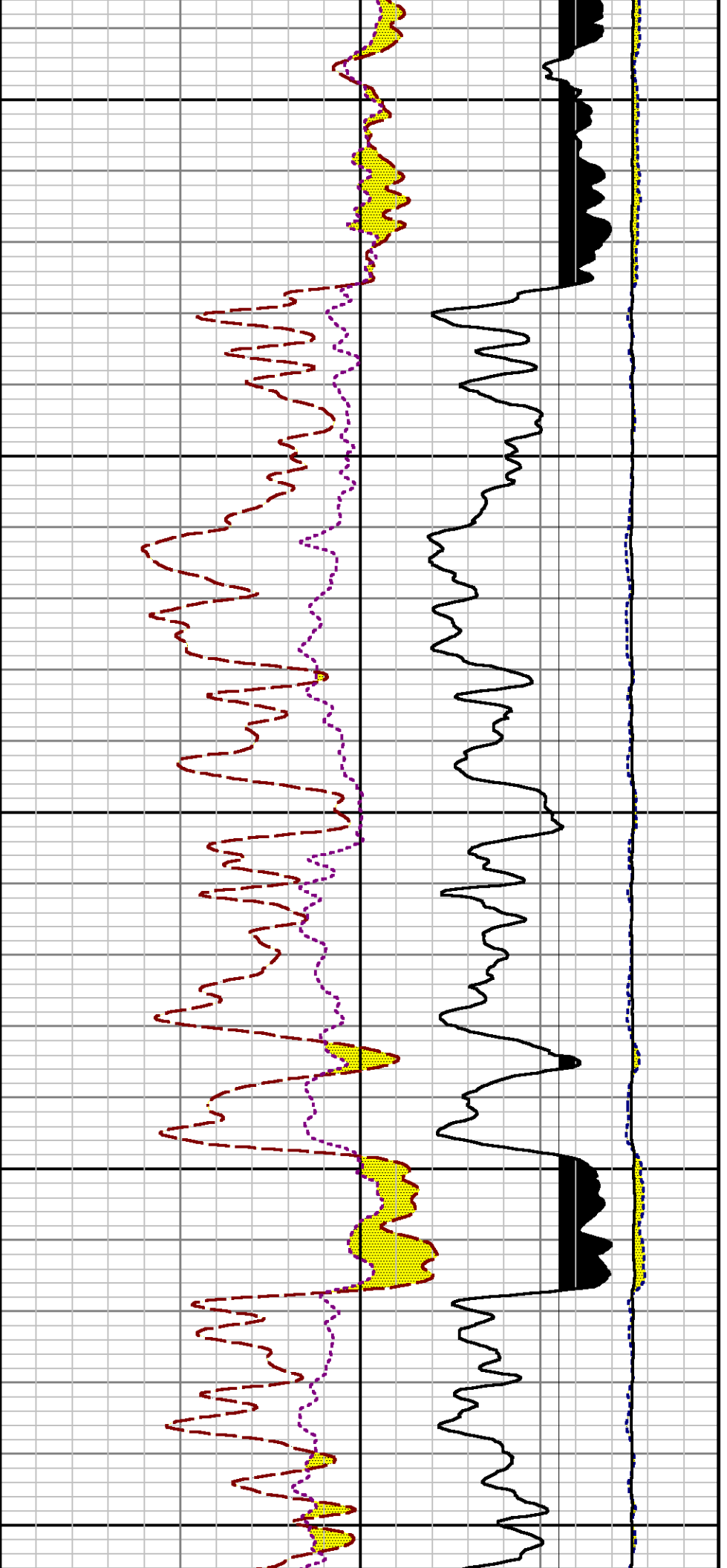


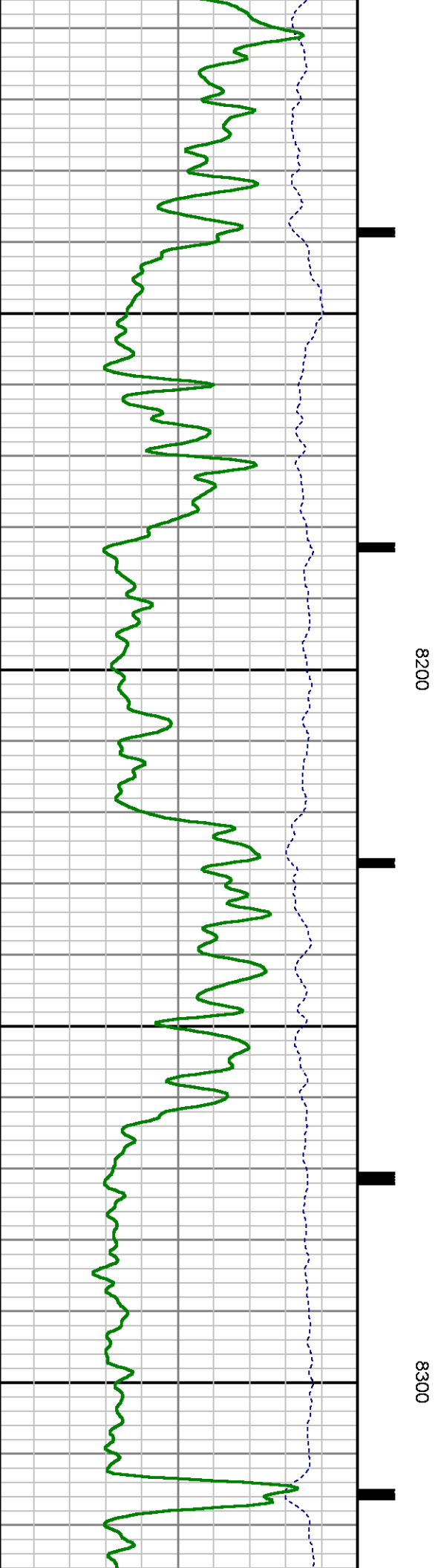
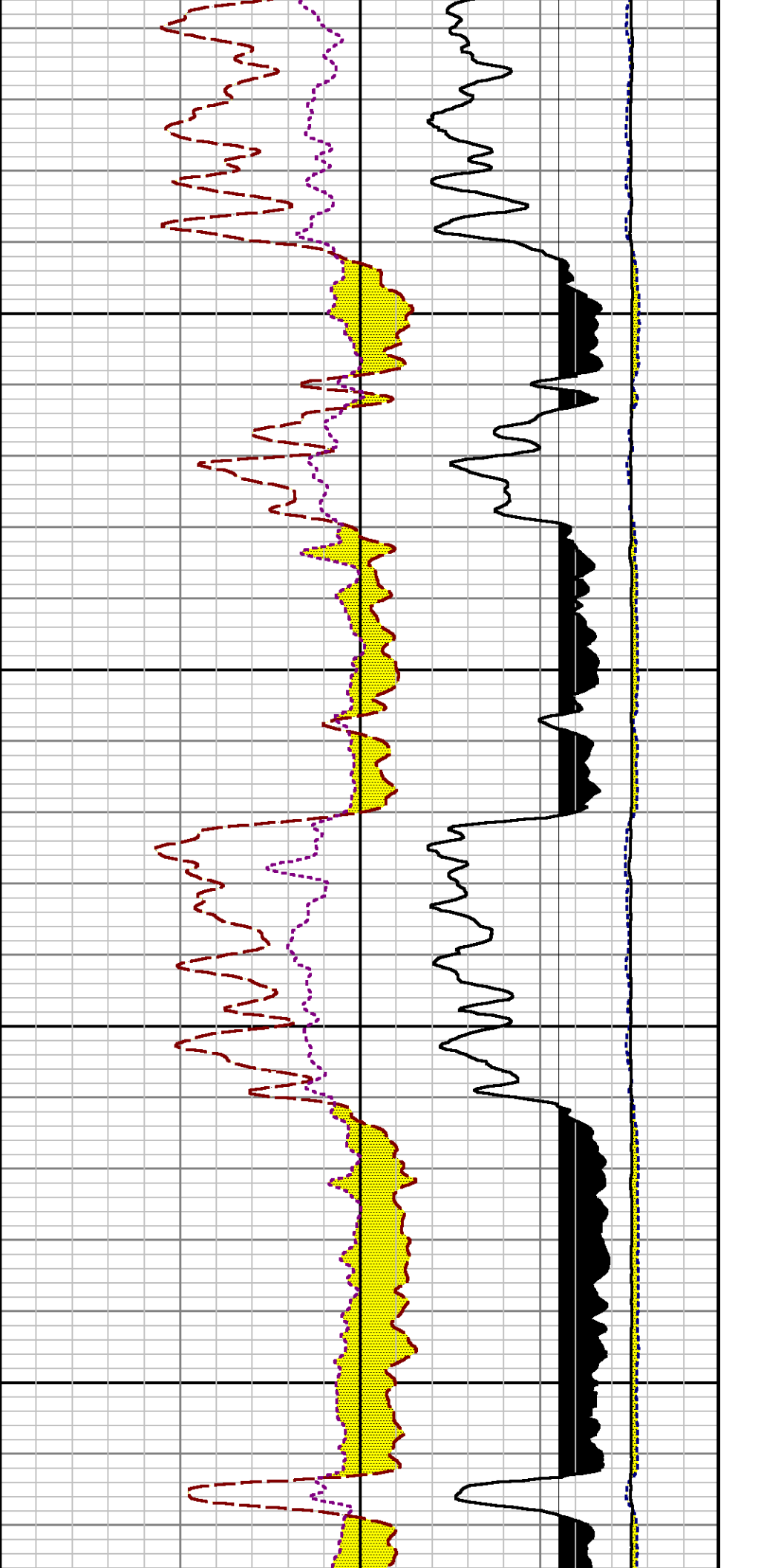


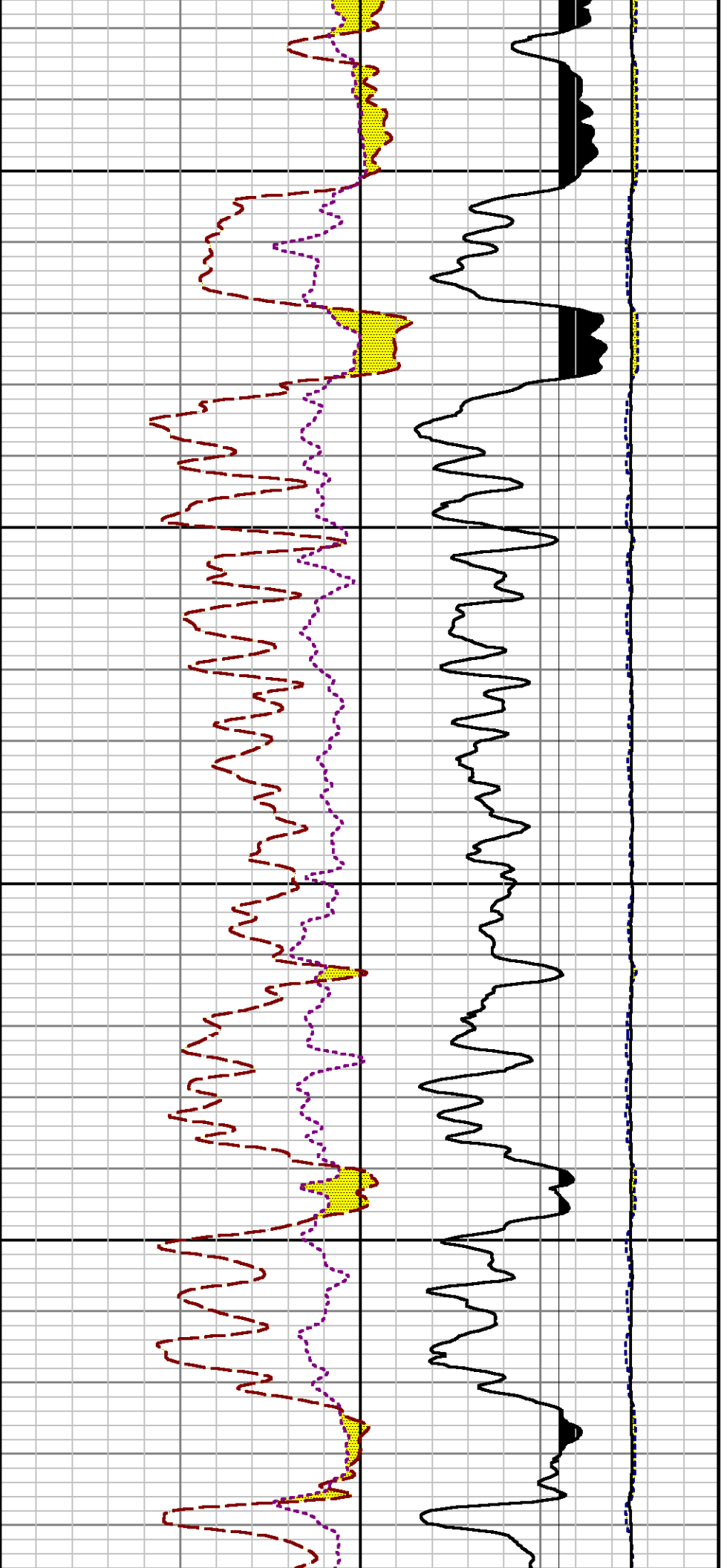
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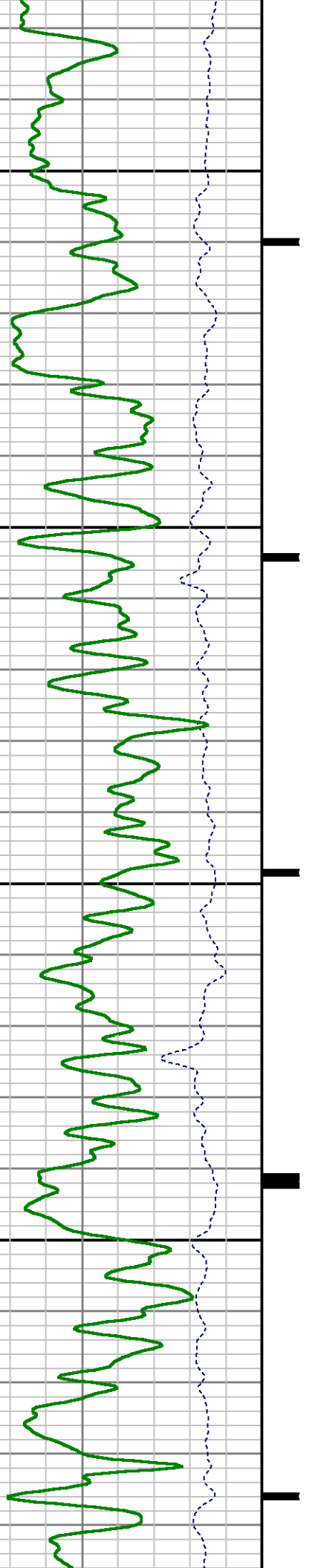


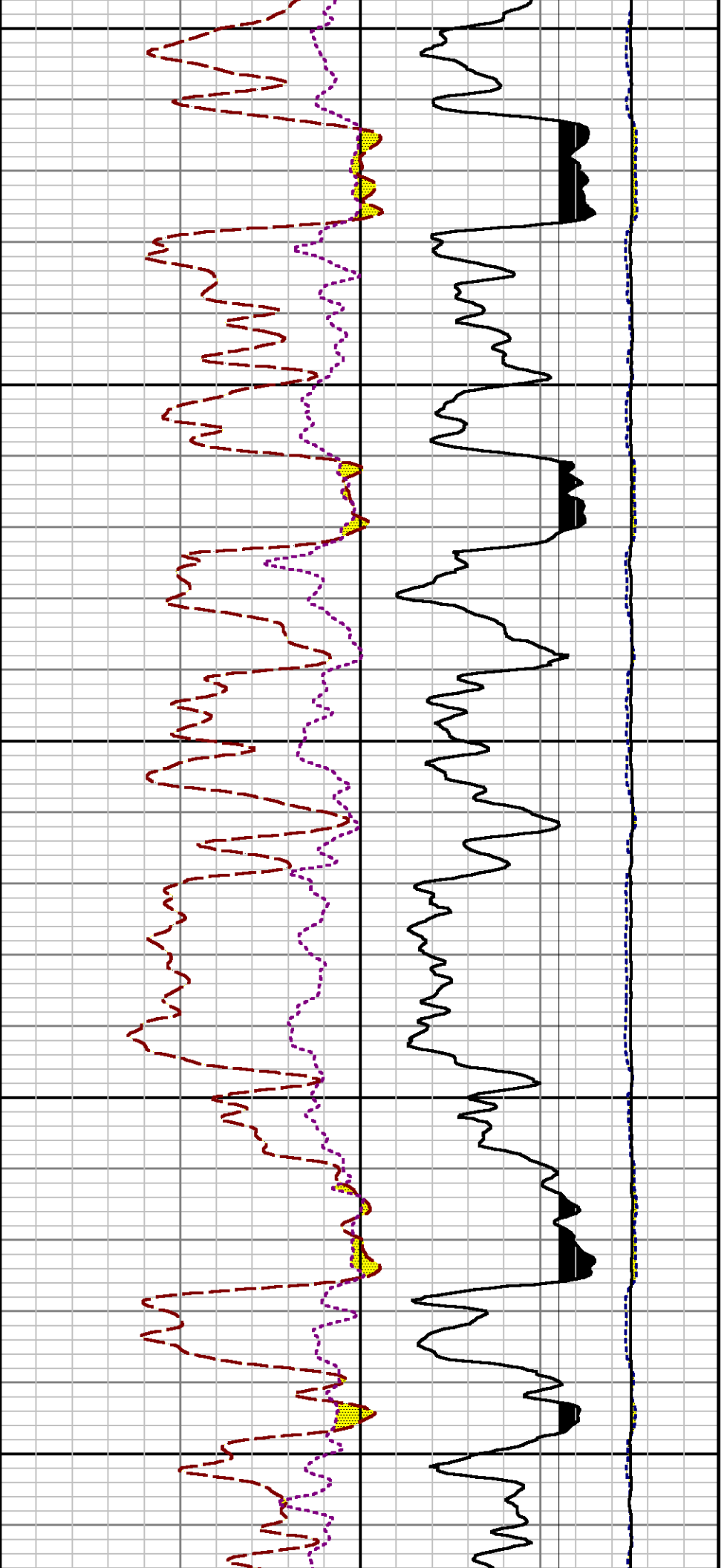




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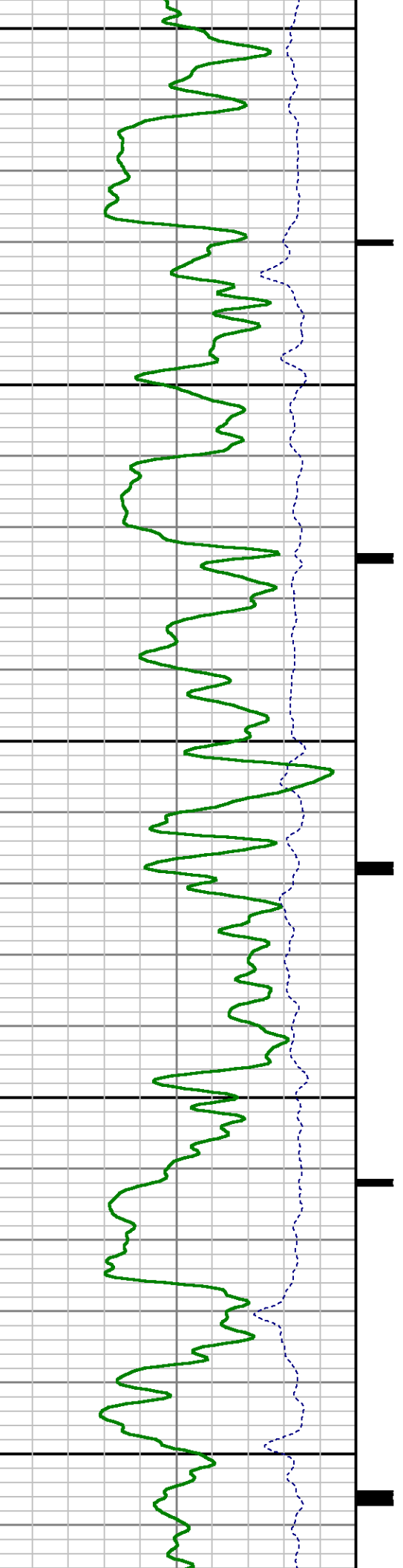
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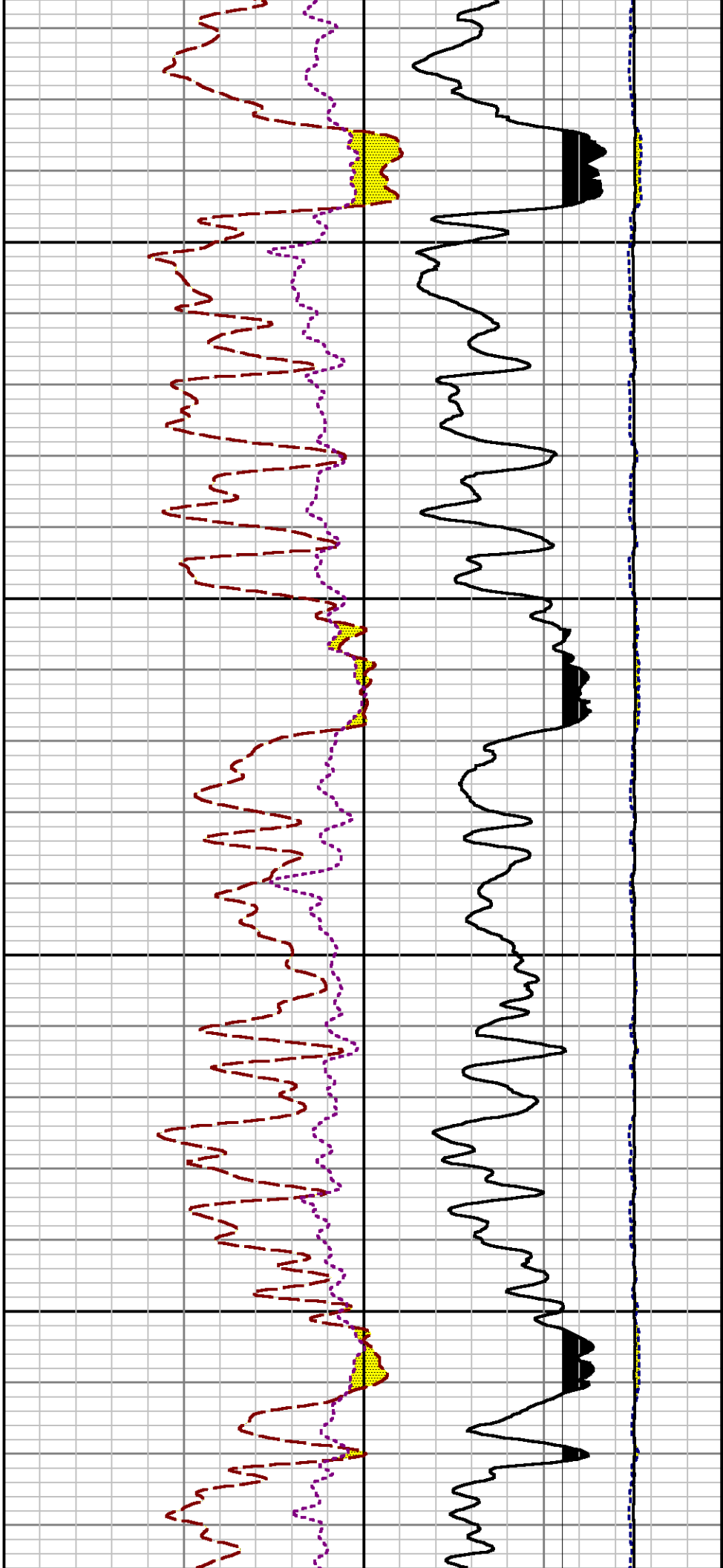


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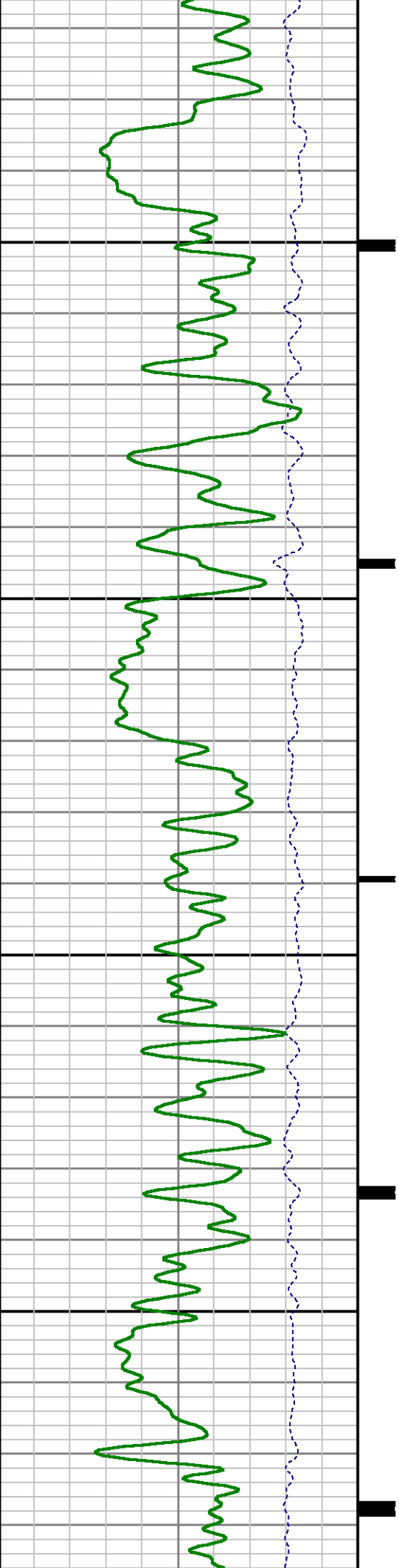


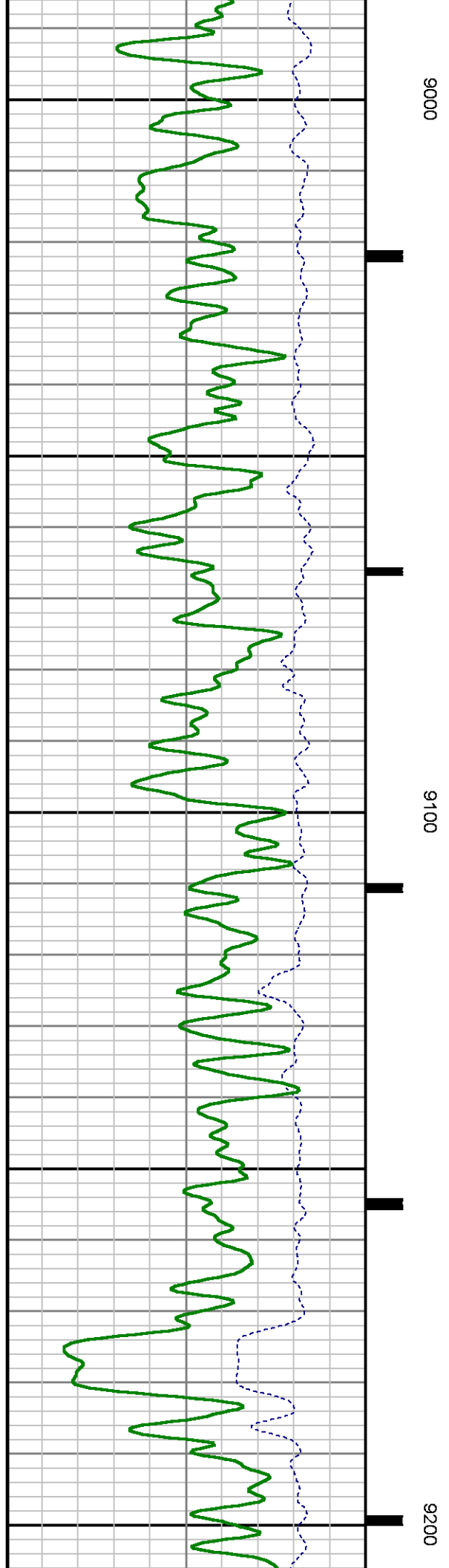
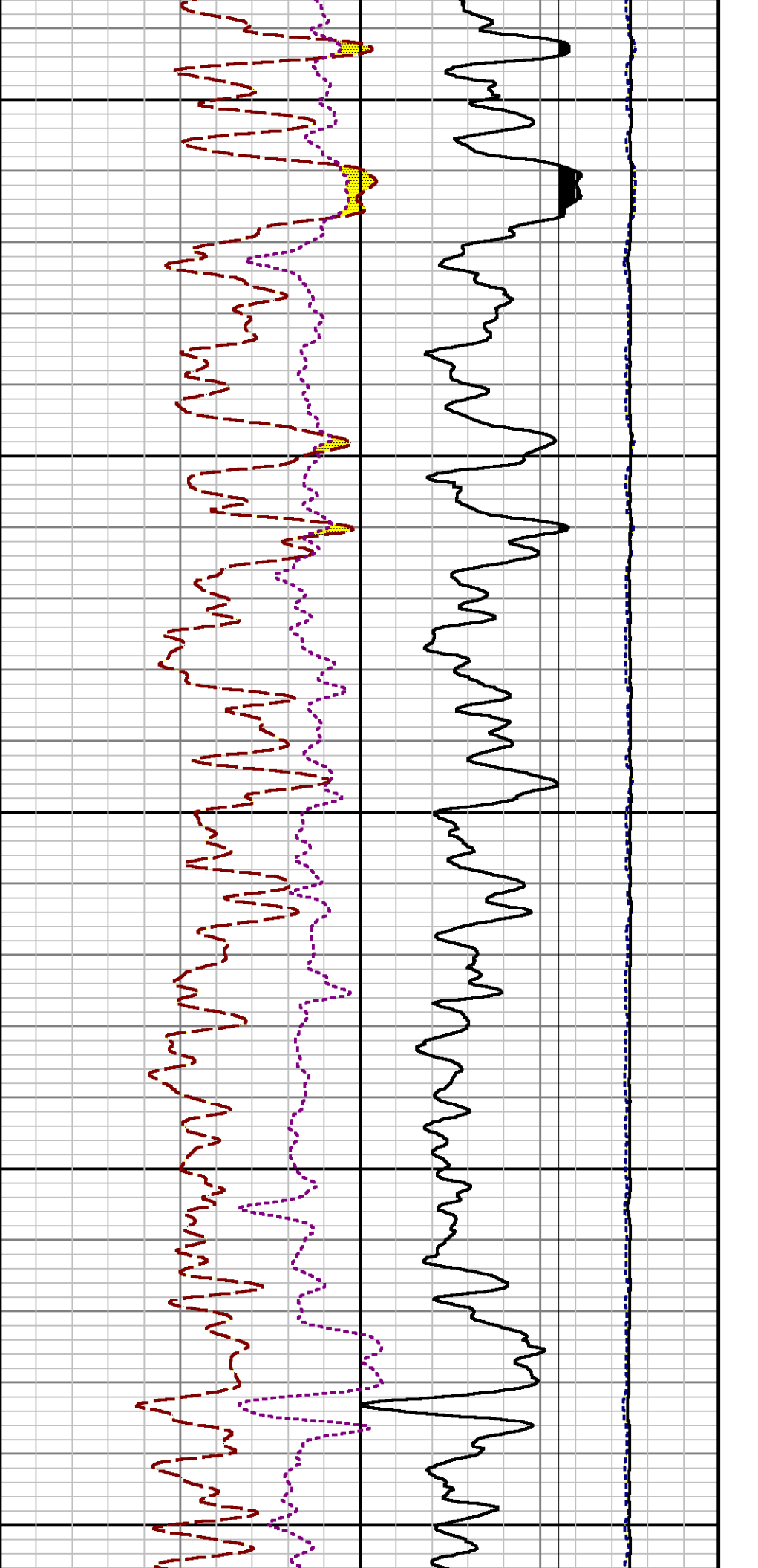


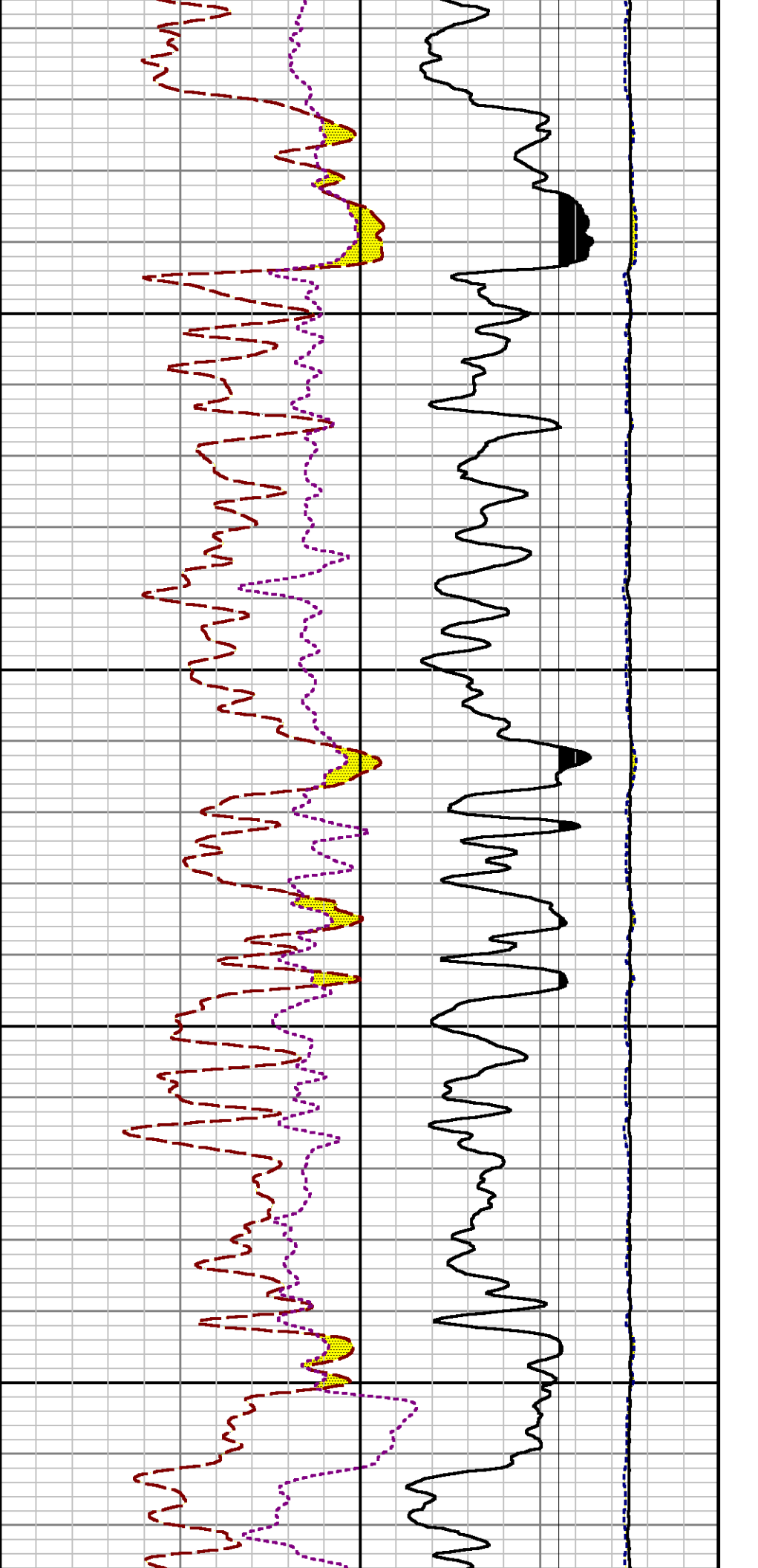


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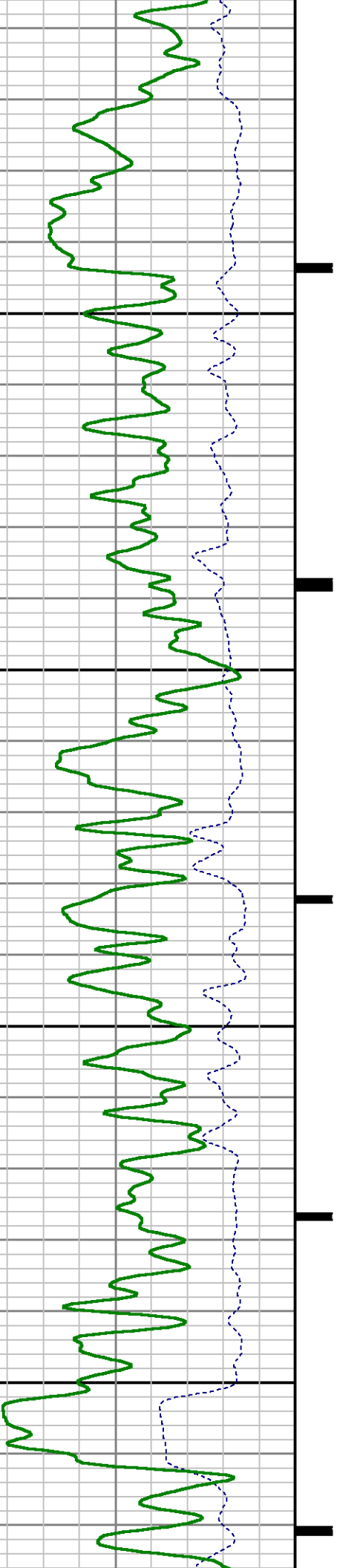


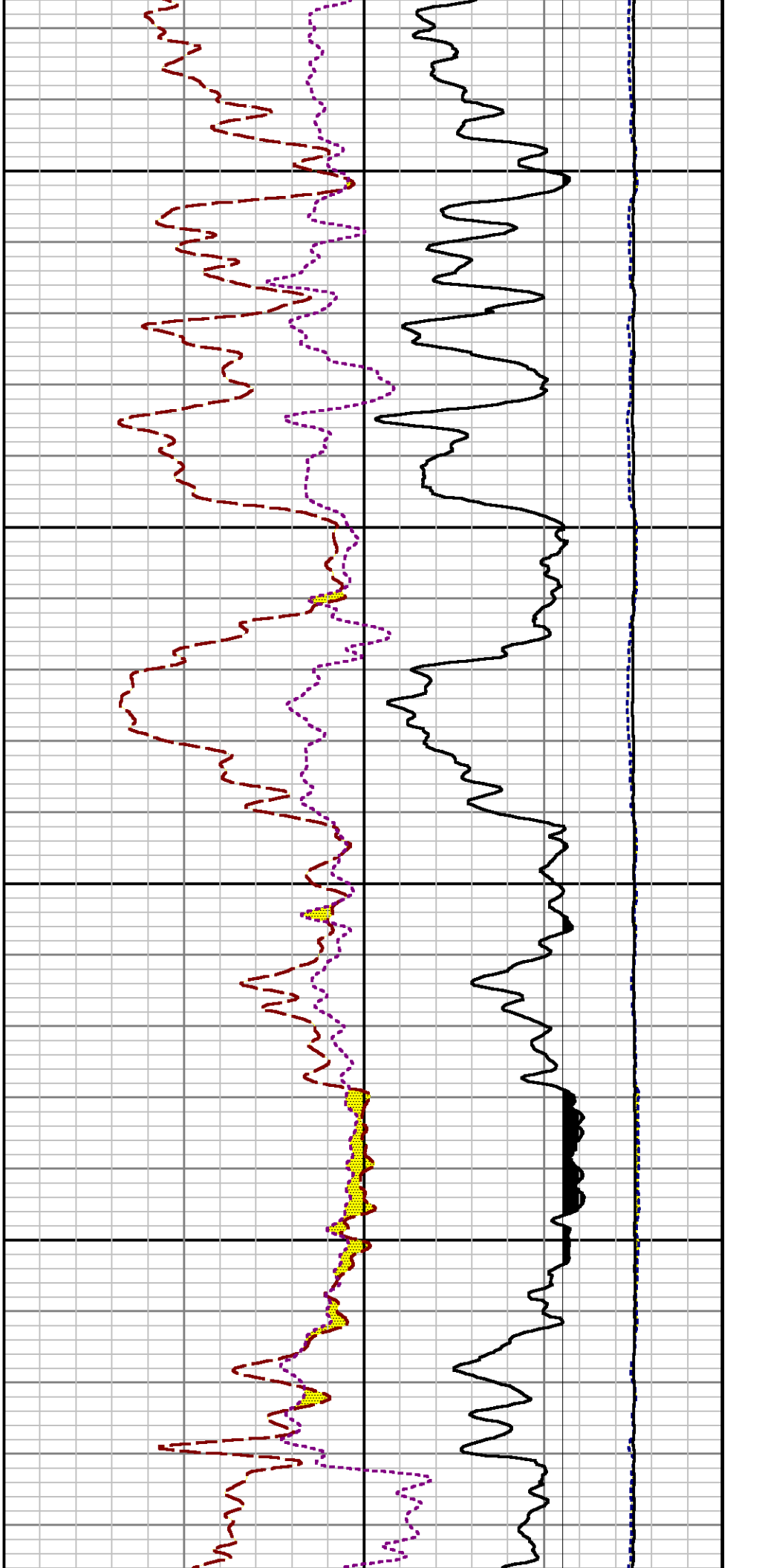
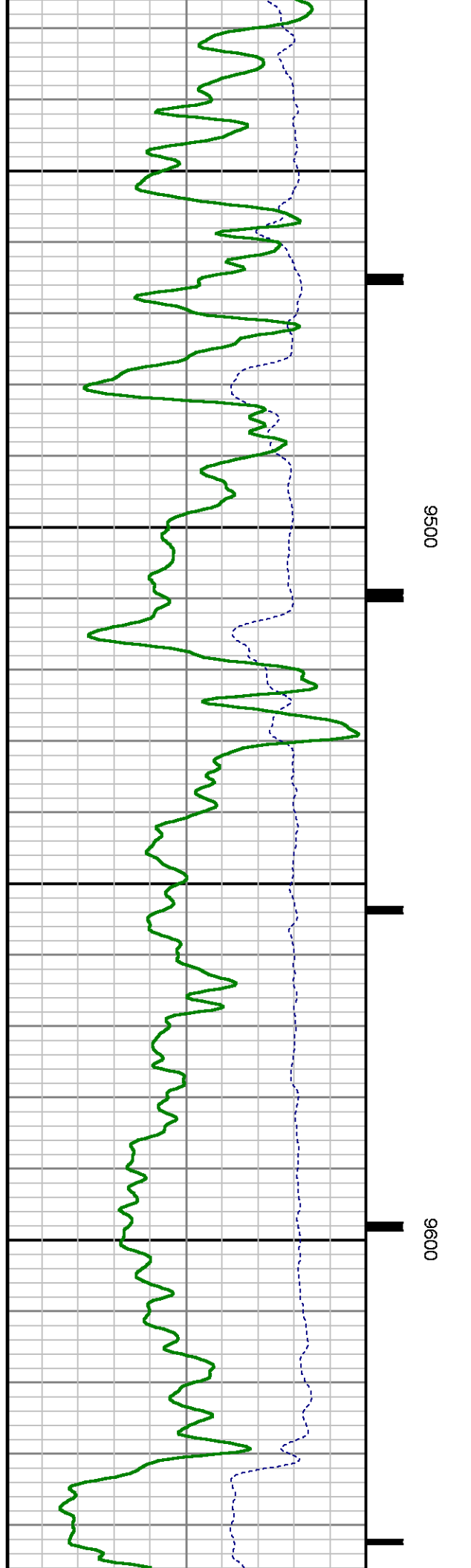


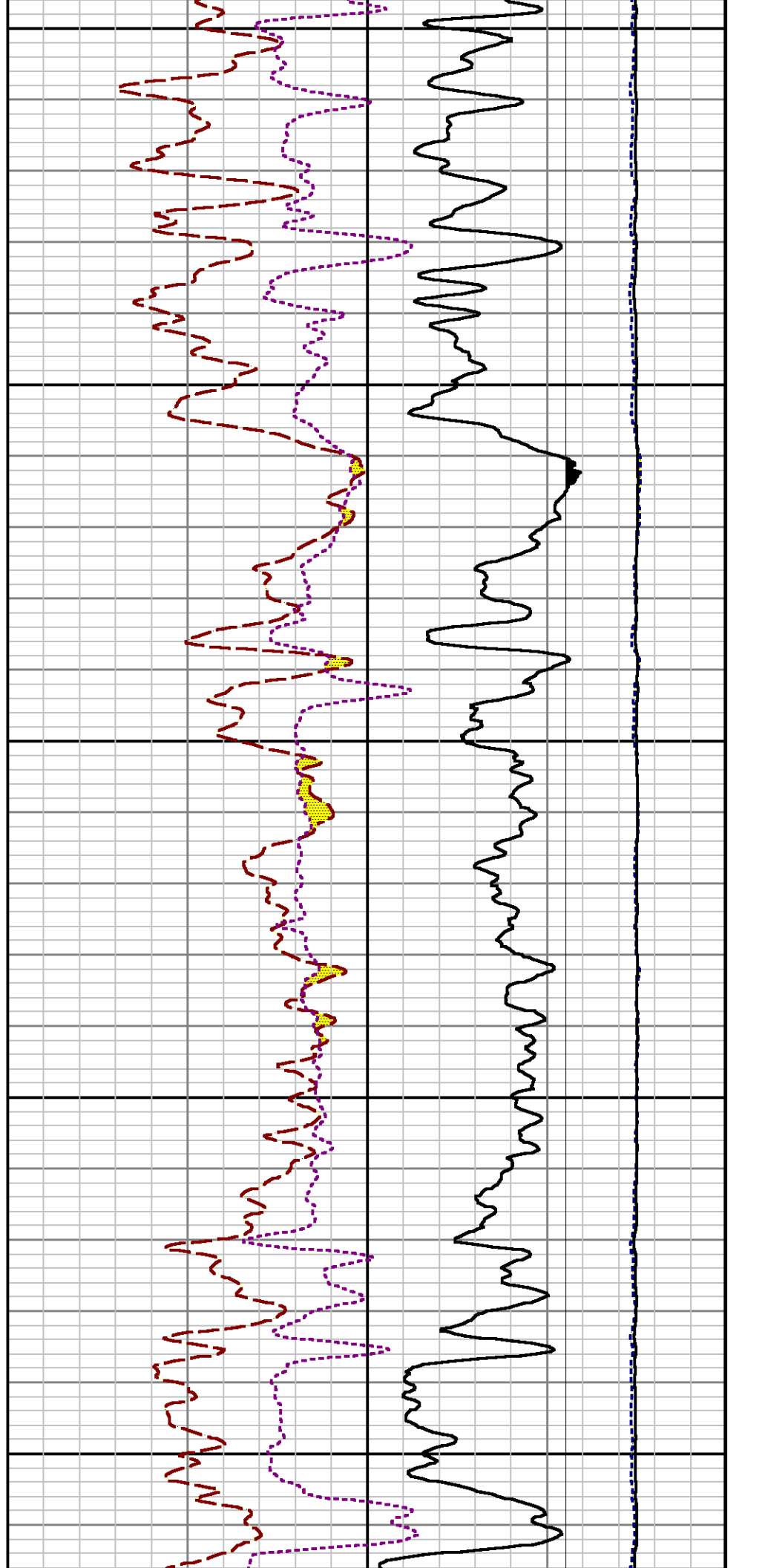
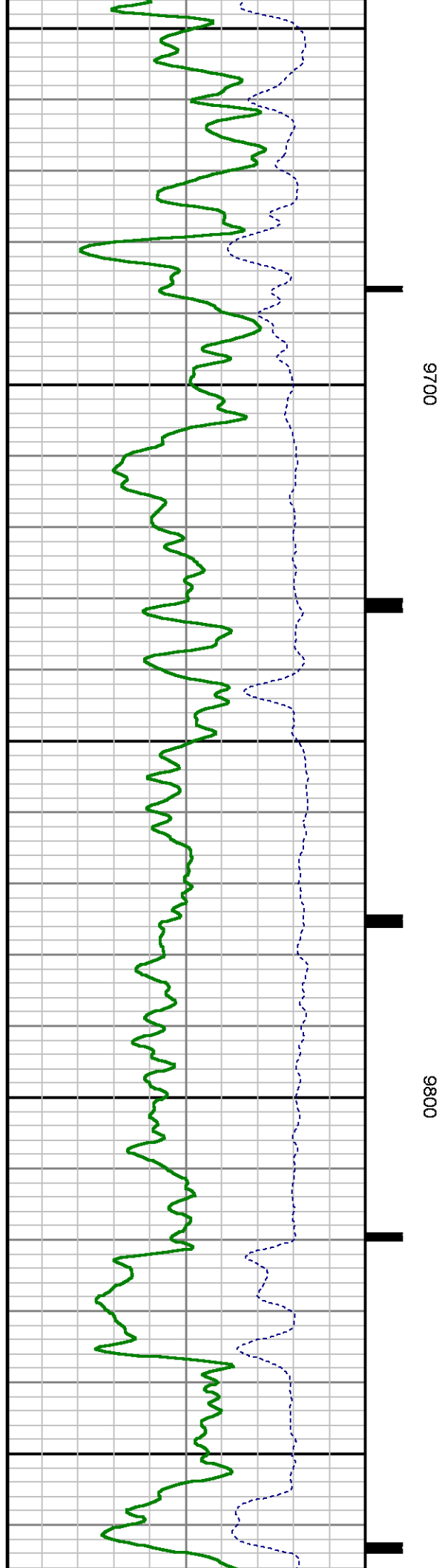


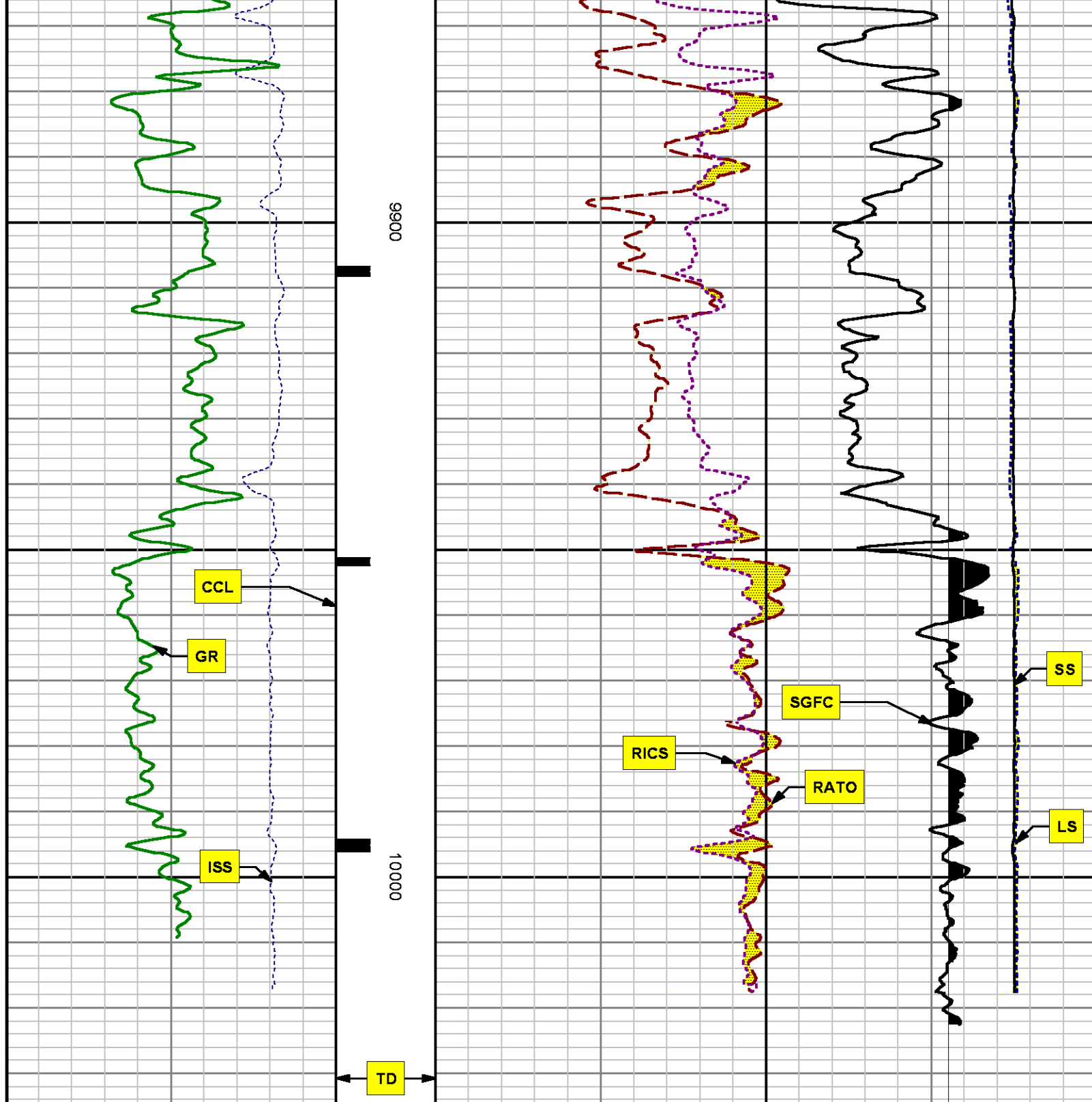
9300

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<p>ISS 1e+006</p> <p>cps</p>	<p>CCL 000</p> <p>MD feet 1:240</p>	<p>SS 290000</p> <p>cps</p>
<p>GR 150</p> <p>gAPI</p>		<p>RATO 0</p> <p>RICS 7</p> <p>SGFC 0</p> <p>cu</p>
		<p>SS 290000</p> <p>cps</p>

# REPEAT SECTION

## PNC 3-D MODE

### SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		9197.884	9505.690
PNC Porosity	Borehole Size	8.750	inch	9197.884	9505.690
PNC Porosity	Casing Size	4.500	inch	9197.884	9505.690
PNC Porosity	Gas Filled	Non Gas Filled		9197.884	9505.690
PNC Porosity	Matrix	Sandstone		9197.884	9505.690
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	9197.884	9505.690

### 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 WIDTH3 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 WIDTH2 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	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	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				

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

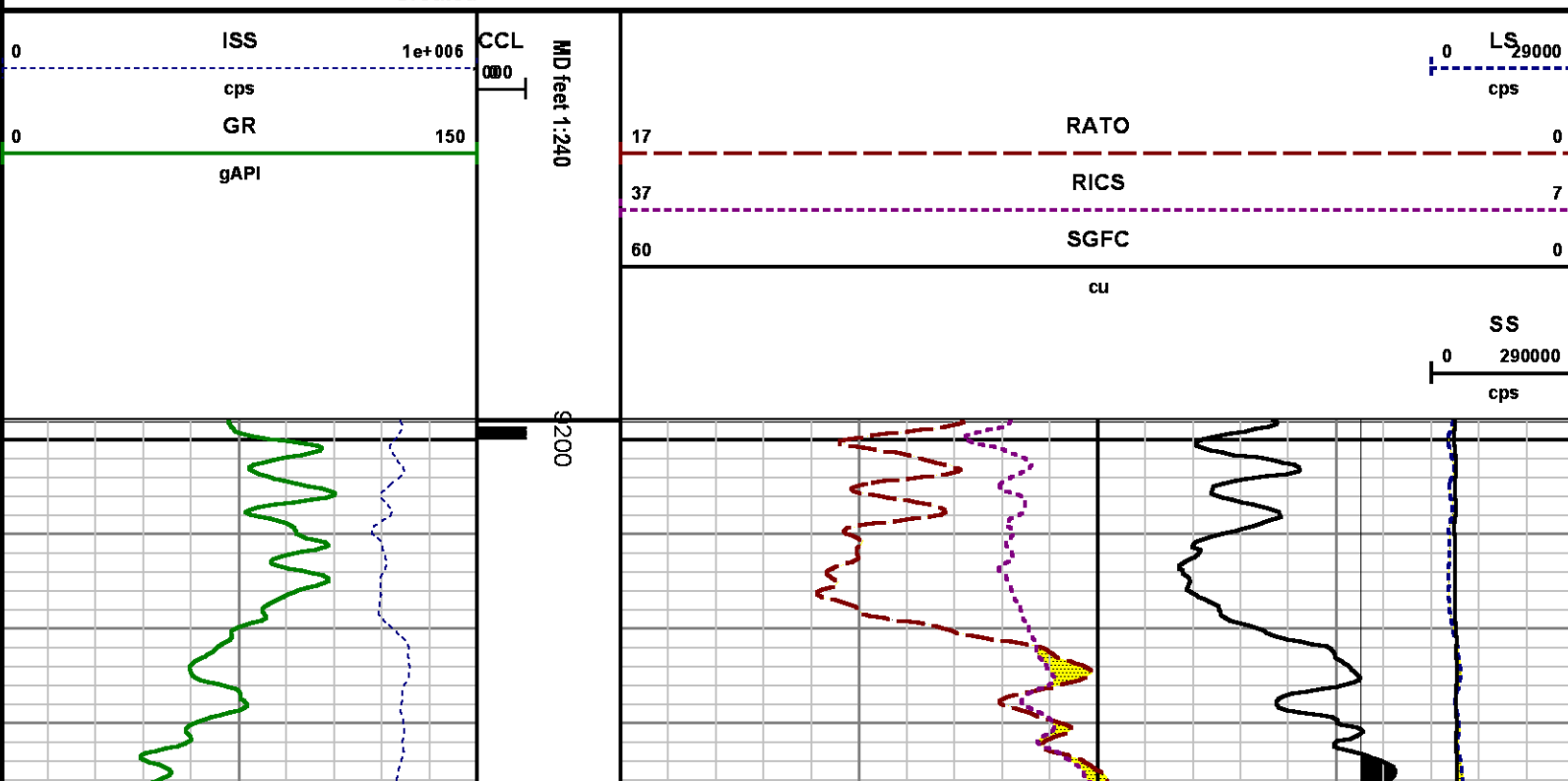
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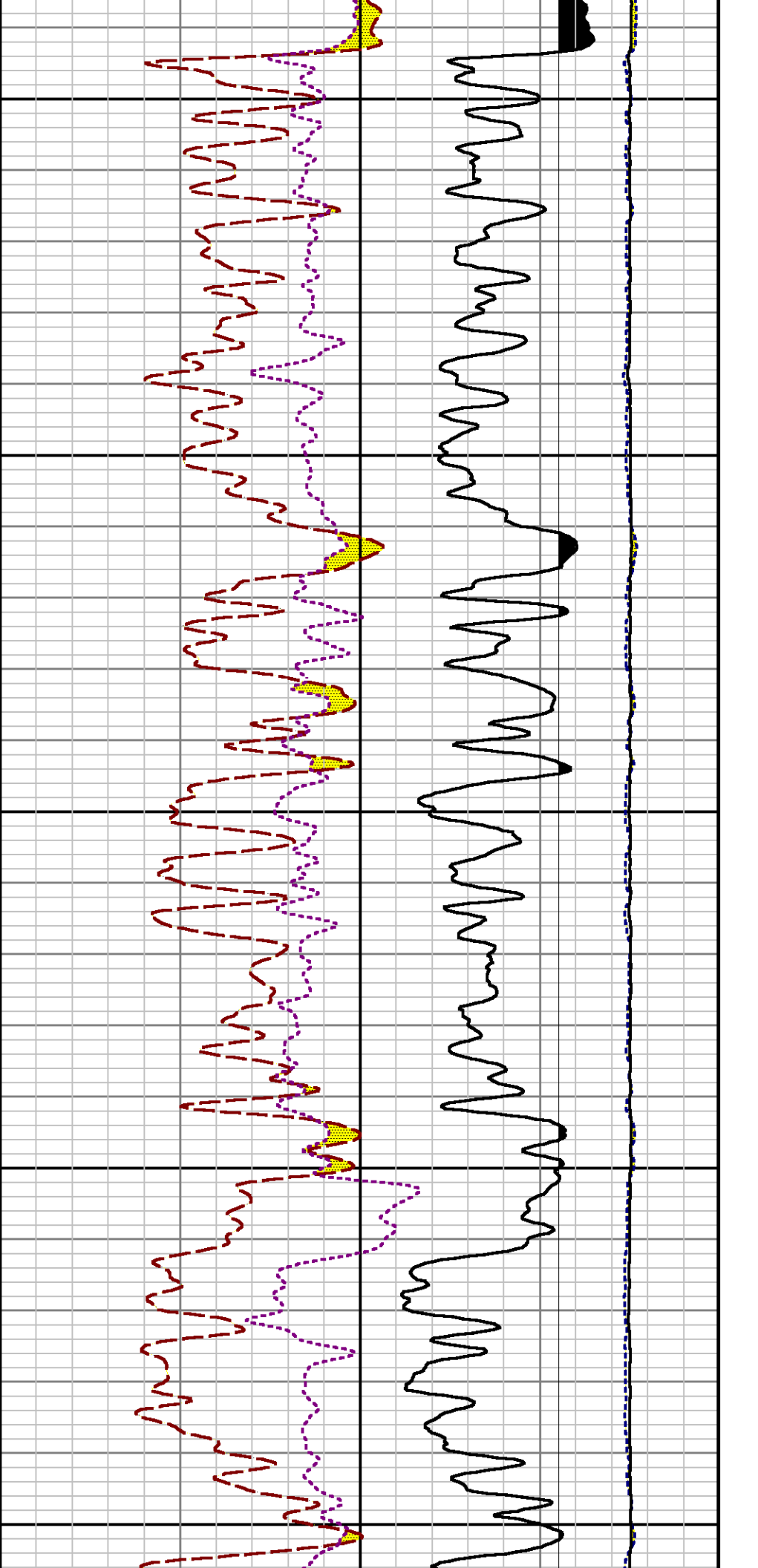
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Interval : 9197.94 - 9508.94 feet UP

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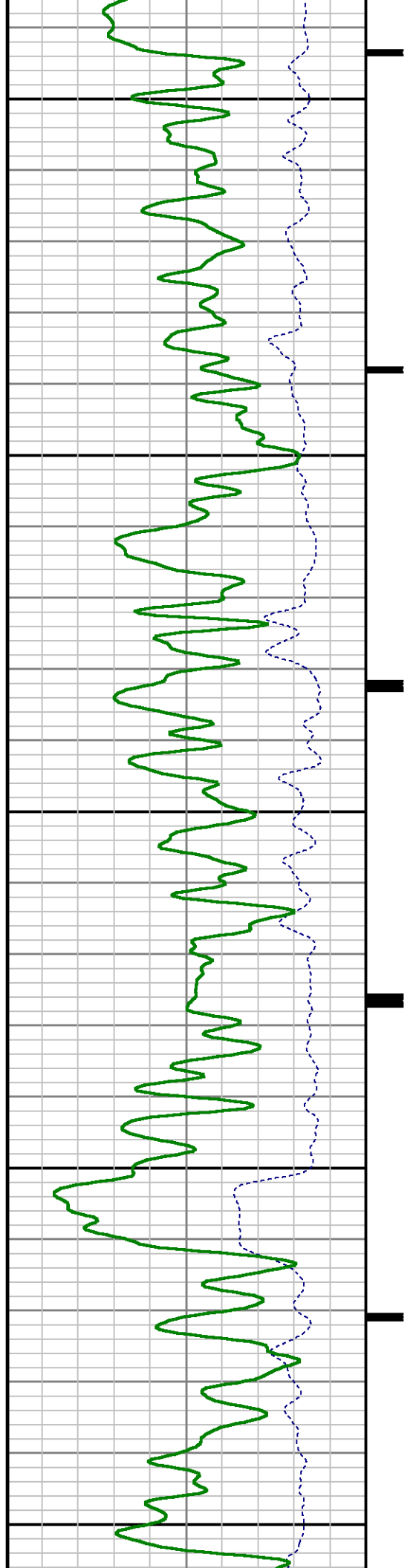


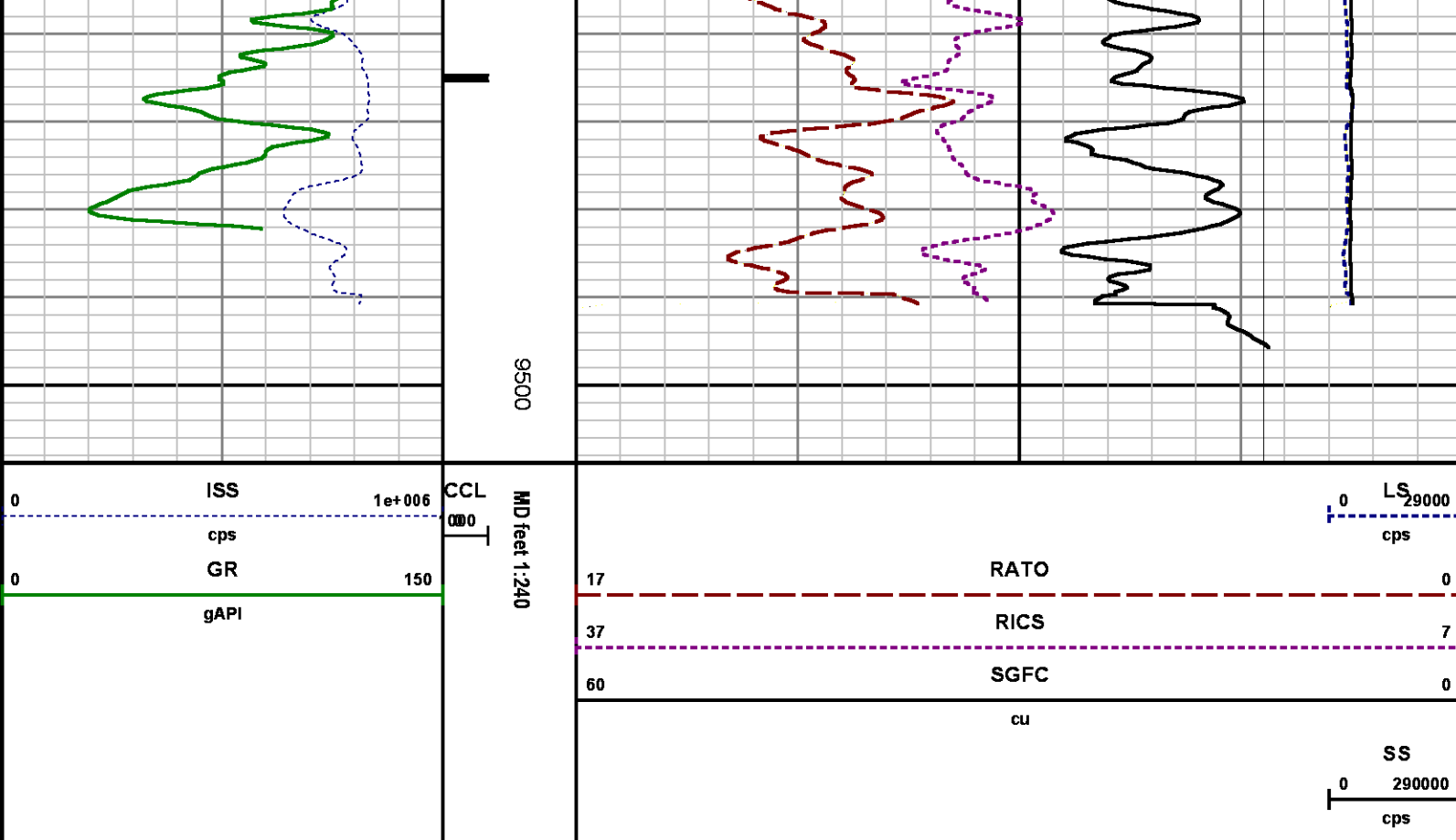




9300

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## CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\case\calver\GR\38515.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Sep 15 07:23:36 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: 15

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA612	85.63	306.18	0.952	81.54	291.54	210.00

Verification File: C:\case\calver\GR\38515.VP

### PRIMARY VERIFICATION

DATE/TIME PERFORMED: Mon Sep 15 07:27:22 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: 15

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA612	85.13	310.48	0.952	81.06	295.63	214.57

# PNC

Calibration File: C:\case\calver\PNC\25117.cal

## PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Wed Sep 17 13:32:09 2014 TOOL SERIES: 8281XA ASSET: 251 SEQ: 17

### Calibrator #

2437XB 112674

### Source #

8281AA 10220684

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	816811	123.00	2297.00	2292.00	2306.00	108.96	7.00	0.9925
Interpolated	1300000	142.22	2278.61	2286.35	2301.44			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	816811	7824.32	1325.50	169.22	25.76	0.14	24.27	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	816811	169831.69	26829.93	88232.01	31440.33	8315.89	53438.83	13288.97
Fit Quality %		0.64	0.57	0.66	0.62	0.64	0.62	0.67

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	816811	1.43	4.81	30.45	15.28	10.61	3.78	4.02
		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 %		0.05	0.09	0.07	0.08	0.03	0.02	0.05
Reduced	1370106	1.43	4.83	30.56	15.35	10.60	3.78	4.02
		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

# TEMPERATURE

Calibration File: C:\case\calver\TEMP\120516AU.cal

## CALIBRATION SUMMARY

DATE/TIME PERFORMED: 09 AUG 2010 TOOL SERIES: 8255XA ASSET: 120516 SEQ: AU

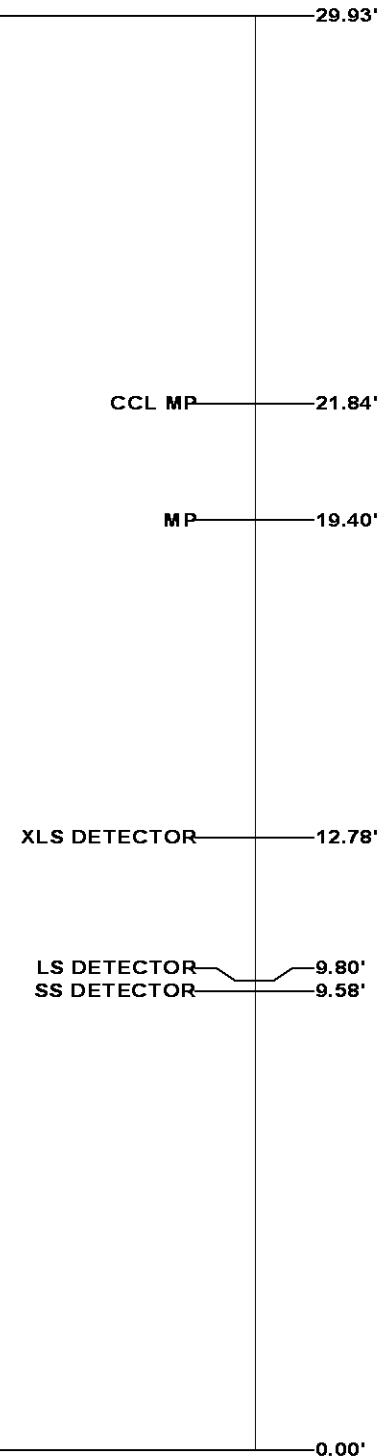
T(0) T(1) T(2) T(3) T(4) T(5)

Coefficients	1(5) -8.673169e+000	1(1) 9.576065e-002	1(2) 6.395448e-006	1(5) -9.461013e-010	1(5) 0.000000e+000	1(5) 0.000000e+000
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## 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"**

<div> <b>BAKER HUGHES</b></div> <div>Baker Atlas</div> <div></div>	<div>Company<div>WPX ENERGY</div></div> <div>Well<div>FEDERAL NER 424-32</div></div> <div>Field<div>RULISON</div></div> <div>County<div>GARFIELD</div>State<div>COLORADO</div></div>	<div>File No:<div>CH090685</div></div> <div>API No:<div>05045217660000</div></div>
	<div>Location<div>SHL: 117' FNL x 2583' FWL SEC 6 7S 93W</div><div>BHL: 649' FSL x 2229' FWL SEC 32 6S 93W</div><div>SEC32TWP6SRGE93W</div></div> <div><div>Elevations</div><div>KB7629 ft</div><div>DF</div><div>GL7603 ft</div></div> <div><div>32 6S 93W</div><div>RU 23-5 PAD</div><div>NABORS 576</div></div>	