



RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: CH084617 Company WPX ENERGY

Well FEDERAL NER 344-32

API No: RULISON

County GARFIELD State COLORADO

05045217790000

Location

32 6S 93W
RU 23-5 PAD
NABORS 676

SHL: 189' FNL x 2605' FWL SEC 5 7S 93W
BHL: 424' FSL x 659' FWL SEC 32 6S 93W

SEC 32 TWP 6S RGE 93W

Other Services

BOND LOG

Permanent Datum GL Elevation 7603 ft

Log Measured From KB 26 ft Above P. D.

Drill Measured From KELLY BUSHING

Elevations

KB 7629 ft

DF

GL 7603 ft

Date	04/APR/14	
Run	ONE	
Service Order	US628373	
Depth Driller	10307 ft	
Depth Logger	10278 ft	
Bottom Logged Interval	10268 ft	
Top Logged Interval	6198 ft	
Time Started	1230	
Time Finished	1830	
Operator Rig Time	6 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	81 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	244 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	04/APR/14	
Equipment No.	4271	GRAND UCT
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	1132 ft
8.75 in	1132 ft	10307 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			26 ft	1132 ft
4.5 in	11.6 lbm/ft	P-110	26 ft	10307 ft

Remarks
All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 4/4/2014 at the client's request.
The amount of linear shift is 10 feet.
Logged in PNC-3D mode.
BHT = 244°F
SJ = 6924'-6946'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	TEMP	8255XA	11774568	FREE
1	1	RPM	8281FA	10191667	FREE
1	1	RPM	8281PA	10169251	FREE
1	1	RPM	8281EA	10169250	FREE
1	1	GR	2812LA	10274385	FREE
1	1	TEL/CCL	8248ED	10296408	FREE
1	1	PCM	8250EA	10397894	FREE

MAIN SECTION
PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		6169.750	10266.937
PNC Porosity	Borehole Size	8.750	inch	6169.750	10266.937
PNC Porosity	Casing Size	4.500	inch	6169.750	10266.937
PNC Porosity	Gas Filled	Non Gas Filled		6169.750	10266.937
PNC Porosity	Matrix	Sandstone		6169.750	10266.937
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	6169.750	10266.937

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	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	RTWO23	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	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					
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 344-32

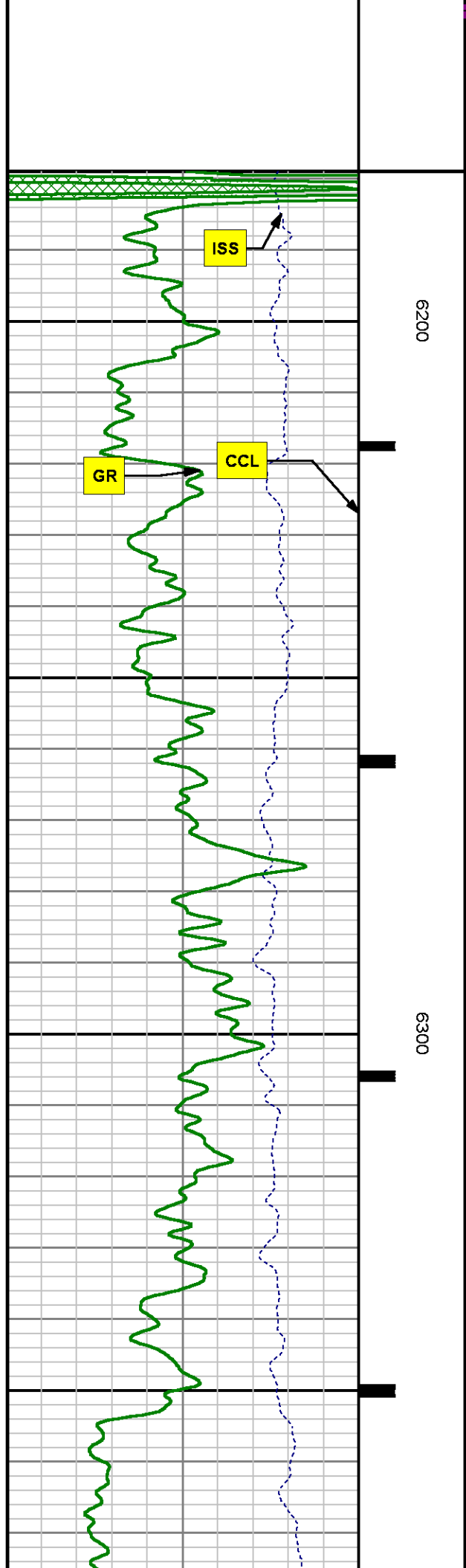
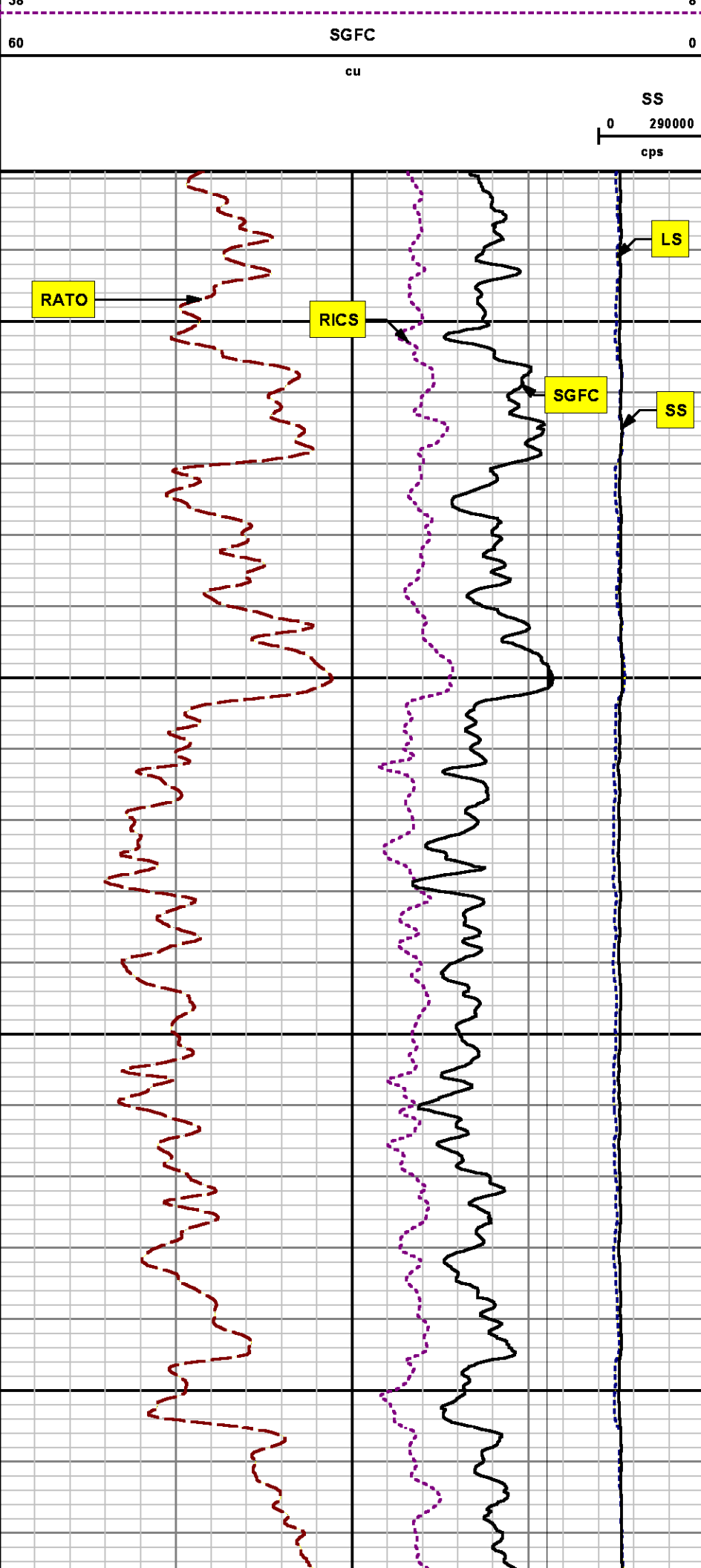
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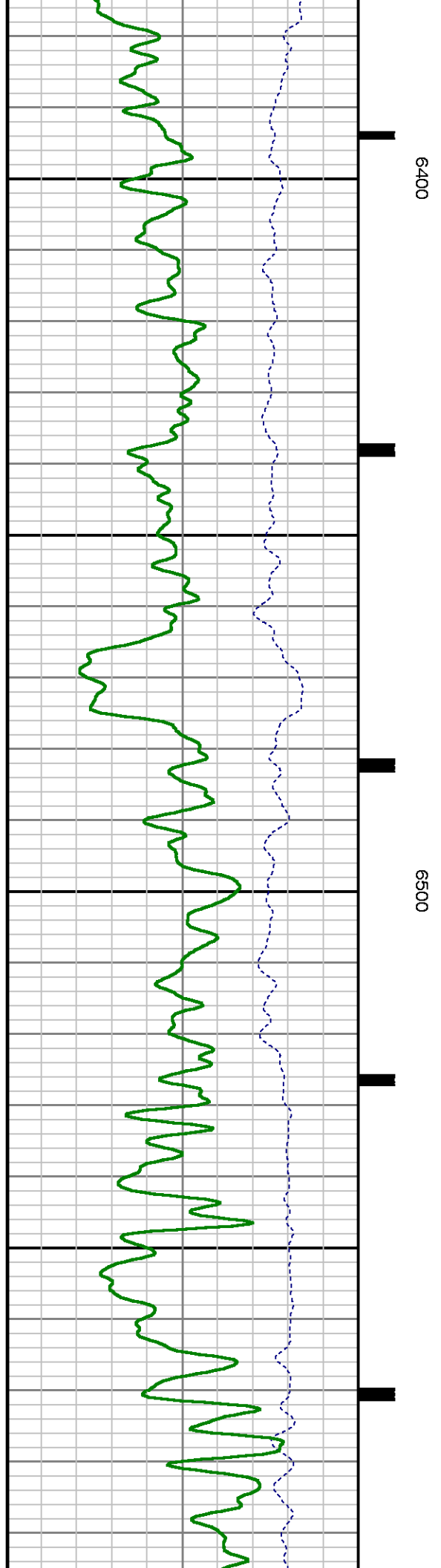
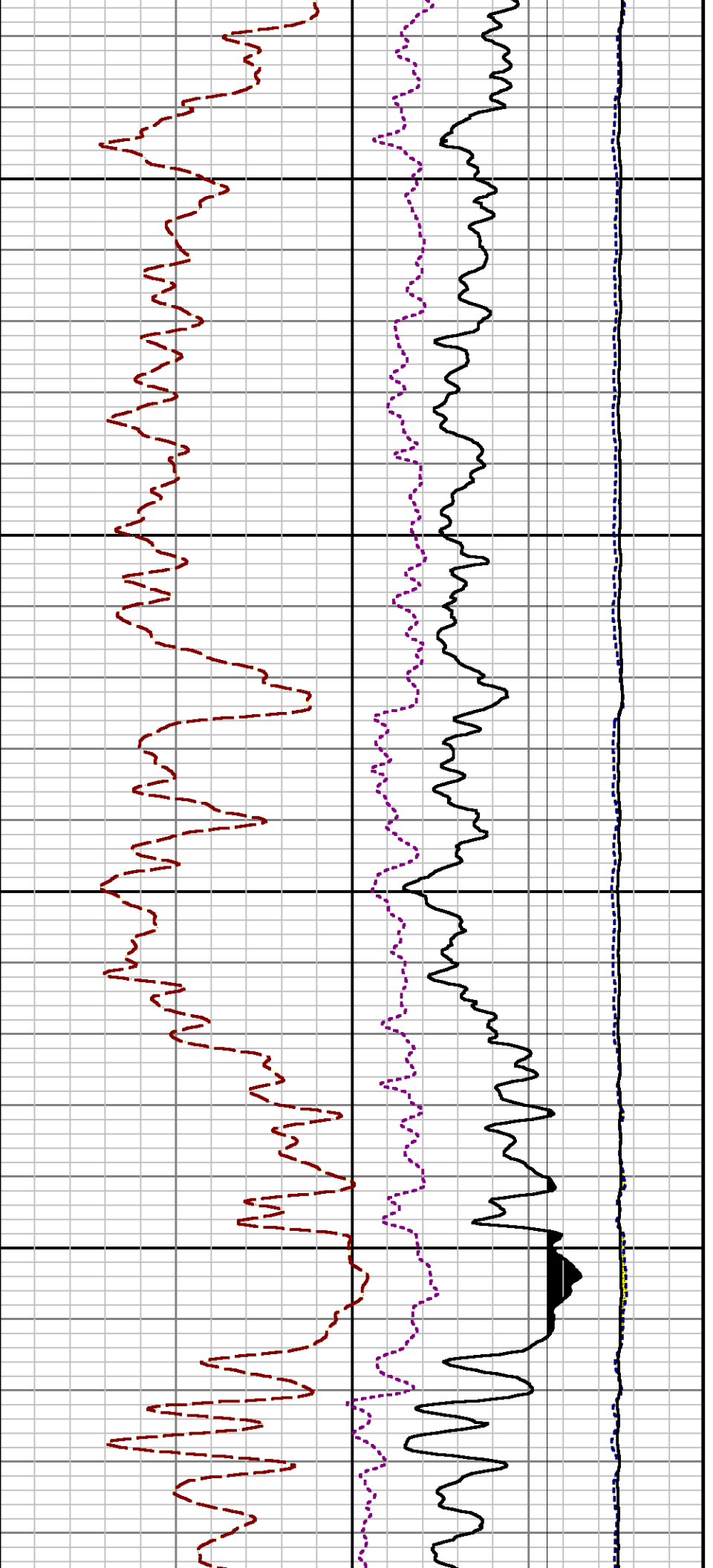
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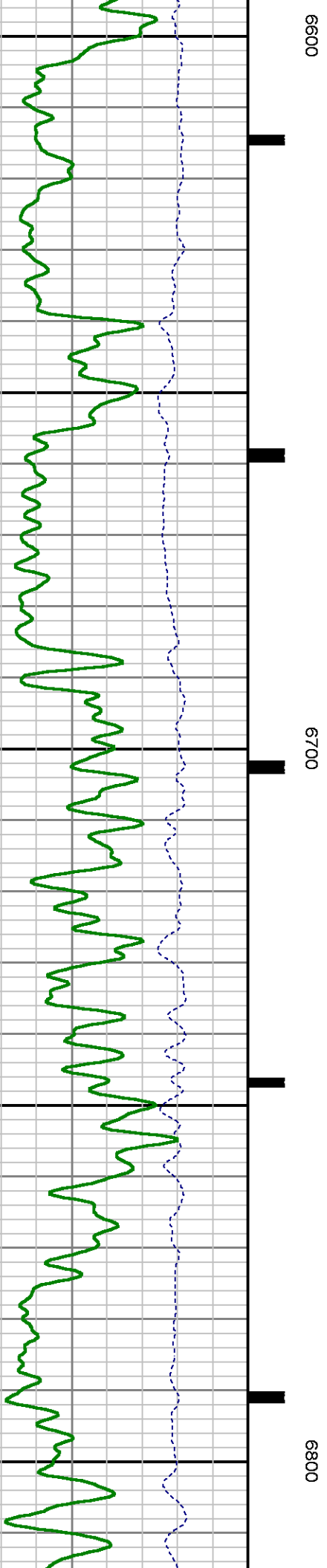
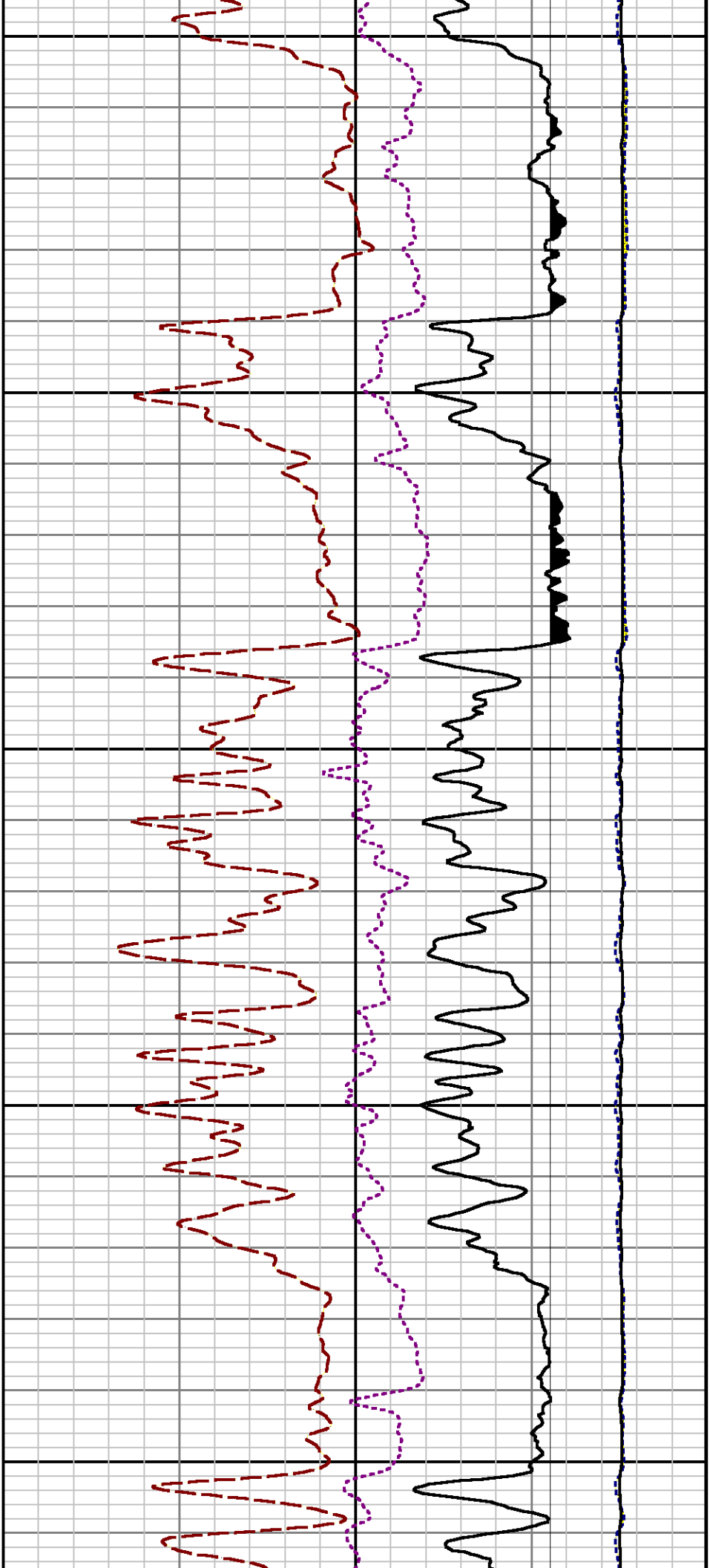
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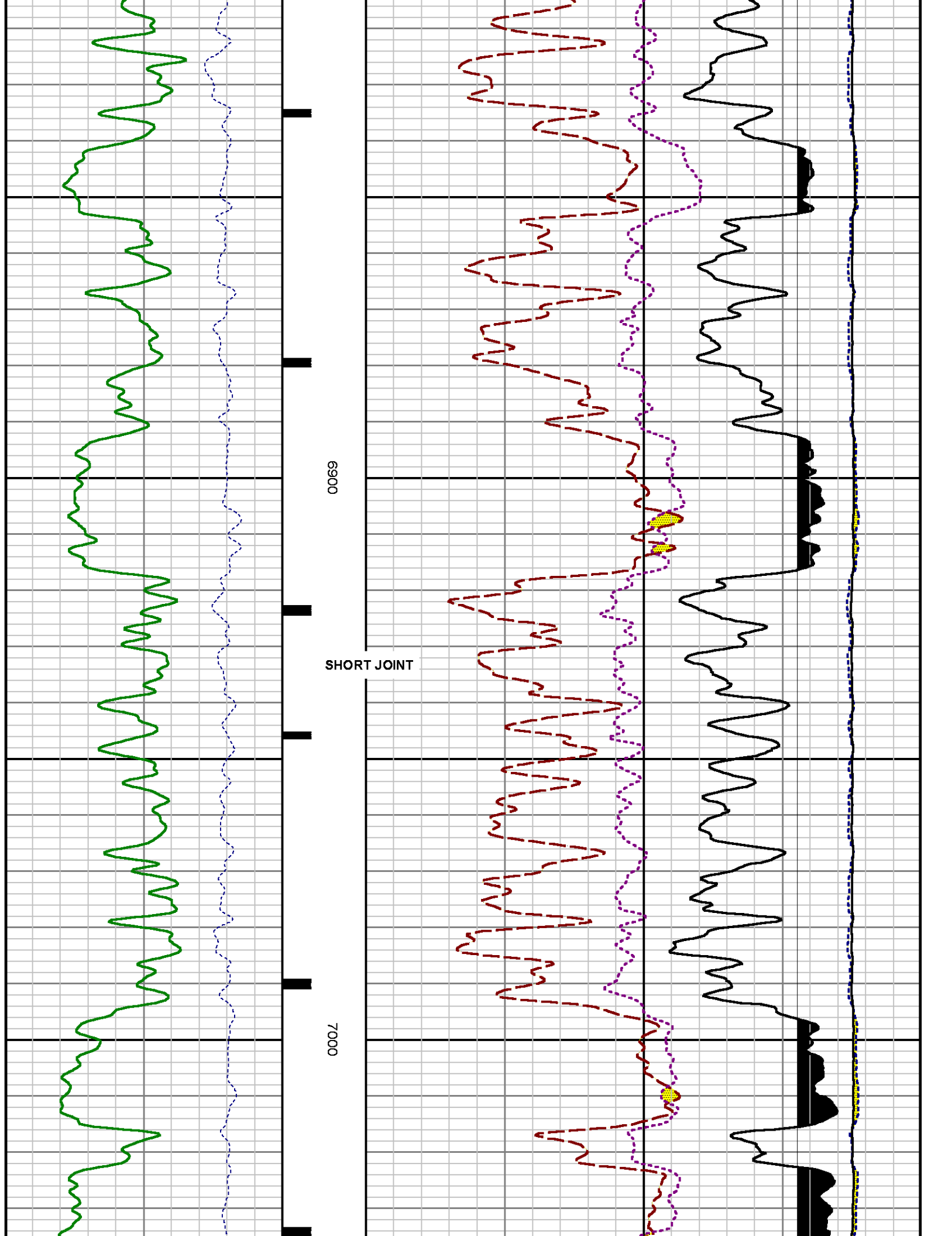
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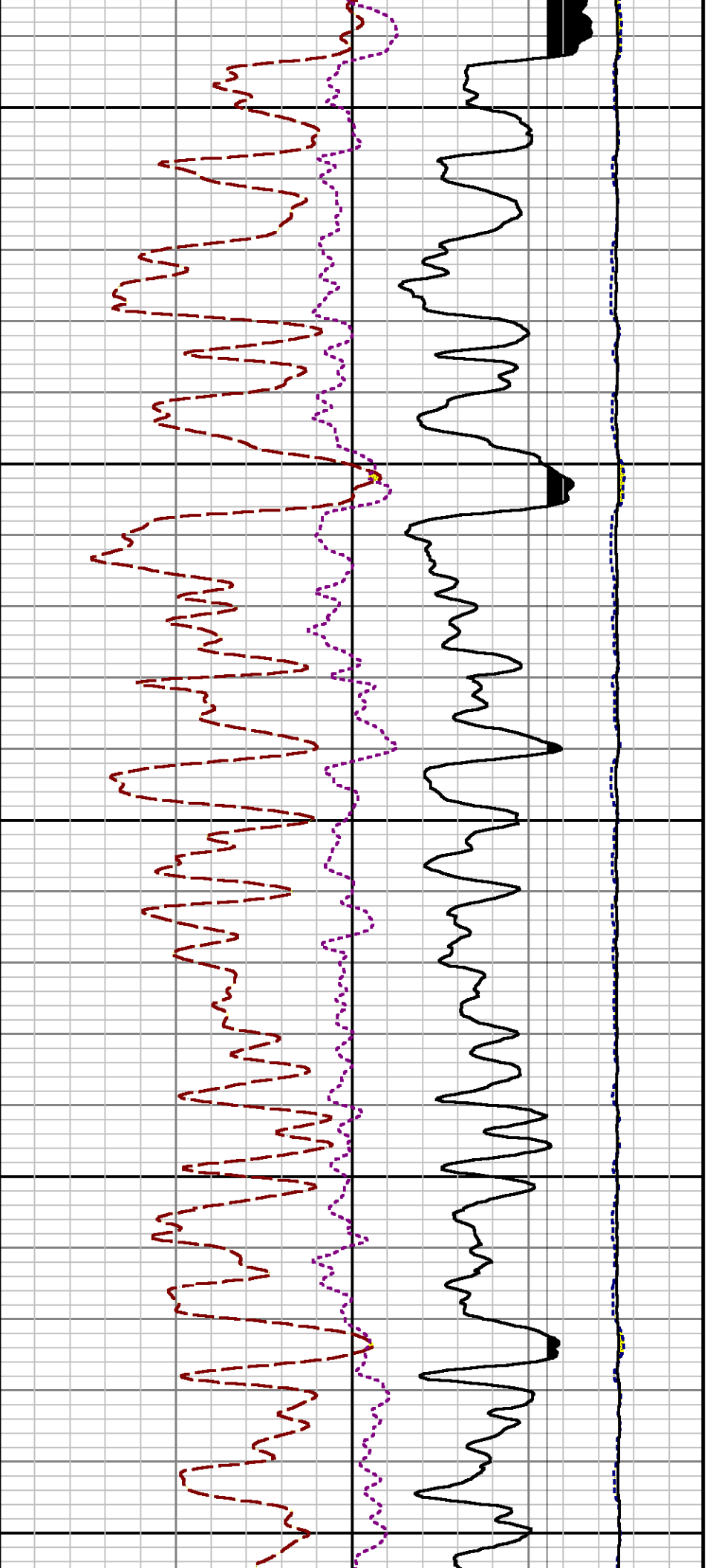






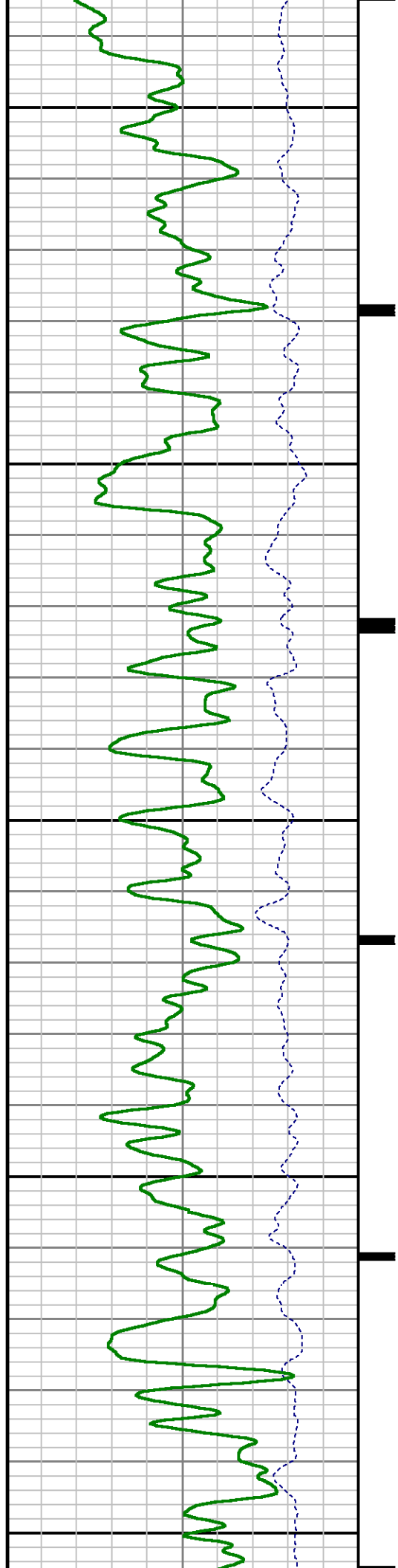


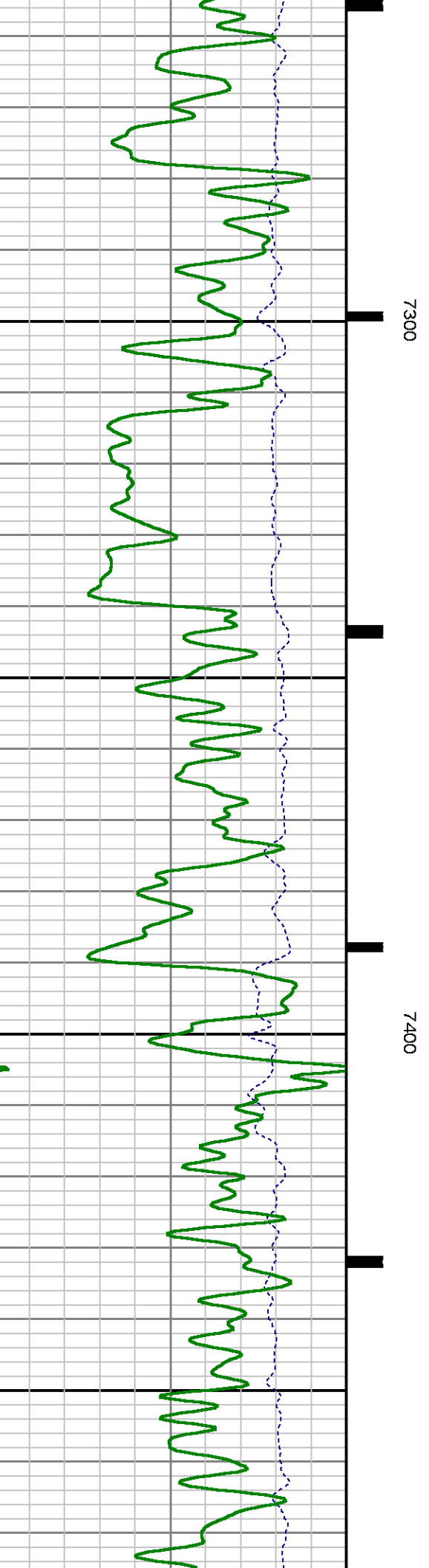
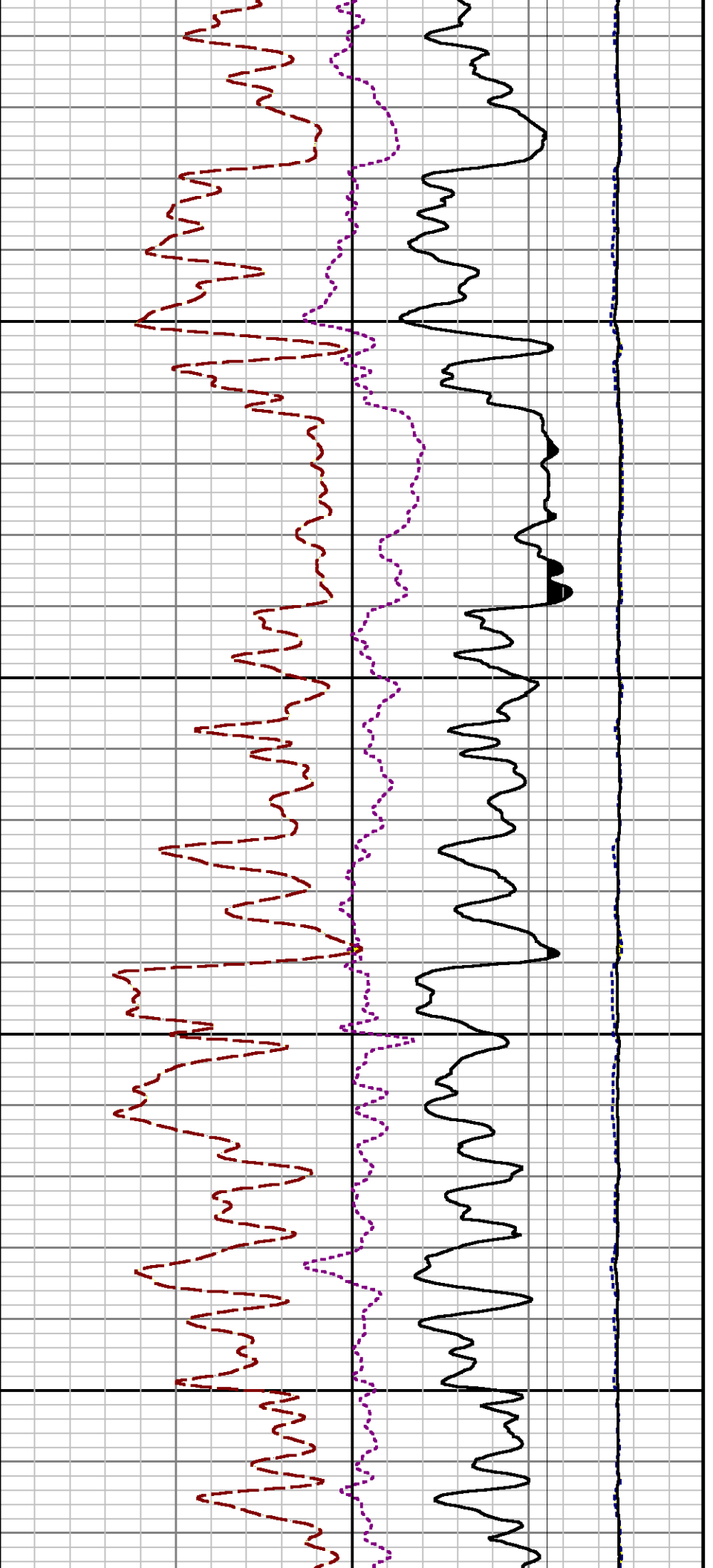


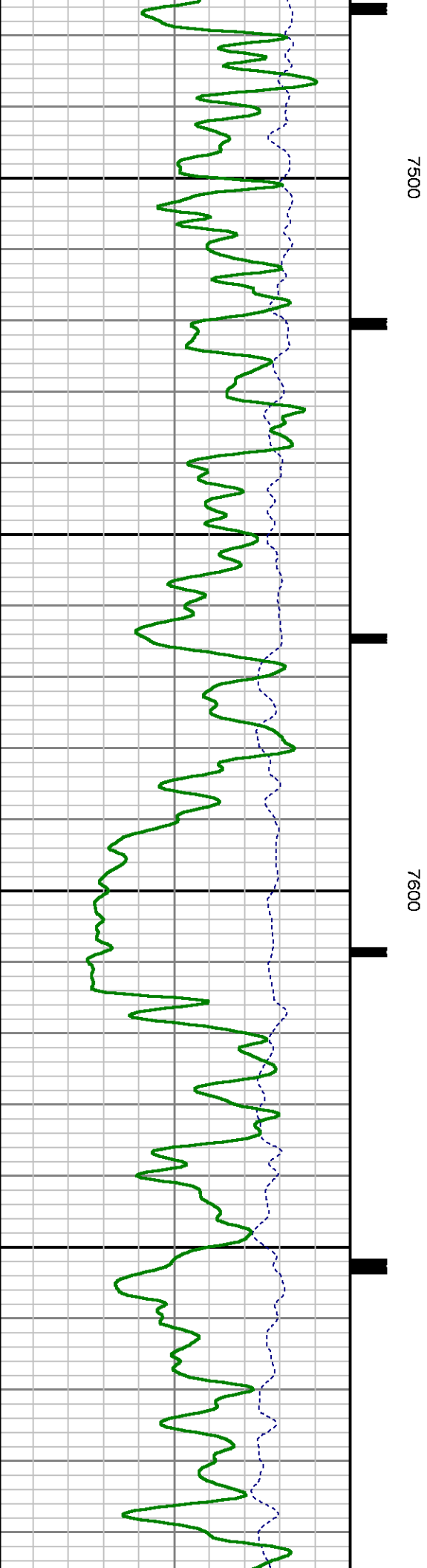
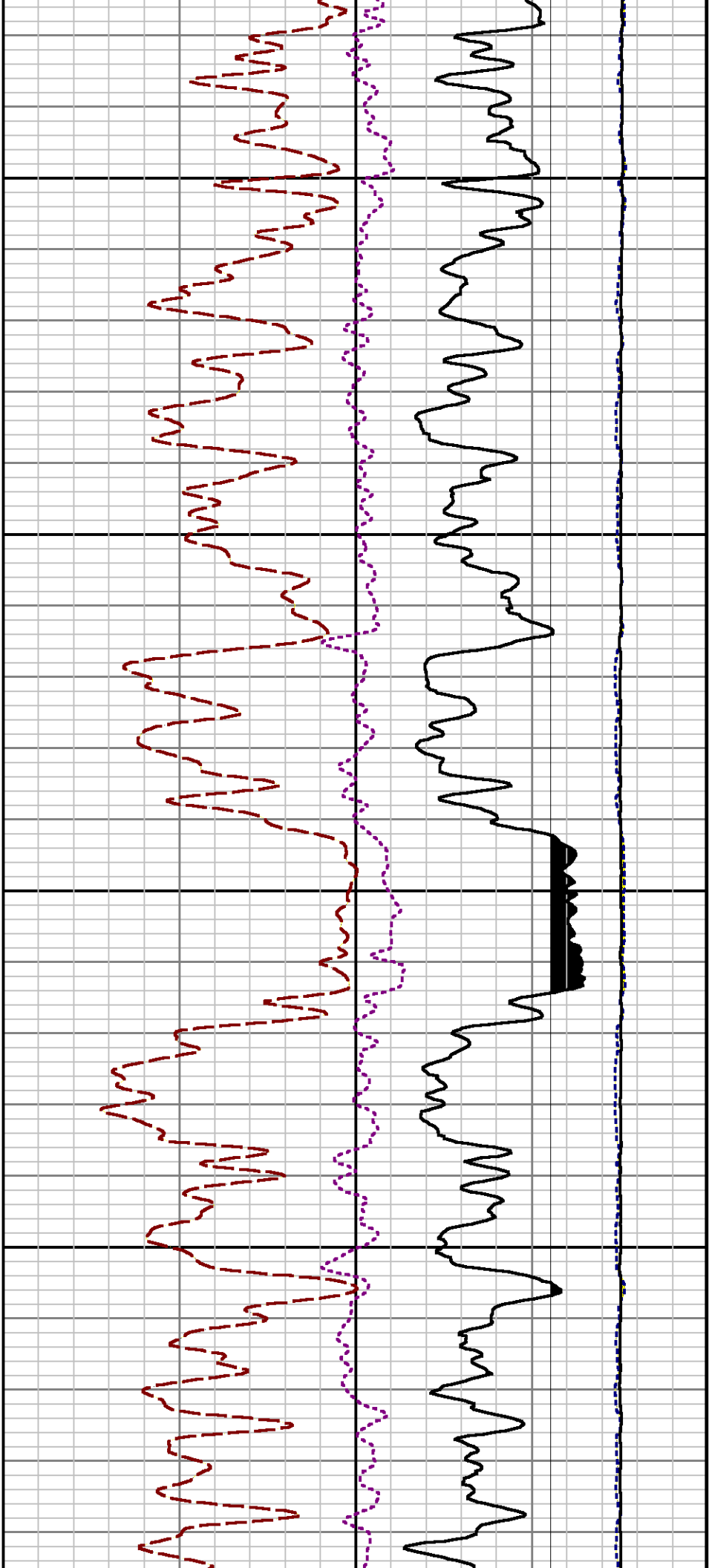


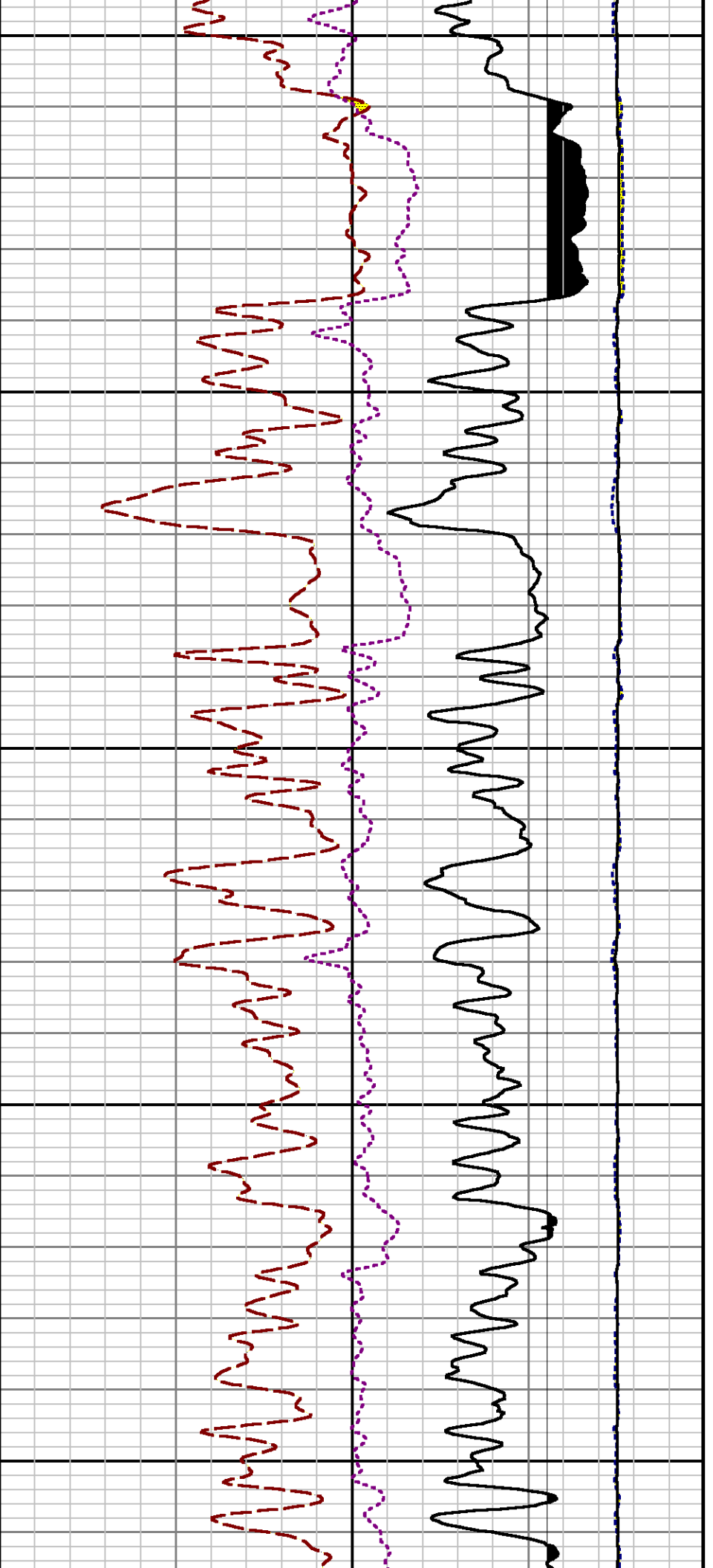
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7200





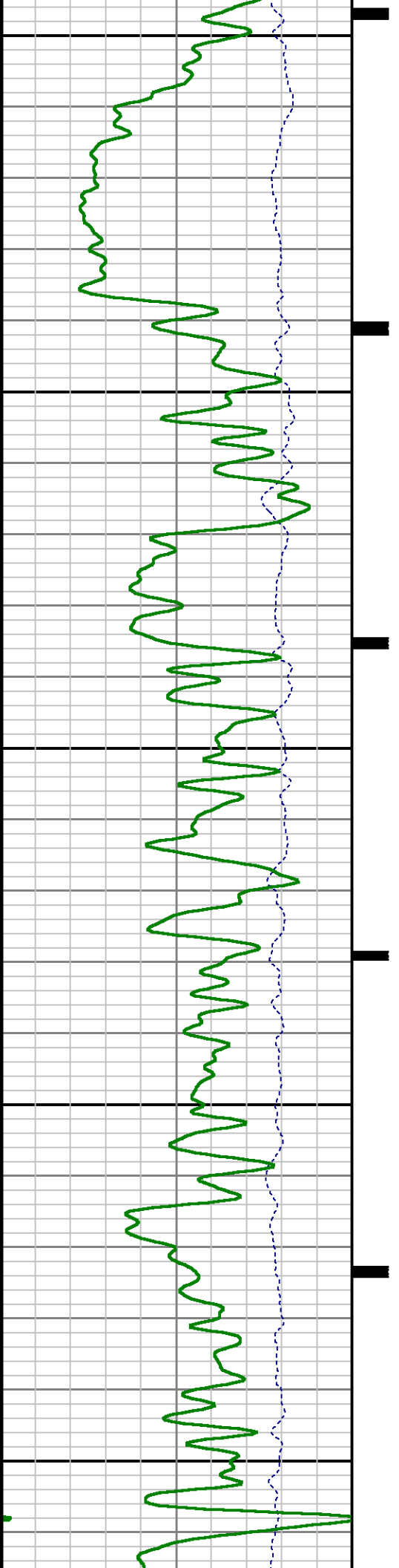


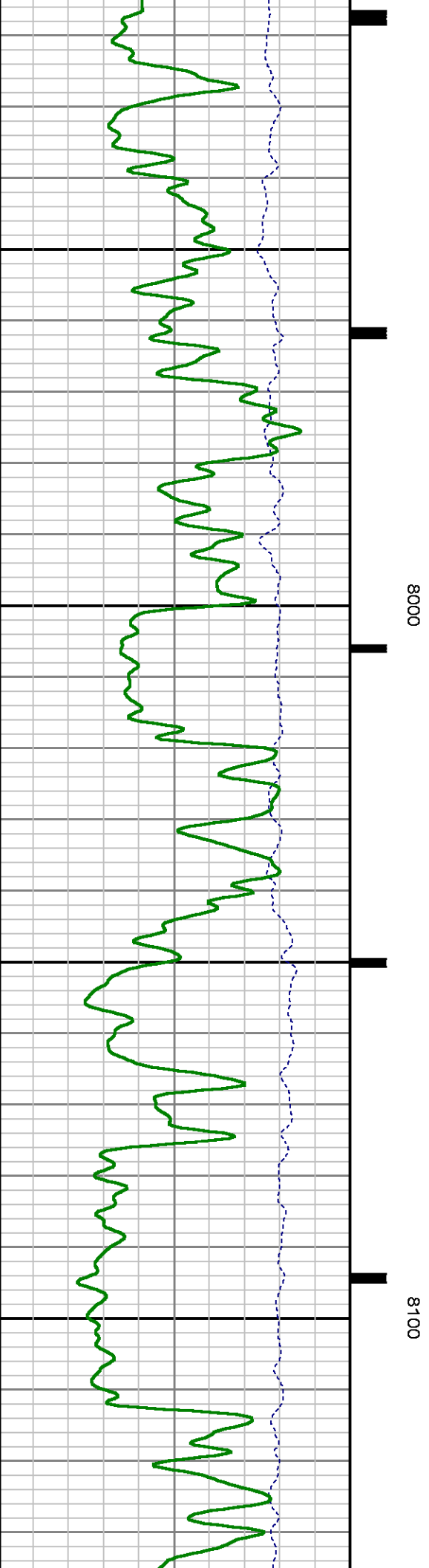
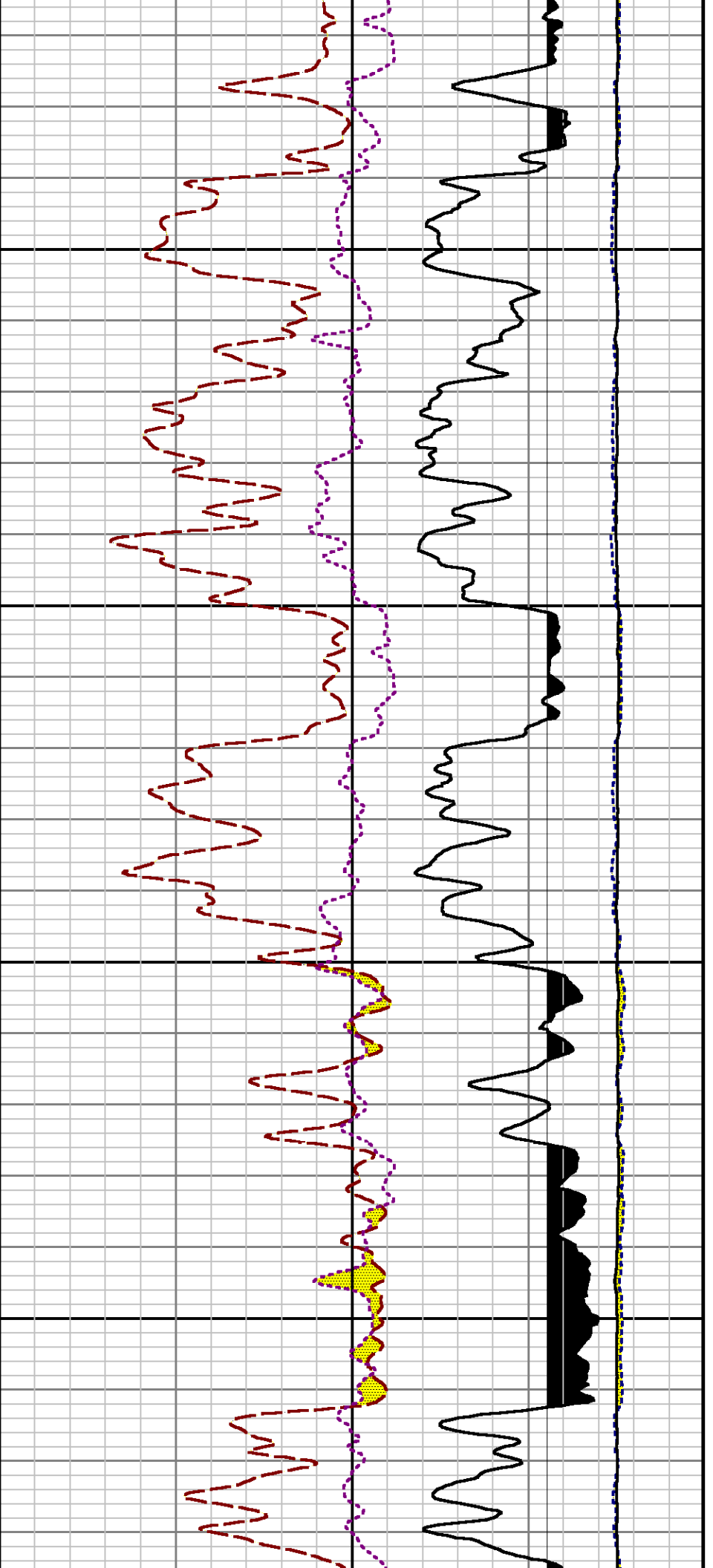


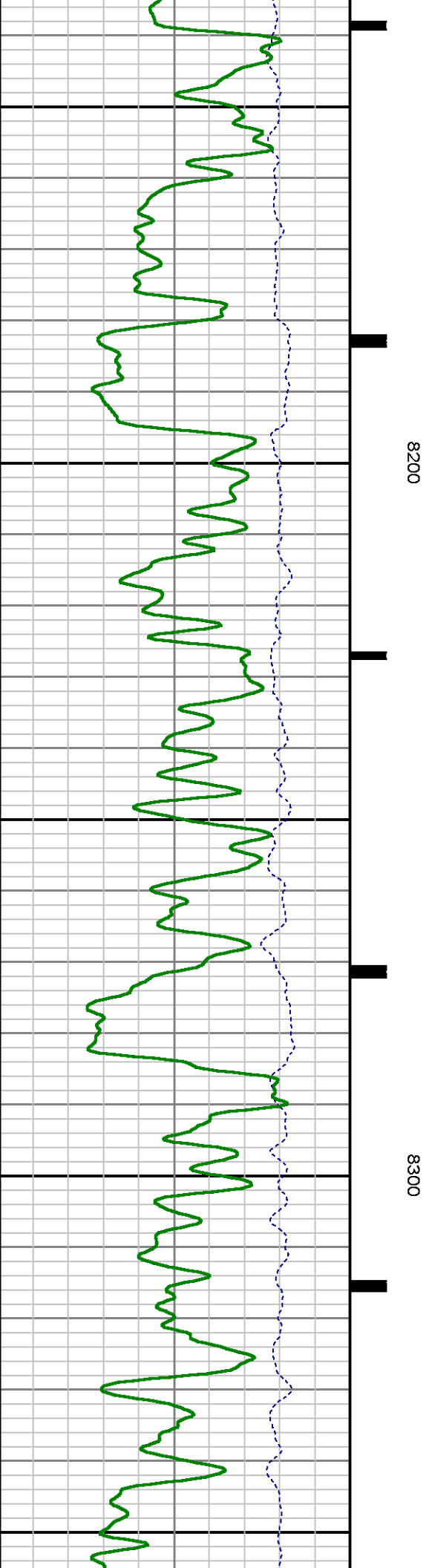
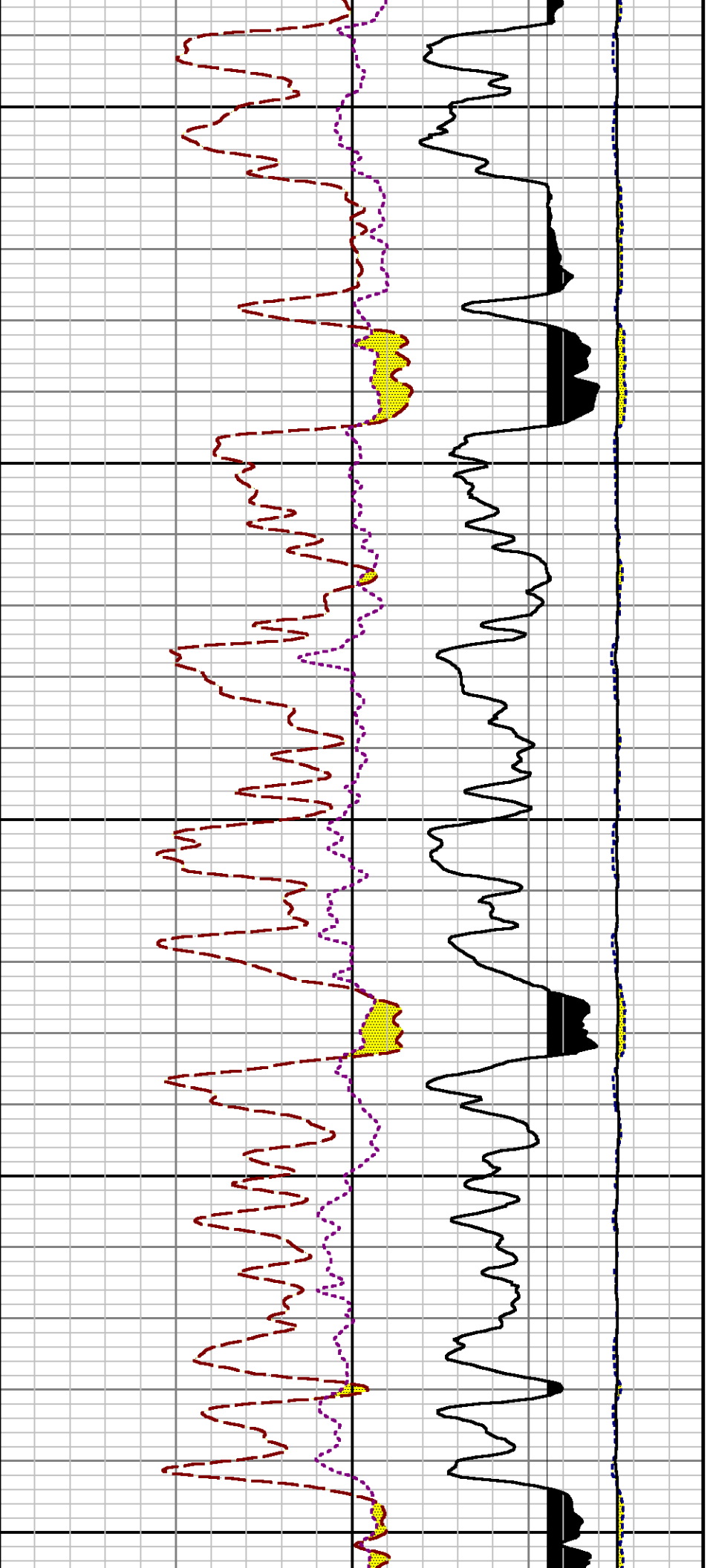
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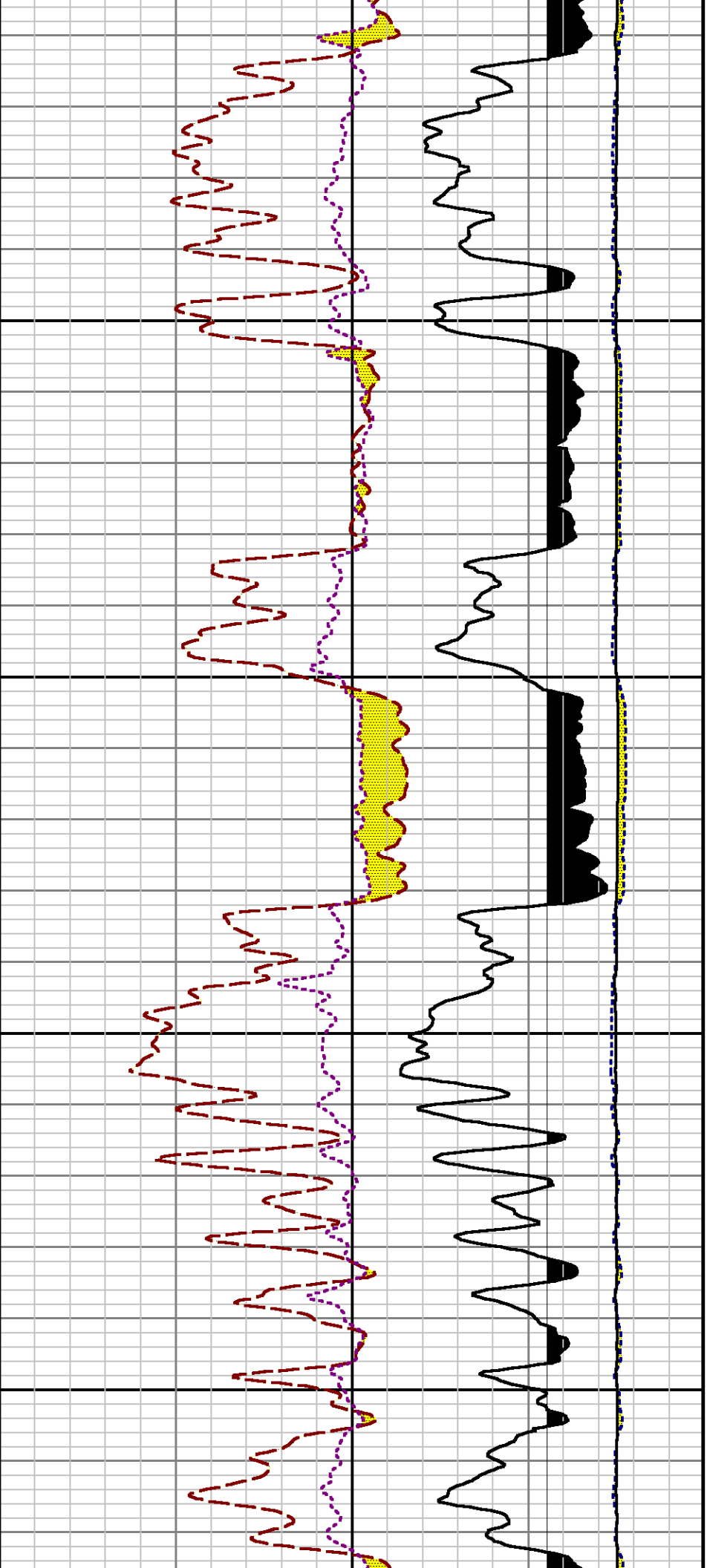
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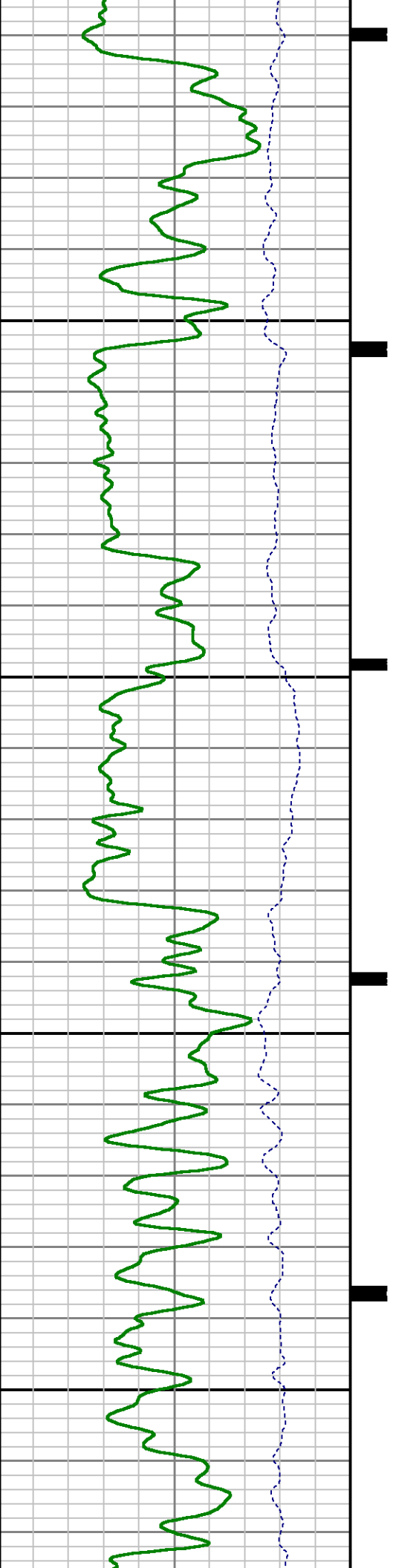


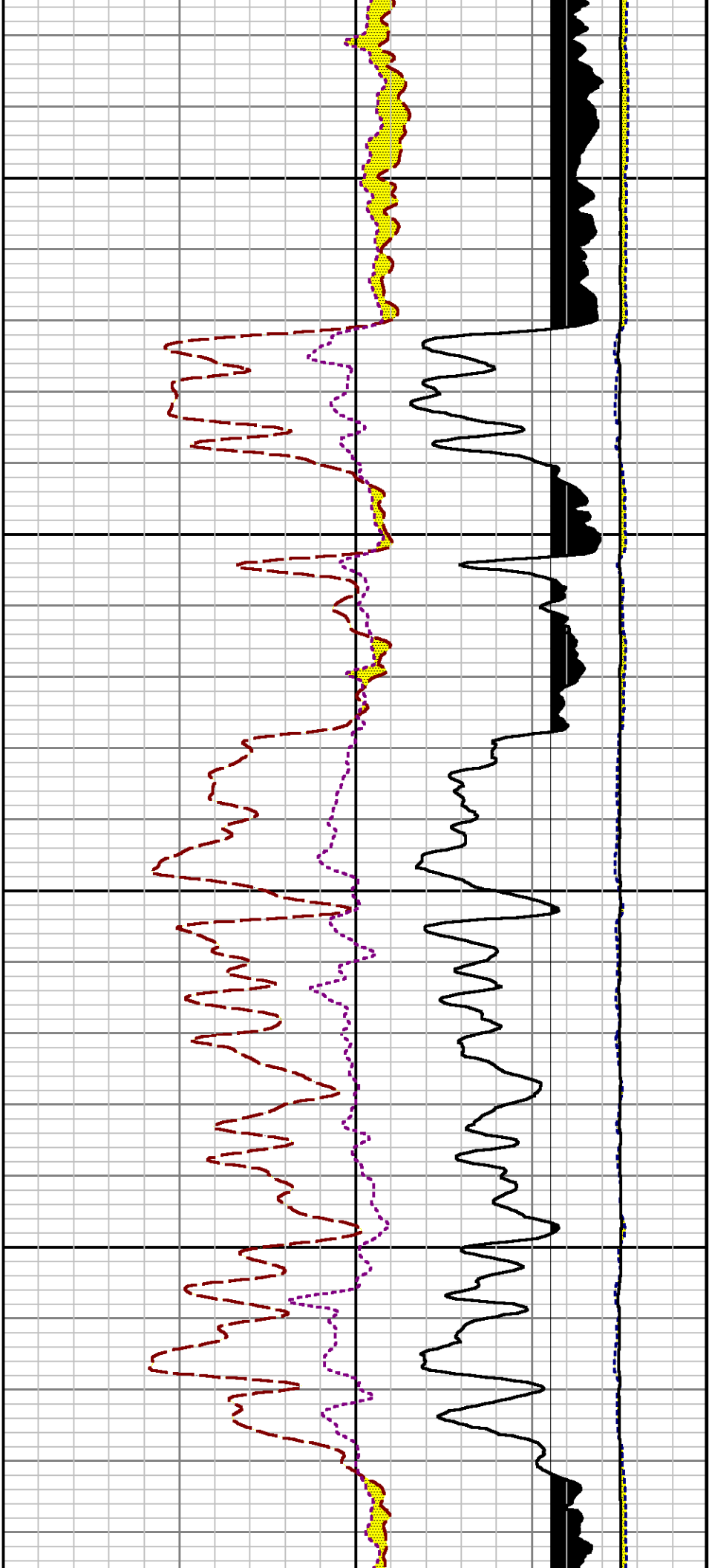




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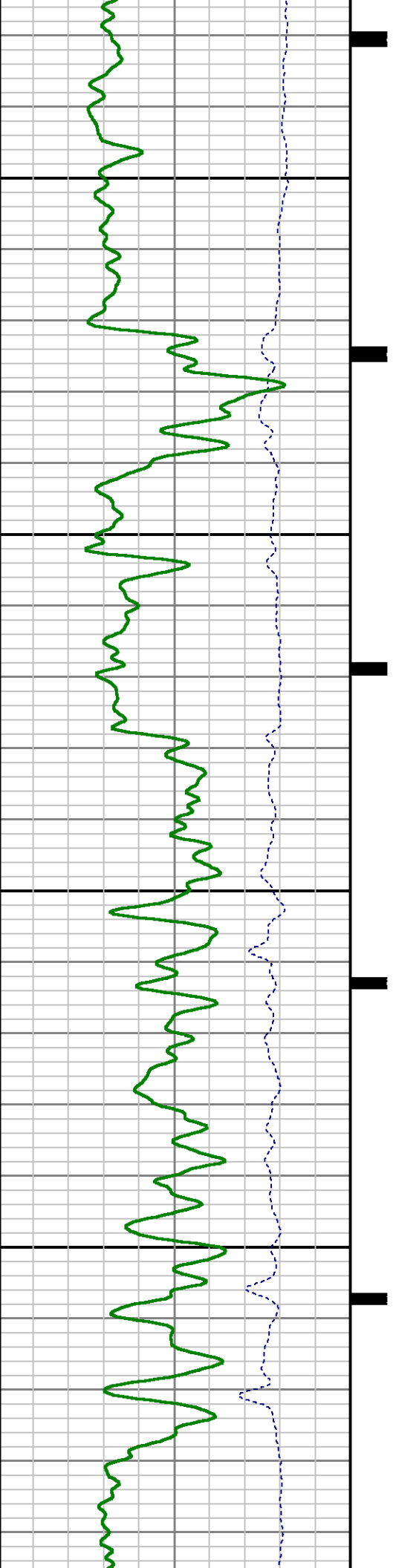
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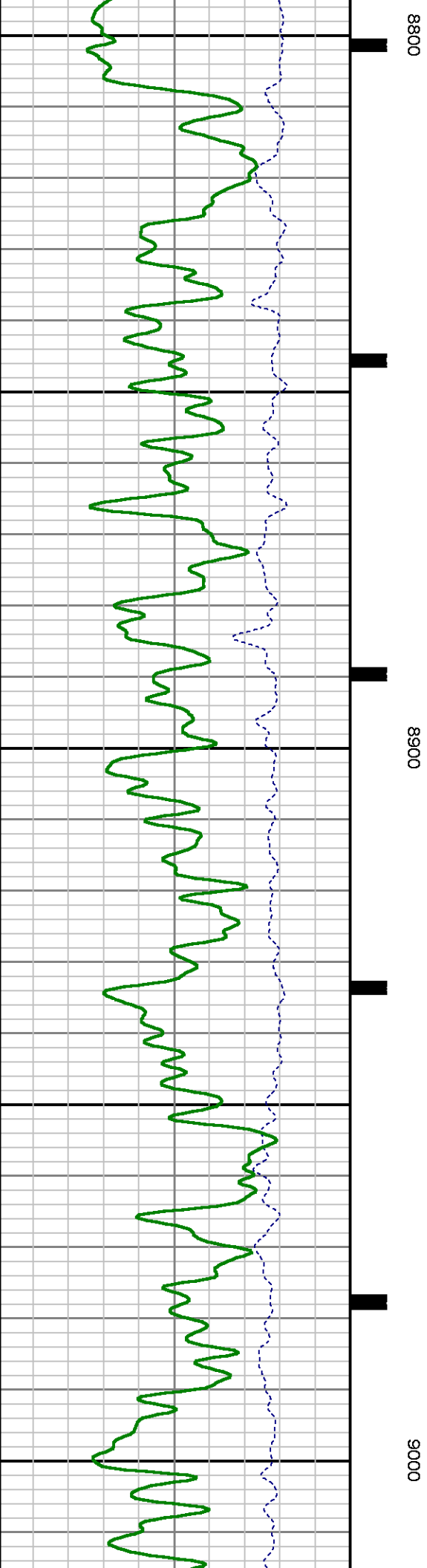
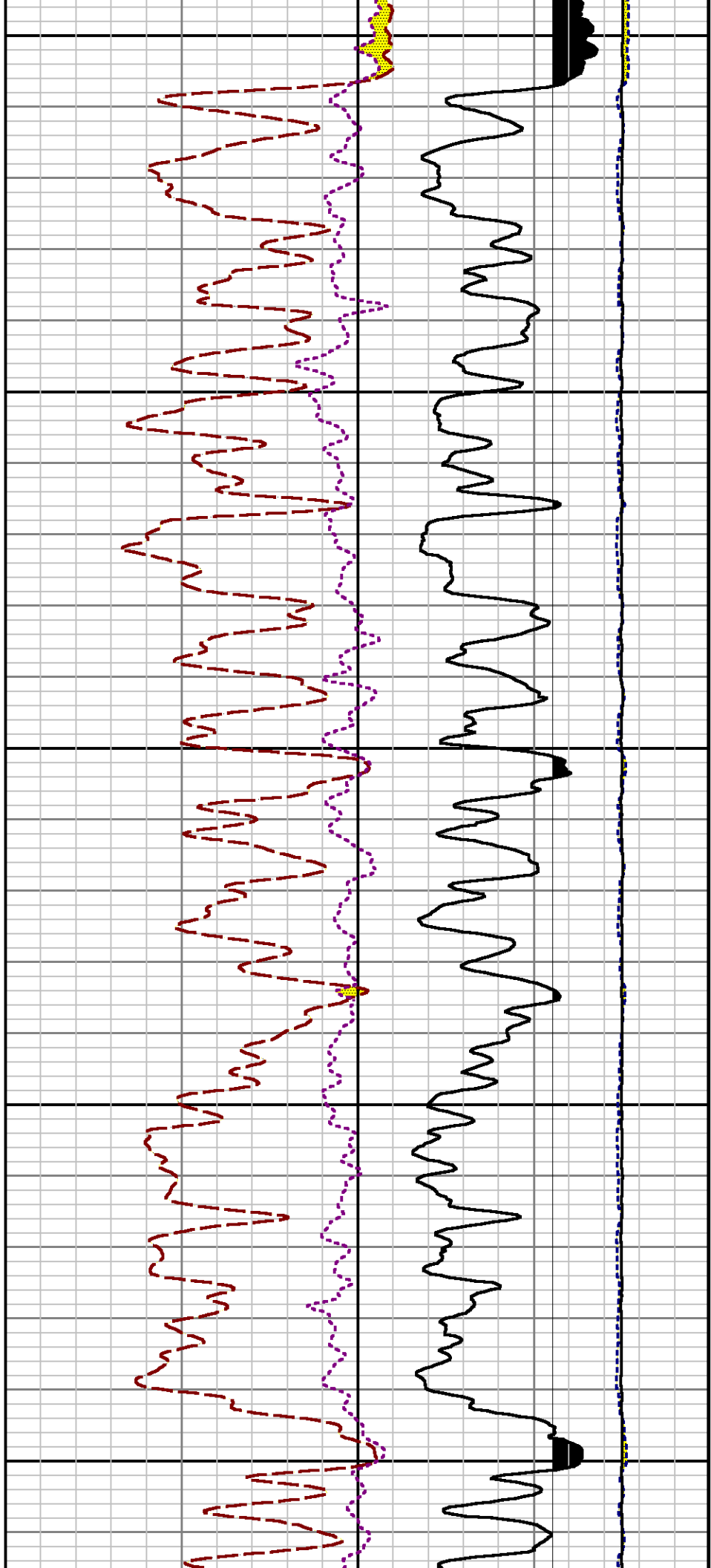


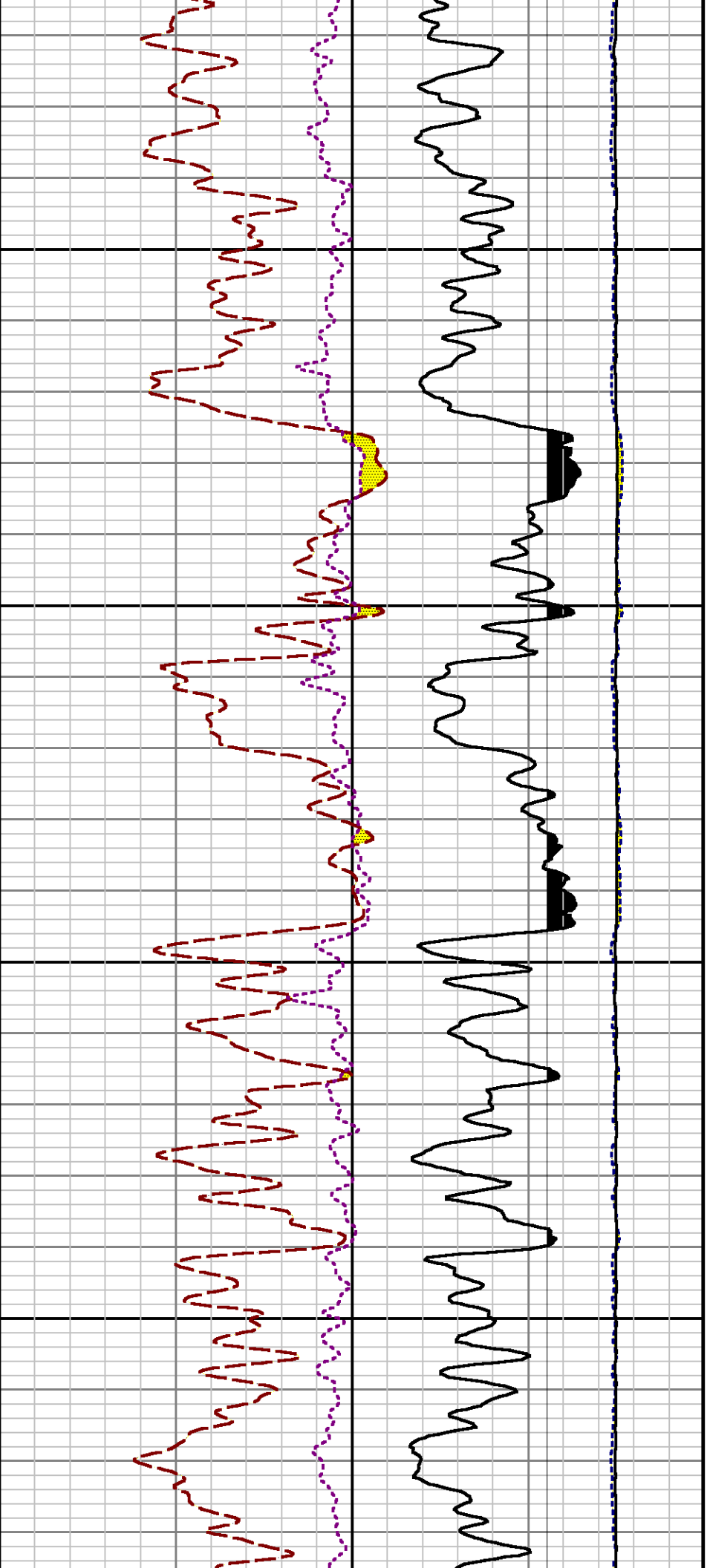


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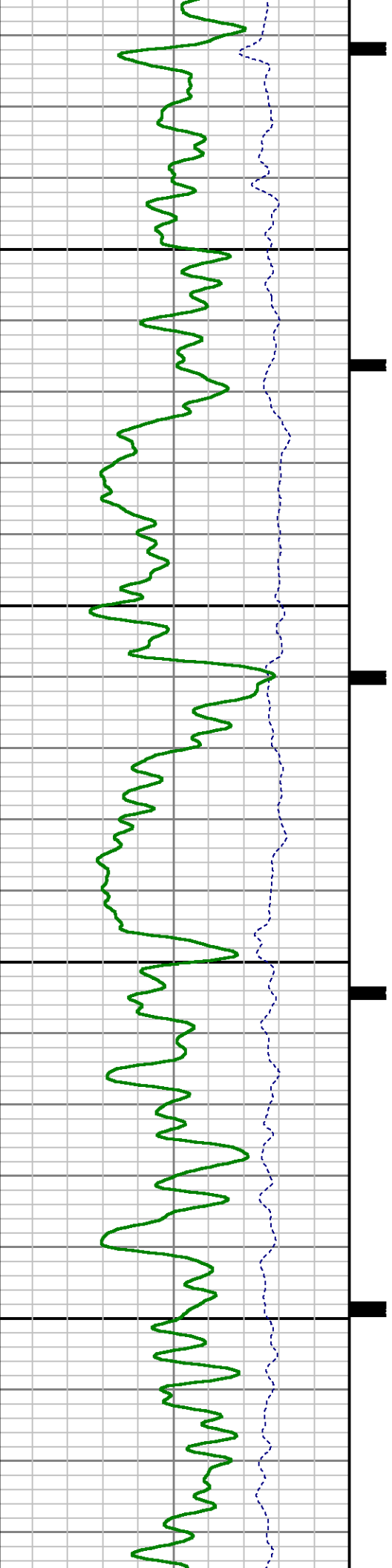


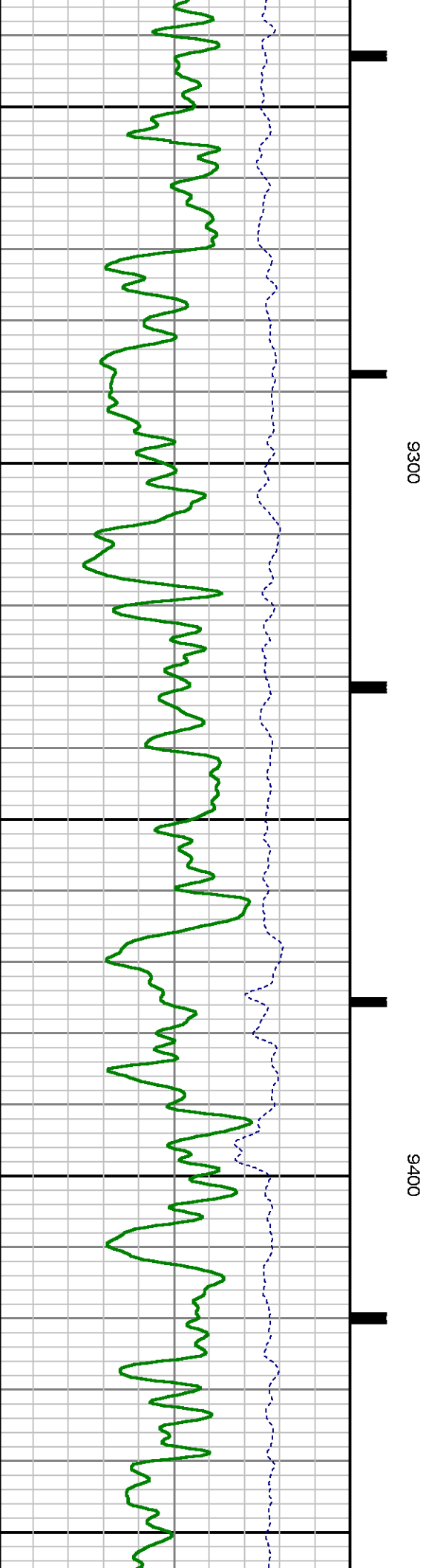
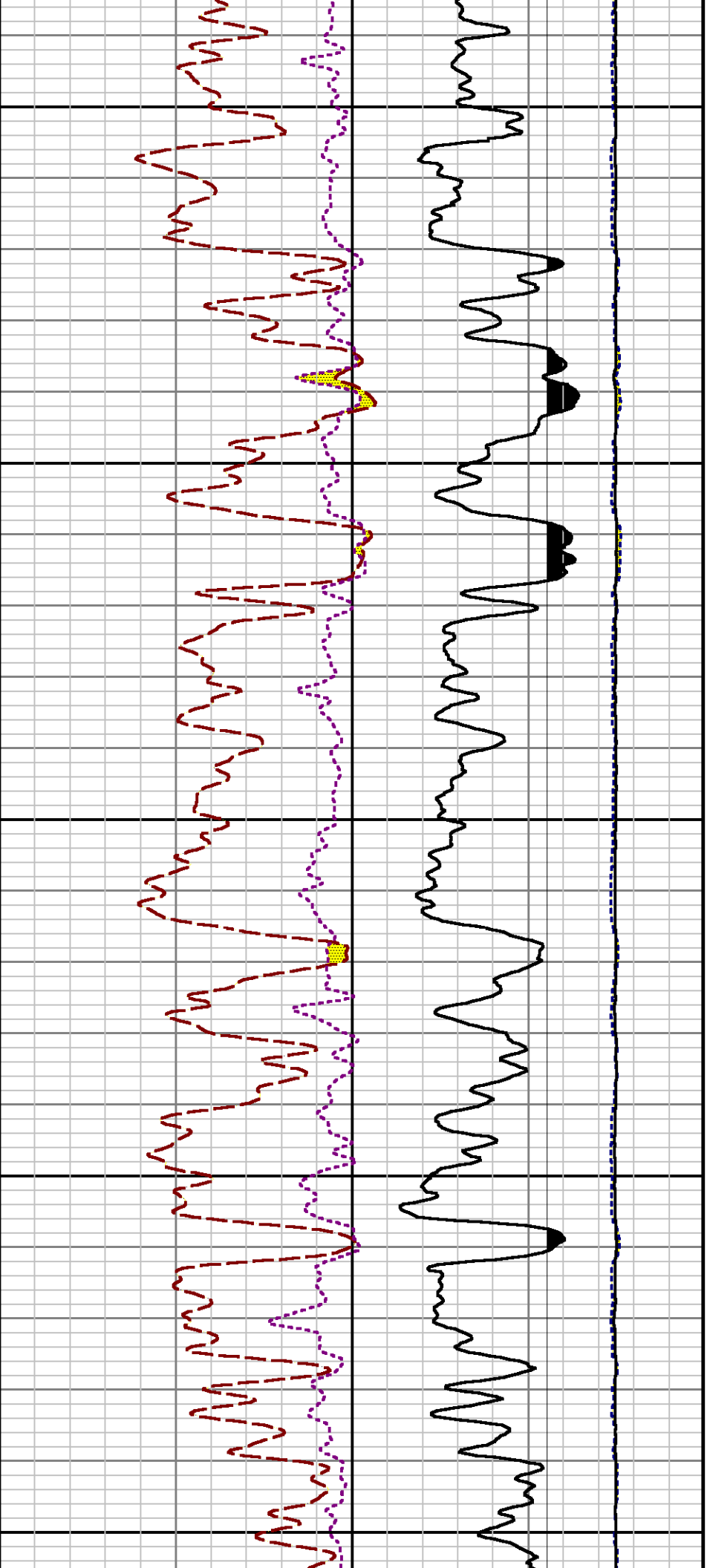


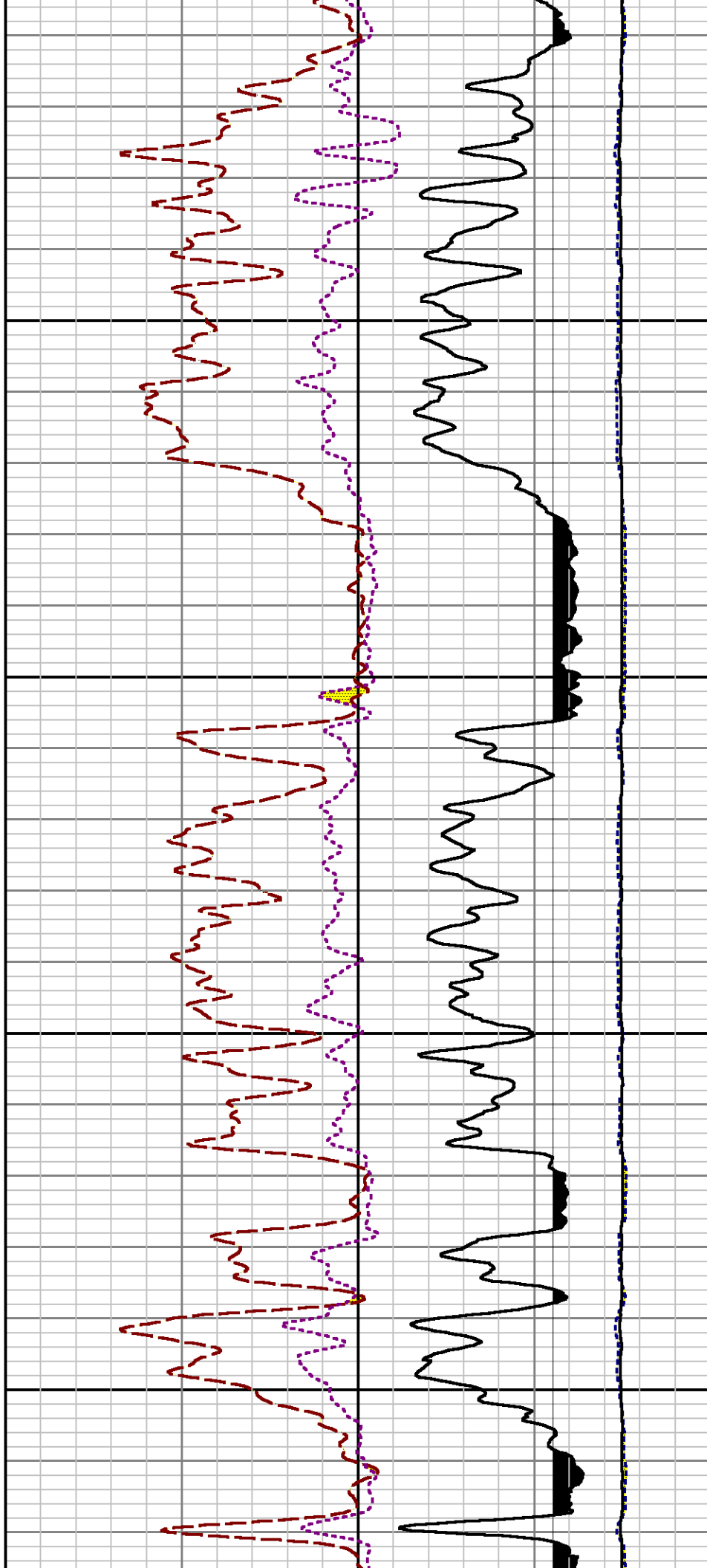


9100

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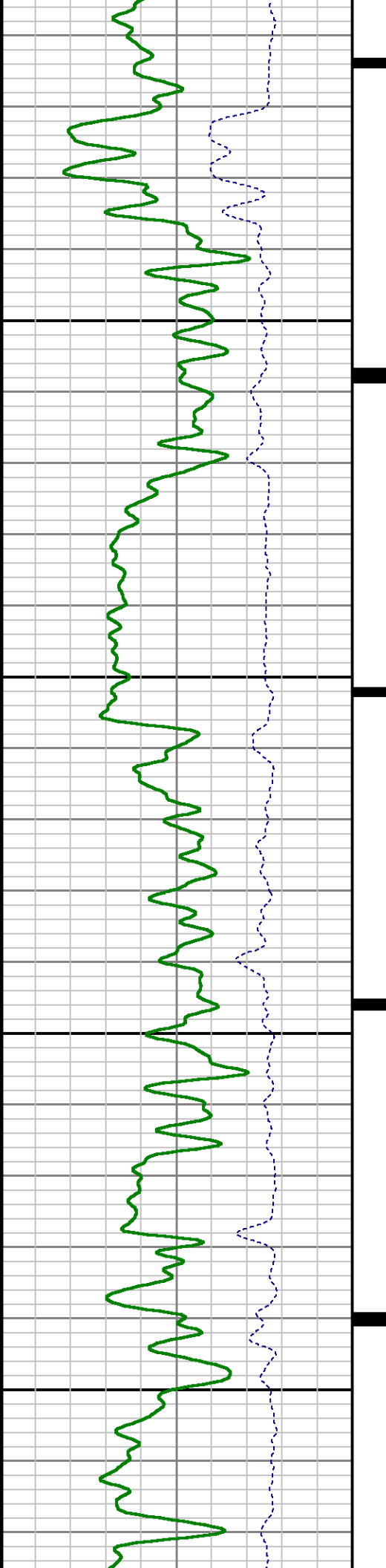


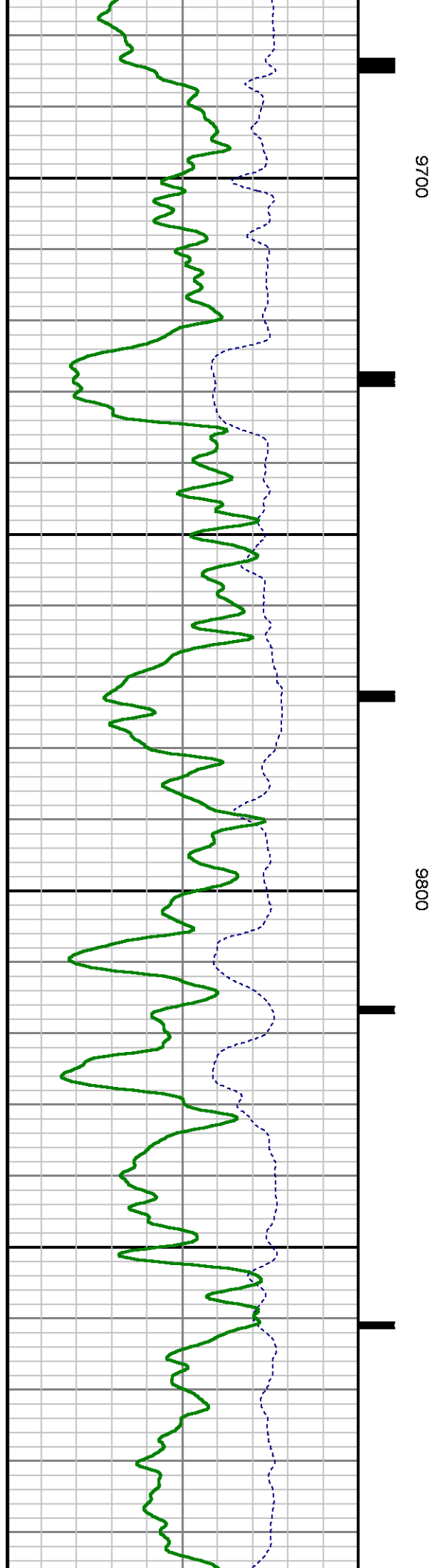
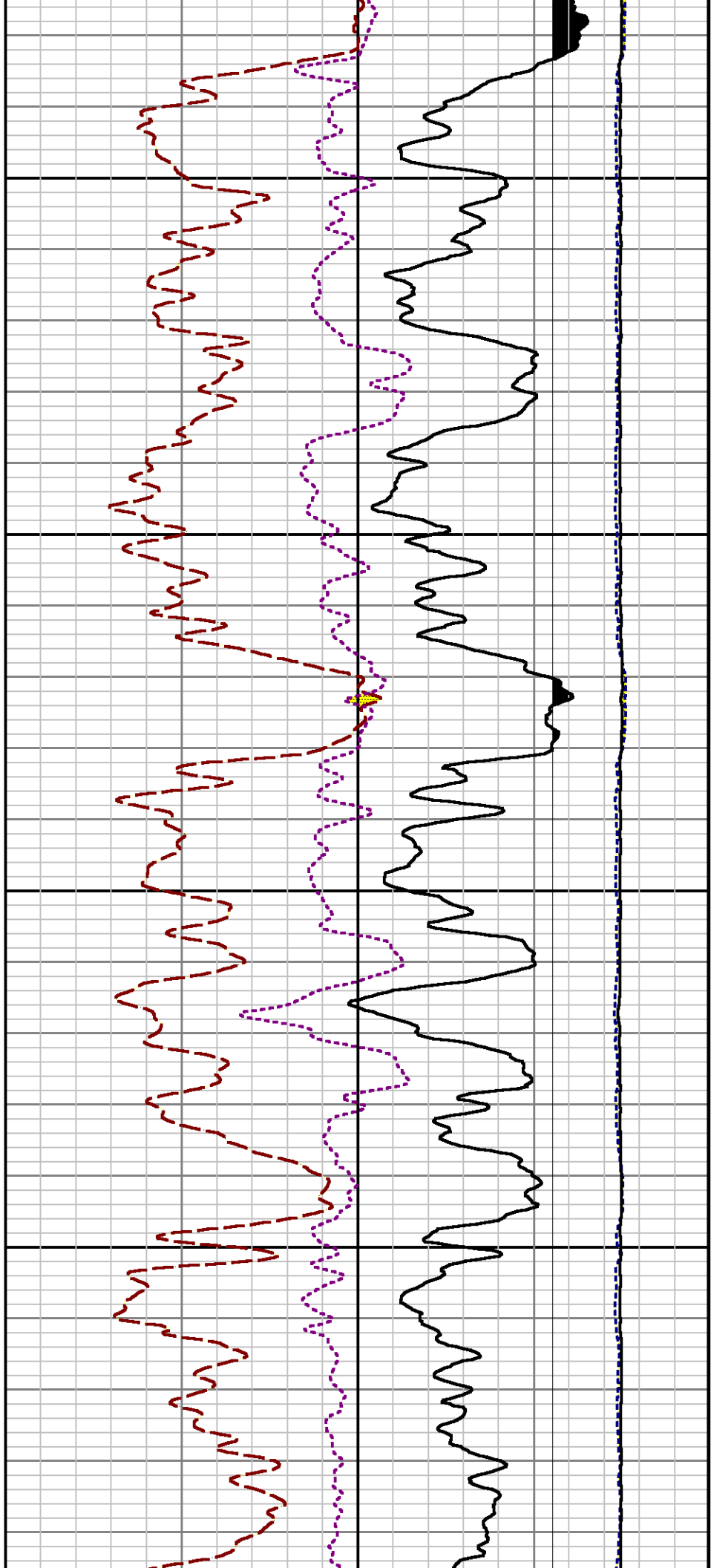


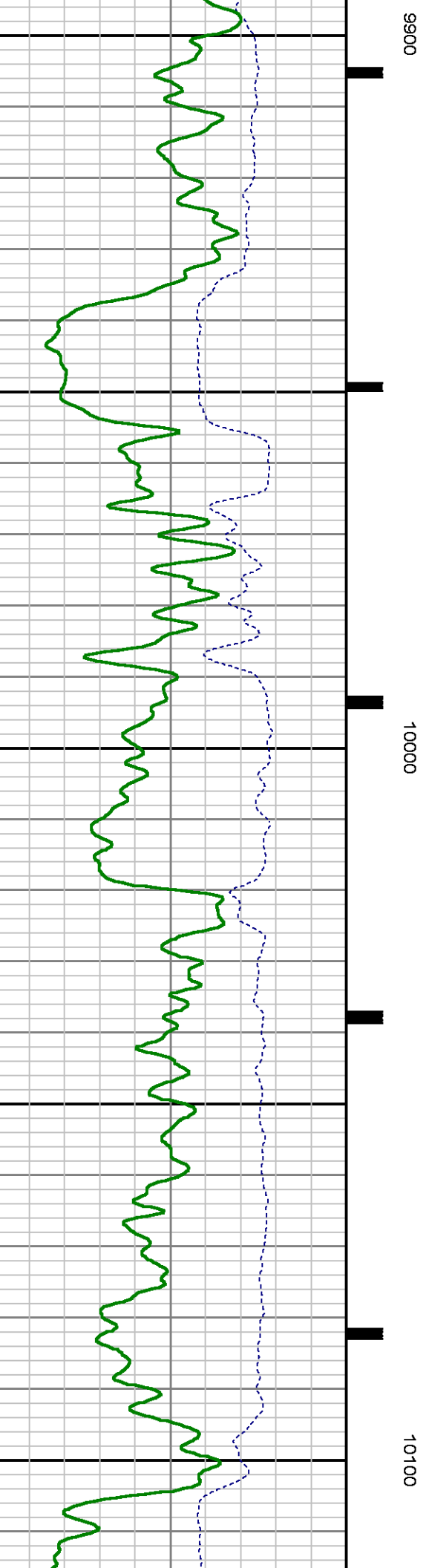
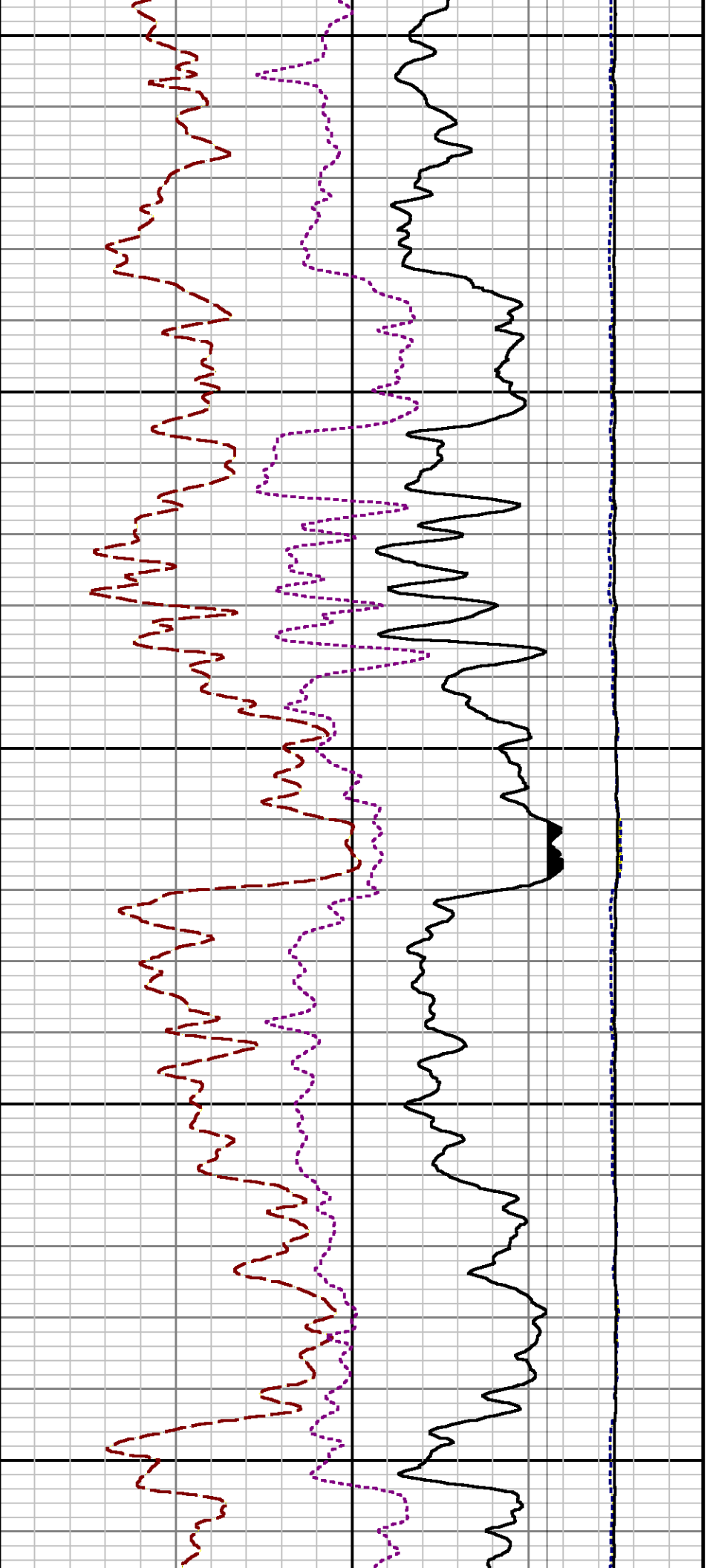


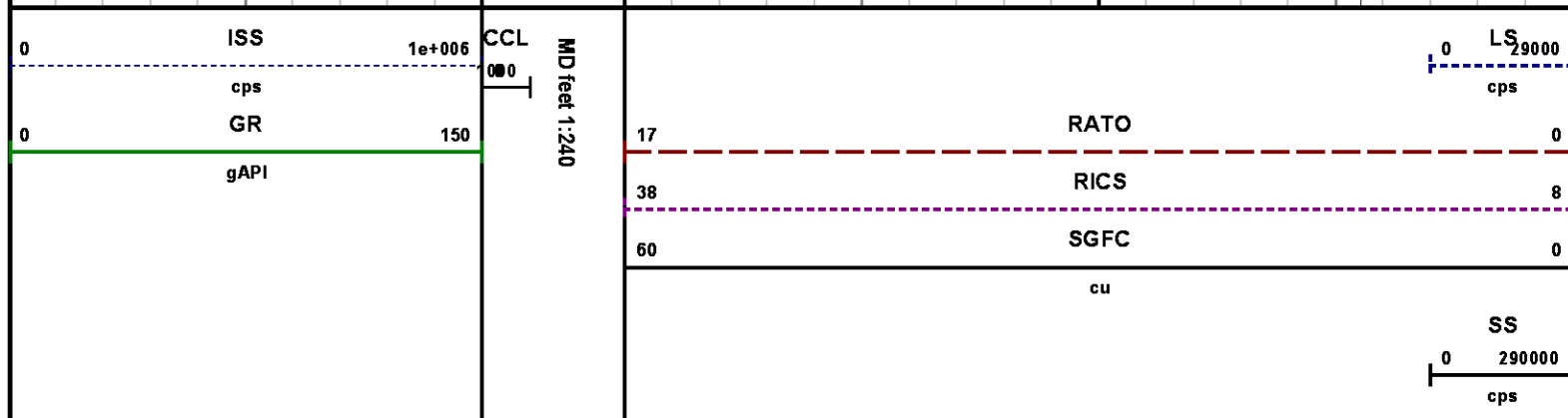
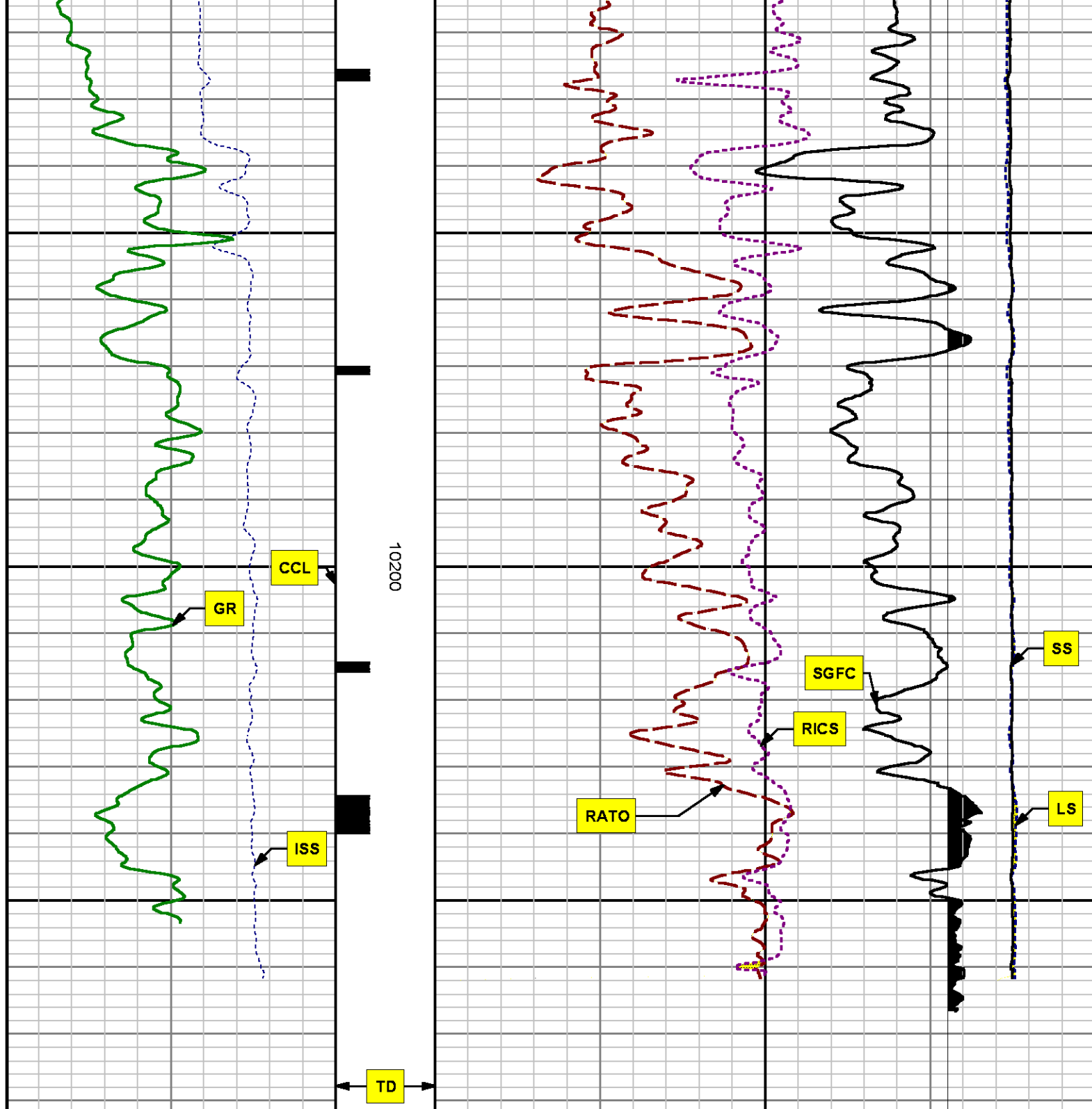
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9600









REPEAT SECTION

PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		9449.050	9771.550
PNC Porosity	Borehole Size	8.750	inch	9449.050	9771.550
PNC Porosity	Casing Size	4.500	inch	9449.050	9771.550
PNC Porosity	Gas Filled	Non Gas Filled		9449.050	9771.550
PNC Porosity	Matrix	Sandstone		9449.050	9771.550
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	9449.050	9771.550

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 G51G G52G ILS MCS1

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

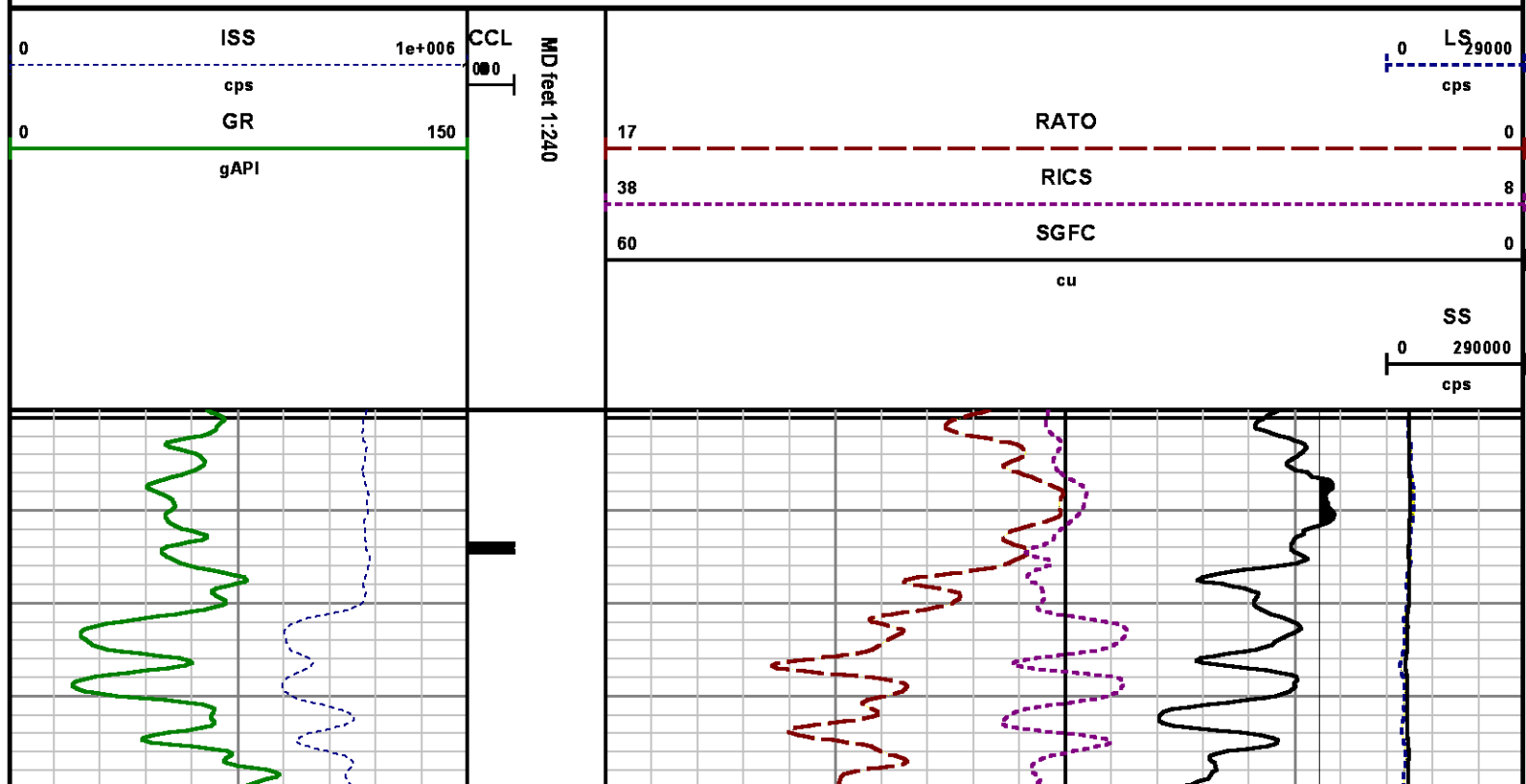
Well : FEDERAL NER 344-32

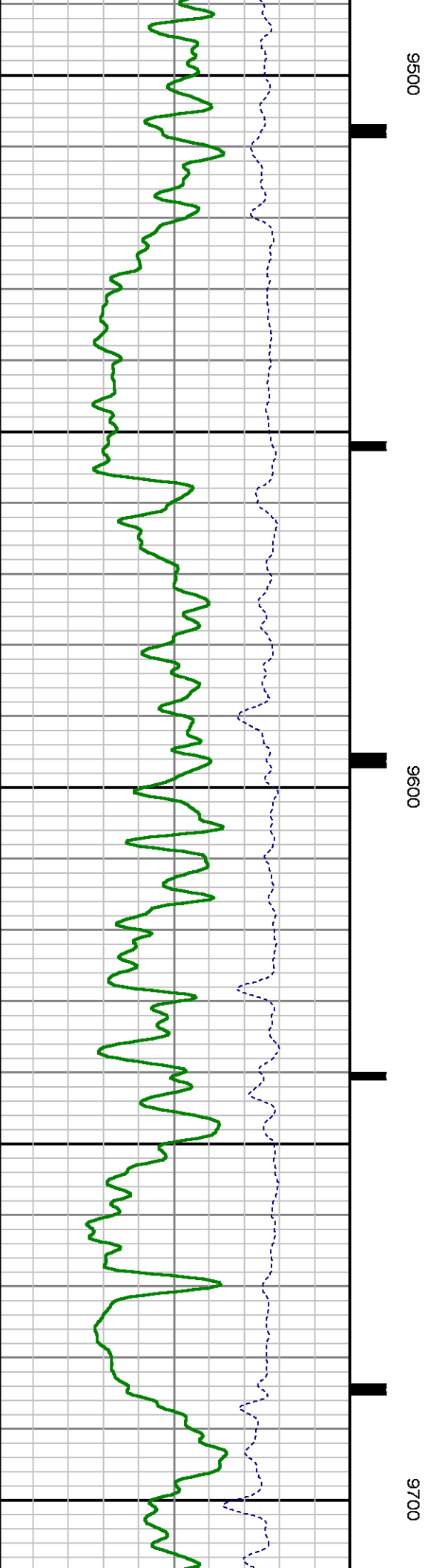
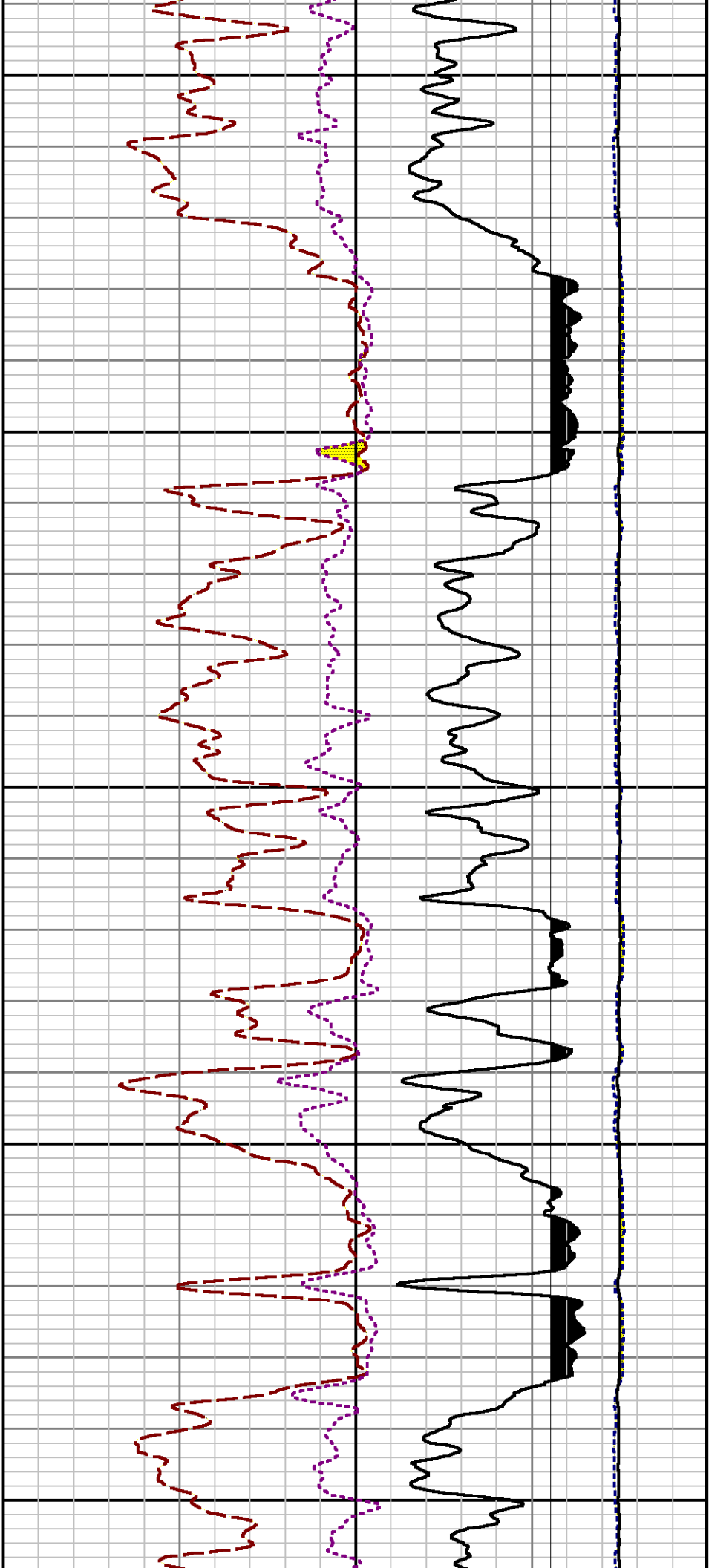
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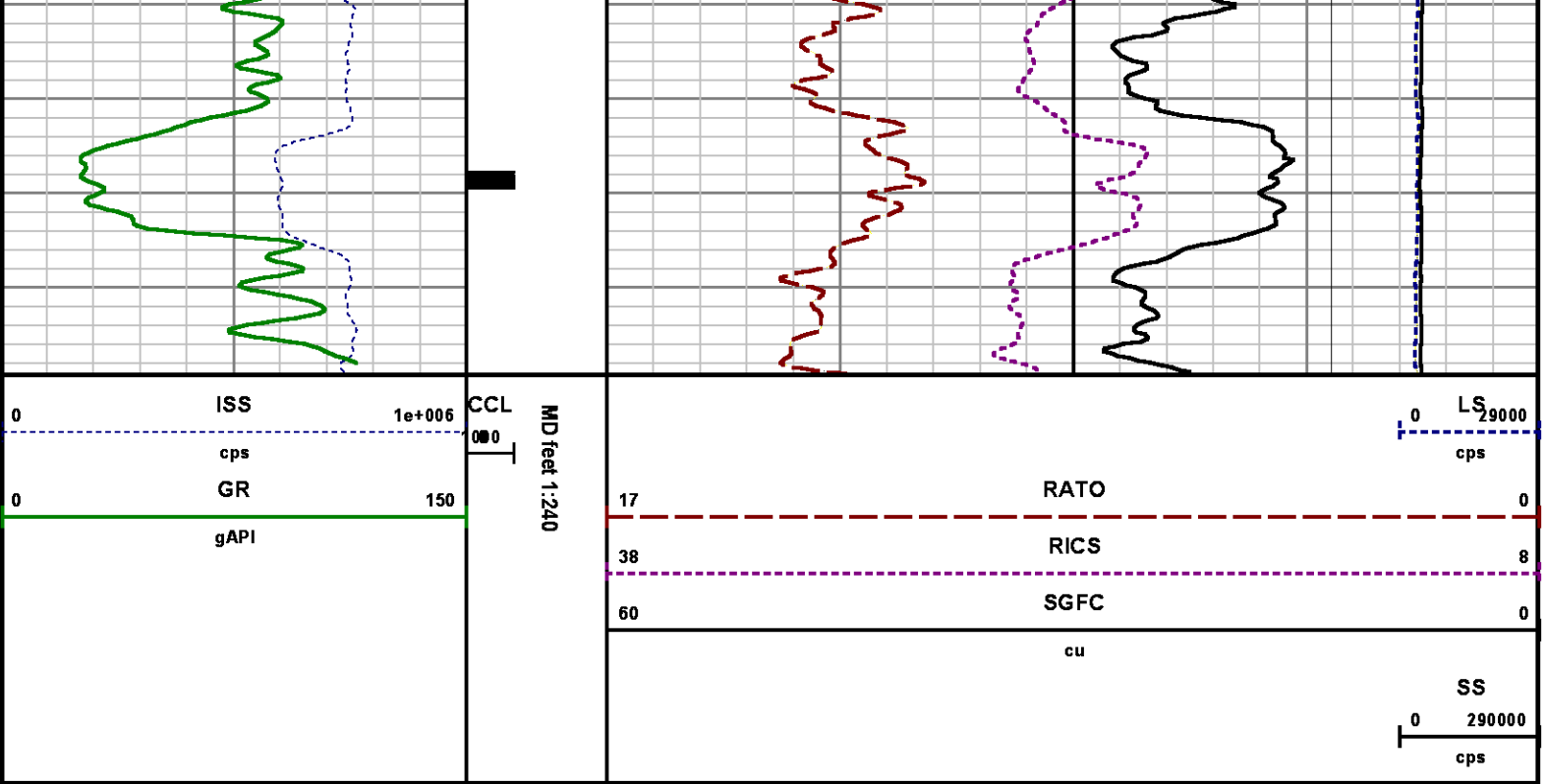
Mode : PlotMgr 5.4.504

Interval : 9449.30 - 9749.30 feet UP

Created : 4/4/2014 1:02:00 PM







CALIBRATION SUMMARY

GAMMA RAY

Calibration File: C:\case\calver\GR\38529.cal

CALIBRATION SUMMARY

DATE/TIME PERFORMED: Sat Mar 29 18:08:14 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: 29

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	58.40	281.04	0.943	55.08	265.08	210.00

Verification File: C:\case\calver\GR\38529.VP

PRIMARY VERIFICATION

DATE/TIME PERFORMED: Sat Mar 29 18:12:15 2014 TOOL SERIES: 2812LA ASSET: 385 SEQ: 29

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA-612	58.02	282.82	0.943	54.73	266.76	212.03

TEMPERATURE

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

PNC

Calibration File: C:\case\calver\PNC\25101.cal

PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Mar 13 14:14:10 2014

TOOL SERIES: 8281XA ASSET: 251 SEQ: 01

Calibrator #

GJSHOP GJSHOP

Source #

8281AA 10220684

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	814019	123.00	2309.00	2303.00	2319.00	107.03	7.00	0.9802
Interpolated	1300000	144.37	2293.78	2297.36	2317.30			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	814019	9005.19	1478.68	184.20	25.79	0.14	24.40	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	814019	171904.59	27109.32	91110.88	32439.69	8459.48	55168.11	13542.46
Fit Quality %		0.43	0.66	0.58	0.56	0.43	0.55	0.45

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	814019	1.43	4.74	30.03	14.76	10.77	3.83	4.07
		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 %		0.03	0.25	0.16	0.19	0.07	0.05	0.05
Reduced	1378500	1.43	4.75	30.10	14.80	10.76	3.83	4.07
		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

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

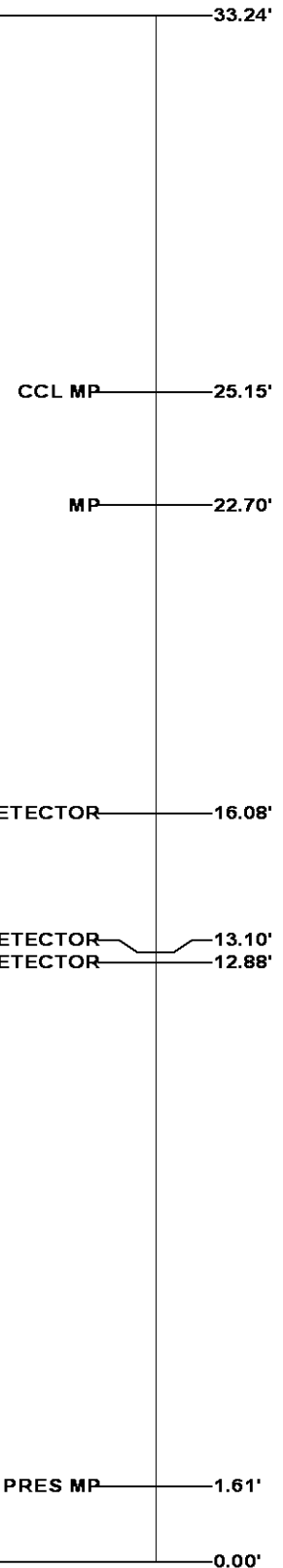
Series 2812LA
Mnemonic SNDX
Diameter 1.69"

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"



Baker Atlas

CASE

Company

WPX ENERGY

Well

FEDERAL NER 344-32

Field

RULISON

County

GARFIELD

State

COLORADO

File No:

CH084517

API No:

05045217790000

Location

SHL: 189' FNL x 2605' FWL SEC 5 7S 93W

BHL: 424' FSL x 659' FWL SEC 32 6S 93W

Elevations

KB 7629 ft

DF

GL 7603 ft

32 6S 93W

RU 23-5 PAD

NABORS 576

SEC 32 TWP 6S RGE 93W