



# RESERVOIR PERFORMANCE MONITOR

**Baker Atlas**

File No:	CH084818	Company	WPX ENERGY
API No:	05045217900000	Well	FEDERAL NER 44-32
		Field	RULISON
		County	GARFIELD
		State	CO

32 6S 93W	Location	SHL: 182' FWL & 2602' FWL (S 7S 93W)	Other Services
RU 23-5 PAD		BHL: 759' FSL & 671' FEL (32 6S 93W)	BOND LOG
NABORS 676	SEC 32	TWP 6S	RGE 93W

Permanent Datum	GL	Elevation	7603 ft
Log Measured From	KB	26 ft	Above P. D.
Drill Measured From	KB		Elevations
			KB 7629 ft
			DF
			GL 7603 ft

Date	26/APR/14
Run	ONE
Service Order	USE25392
Depth Driller	10389 ft
Depth Logger	10314 ft
Bottom Logged Interval	10304 ft
Top Logged Interval	6250 ft
Time Started	0730
Time Finished	1330
Operator Rig Time	6 HOURS
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	246 degF
Reference Log	BAKER HUGHES BOND LOG
Reference Log Date	26/APR/14
Equipment No.	4271
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	0 ft	1138 ft
8.75 in	1138 ft	10427 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			0 ft	1138 ft
4.5 in	11.6 lbm/ft	P-110	0 ft	10427 ft

**Remarks**

All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 4/25/2014 at the client's request.

The amount of linear shift is 9 feet.

Logged in PNC-3D mode.

BHT = 246°F

SJ = 6730'-6750'

**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	10585555	FREE
1	1	RPM	8281EA	10169250	FREE
1	1	GR	2812LA	10274382	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		6224.750	10306.699
PNC Porosity	Borehole Size	8.750	inch	6224.750	10306.699
PNC Porosity	Casing Size	4.500	inch	6224.750	10306.699
PNC Porosity	Gas Filled	Non Gas Filled		6224.750	10306.699
PNC Porosity	Matrix	Sandstone		6224.750	10306.699
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	6224.750	10306.699

**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 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 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 WDT1 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 44-32

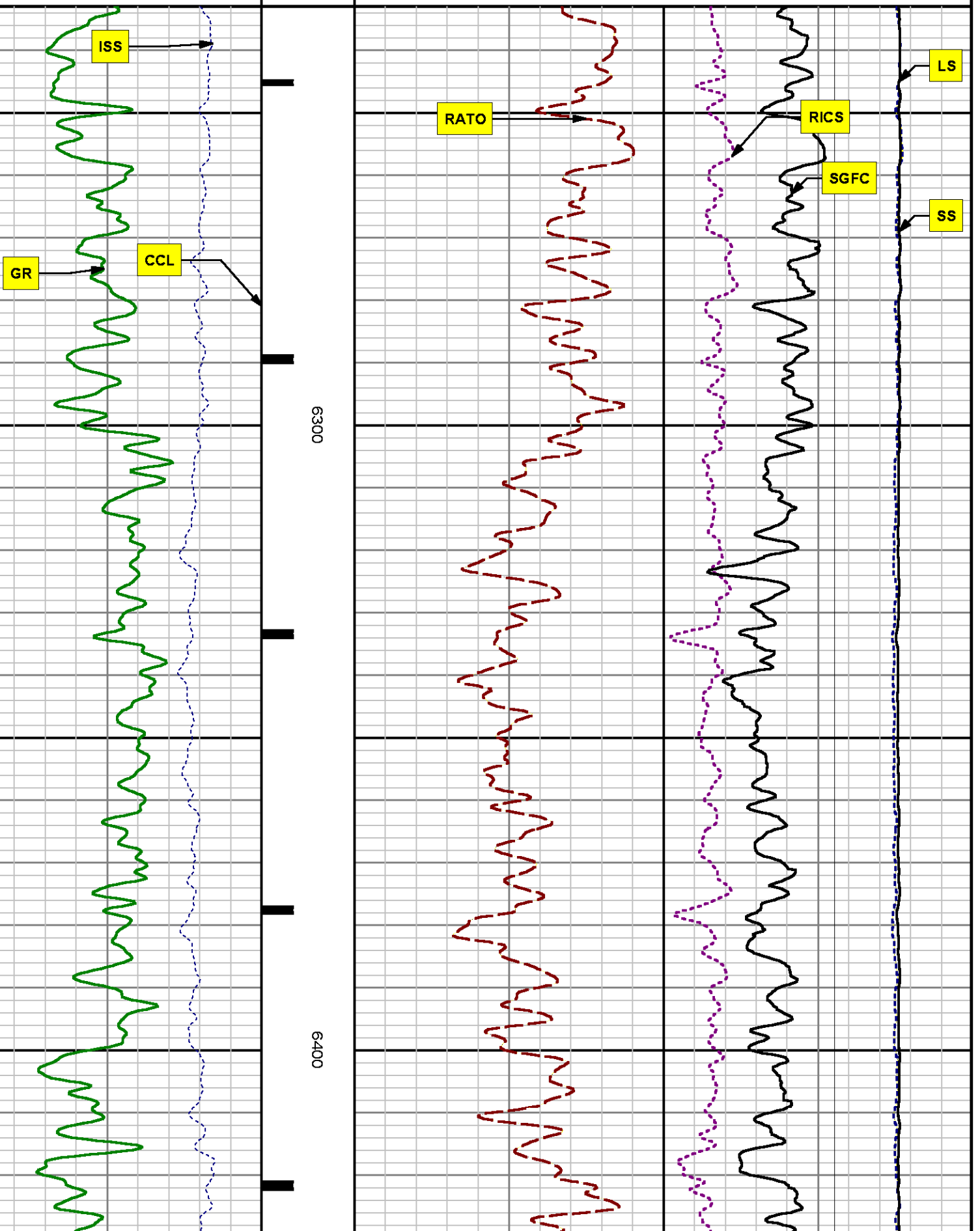
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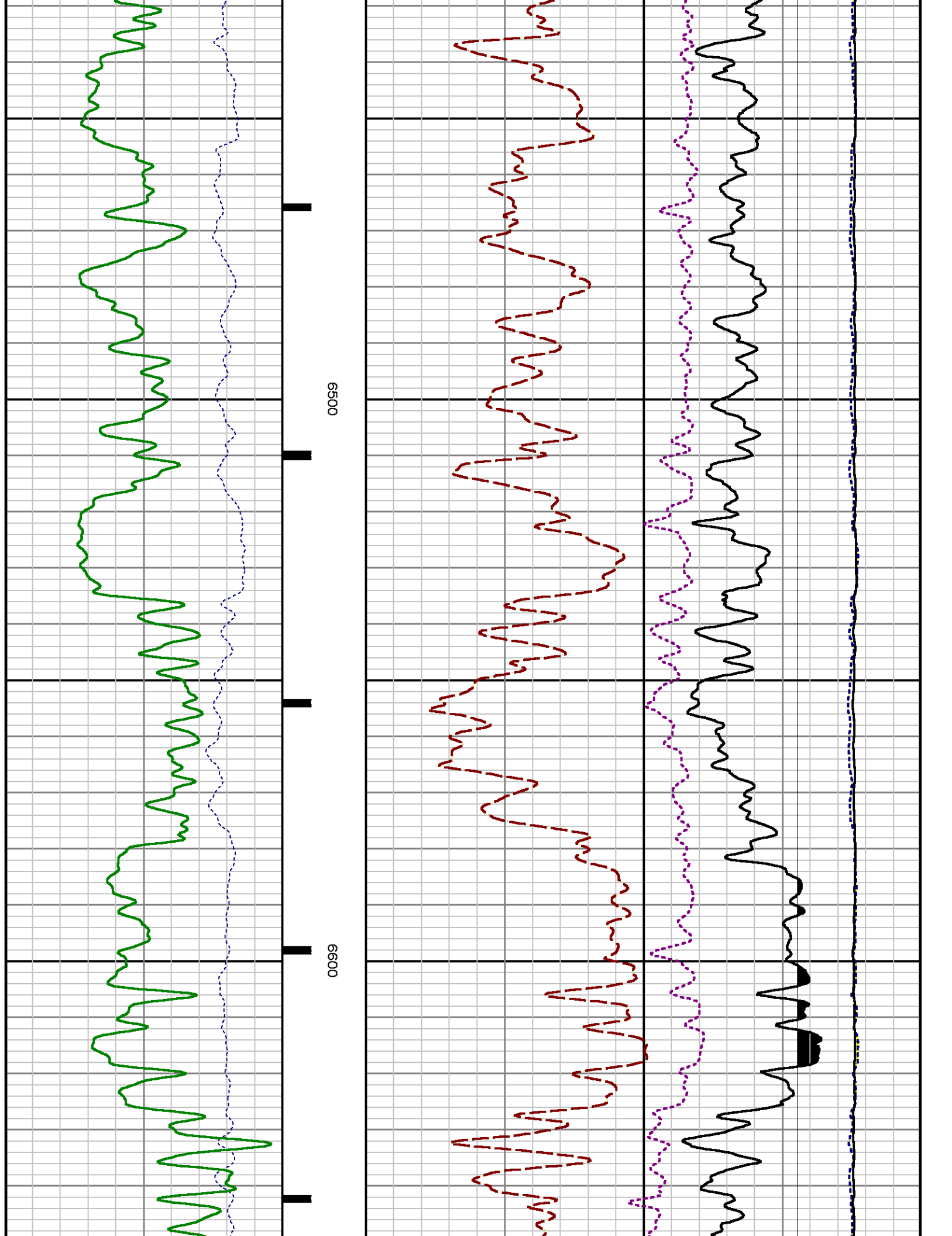
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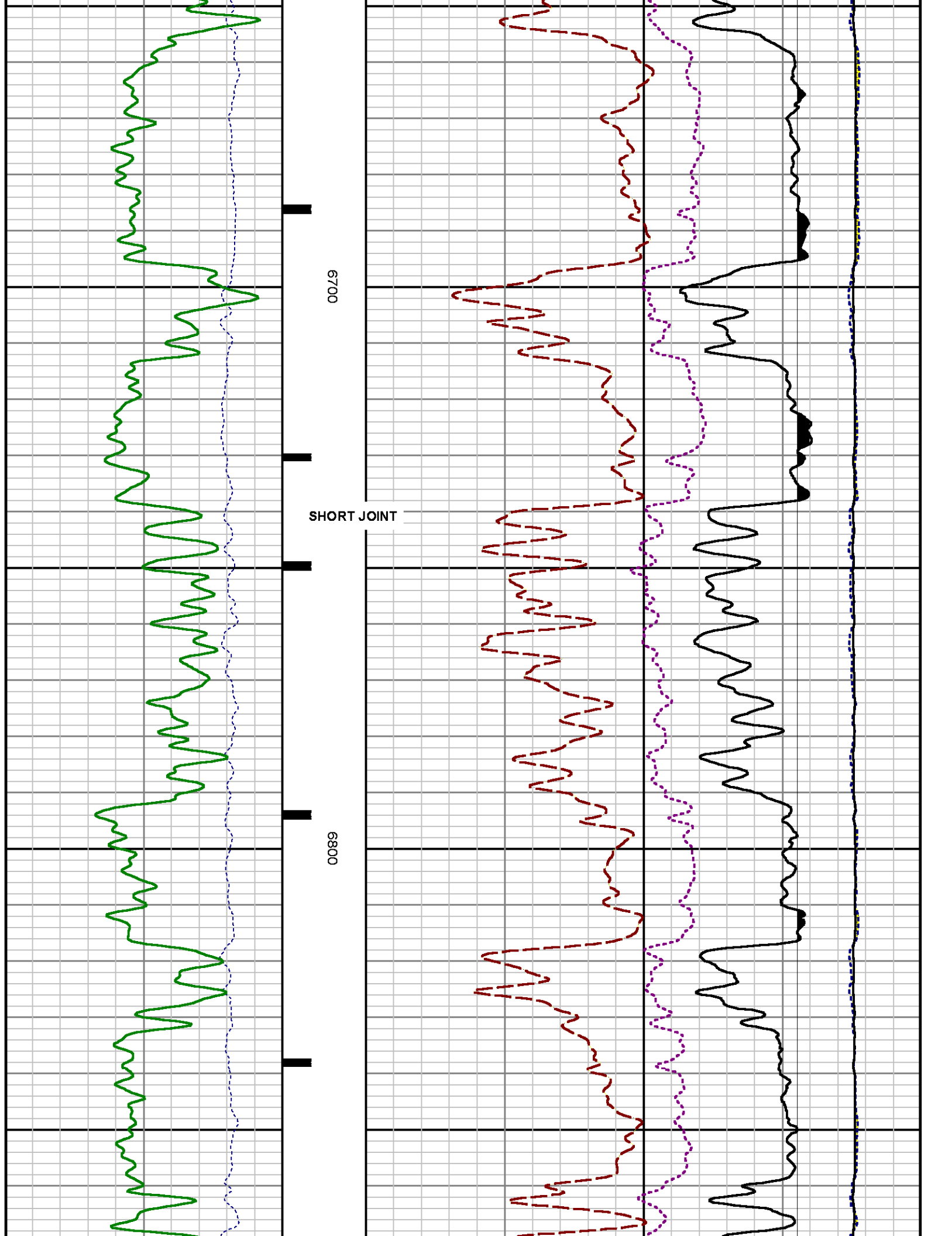
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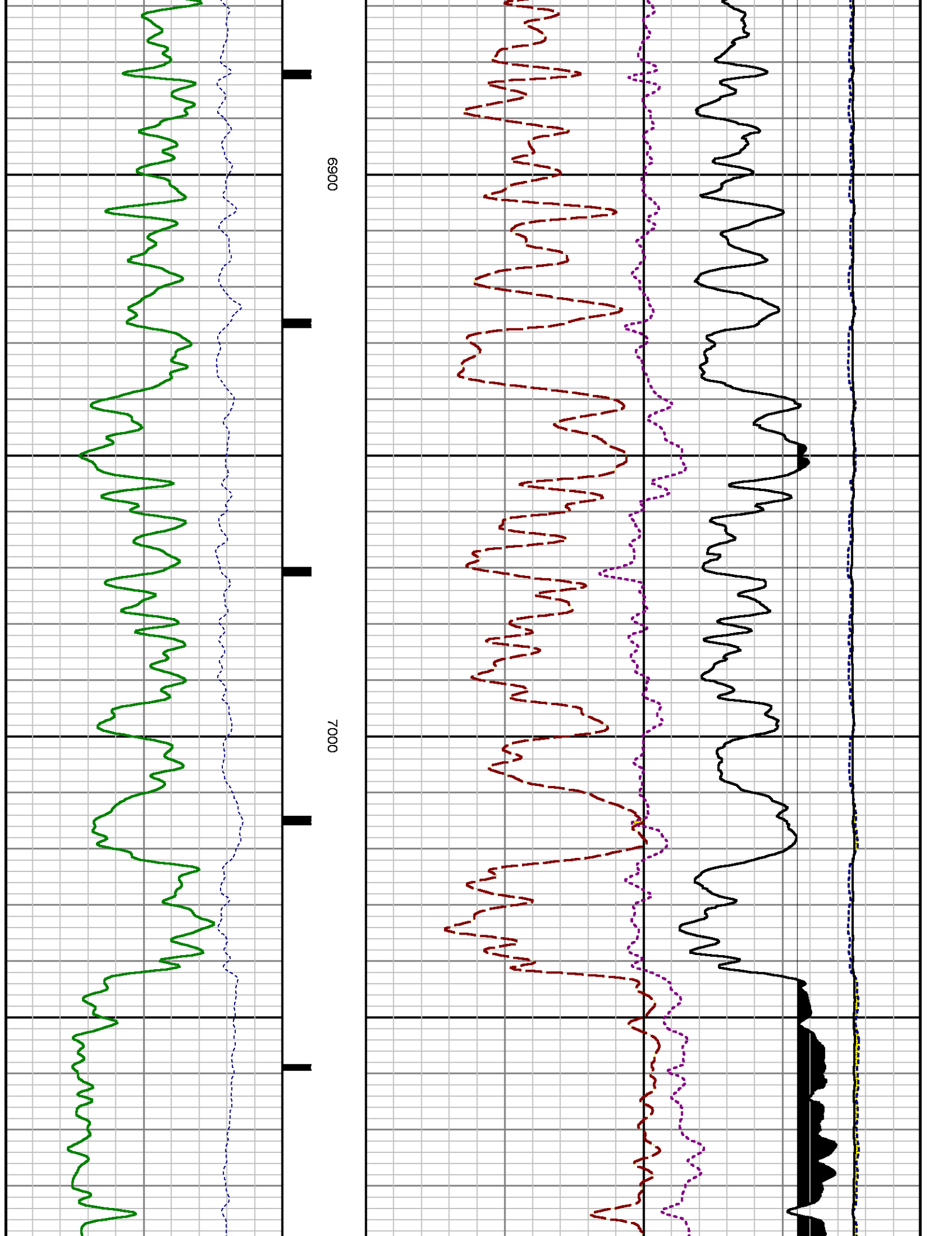
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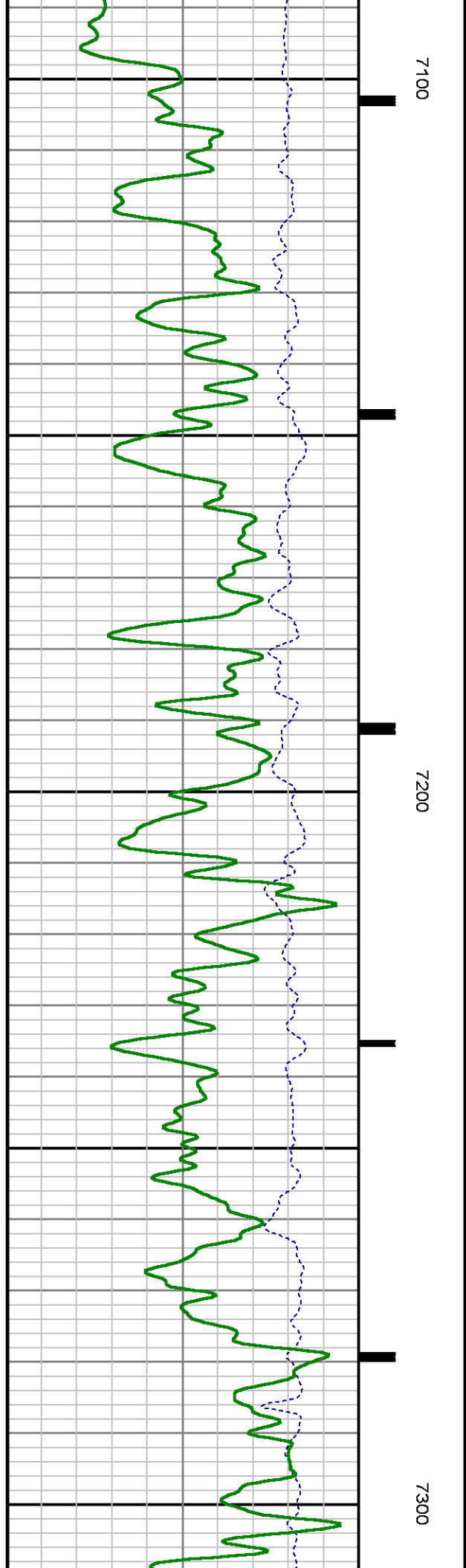
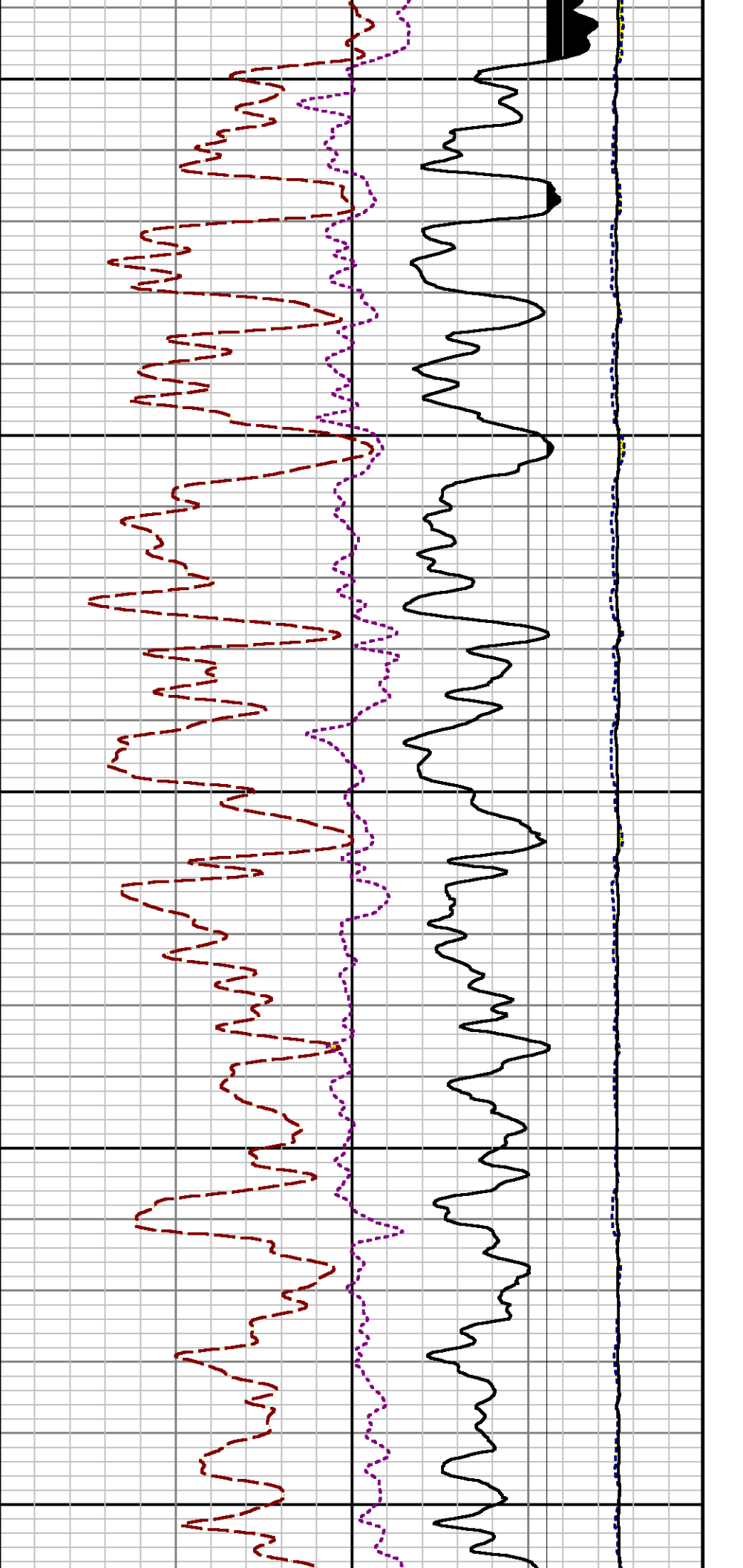


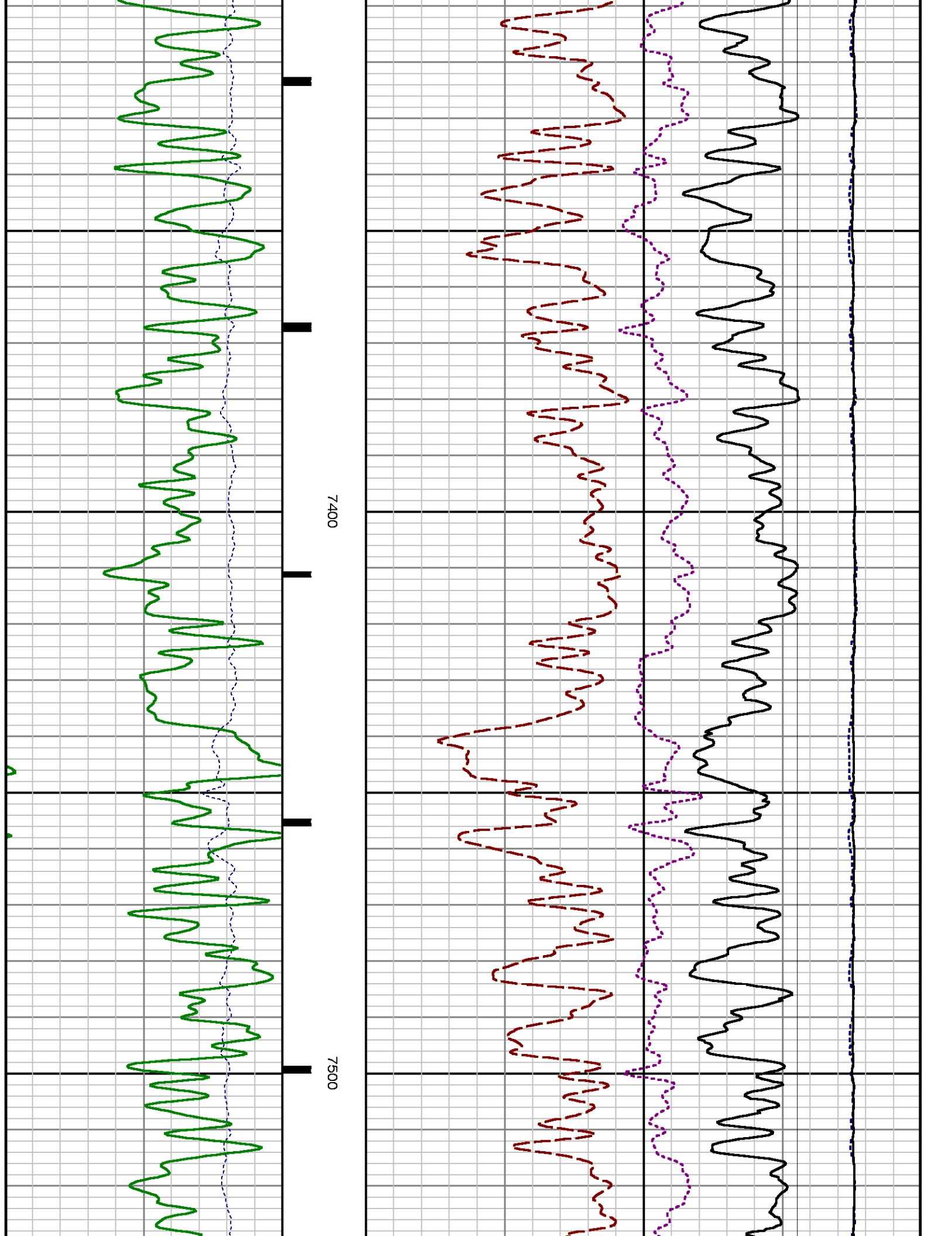


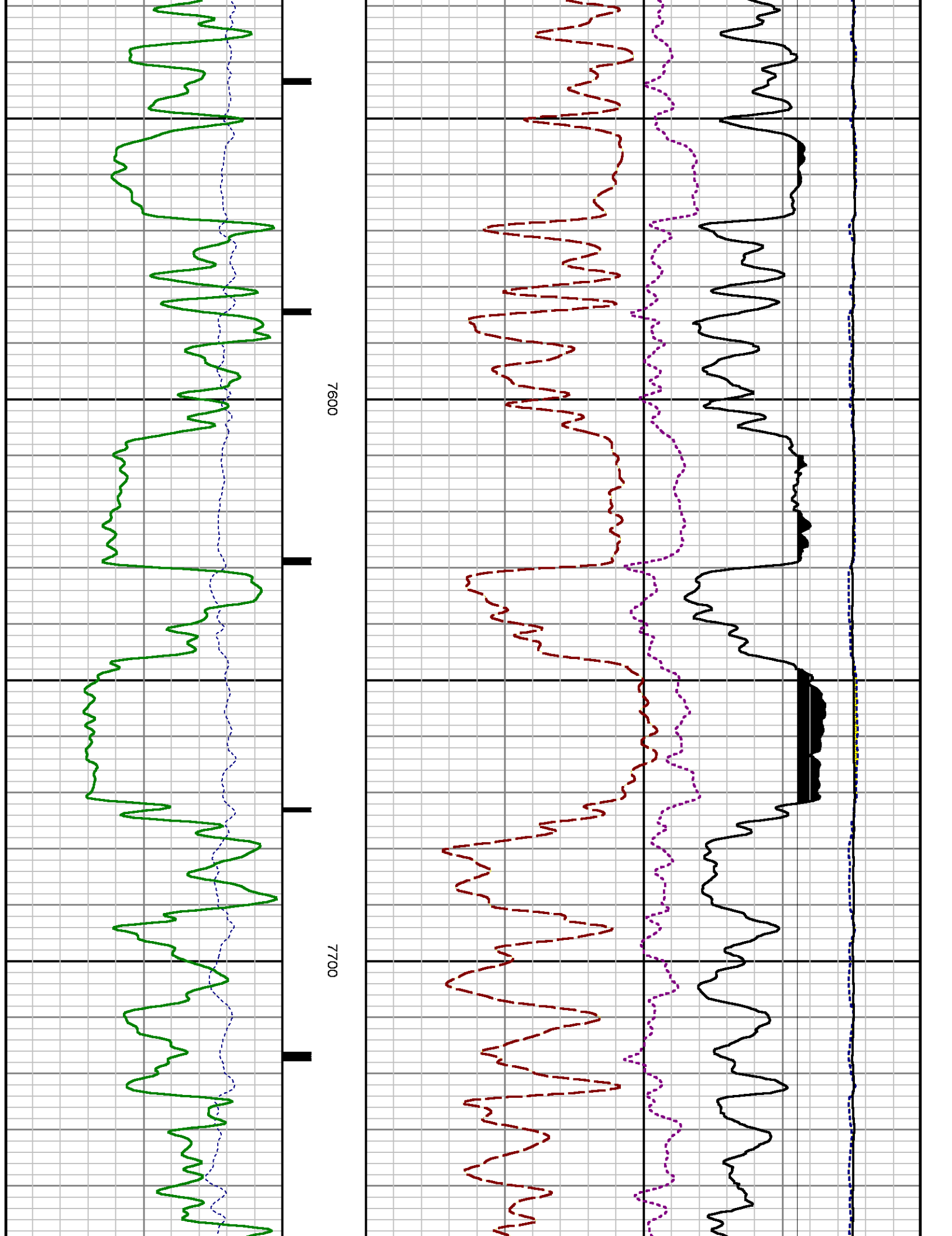


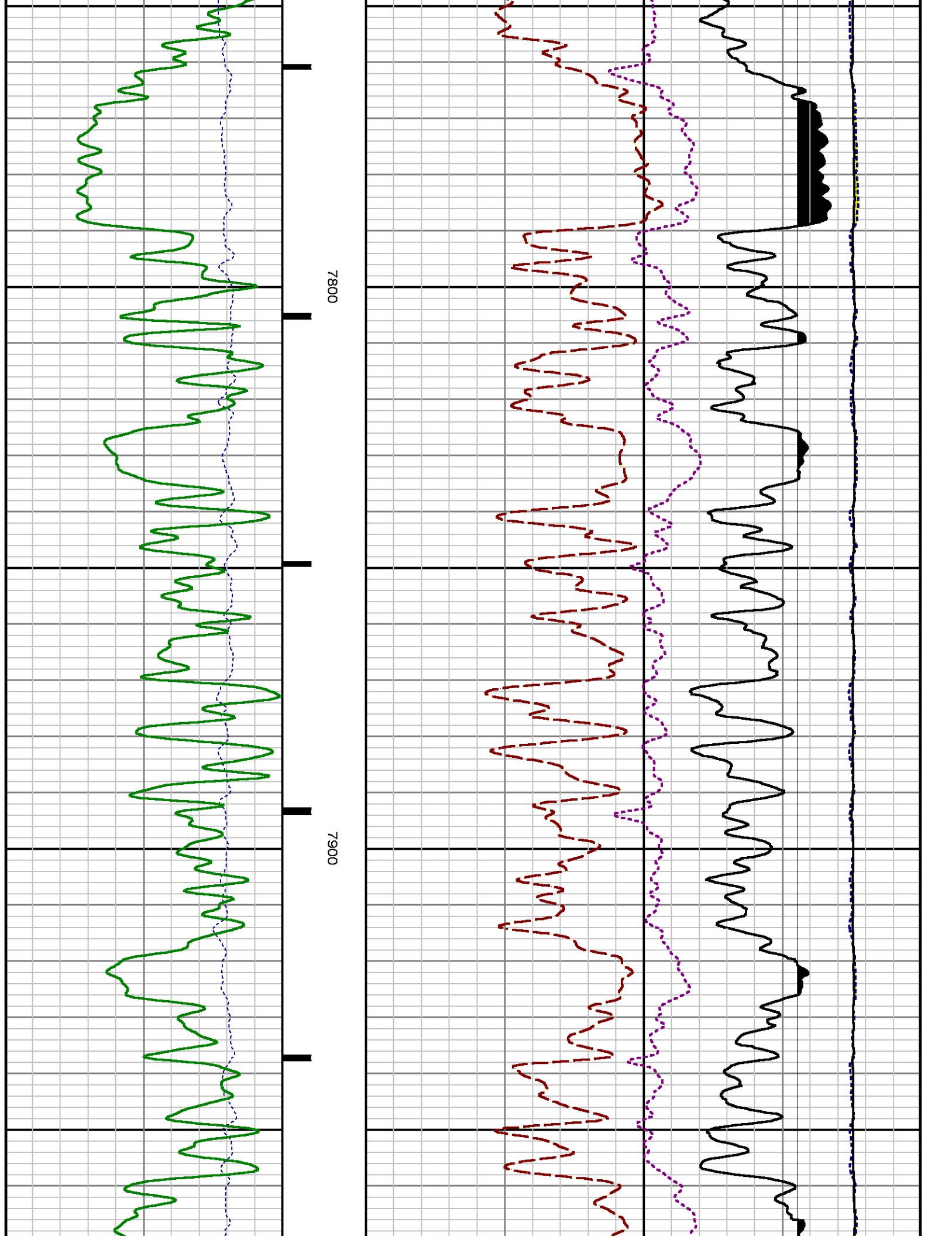


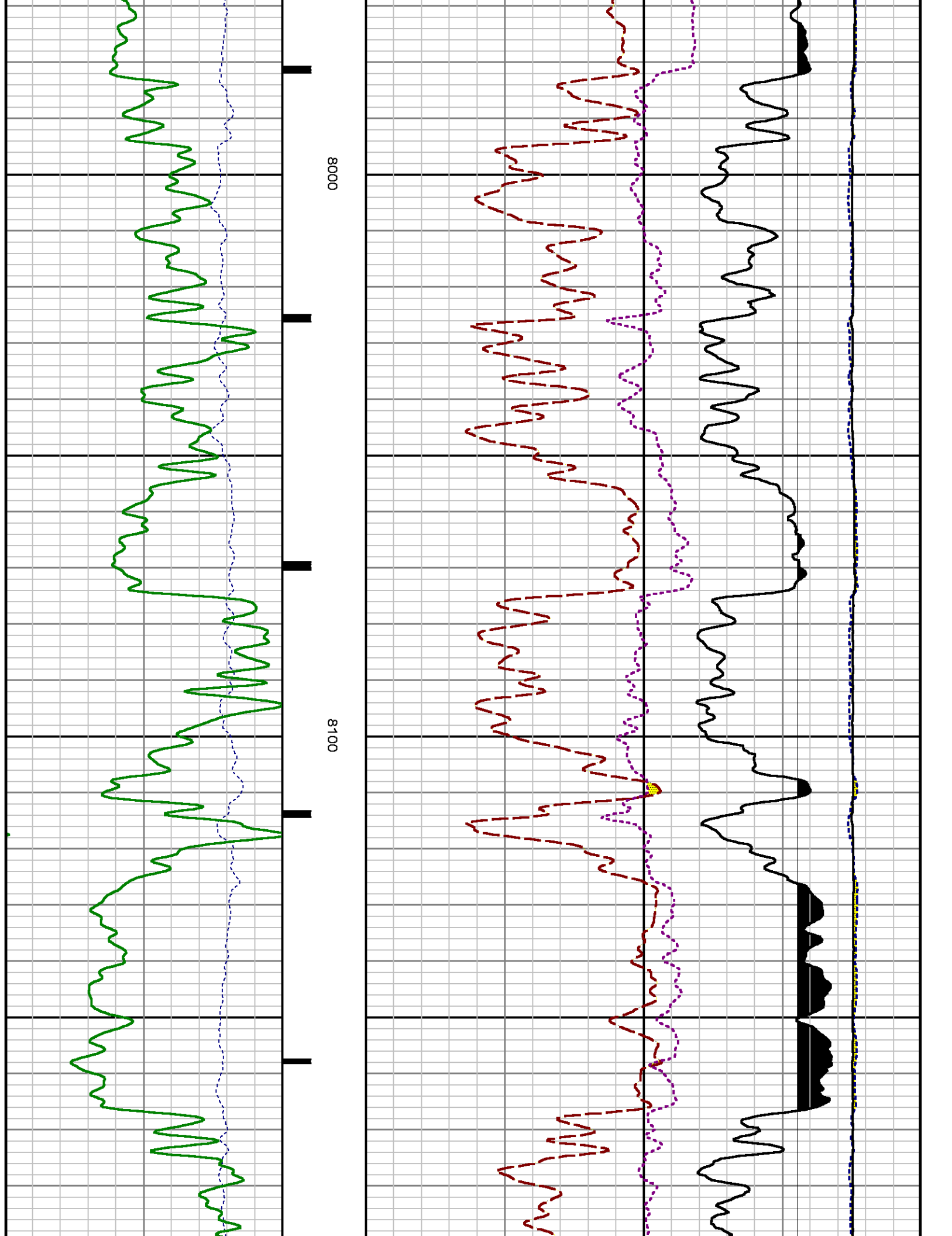


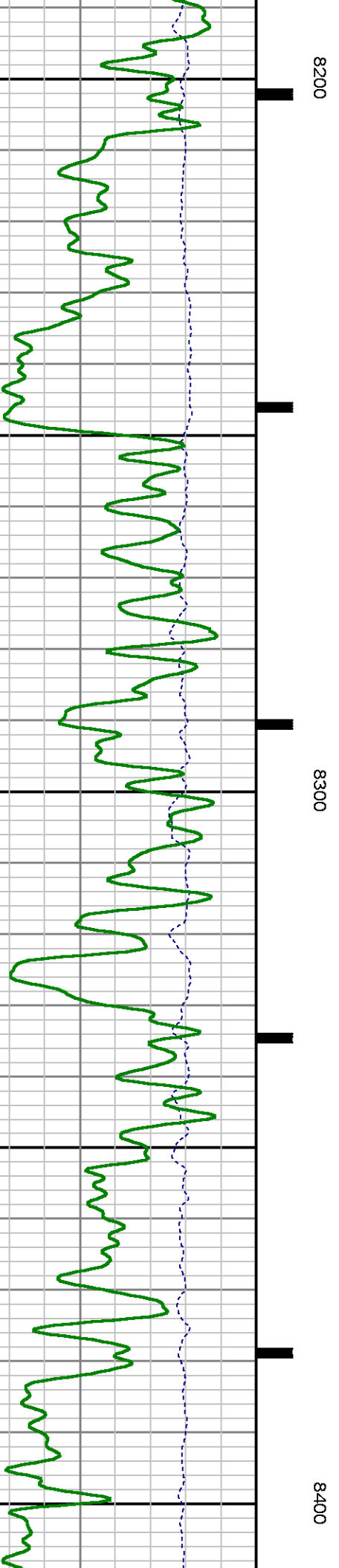
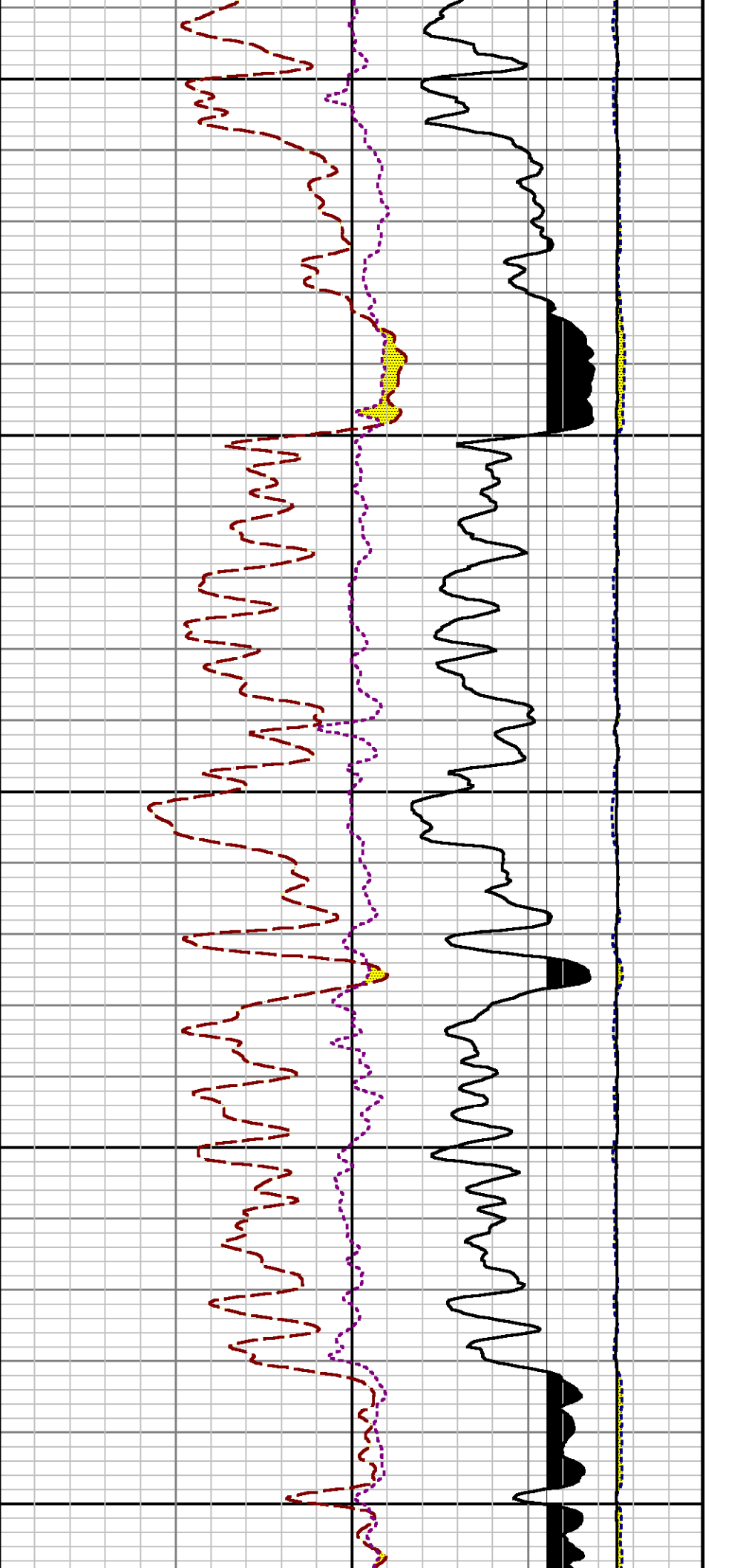


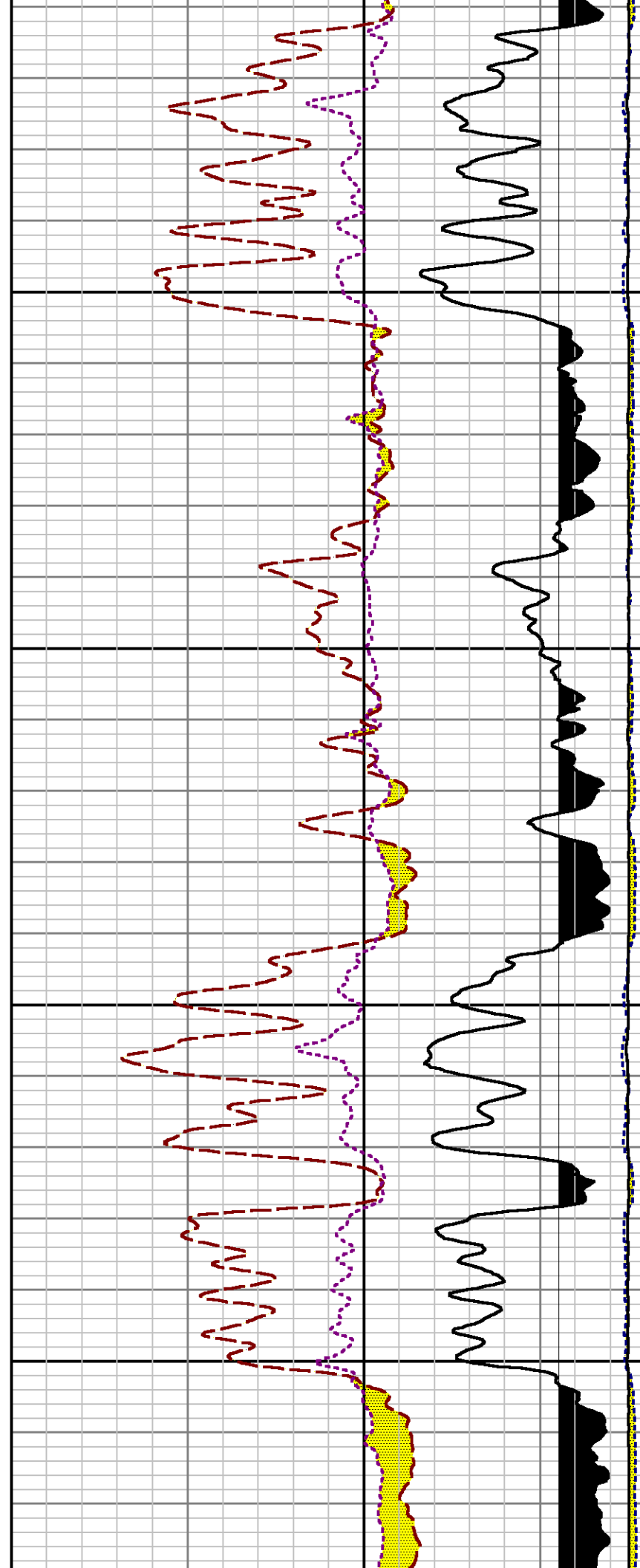
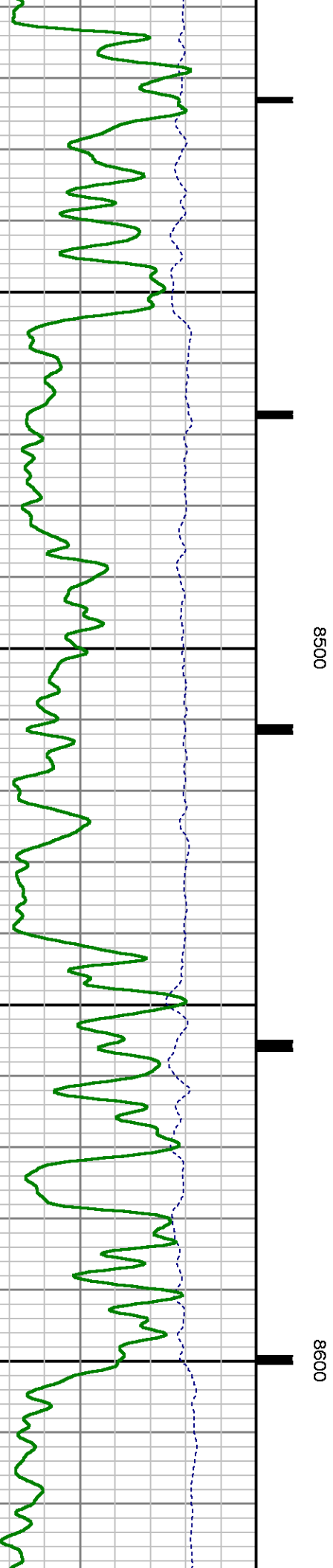


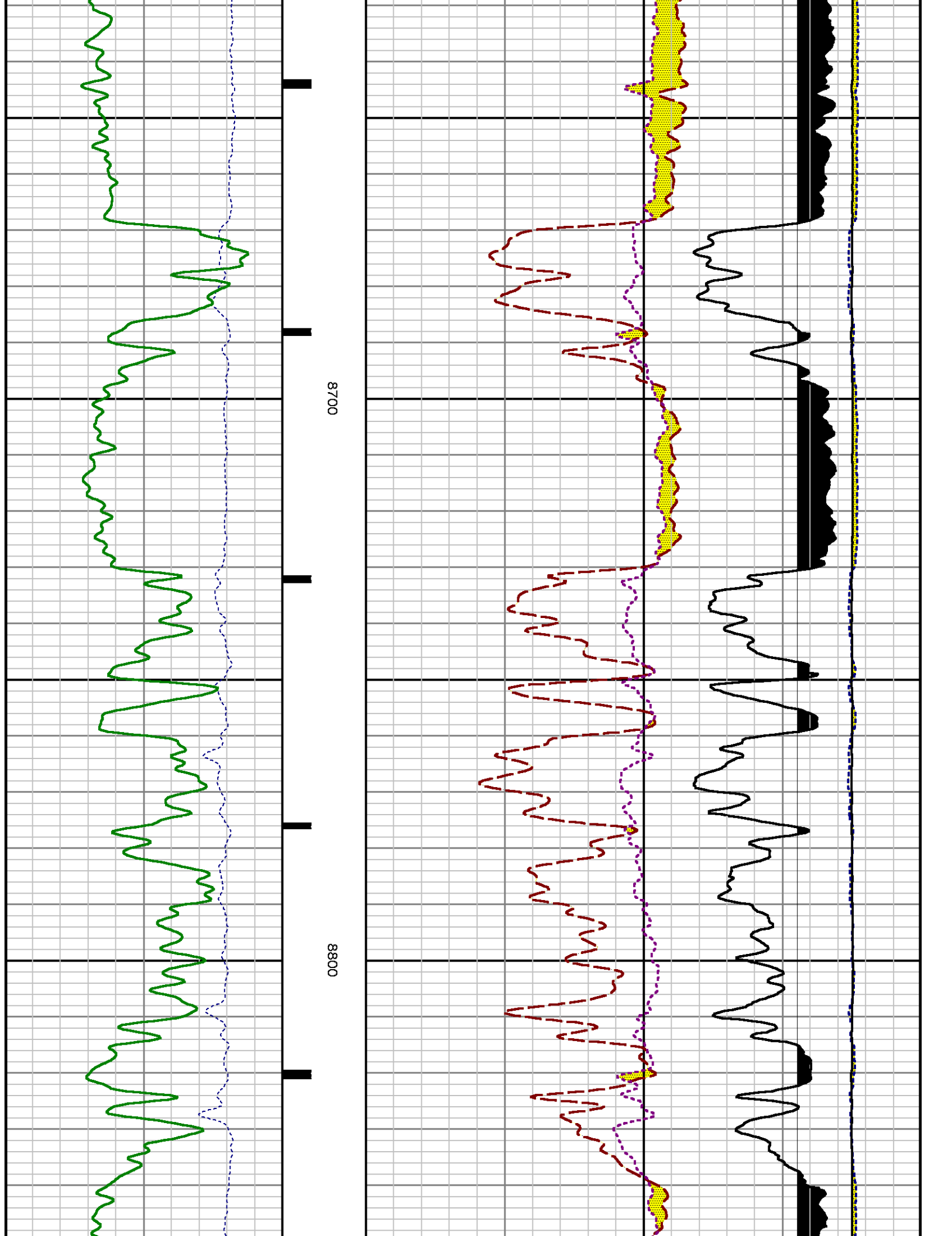


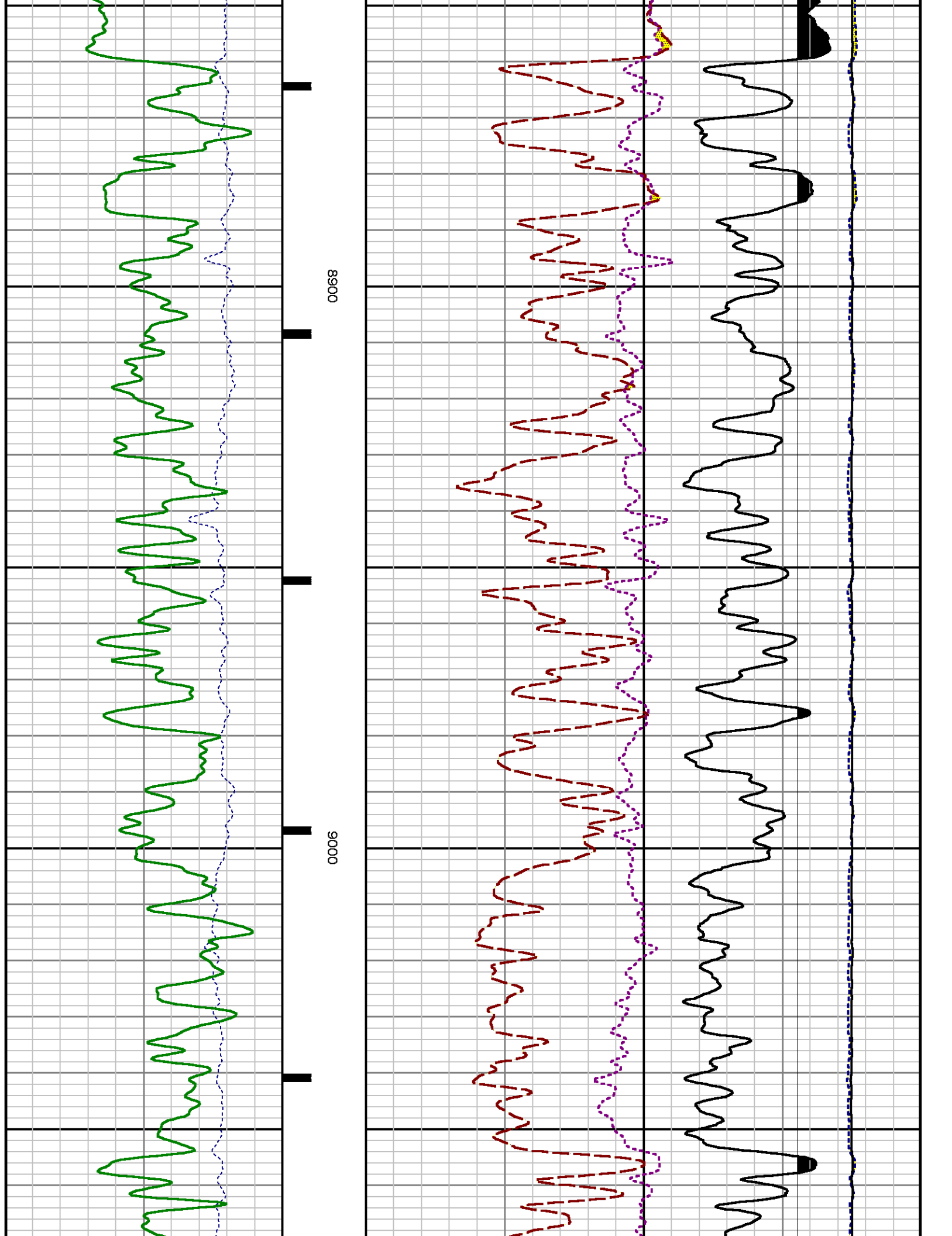


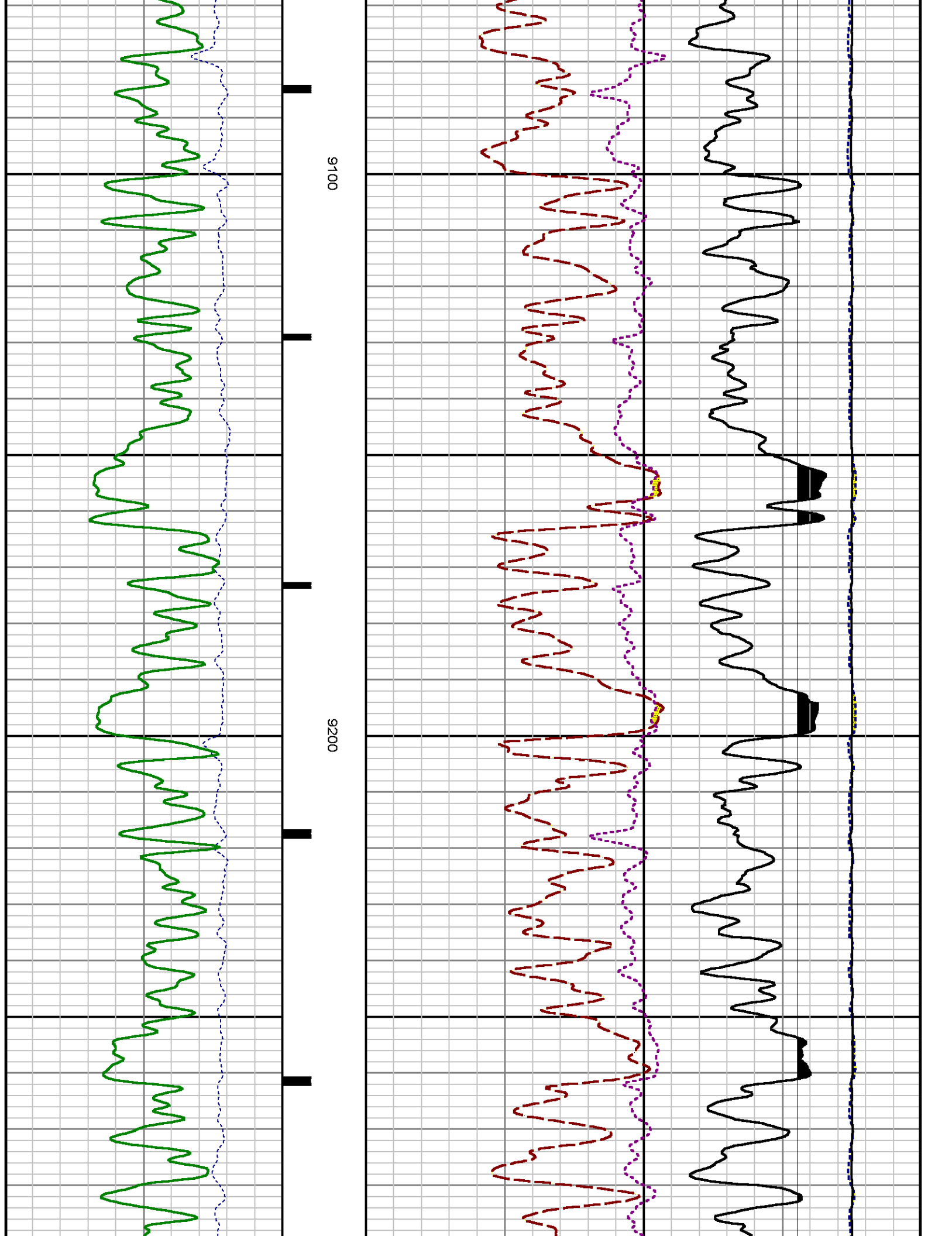


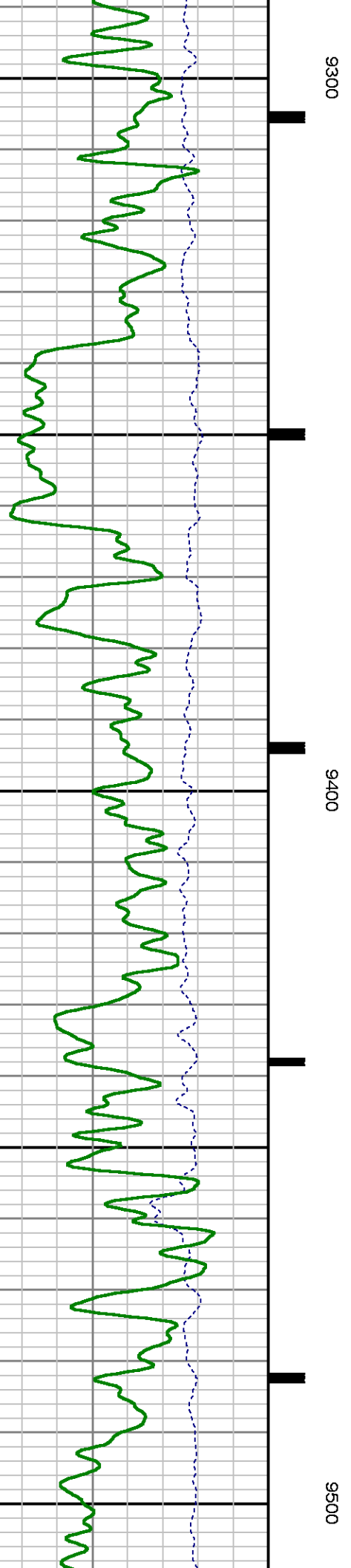
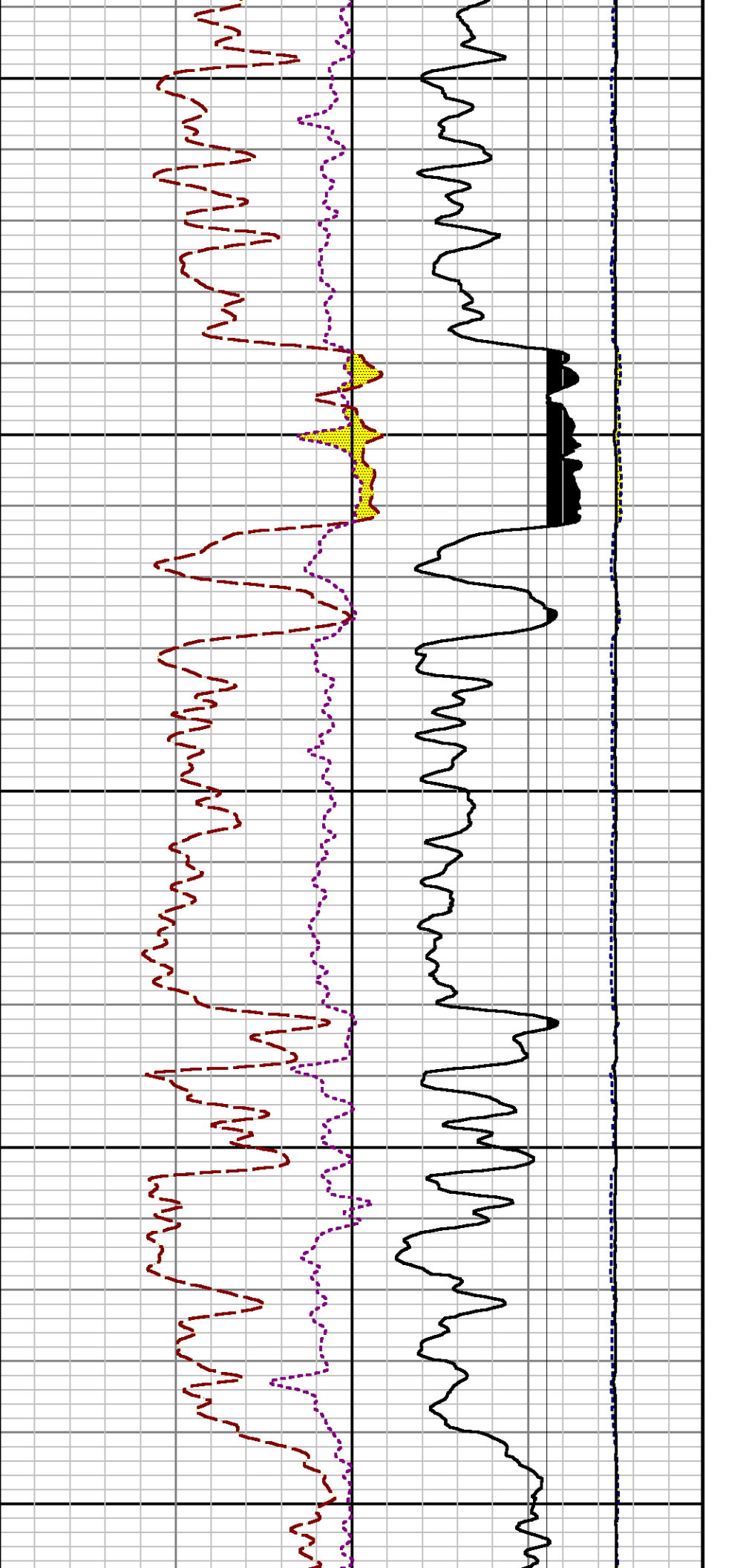


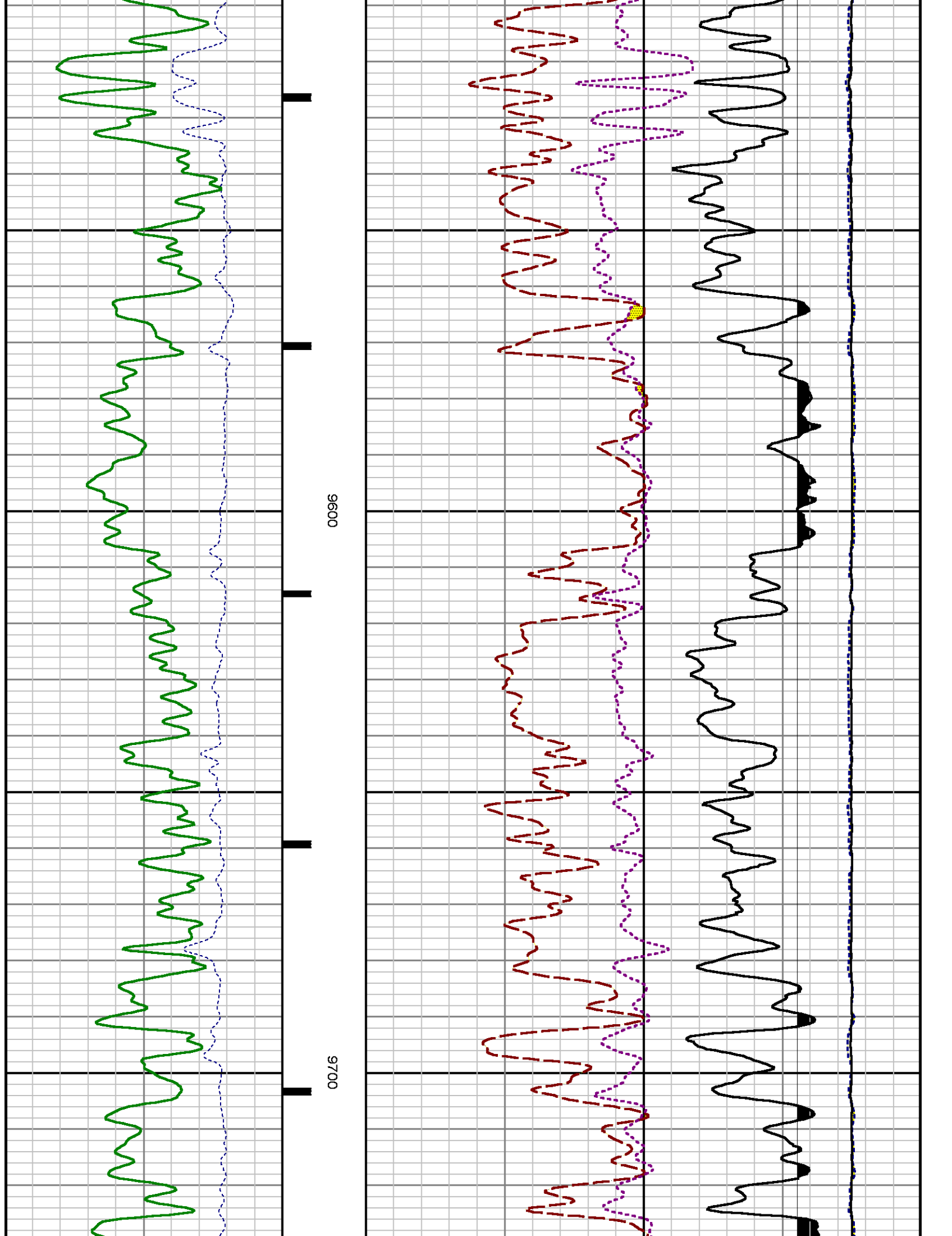


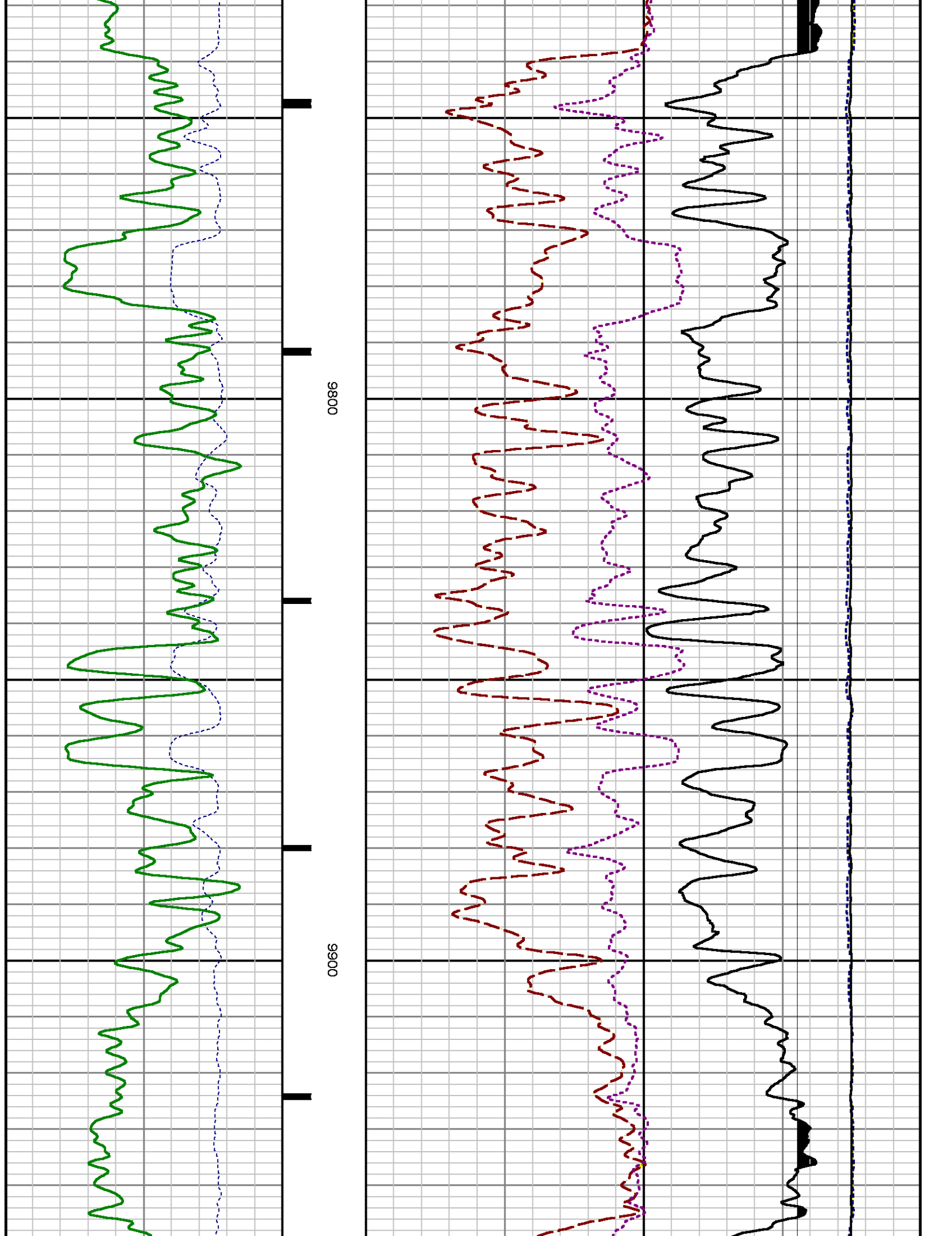


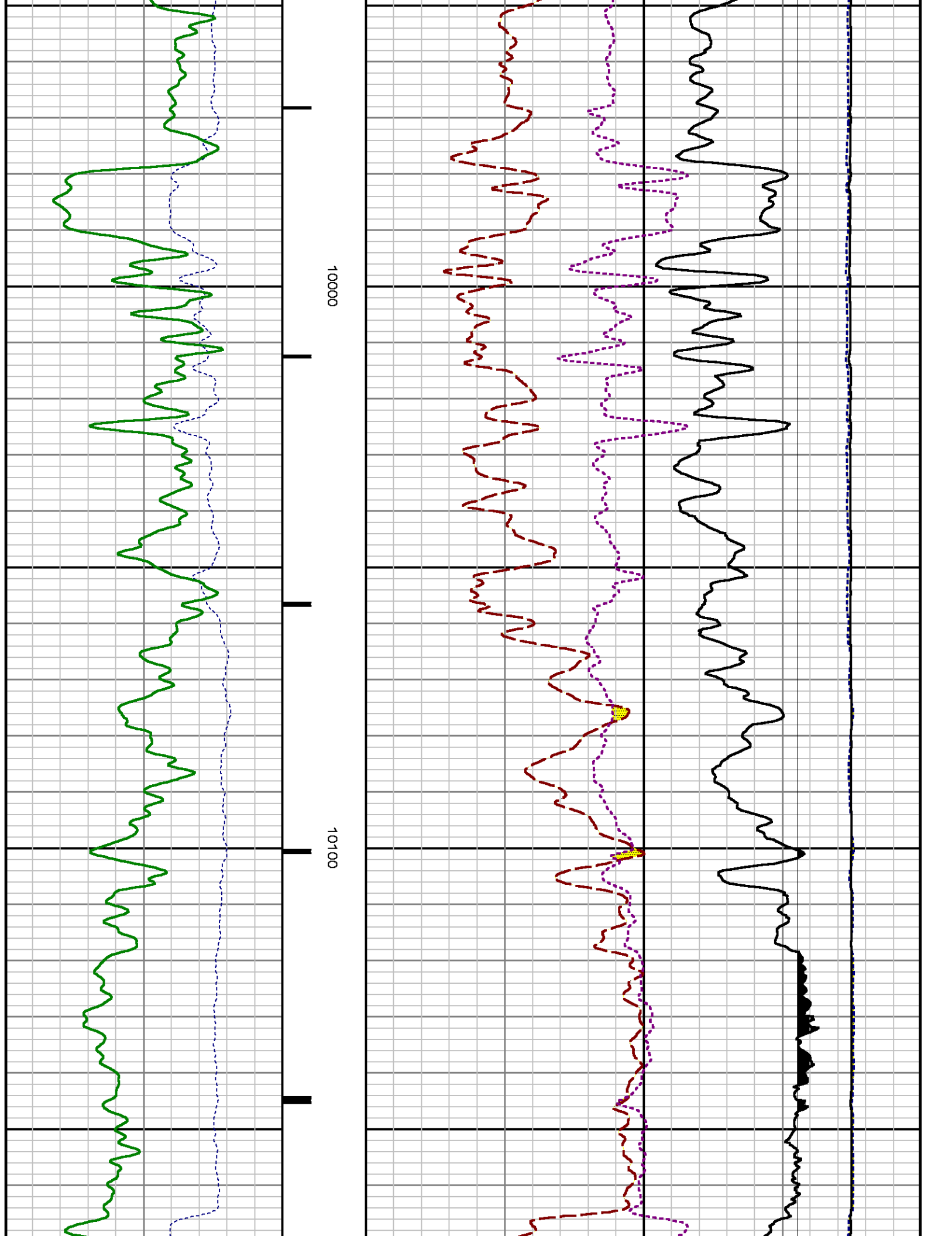














# PNC 3-D MODE

## SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		9467.750	9801.262
PNC Porosity	Borehole Size	8.750	inch	9467.750	9801.262
PNC Porosity	Casing Size	4.500	inch	9467.750	9801.262
PNC Porosity	Gas Filled	Non Gas Filled		9467.750	9801.262
PNC Porosity	Matrix	Sandstone		9467.750	9801.262
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	9467.750	9801.262

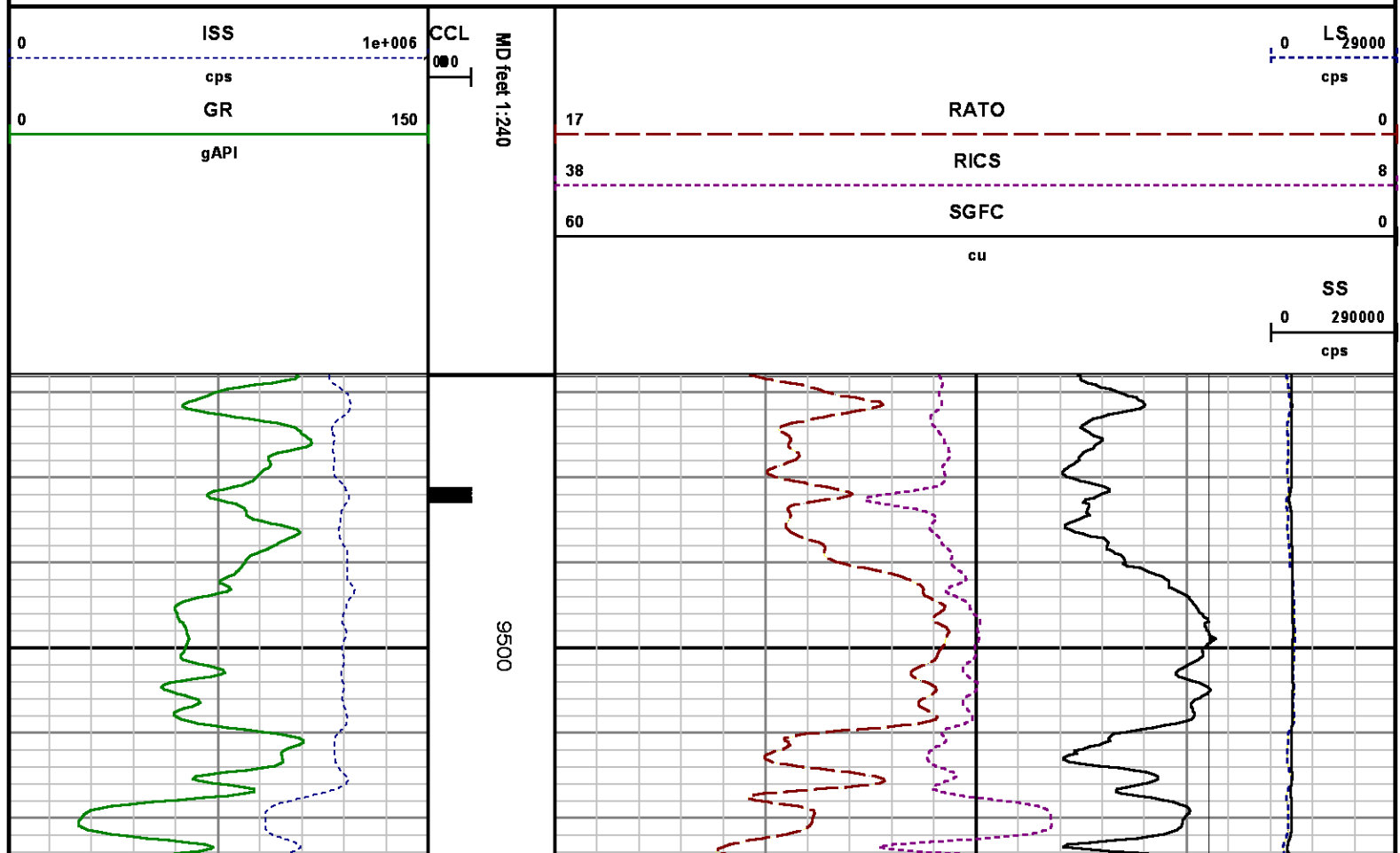
## DEPTH OFFSETS

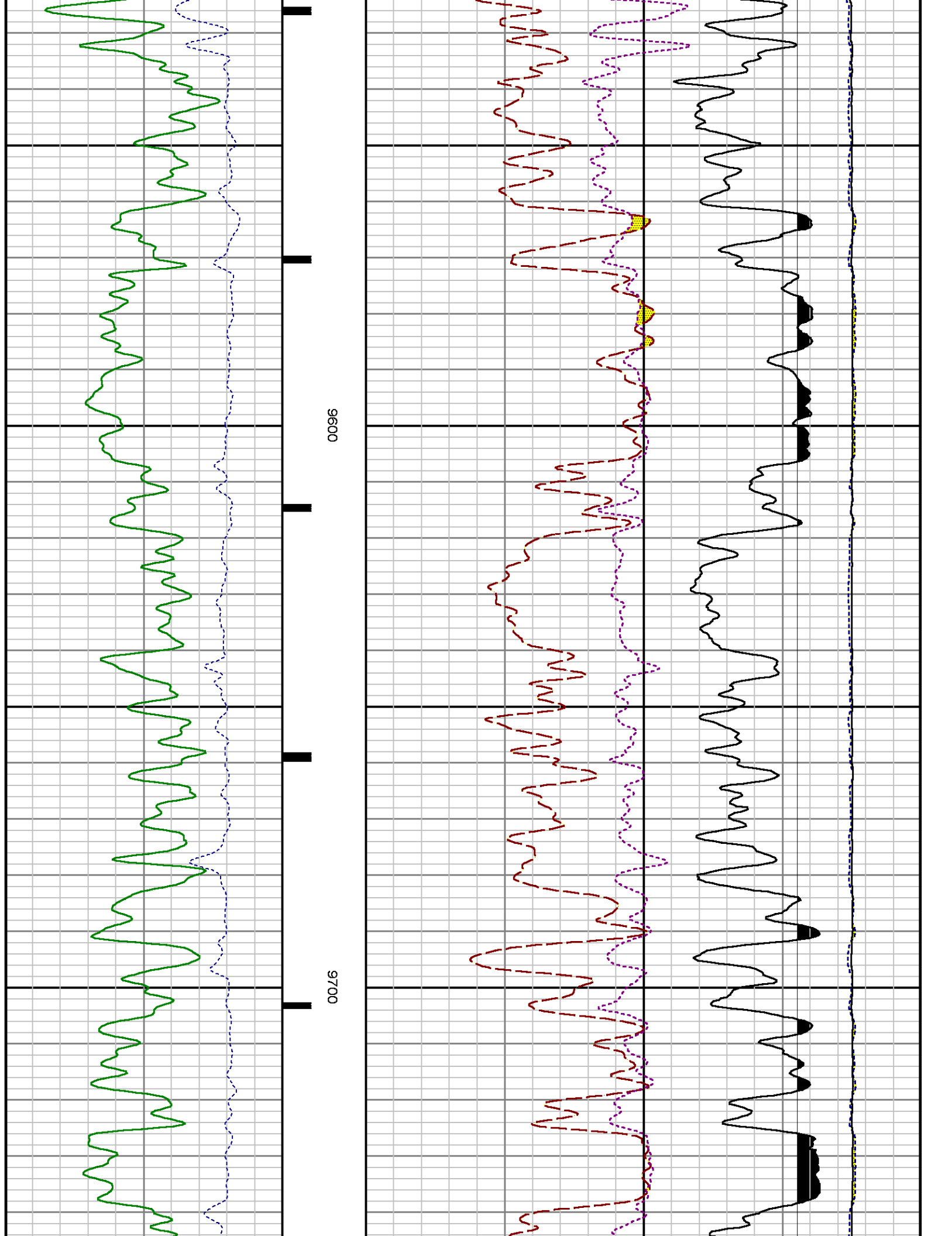
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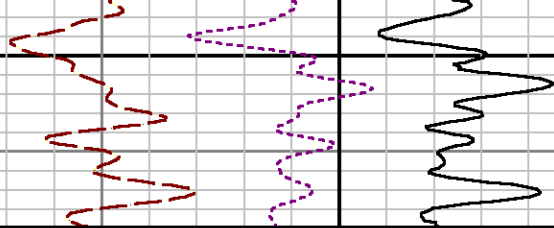
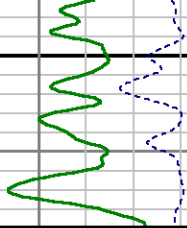
SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-26.519	FLTM
8248ED	-24.519	CCL CHV
2812LA	-21.969	GR
8281XA	-12.702	HVC3Q0 SEQ3 AMA3 AML3 BKX CXS CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3 SDL3 SGA3 SGL3 STA3 XS ASPEC3 AMB3 AMF3 CHF3 IXSC IXSN RATO23 RICXC RIN13C RIN23 RIN23C SD3D 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 SCRB SCF1

SDA1	SDLT	SGA1	SGBT	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 44-32  
 File Name : d:\well\data\wpx\ner 44-32\rpm44\repeat.xtf  
 Mode : PlotMgr 5.4.504  
 Interval : 9468.00 - 9768.00 feet UP  
 Created : 4/26/2014 8:47:19 AM







0	ISS	1e+006	CCL	000	MD feet 1:240	0	LS	29000
	cps						cps	
0	GR	150				17	RATO	0
	gAPI					38	RICS	8
						60	SGFC	0
							cu	
								SS
								0 290000
								cps

## CALIBRATION SUMMARY

## GAMMA RAY

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

### CALIBRATION SUMMARY

<b>DATE/TIME PERFORMED:</b>	Sat Apr 19 16:31:28 2014	<b>TOOL SERIES:</b>	2812LA	<b>ASSET:</b>	382	<b>SEQ:</b>	19
<b>Calibrator #</b>	<b>Background [cps]</b>	<b>Calibrator On [cps]</b>	<b>Multiplicative</b>	<b>Background [api]</b>	<b>Calibrator On [api]</b>	<b>Differential [api]</b>	
S2K	51.88	260.02	1.009	52.34	262.34	210.00	

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

### PRIMARY VERIFICATION

<b>DATE/TIME PERFORMED:</b>	Sat Apr 19 16:38:08 2014	<b>TOOL SERIES:</b>	2812LA	<b>ASSET:</b>	382	<b>SEQ:</b>	19
<b>Calibrator #</b>	<b>Background [cps]</b>	<b>Calibrator On [cps]</b>	<b>Multiplicative</b>	<b>Background [api]</b>	<b>Calibrator On [api]</b>	<b>Differential [api]</b>	
S2K WA612	51.54	263.60	1.009	52.00	265.95	213.95	

## PNC

Calibration File: C:\case\calver\PNC\55525.cal

DATE/TIME PERFORMED: Fri Apr 25 18:25:14 2014 TOOL SERIES: 8281XA ASSET: 555 SEQ: 25

Calibrator #

2437xb 12674

Source #

8281AA 11765054

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	805176	120.00	2331.00	2273.00	2234.00	108.55	7.00	0.9843
Interpolated	1300000	141.72	2308.02	2267.71	2229.00			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	805176	6336.16	994.53	143.80	25.86	0.14	24.06	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	805176	169525.92	26760.55	88448.11	31484.04	8267.11	53495.99	13229.94
Fit Quality %		1.32	1.41	1.18	1.17	1.39	1.11	1.43

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	805176	1.43	4.75	30.09	15.05	10.70	3.81	4.04
		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 %		0.06	0.06	0.16	0.02	0.12	0.13	0.17
Reduced	1388413	1.43	4.76	30.18	15.07	10.70	3.81	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

# TEMPERATURE

Calibration File: C:\case\calver\TEMP\7456813.cal

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

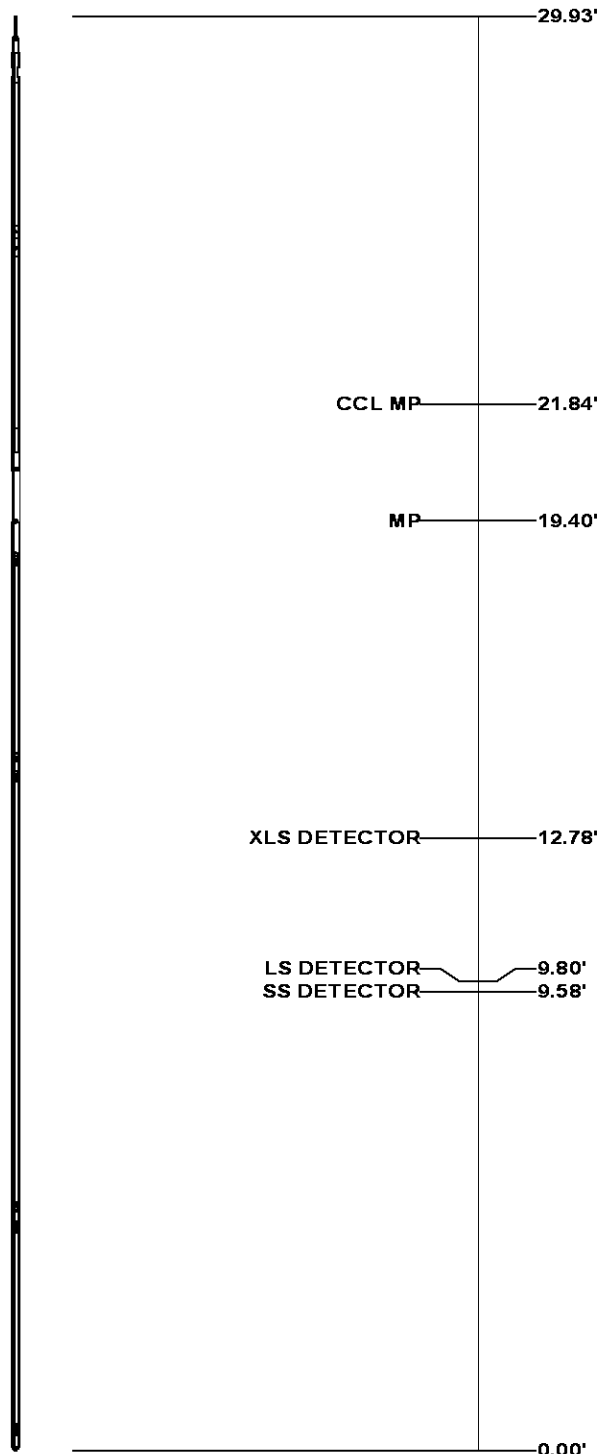
Series 8248EA  
 Mnemonic PCM  
 Diameter 1.70"  
 Weight 20.00 lb  
 Length 4.46'  
 Measure Point 1.00' CCL MP  
 Temp Rating 350.00 °F  
 Press Rating 15000.00 PSI

### 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



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

**HUGHES**

**Baker Atlas**

*CASE*

Well	FEDERATION 1102		
Field	RULISON		
County	GARFIELD	State	CO

API No:	05045217900000
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<b>Location</b> SHL: 182' FNL & 2602' FWL (5 7S 93W) BHL: 759' FSL & 671' FEL (32 6S 93W)  <b>SEC</b> 32 <b>TWP</b> 6S <b>RGE</b> 93W	<b>Elevations</b> <b>KB</b> 7629 ft <b>DF</b> <b>GL</b> 7603 ft	<b>32 6S 93W</b> <b>RU 23-5 PAD</b> <b>NABORS 576</b>
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