



# RESERVOIR PERFORMANCE MONITOR

Baker Atlas

File No: CH085741

Company Well WPX ENERGY C&C ENERGY GM 321-13

API No: Field GRAND VALLEY

County GARFIELD State COLORADO

05045222690000

Location SHL: 276' FSL & 1032' FWL (SEC 12)

GM 24-12 PAD BHT: 418' FNL & 2181' FWL (NENW SEC 13)

H&P 318 SEC 13 TWP 7S RGE 96W

Other Services

BOND LOG

Permanent Datum GL Elevation 5141 ft

Log Measured From KB 24 ft Above P. D.

Drill Measured From KB Elevations KB 5165 ft DF GL 5141 ft

Date	28/MAY/14	
Run	ONE	
Service Order	US085741J	
Depth Driller	6226 ft	
Depth Logger	6167 ft	
Bottom Logged Interval	6157 ft	
Top Logged Interval	3014 ft	
Time Started	7:00	
Time Finished	12:00	
Operator Rig Time	5 HOURS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	60 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	198 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	27/MAY/14	
Equipment No.	4271	GRAND UCT
Recorded By	TIM NEWMELL	
Witnessed By	JEFF BRADY	

- 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	24 ft	1551 ft
8.75 in	1551 ft	6226 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			24 ft	1551 ft
4.5 in	11.6 lbm/ft	I-80	24 ft	6226 ft

Remarks
All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 5/27/2014 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 5 feet.

Logged in PNC-3D mode.

BHT = 198 °F

SJ = 2735' - 2758'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	PCM	8250EA	10397894	FREE
1	1	TEL/CCL	8248ED	10296408	FREE
1	1	GR	2812LA	10274382	FREE
1	1	RPM	8281EA	10303640	FREE
1	1	RPM	8283PA	10585555	FREE
1	1	RPM	8281FA	10401926	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		2989.750	6187.875
PNC Porosity	Borehole Size	8.750	inch	2989.750	6187.875
PNC Porosity	Casing Size	4.500	inch	2989.750	6187.875
PNC Porosity	Gas Filled	Non Gas Filled		2989.750	6187.875
PNC Porosity	Matrix	Sandstone		2989.750	6187.875
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	2989.750	6187.875

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 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 SGB1 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

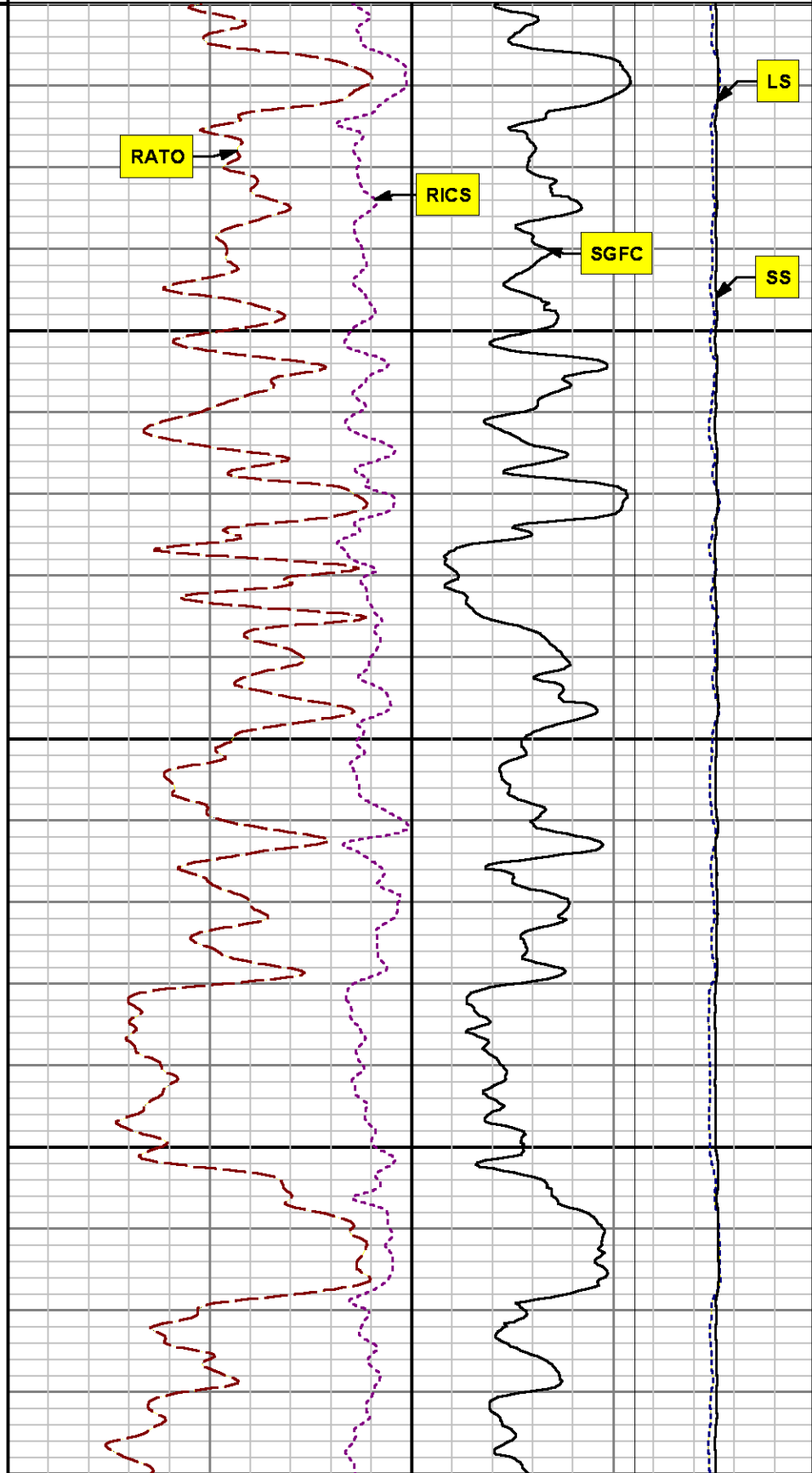
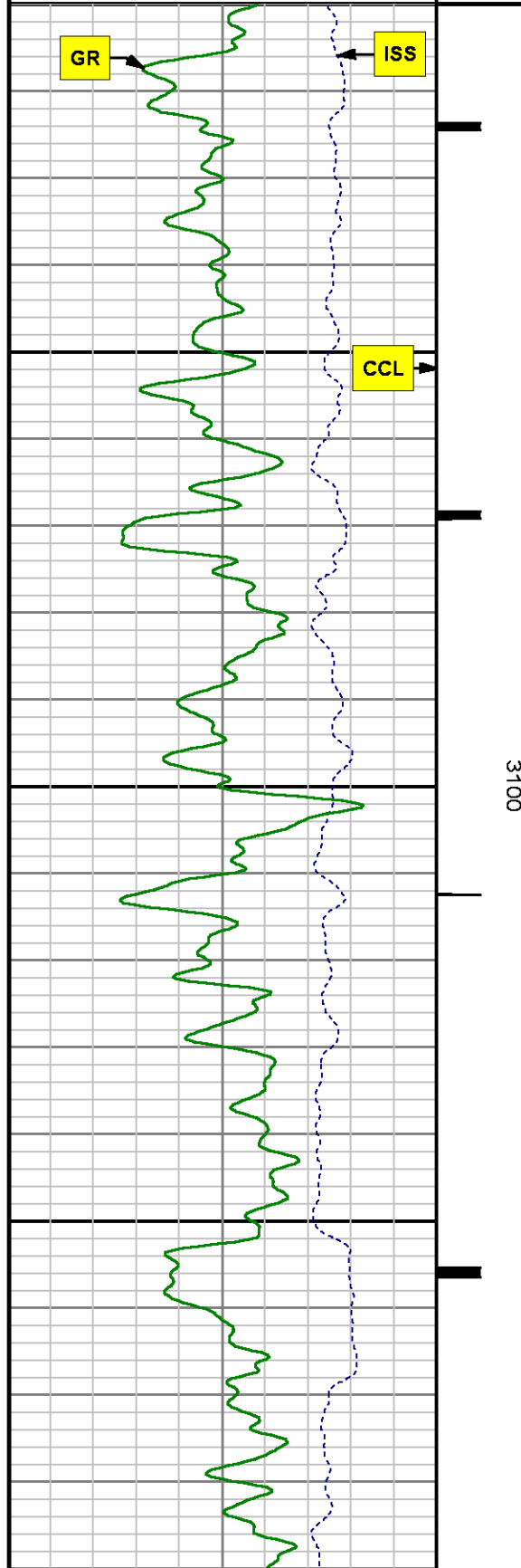
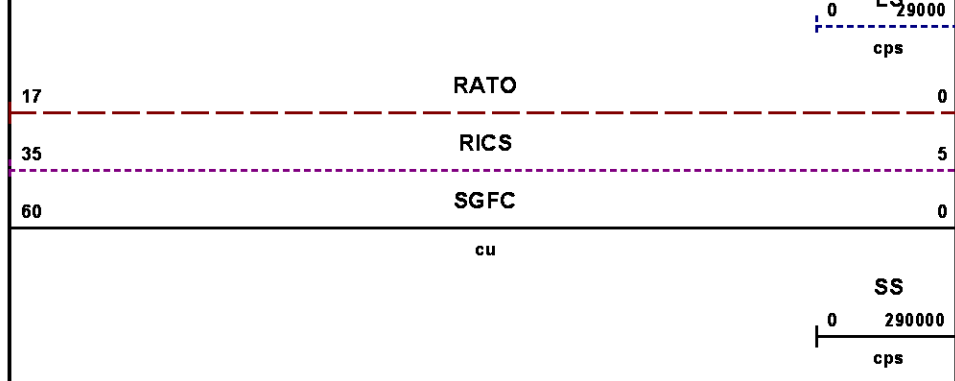
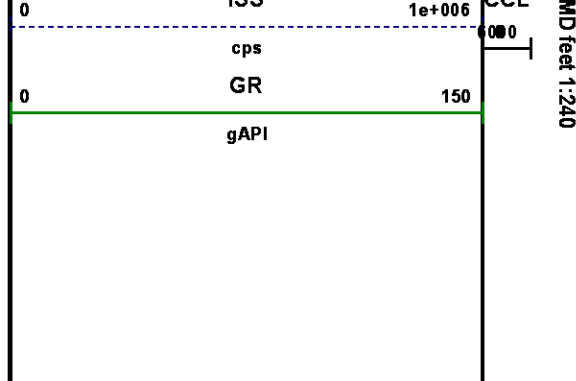
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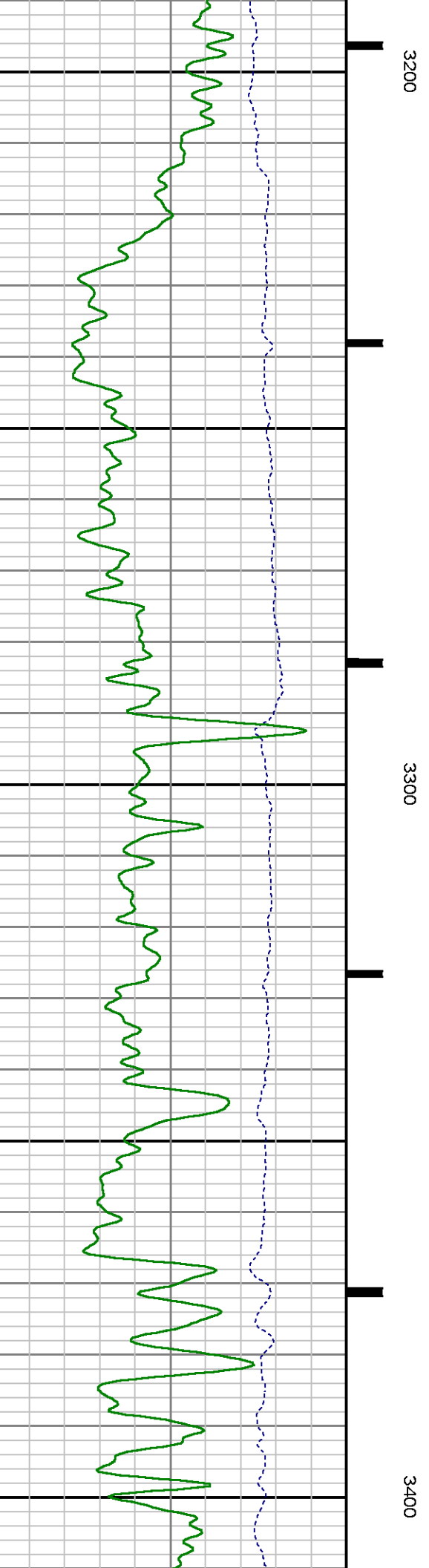
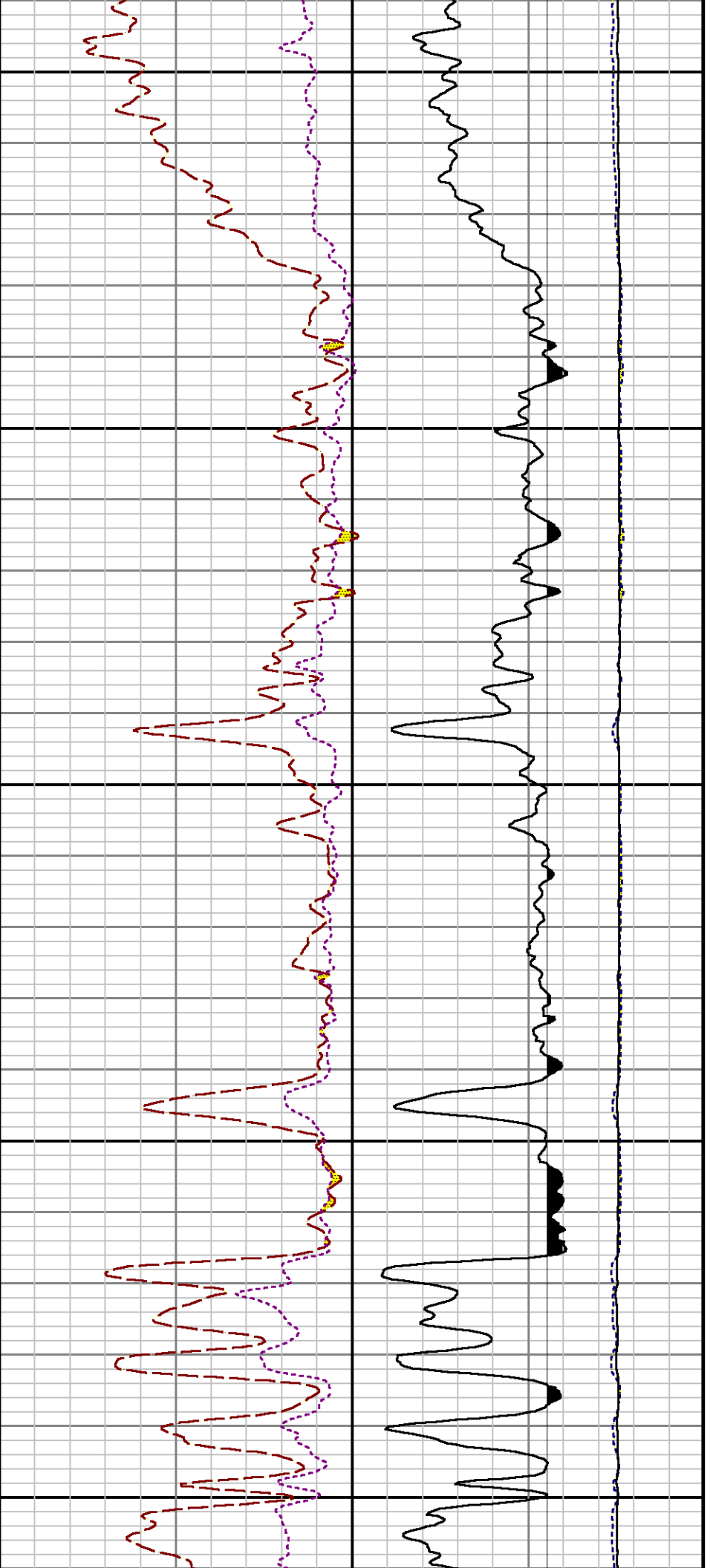
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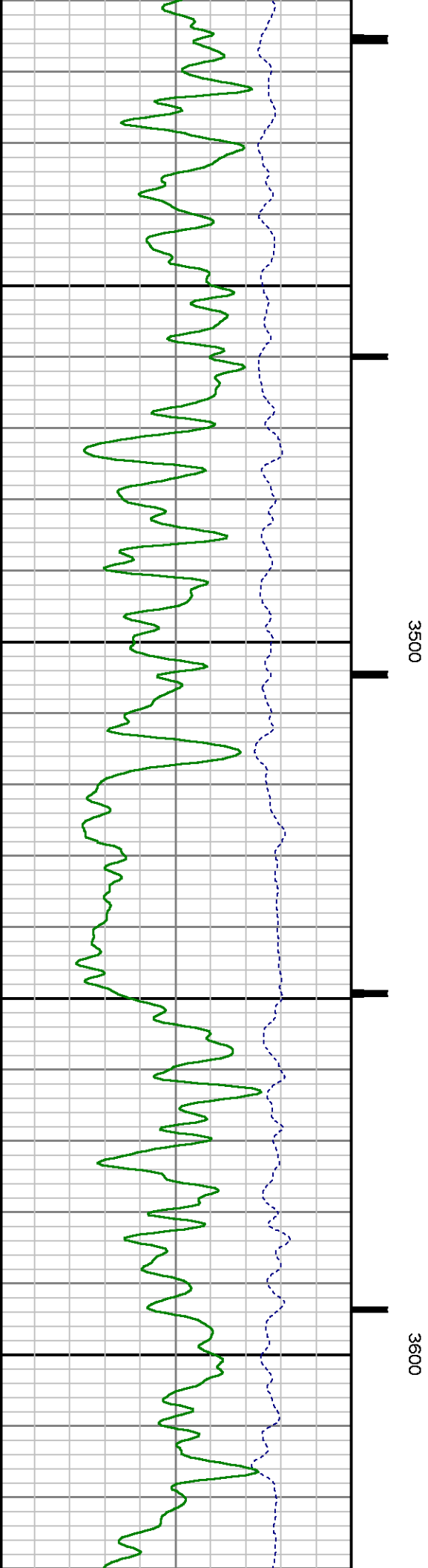
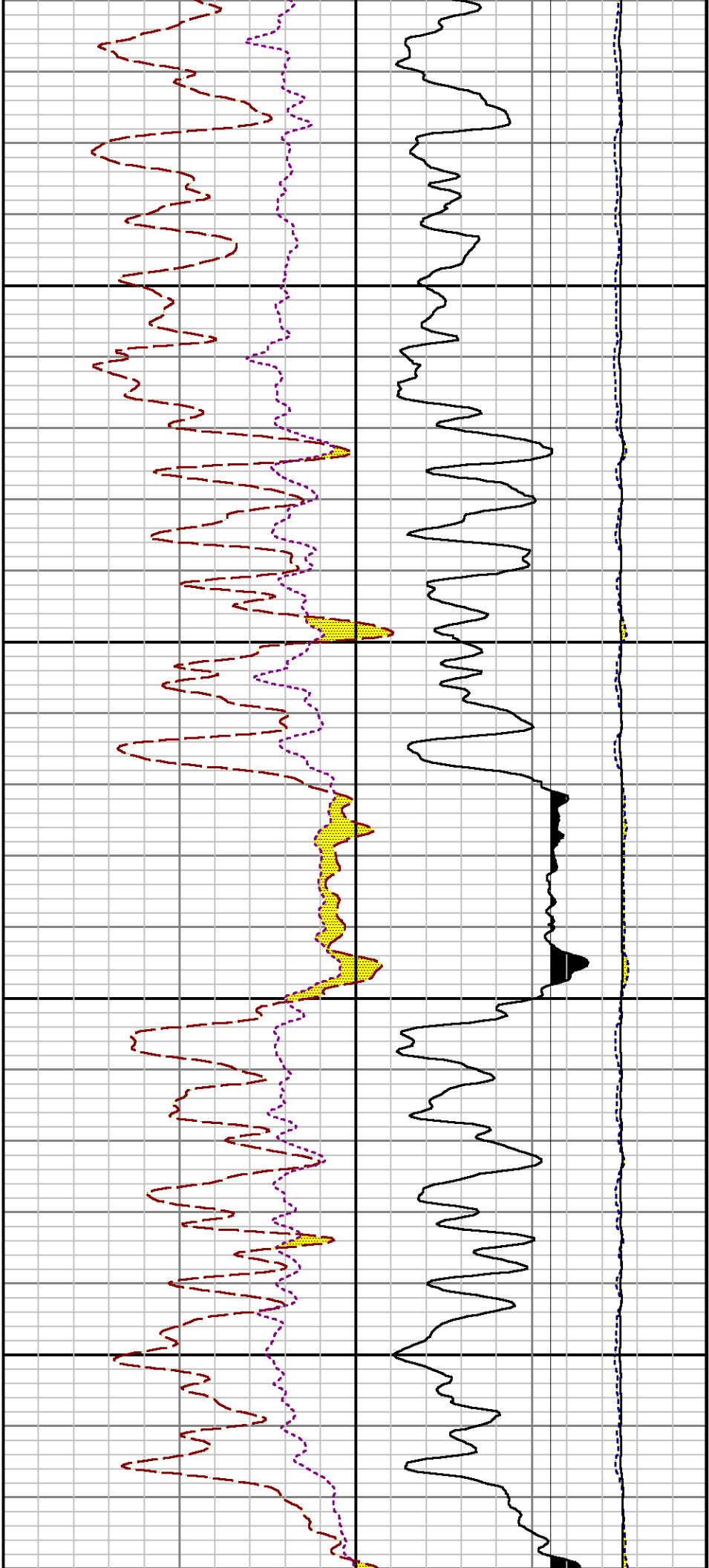
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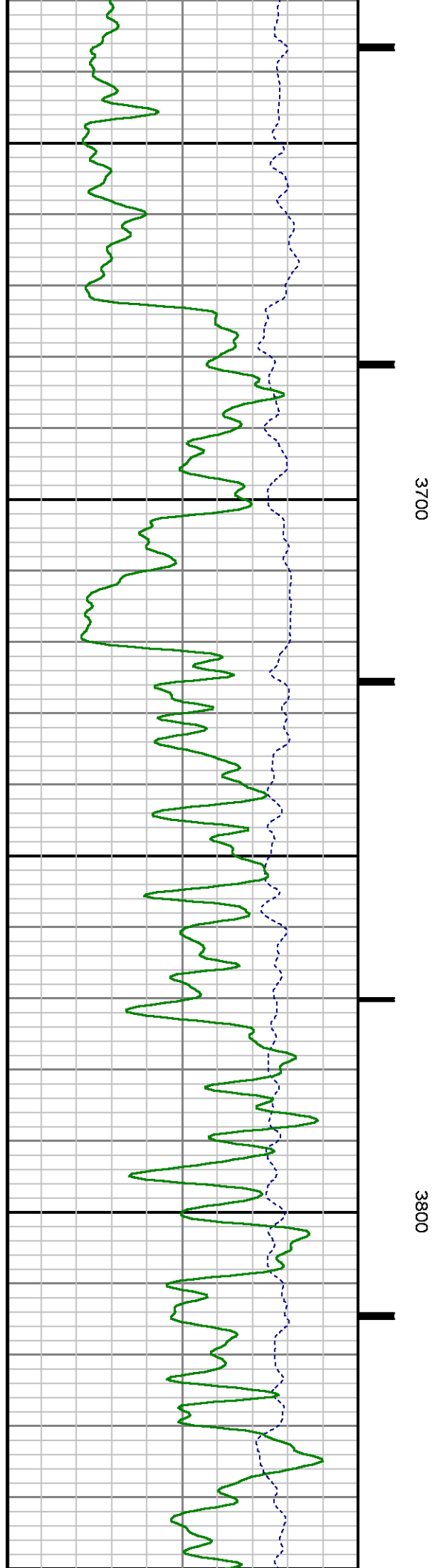
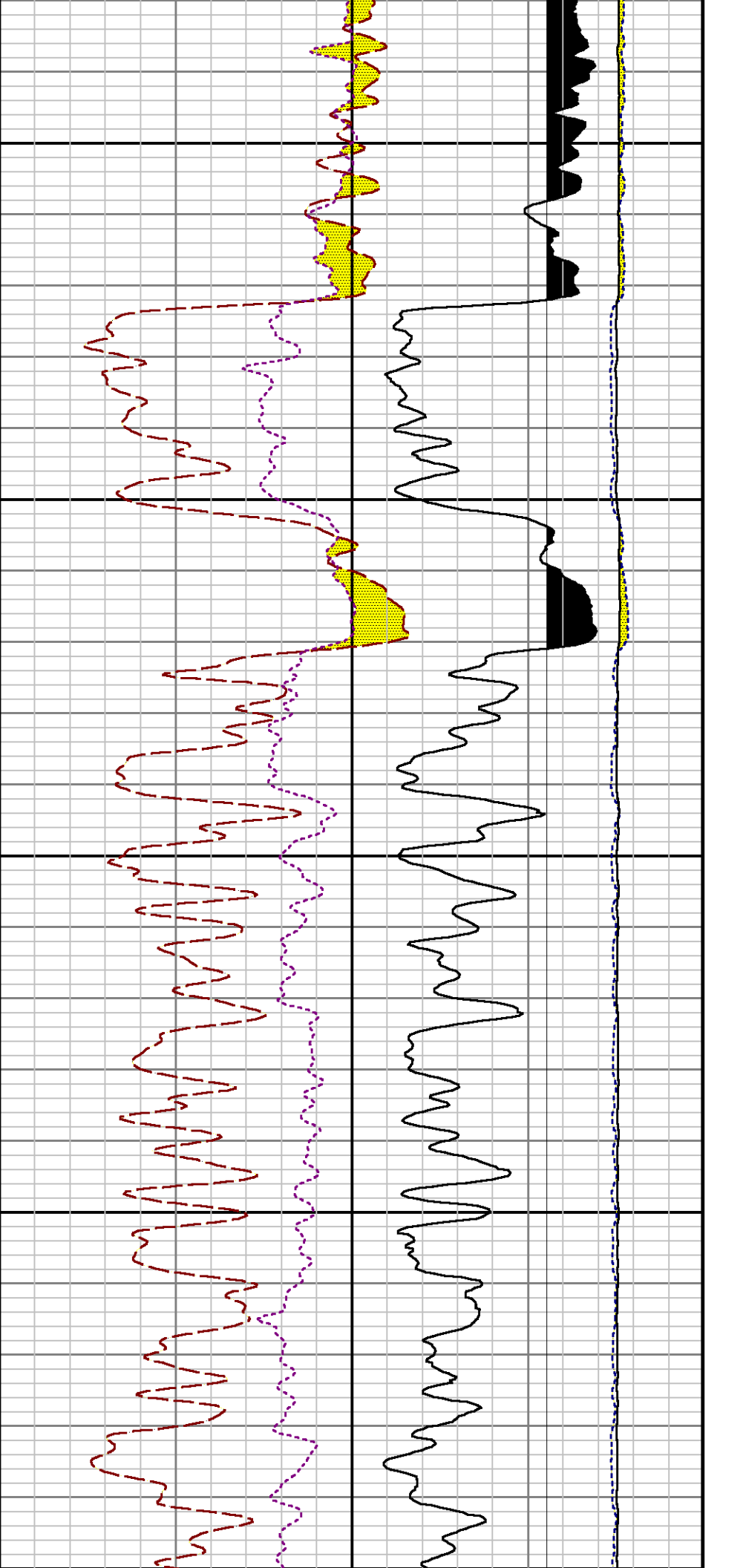
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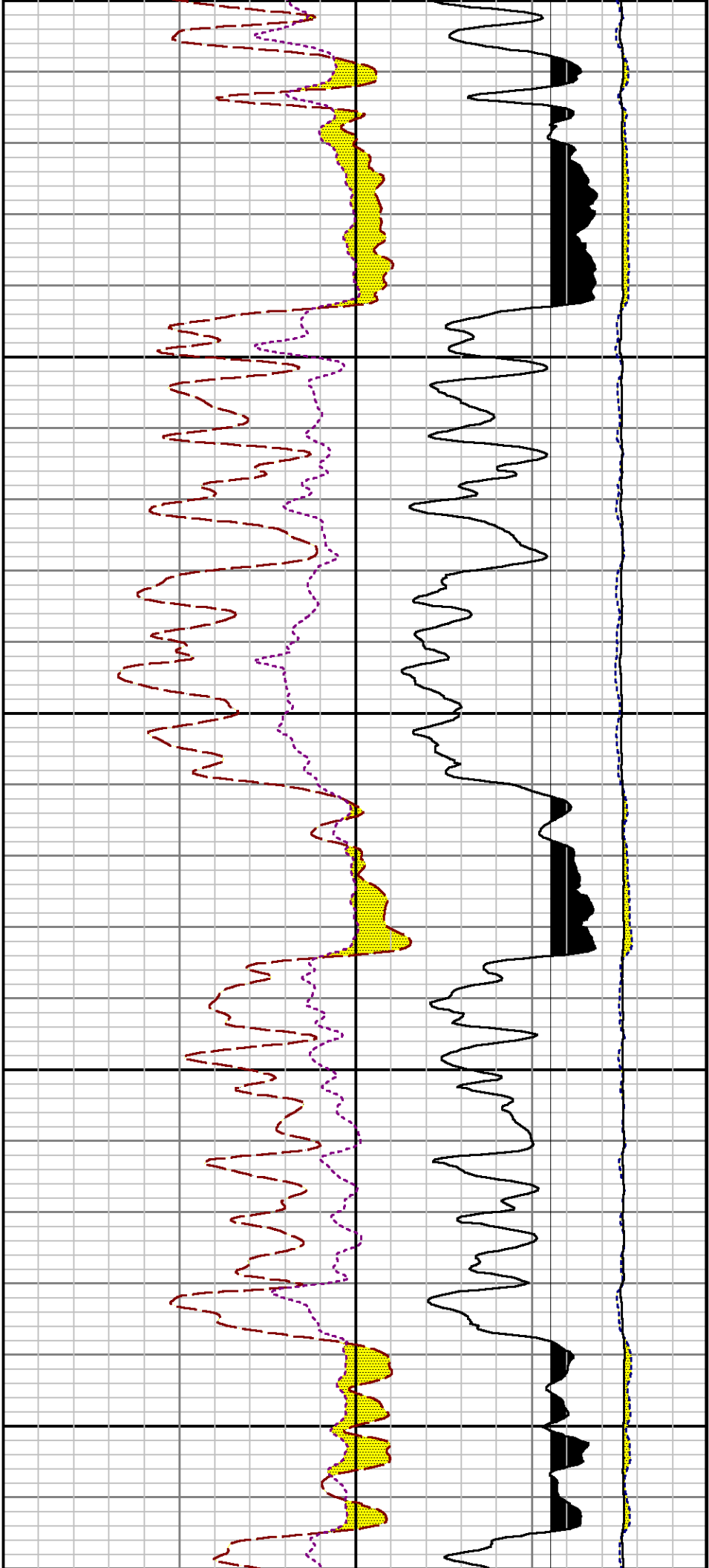
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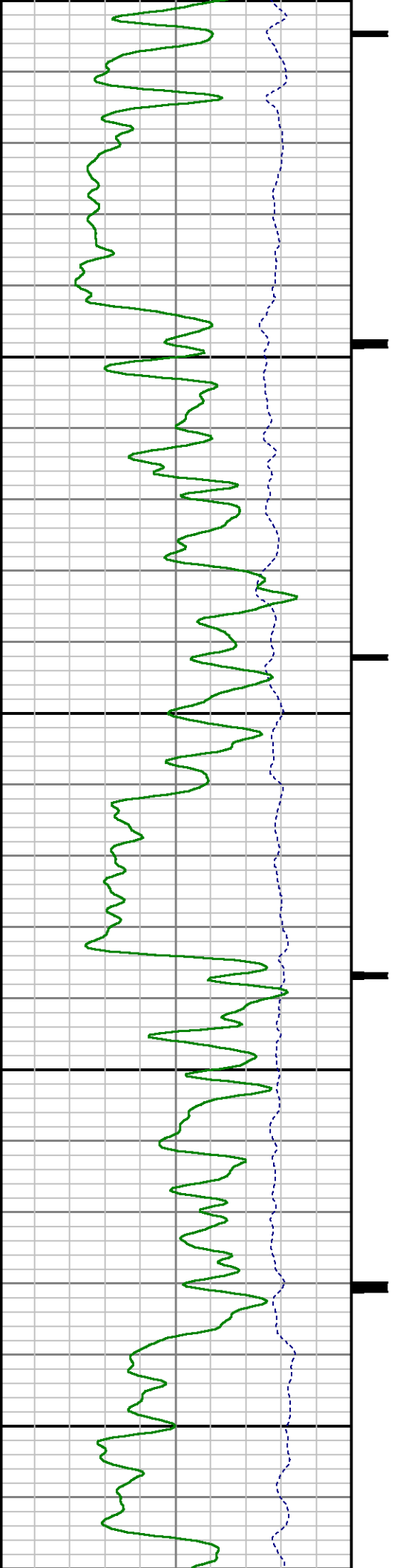




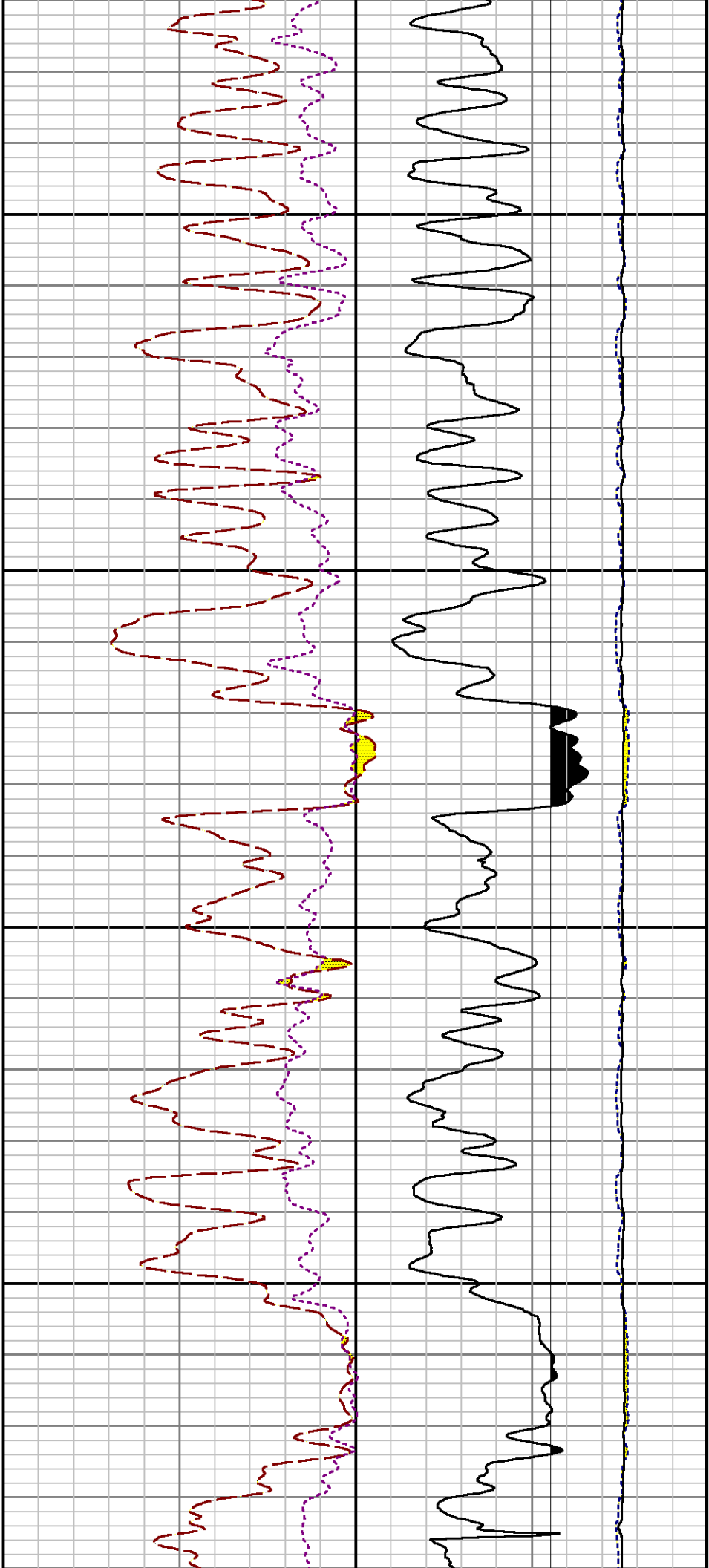


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4000

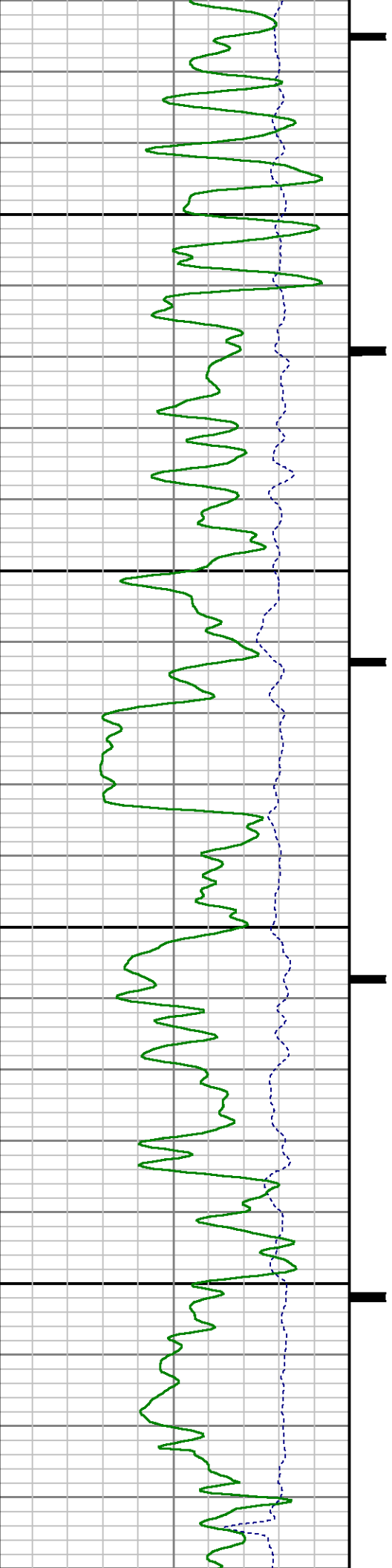


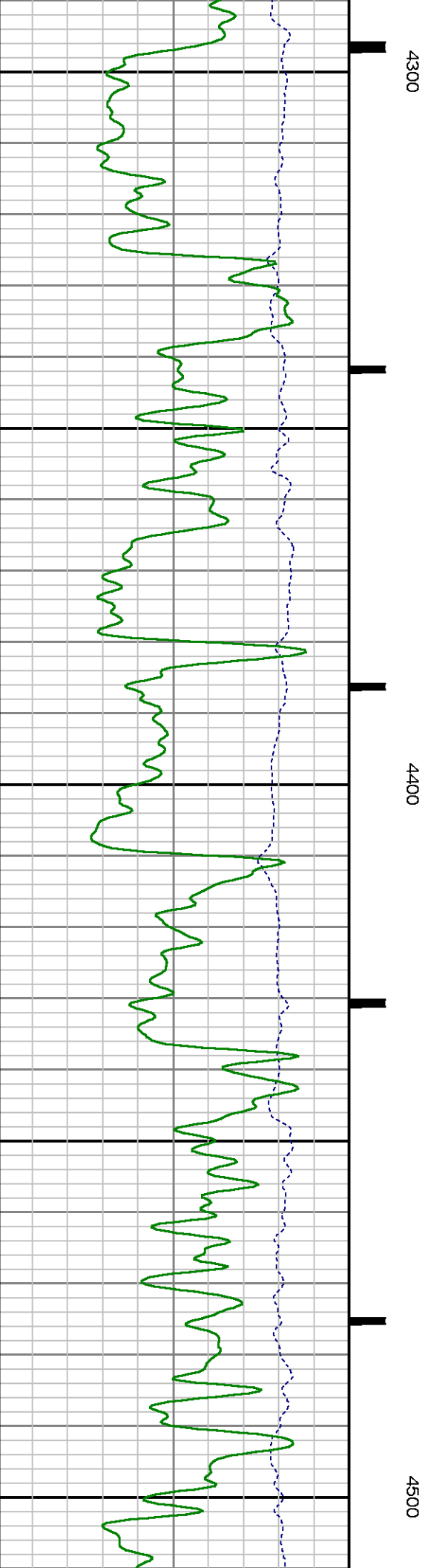
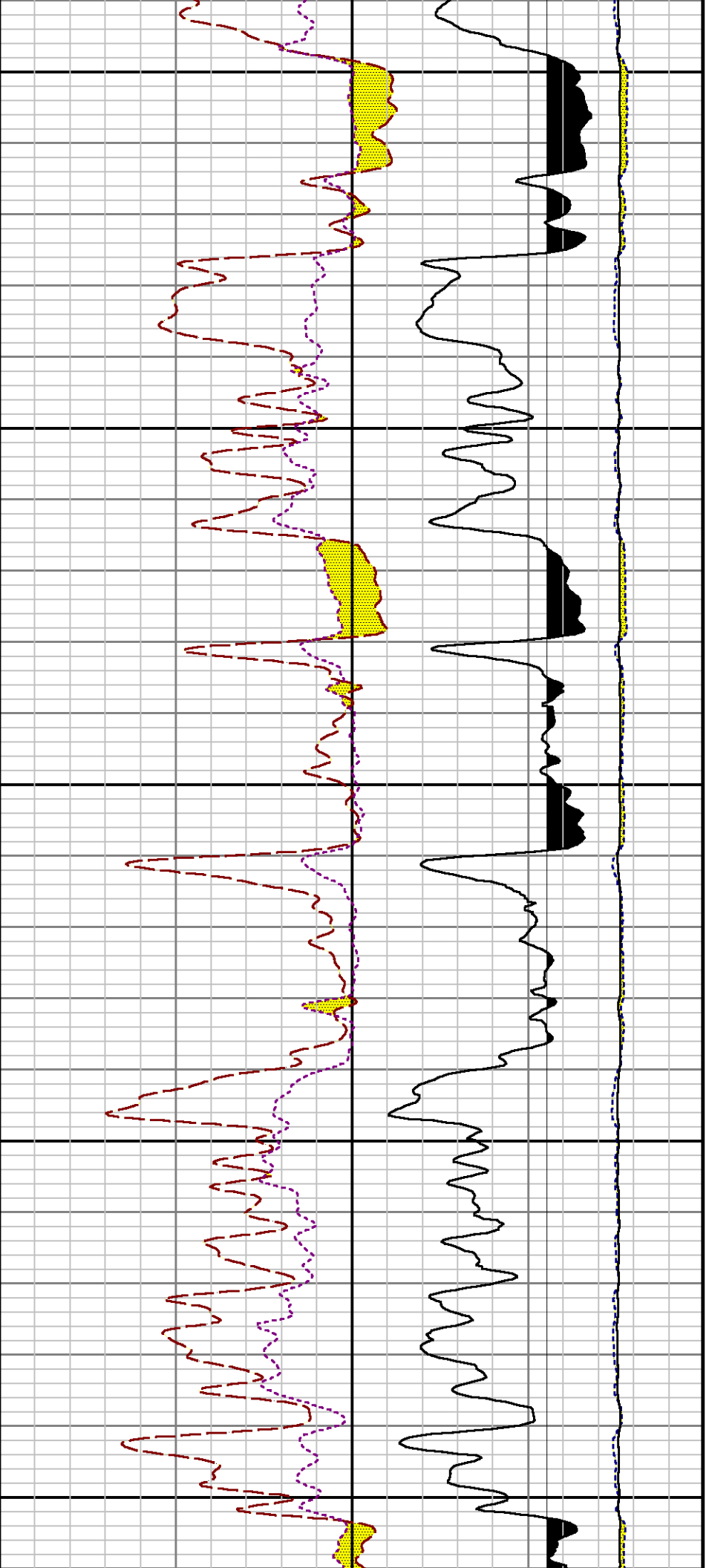


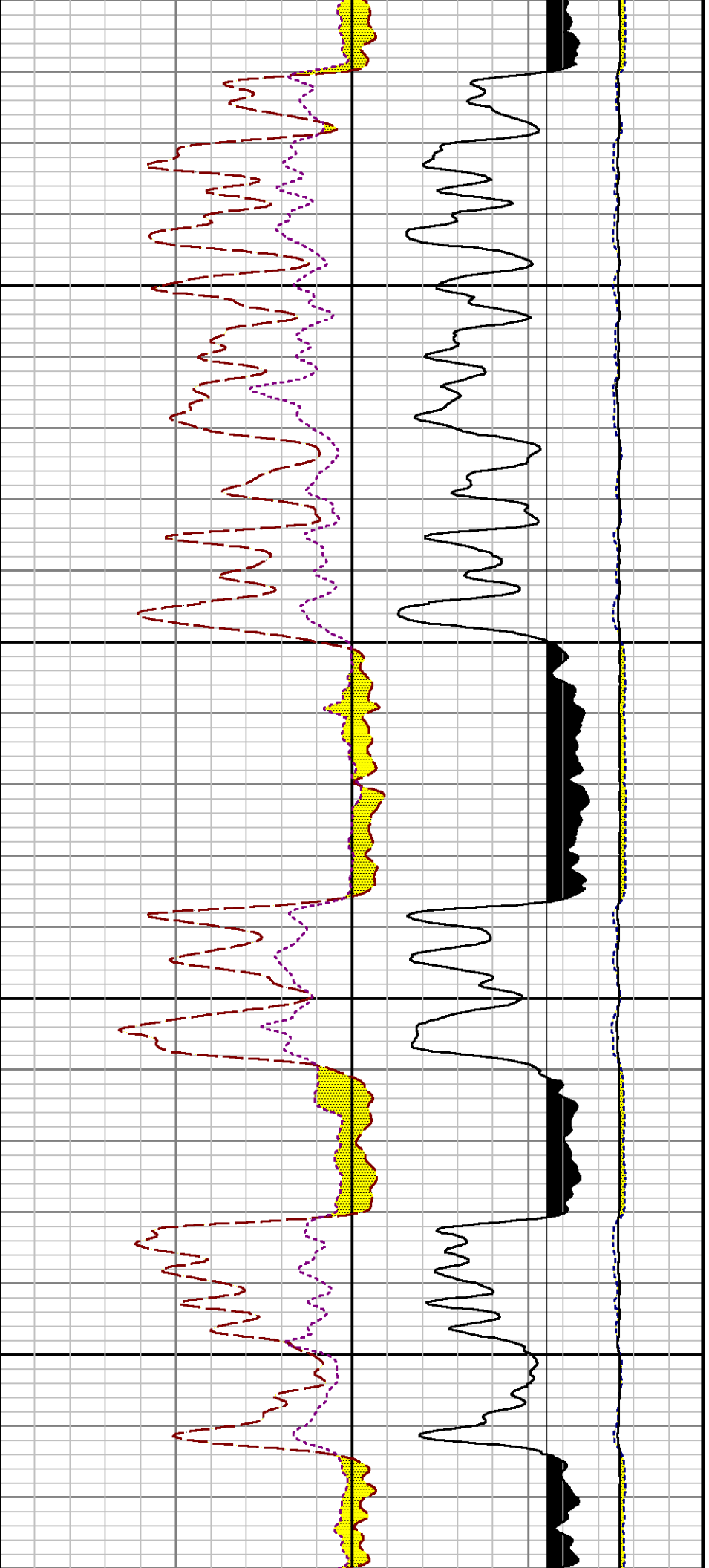


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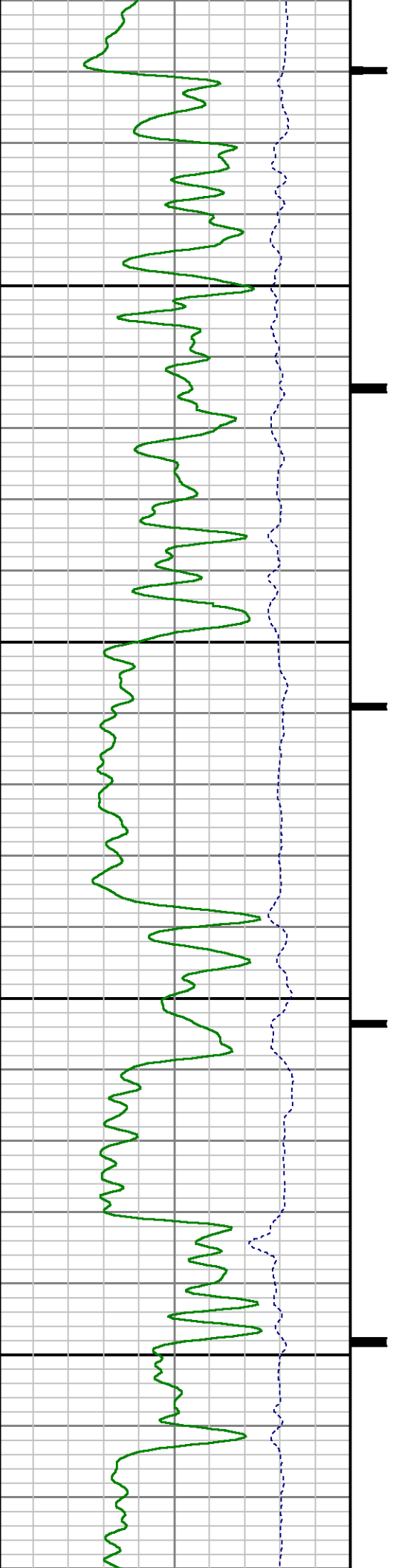


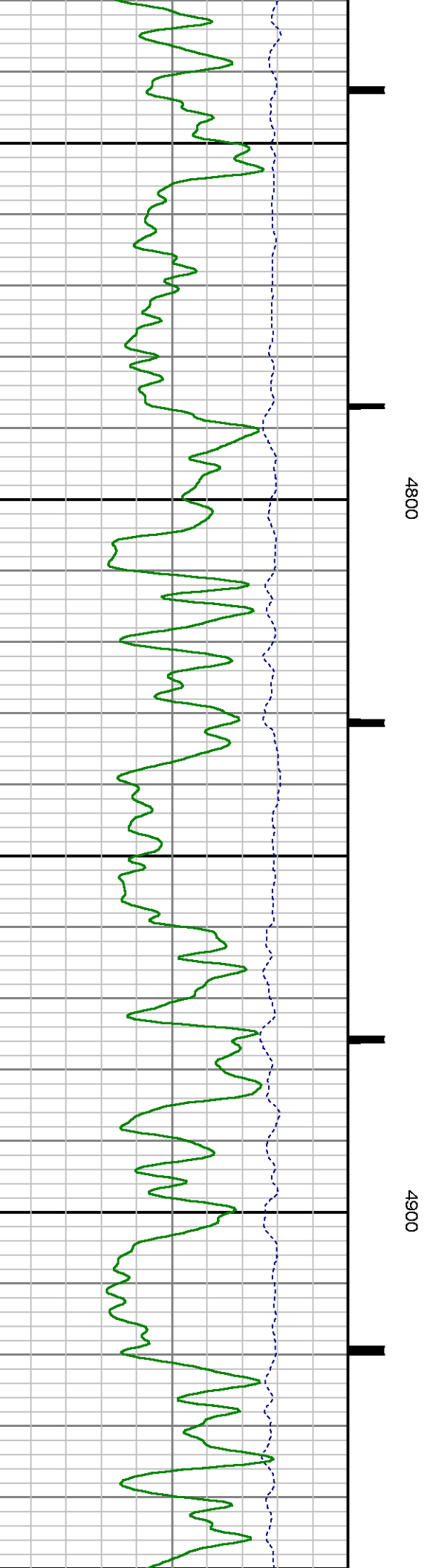
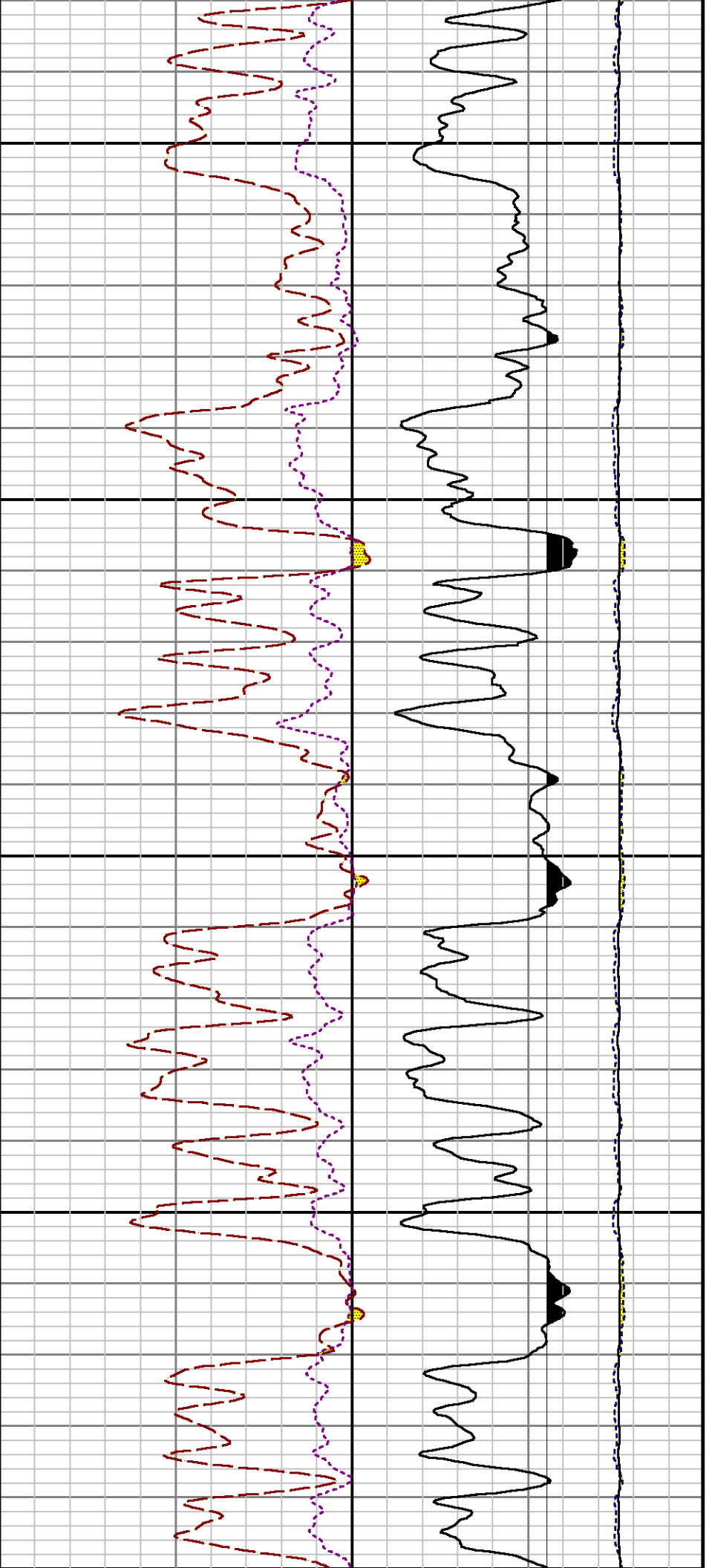


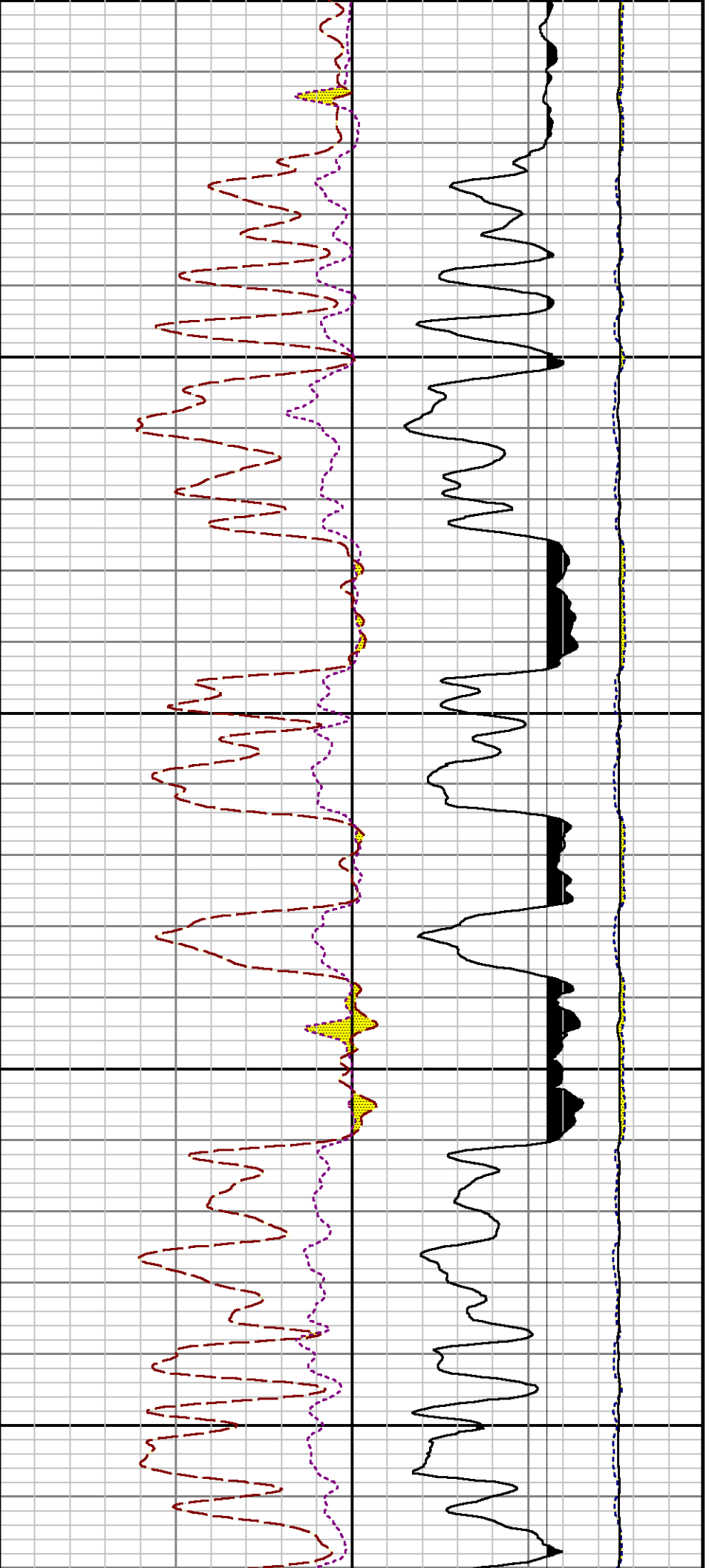


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4700

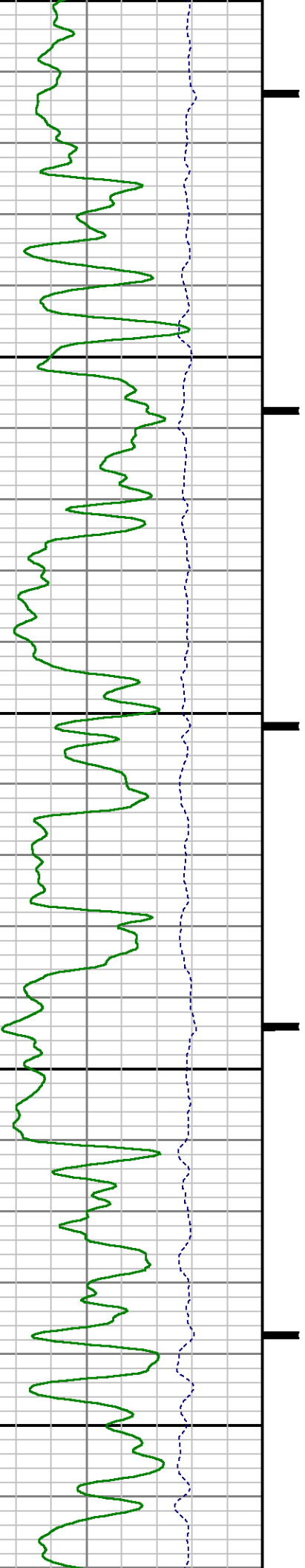


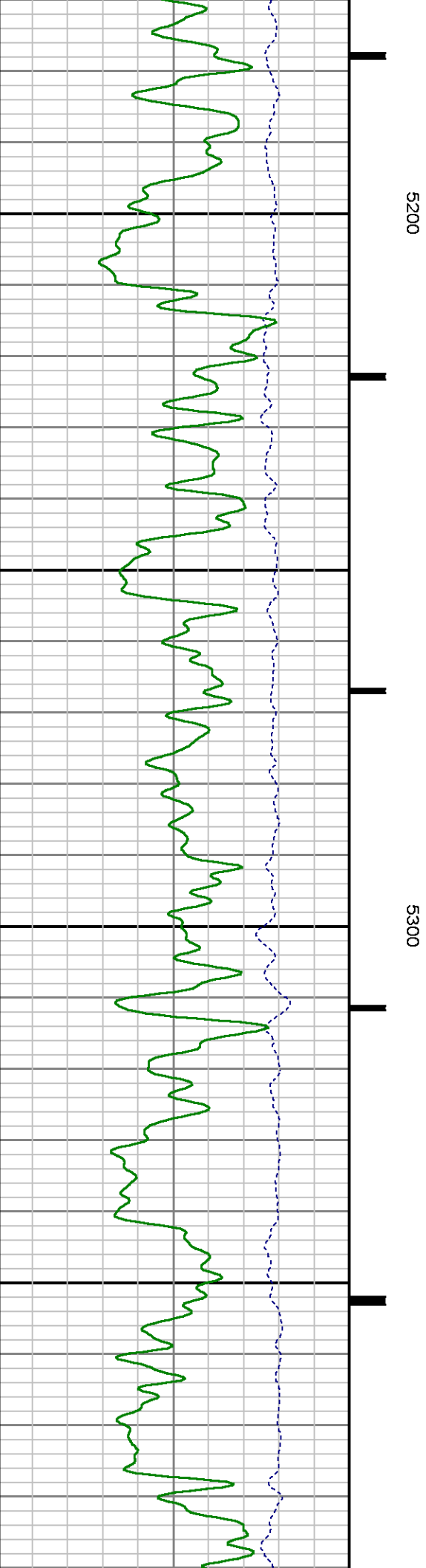
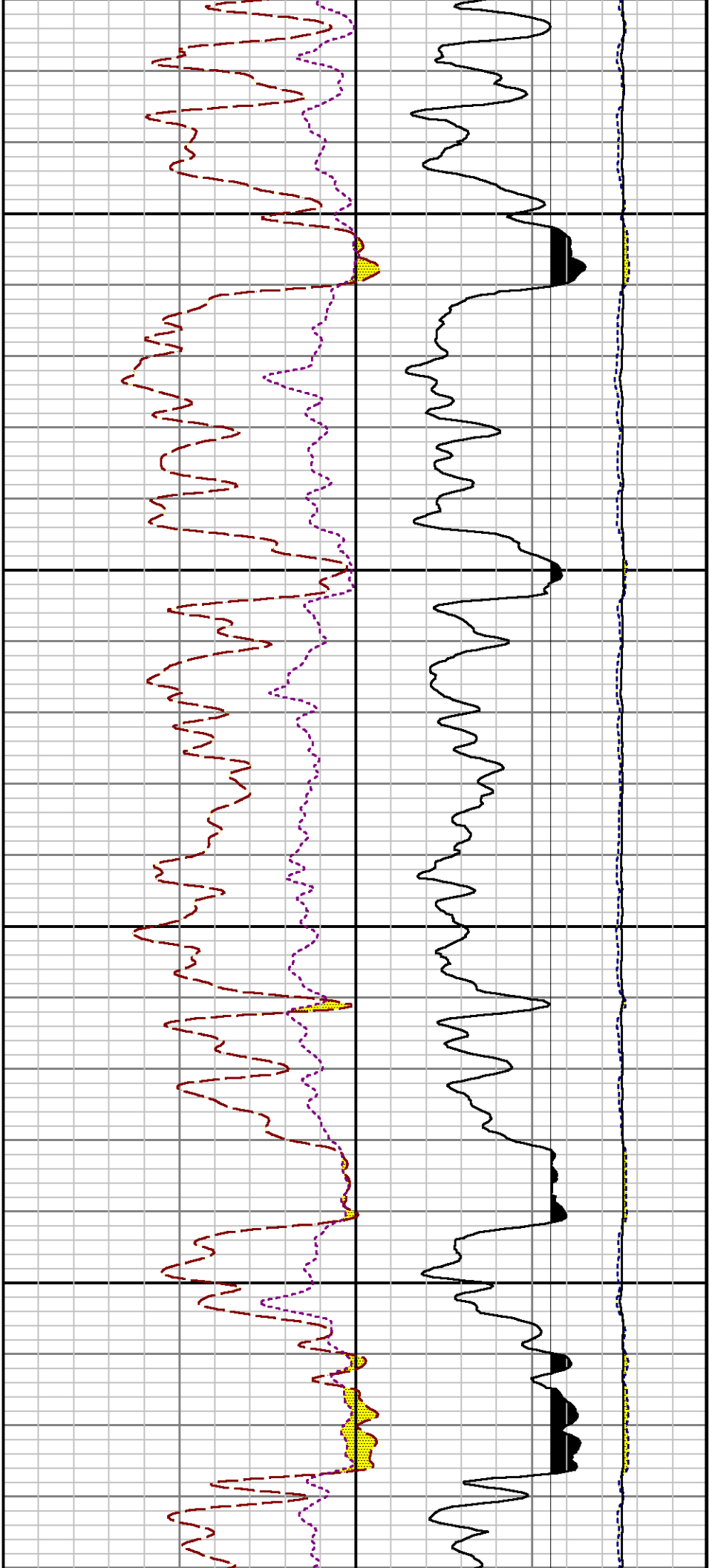


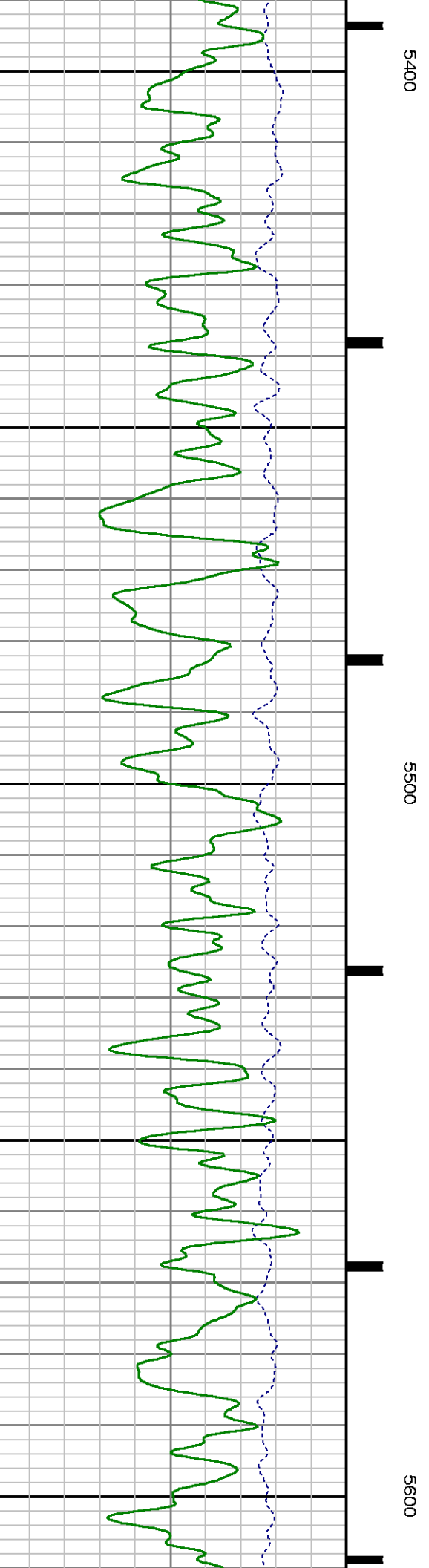
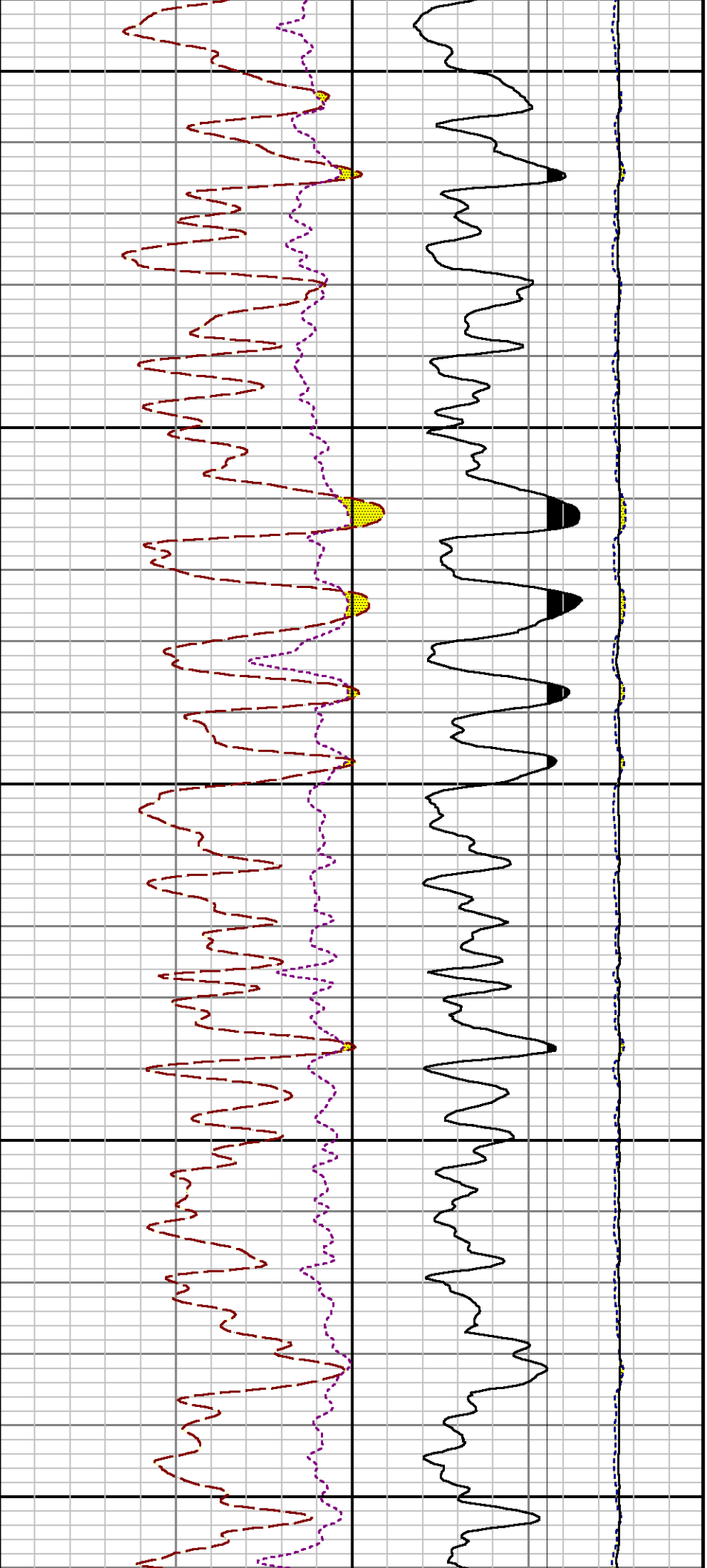


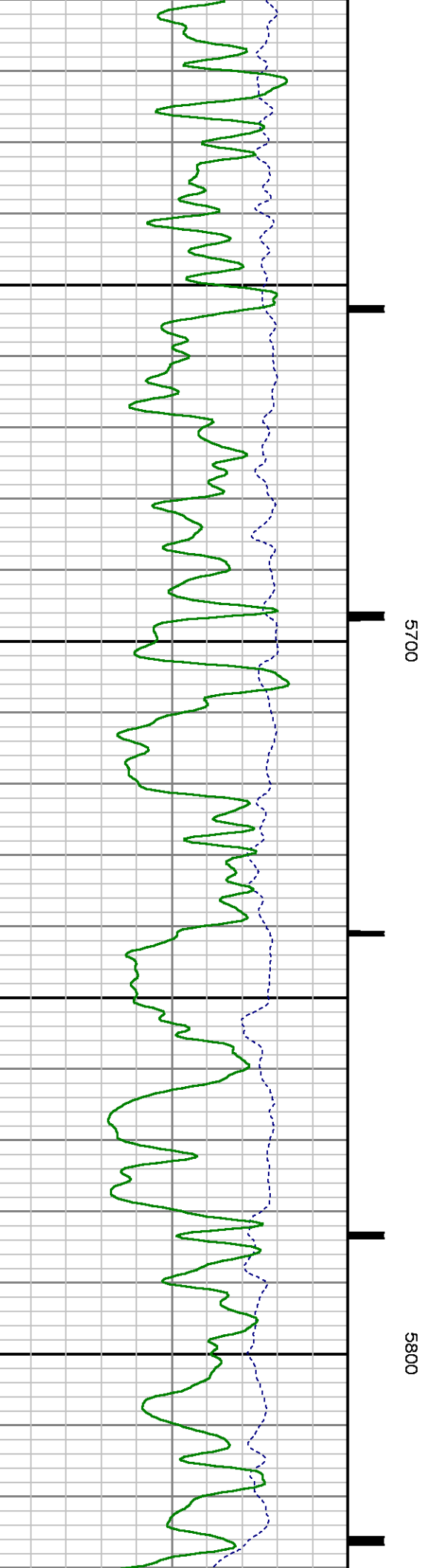
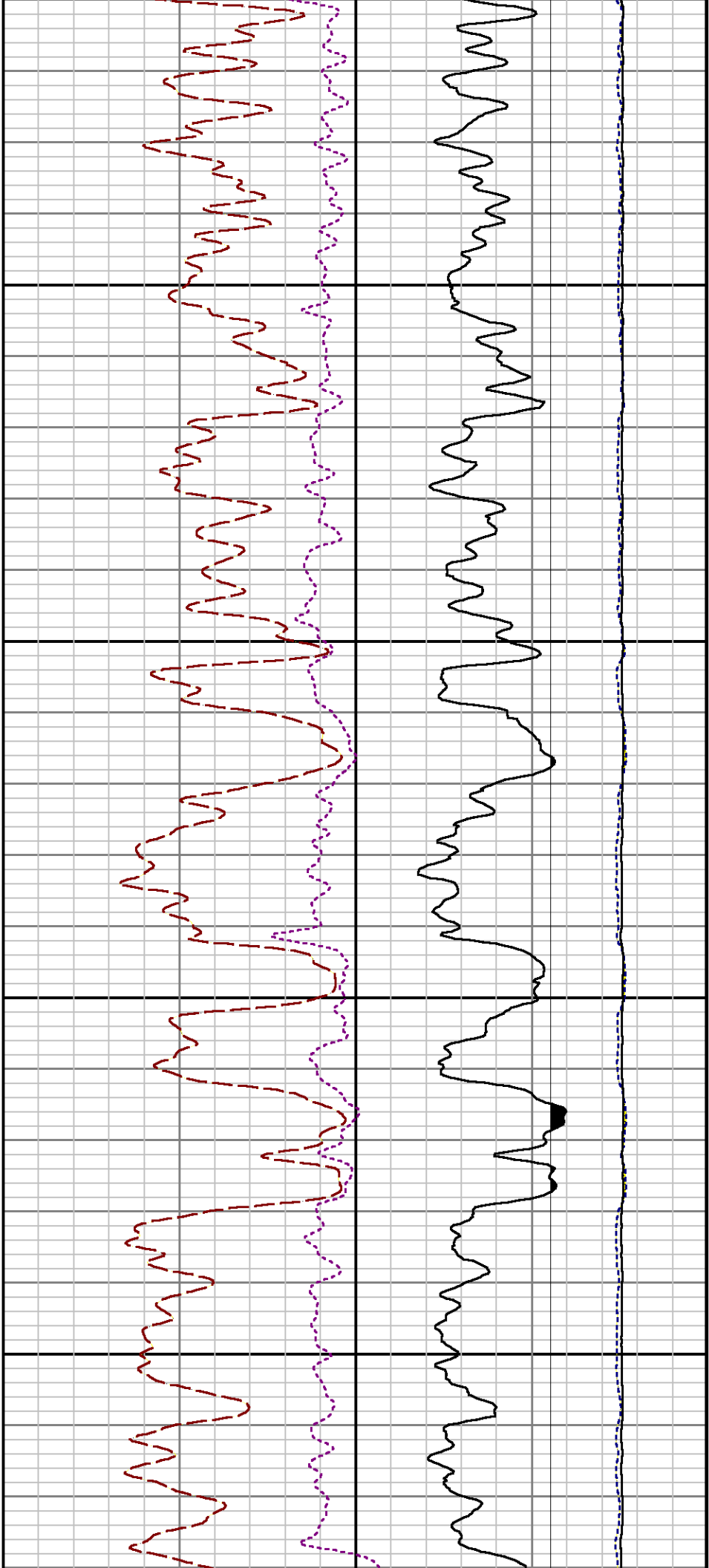
5000

5100

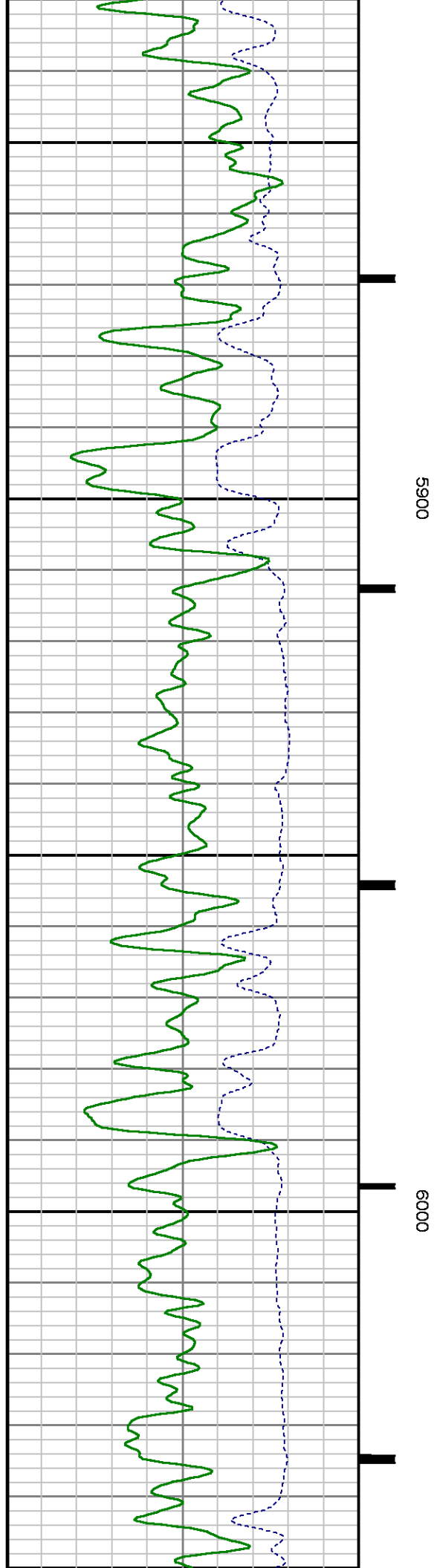
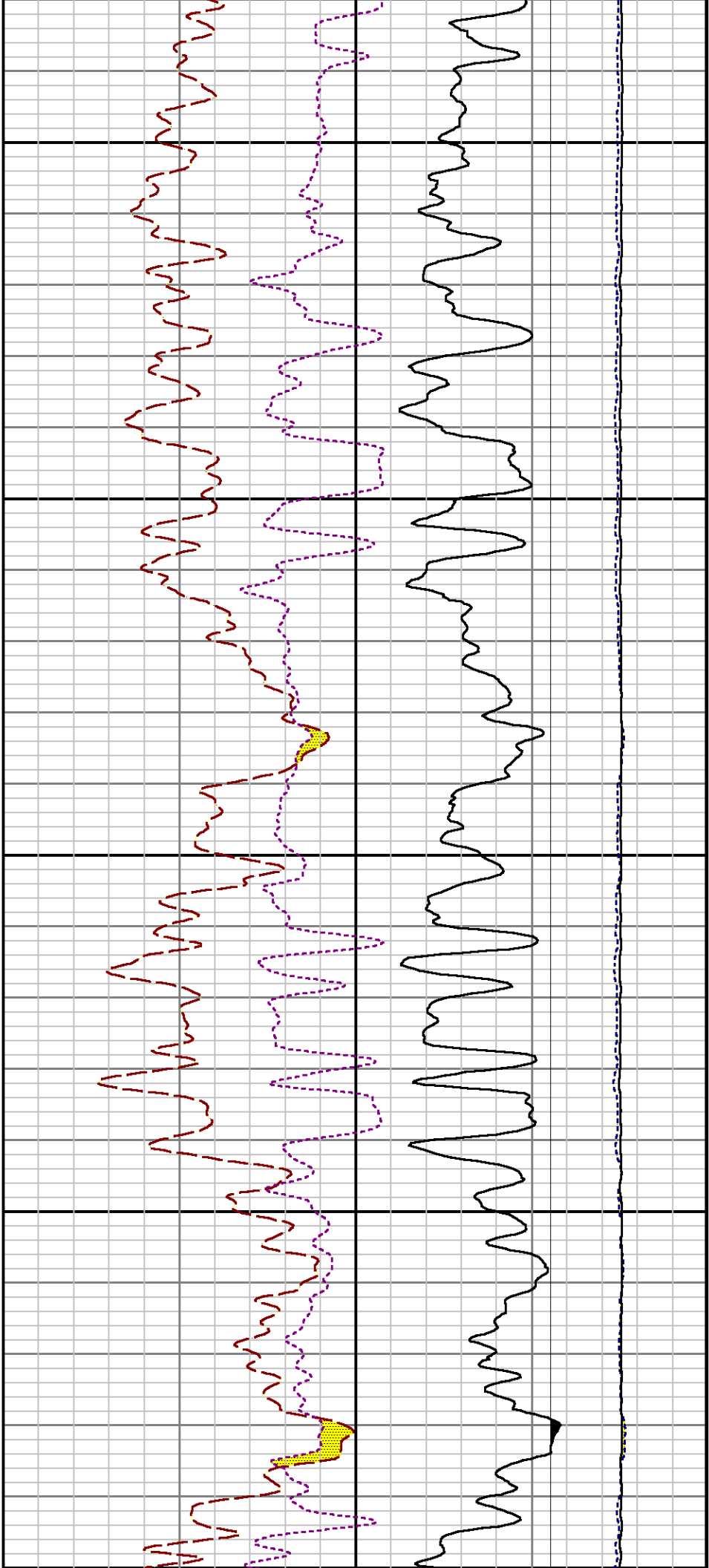


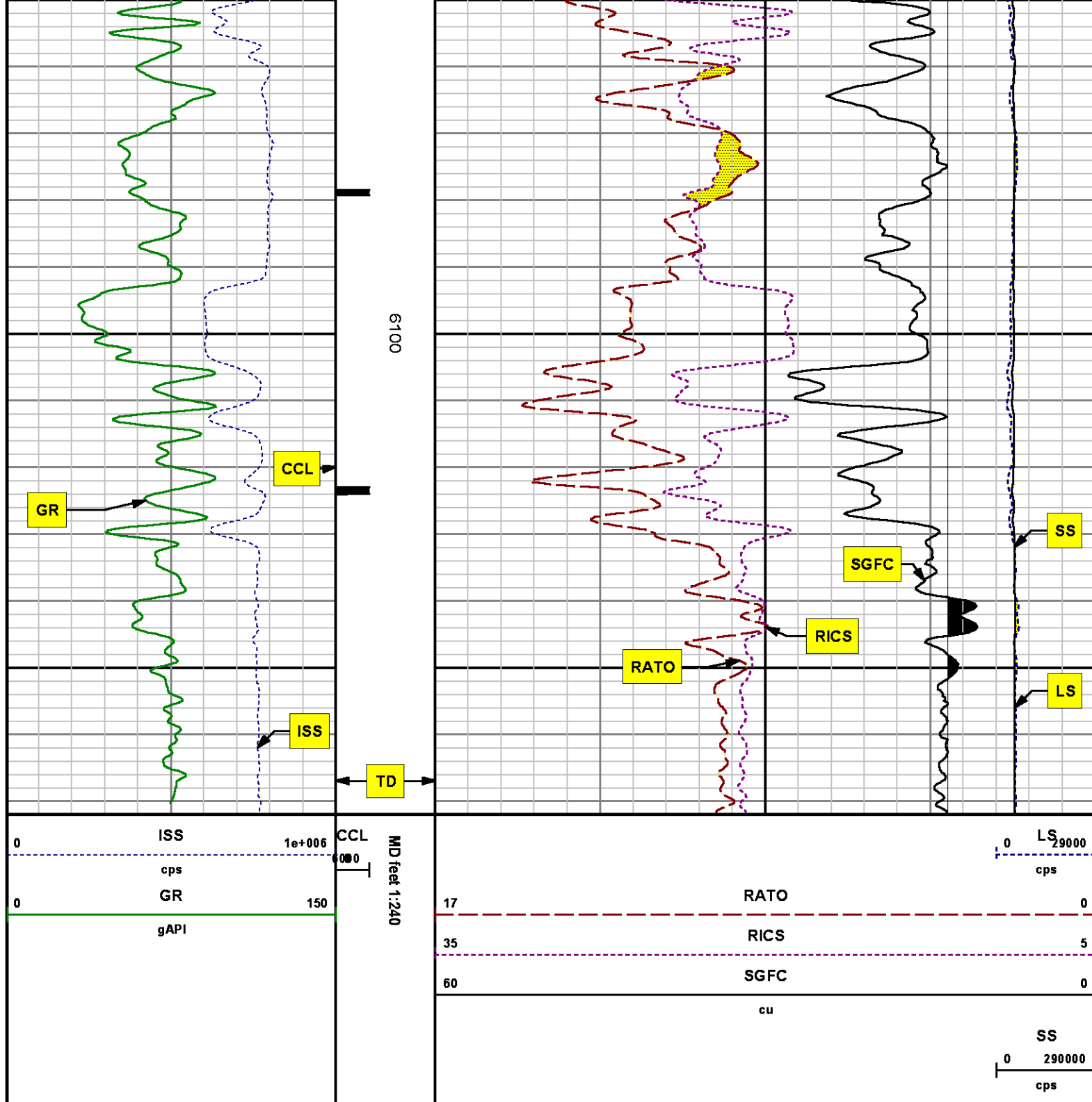












REPEAT SECTION  
PNC 3-D MODE

SPL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		5364.780	5694.280
PNC Porosity	Borehole Size	8.750	inch	5364.780	5694.280
PNC Porosity	Casing Size	4.500	inch	5364.780	5694.280
PNC Porosity	Gas Filled	Non Gas Filled		5364.780	5694.280
PNC Porosity	Matrix	Sandstone		5364.780	5694.280
TPS Pressure	Temperature Corr. Source	Fixed (72.00)	degF	5364.780	5694.280

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 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

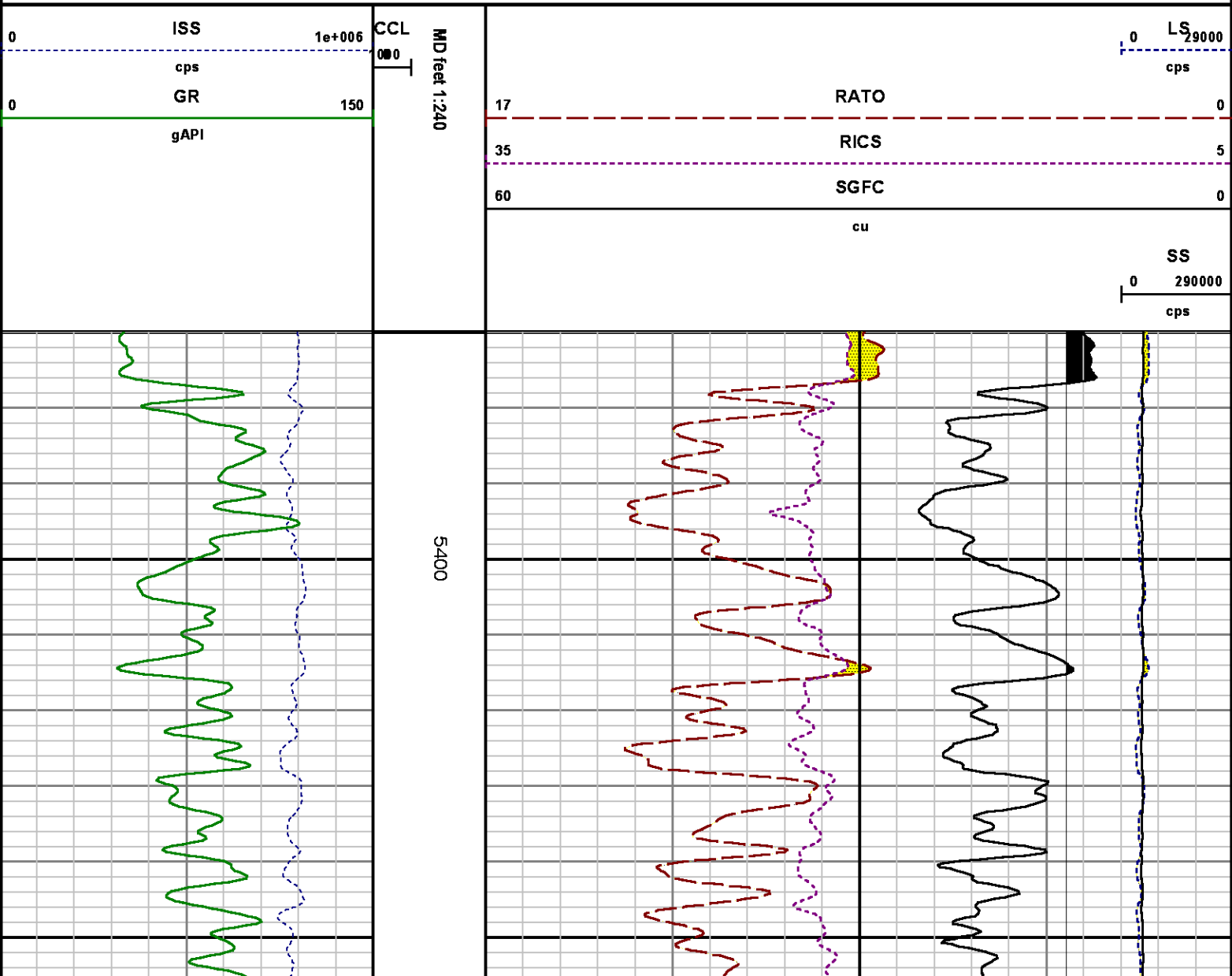
Well : C&C ENERGY GM 321-13

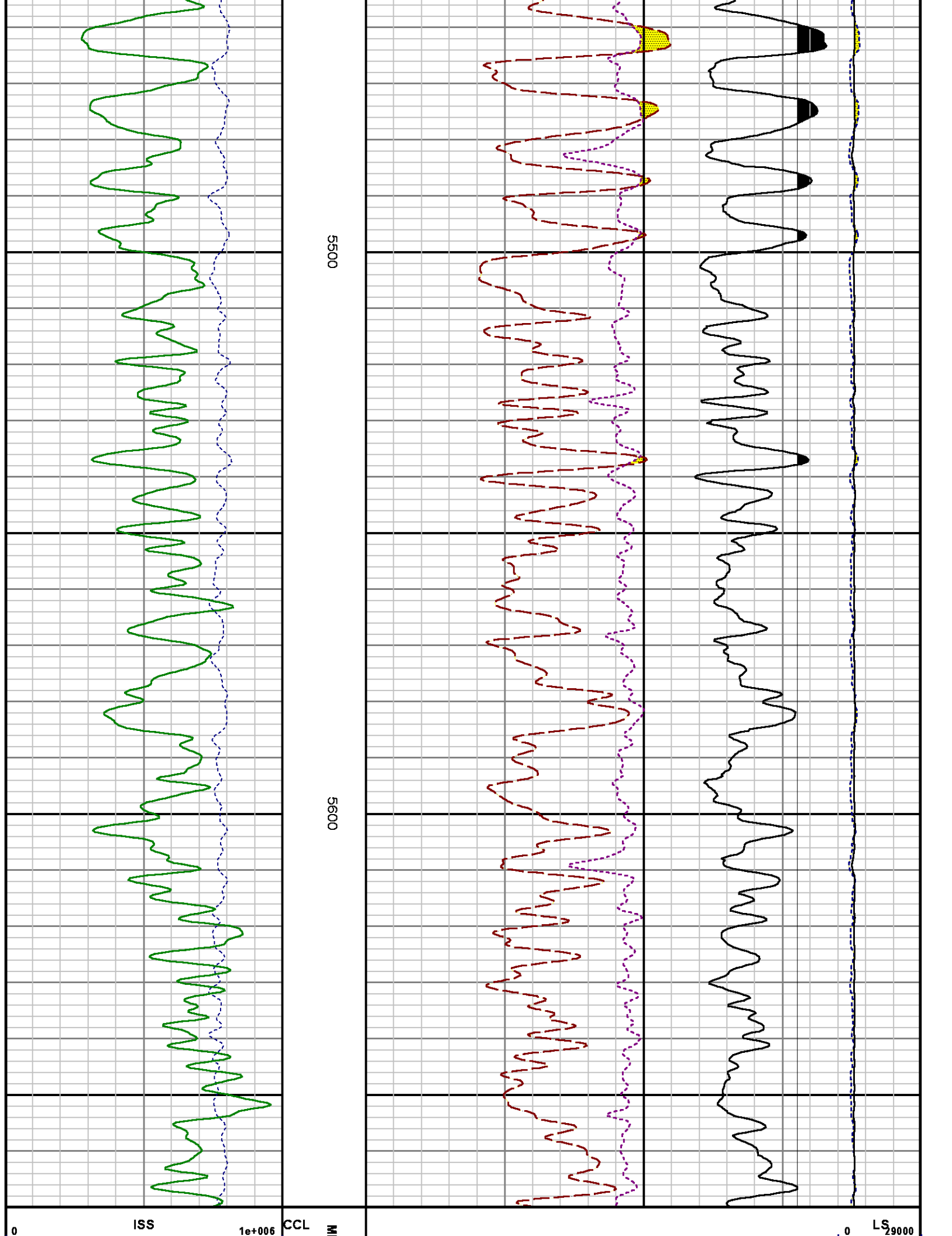
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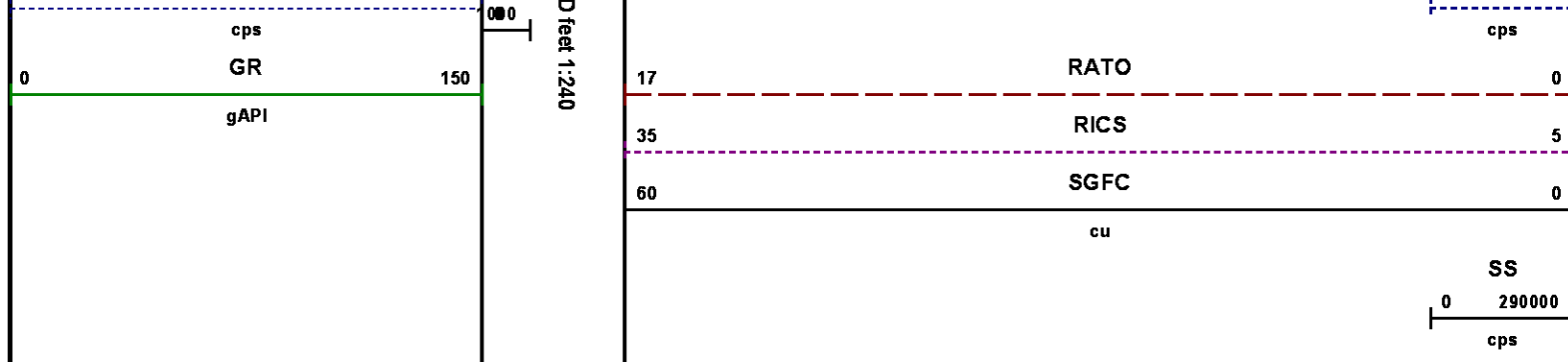
Mode : PlotMgr 5.4.504

Interval : 5370.00 - 5670.00 feet UP

Created : 5/28/2014 7:59:29 AM







## CALIBRATION SUMMARY

PNC

Calibration File: C:\case\calver\PNC\55528.cal

### PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Mon Apr 28 09:59:59 2014 TOOL SERIES: 8281XA ASSET: 555 SEQ: 28

Calibrator #

2437XB GJSHOP

Source #

8281AA 11765054

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	811508	121.00	2347.00	2278.00	2241.00	110.62	7.00	0.9846
Interpolated	1300000	143.31	2318.28	2276.39	2237.74			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	811508	6877.25	1084.60	148.19	25.74	0.14	24.34	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	811508	173131.64	27245.19	91206.62	32486.00	8514.36	55168.79	13602.94
Fit Quality %		1.06	1.20	1.11	1.05	1.06	0.97	1.04

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	811508	1.43	4.69	29.79	14.71	10.71	3.82	4.06
		1.42 1.45	3.55 5.52	22.20 32.70	10.00 16.34	10.06 11.10	3.57 3.95	3.76 4.22

Fit Quality %

0.11

0.28

0.24

0.17

0.06

0.03

0.05

Reduced

1414078

1.43

4.70

29.86

14.75

10.71

3.82

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

# GAMMA RAY

Calibration File:

C:\case\calver\GR\38220.cal

## CALIBRATION SUMMARY

DATE/TIME PERFORMED: Tue May 20 19:18:21 2014

TOOL SERIES: 2812LA ASSET: 382 SEQ: 20

Calibrator #

Background

Calibrator On

Multiplicative

Background

Calibrator On

Differential

[cps]

[cps]

[api]

[api]

[api]

S2K WA612

55.04

271.02

0.972

53.52

263.52

210.00

Verification File:

C:\case\calver\GR\38220.VP

## PRIMARY VERIFICATION

DATE/TIME PERFORMED: Tue May 20 19:21:16 2014

TOOL SERIES: 2812LA ASSET: 382 SEQ: 20

Calibrator #

Background

Calibrator On

Multiplicative

Background

Calibrator On

Differential

[cps]

[cps]

[api]

[api]

[api]

S2K WA612

54.71

266.67

0.972

53.20

259.29

206.09

# 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	
<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"

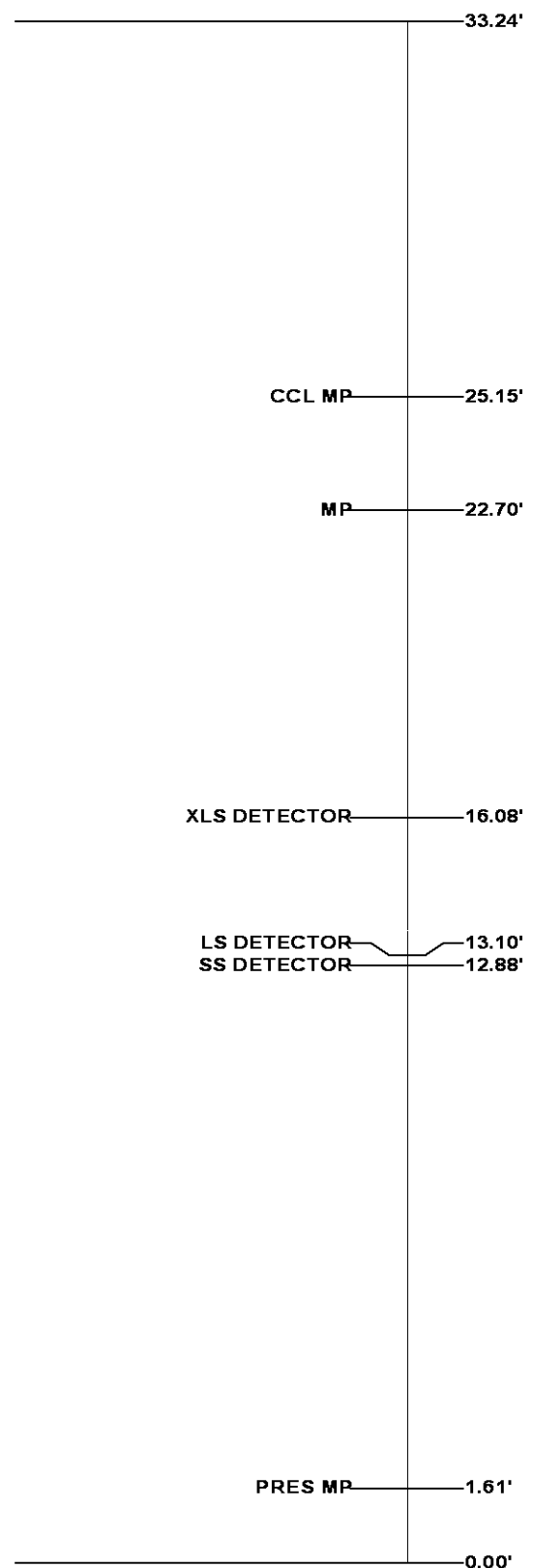
#### RESERVOIR PERFORMANCE MONITOR

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**  
**Max Diameter: 0' 1.70"**



Baker Atlas

**Company**  
**Well**  
**Field**  
**County**

**WPX ENERGY**  
**C&C ENERGY GM 321-13**  
**GRAND VALLEY**  
**GARFIELD**

**State**

**COLORADO**

**File No:**

CH085741

**API No:**

05045222690000





Location

SHL: 275' FSL & 1032' FWL (SEC 12)

BHT: 418' FNL & 2181' FWL (NENW SEC 13)

SEC 13 TWP 7S RGE 96W

Elevations

KB 5165 ft

DF

GL 5141 ft

13 7S 96W

GM 24-12 PAD

H&P 318