



BAKER
HUGHES

RESERVOIR
PERFORMANCE
MONITOR

Baker Atlas

File No:
CH081916

Company
Well
Field
County

WPX ENERGY
SAVAGE RWF 312-25
RULISON
GARFIELD

State
COLORADO

26 GS 94W
RWF 22-25 PAD
CYCLONE 17

Location
SHL: 2482' FNL & 1397' FWL
BHL: 1439' FNL & 762' FWL (SWNM)
SEC 25 TWP 6S RGE 94W

Other Services
BOND LOG

Permanent Datum
Log Measured From
Drill Measured From

GL
KB
KELLY BUSHING

Elevation
21 ft
Above P. D.

Elevations
KB 6058 ft
DF
GL 6037 ft

Date	16/JAN/14	
Run	ONE	
Service Order	US625088	
Depth Driller	8702 ft	
Depth Logger	8674 ft	
Bottom Logged Interval	8664 ft	
Top Logged Interval	4647 ft	
Time Started	1130	
Time Finished	1730	
Operator Rig Time	6 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	NA	
Salinity	NA	
Fluid Level	66 ft	
Logged Cement Top	NA	
Wellhead Pressure	0 psi	
Maximum Hole Deviation	NA	
Nominal Logging Speed	10 fpm	
Maximum Recorded Temperature	228 degF	
Reference Log	BAKER HUGHES BOND LOG	
Reference Log Date	16/JAN/14	
Equipment No.	4271	GRAND JCT
Recorded By	FLOYD RENEAU	
Witnessed By	COLE APPLIGATE	

- 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	1119 ft
8.75 in	1119 ft	8702 ft

Casing Record				
Size	Weight	Grade	From	To
9.625 in			0 ft	1119 ft
4.5 in	11.6 lbm/ft	I-80	0 ft	8702 ft

Remarks

All data on this log is shifted and depth matched using the Gamma Ray curve to the Baker Hughes bond log dated 1/16/2014 at the client's request.

The amount of linear shift is -.5 feet.

Logged in PNC-3D mode.

BHT = 228°F

SJ = 5379'-5403'

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position
1	1	RPM	8281FA	10460082	FREE
1	1	RPM	8281PA	10466231	FREE
1	1	RPM	8281EA	10190984	FREE
1	1	GR	2812LA	10274385	FREE
1	1	TEL/CCL	8248ED	10590814	FREE
1	1	PCM	8250EA	10408796	FREE

MAIN SECTION
PNC 3-D MODE

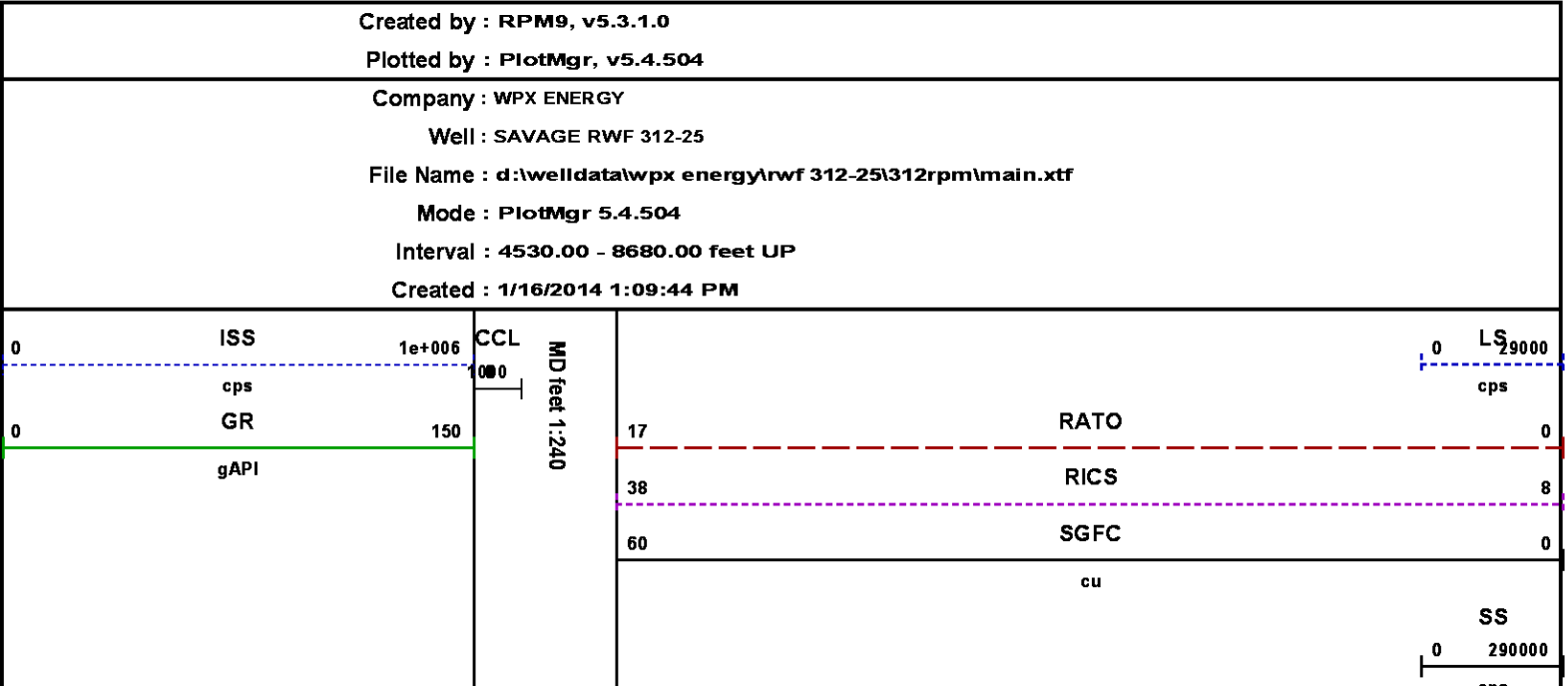
SPL PROCESSING

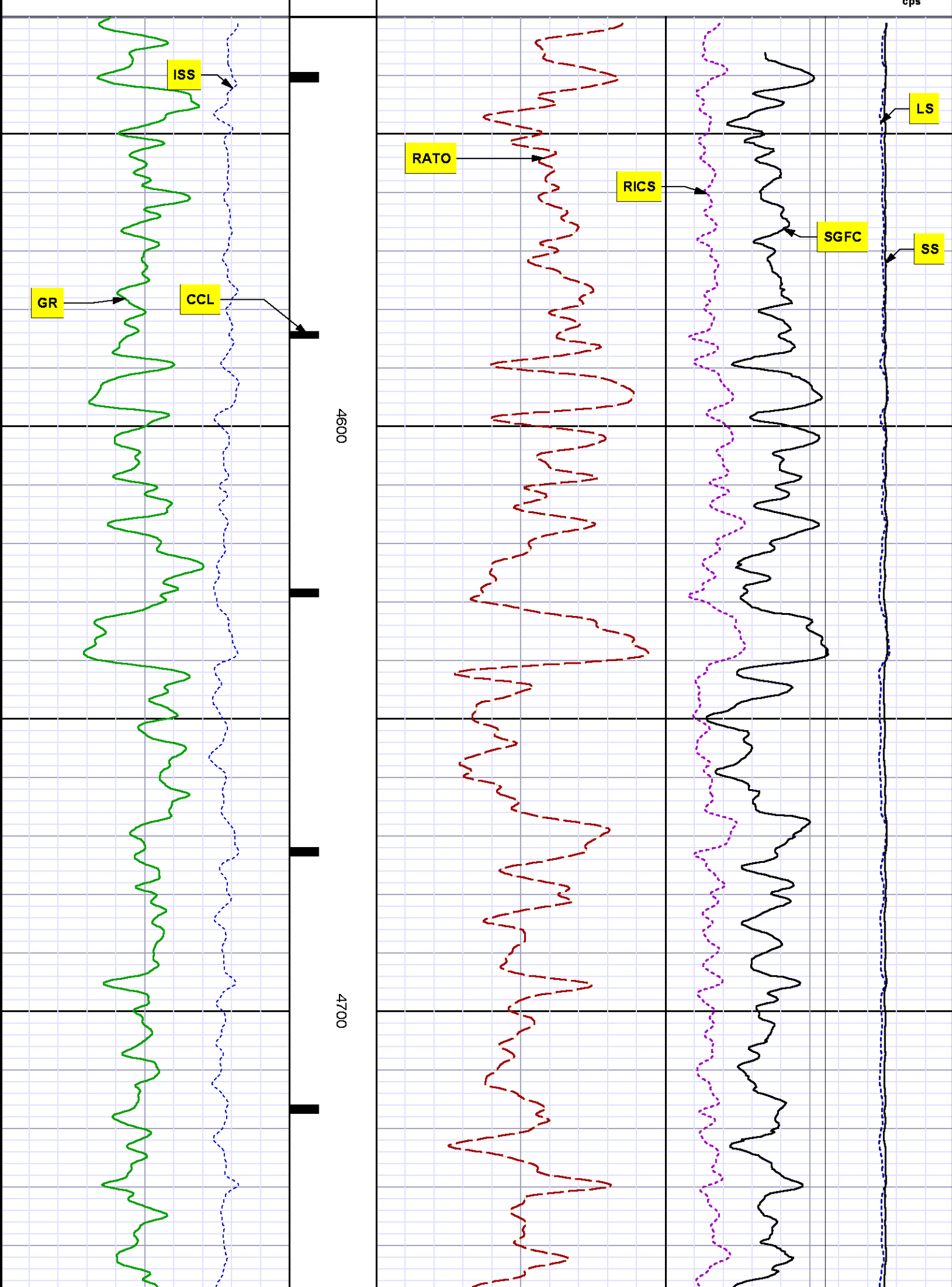
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		4529.750	8690.000
PNC Porosity	Borehole Size	8.750	inch	4529.750	8690.000
PNC Porosity	Casing Size	4.500	inch	4529.750	8690.000
PNC Porosity	Gas Filled	Non Gas Filled		4529.750	8690.000
PNC Porosity	Matrix	Sandstone		4529.750	8690.000

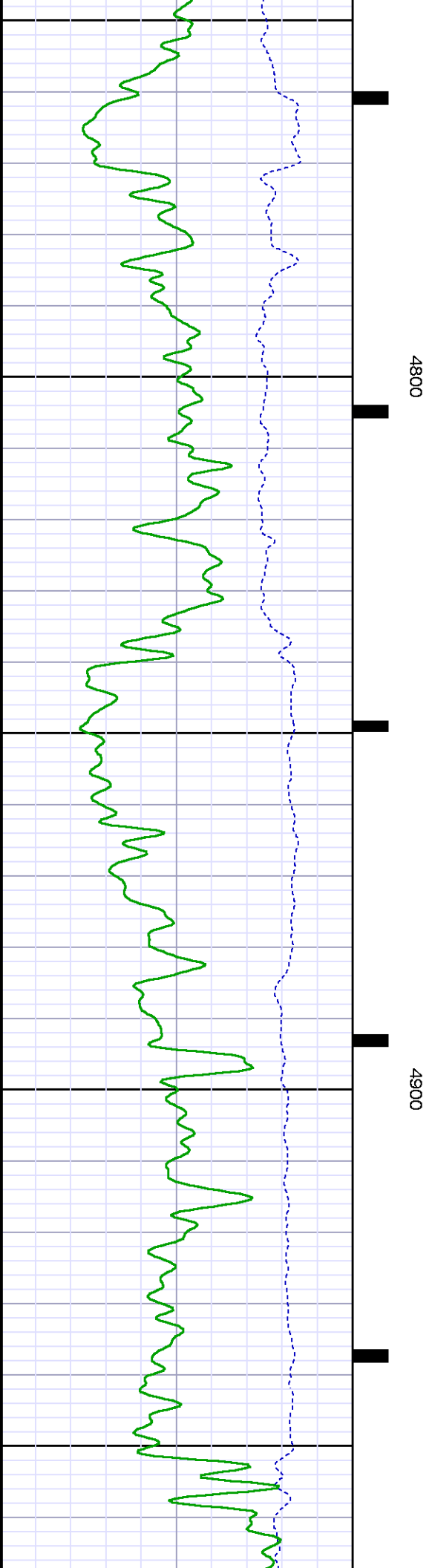
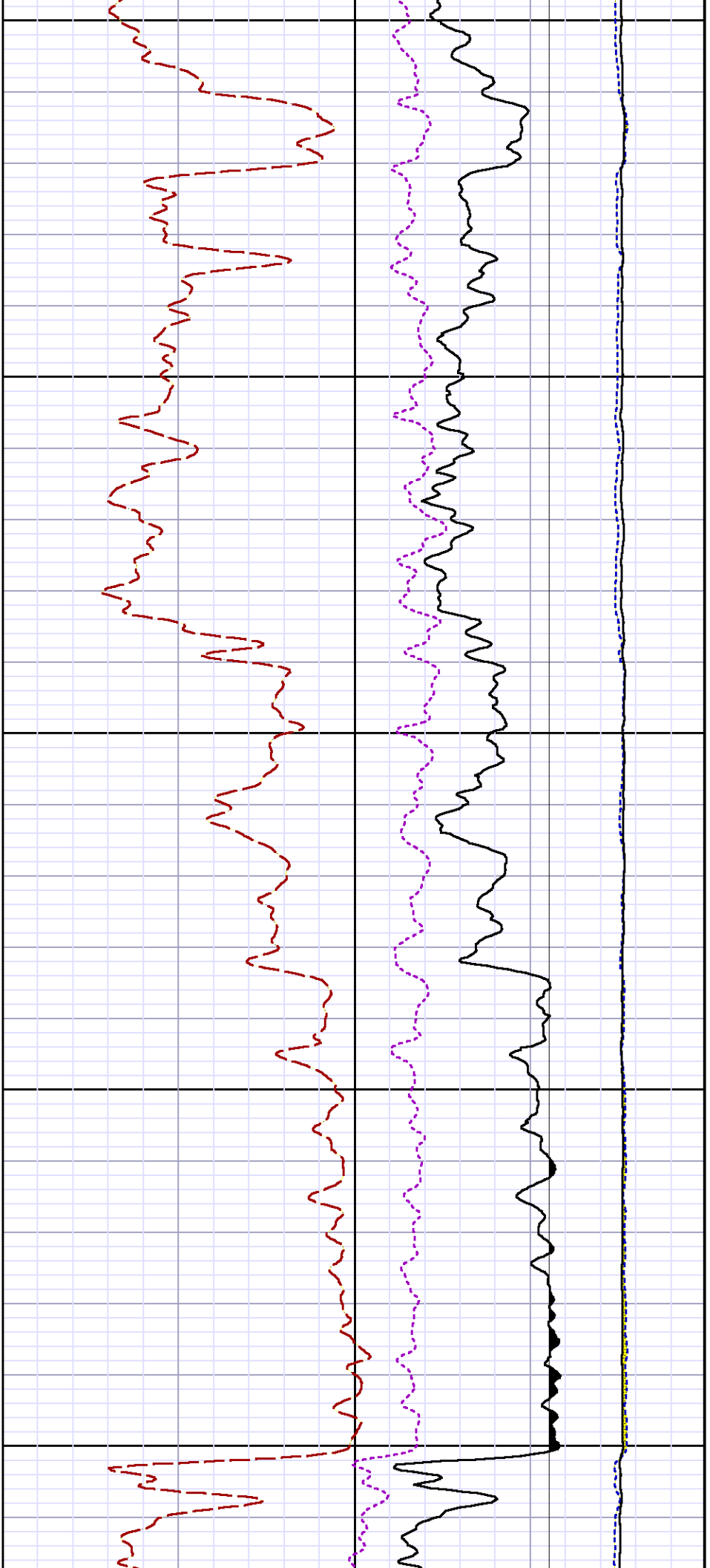
DEPTH OFFSETS
(for Acquired Curves)

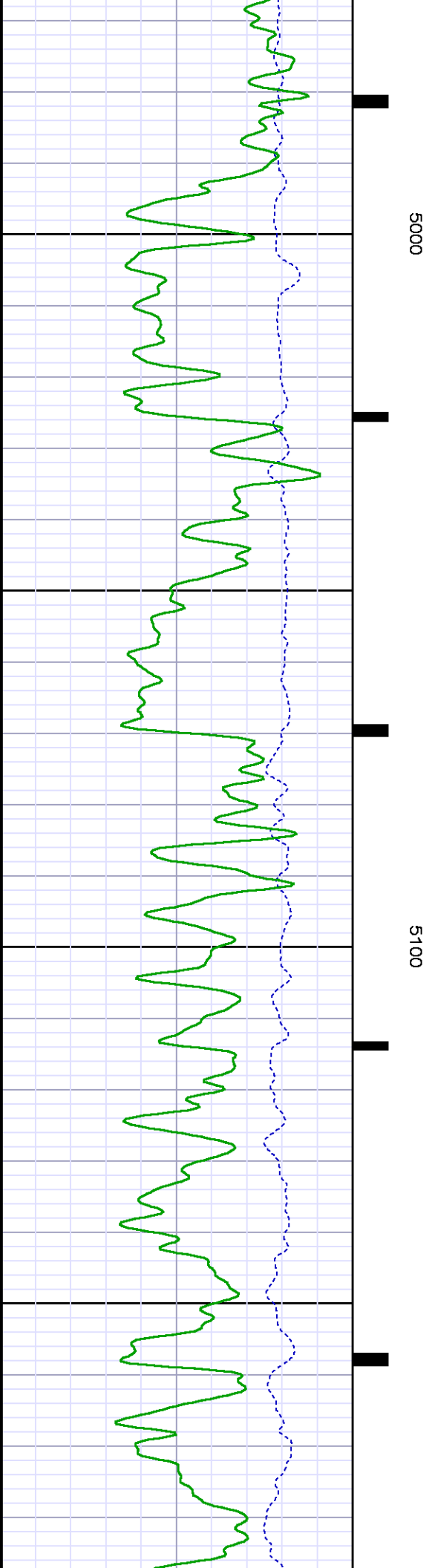
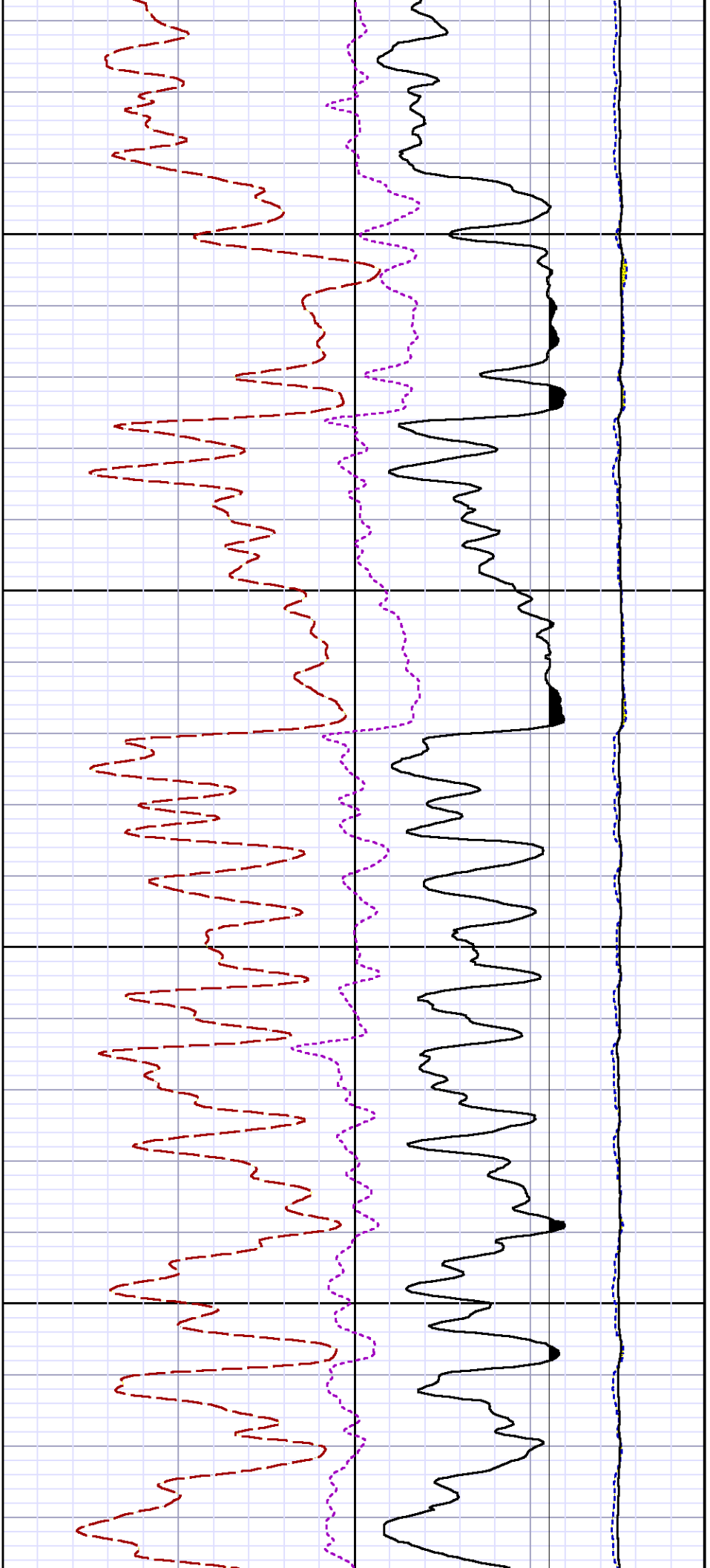
SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-14.478	FLTM
8248ED	-12.478	CCL CHV
2812LA	-9.928	GR
8281XA	-0.662	HVC3Q0 SEQ3 AMA3 AML3 BKX CXS CPT3Q0 CPT3Q2 CPT3Q3 CPT3Q4 ET3 IXS MCS3 MCS3Q0 QCAL3 RGN3 RICX SDA3 SDL3 SGA3 SGL3 STA3 XS ASPEC3 AMB3 AMF3 CHF3 IXSC IXSN RATO23 FVQV FVWQ FVWQ FVWQ FVWQ FVWQ

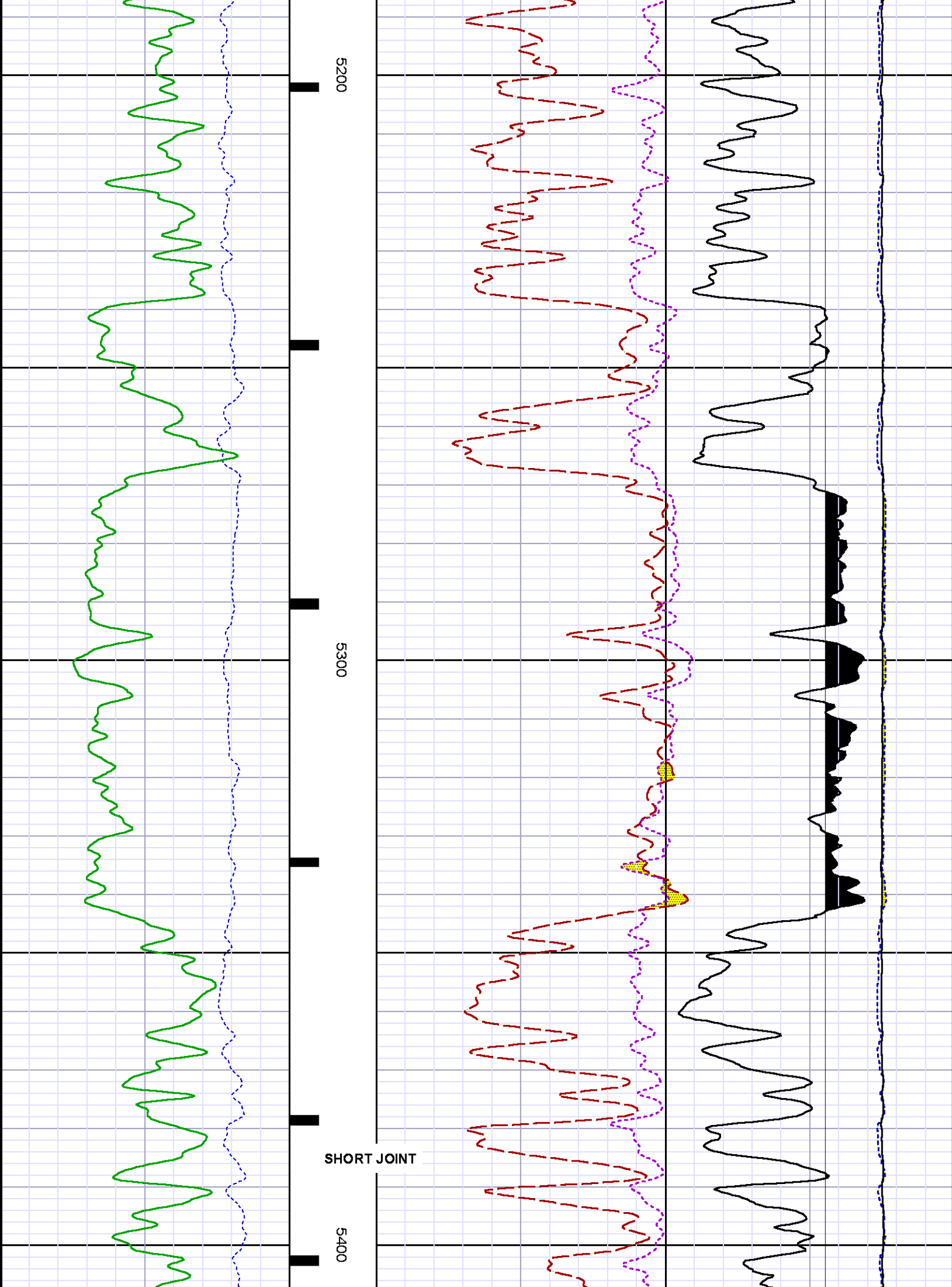
		RICXC	RIN13C	RIN23	RIN23C	SD3D	SG3D
		SGB3	SGF3	WDTH3	CXSR	IXSR	XSR
		RICXR					
8281XA	-0.250	HVC2Q0	SEQ2	AMA2	AMB2	AMF2	AML2
		BKL	CHF2	CLS	CPT2Q0	CPT2Q2	CPT2Q3
		CPT2Q4	ET2	ILS	LS	MCS2	MCS2Q0
		QCAL2	RGN2	RICL	RONE23	RTWO23	SDA2
		SDL2	SGA2	SGB2	SGF2	SGK2	SGL2
		STA2	ASPEC2	ILSC	ILSN	WDTH2	RICLC
		CLSR	ILSR	LSR	RICLR		
8281XA	0.000	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					
SYSTEM	0.000	TEN	TTEN				

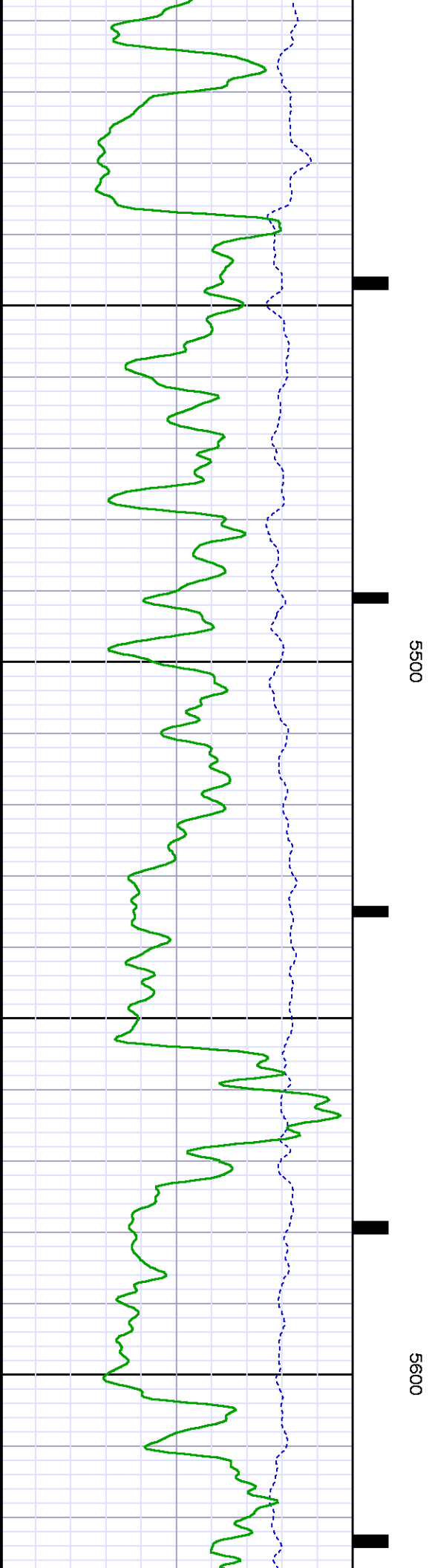
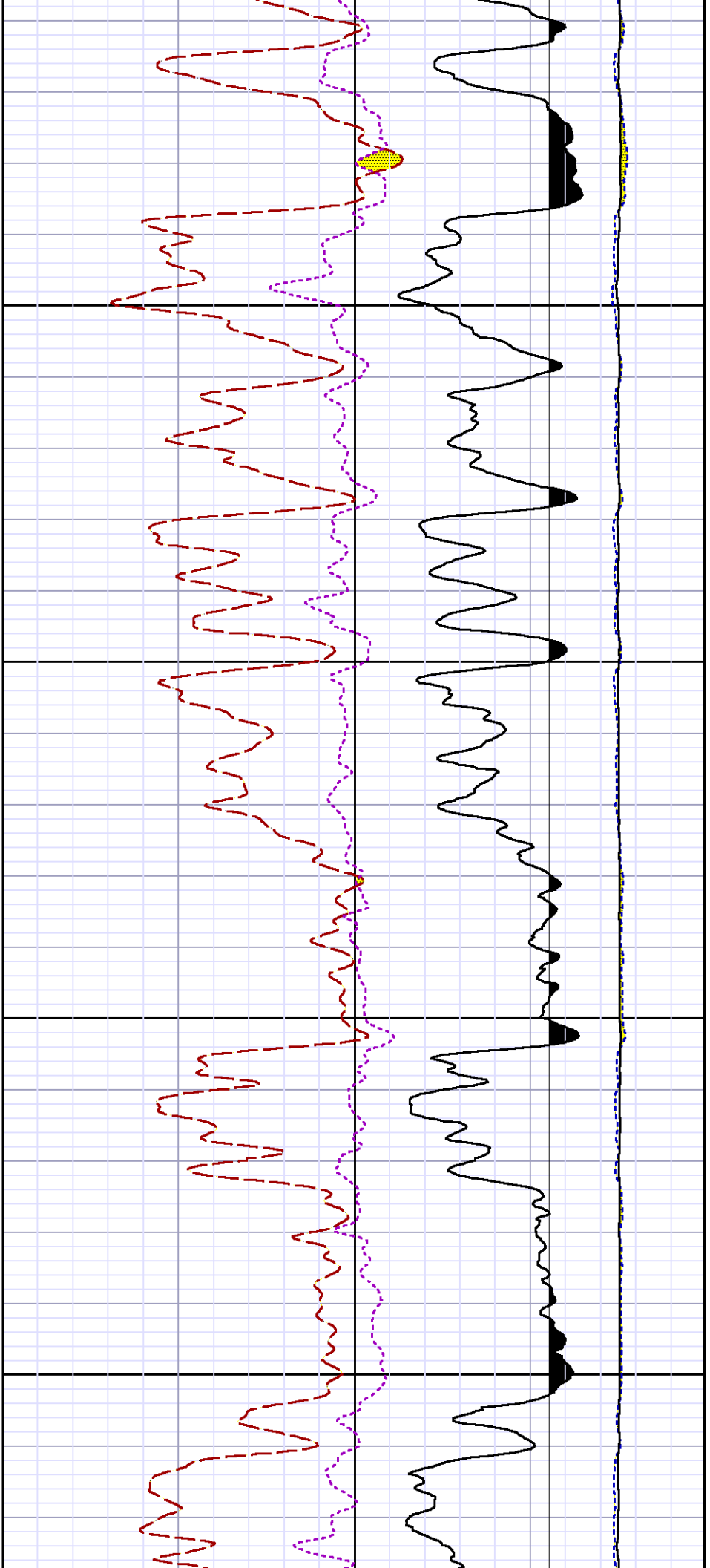


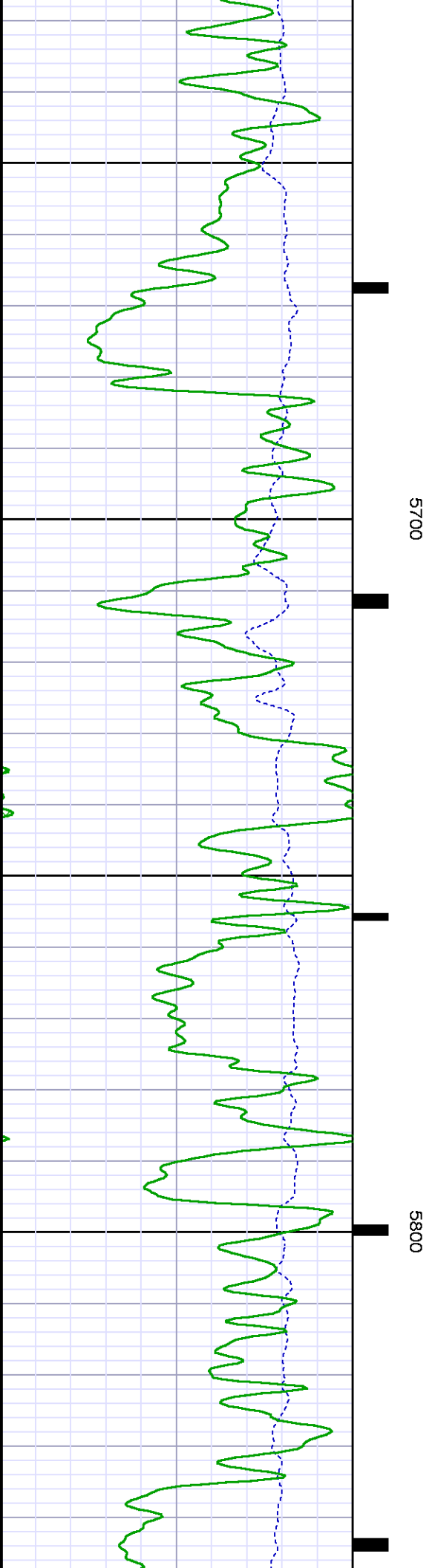
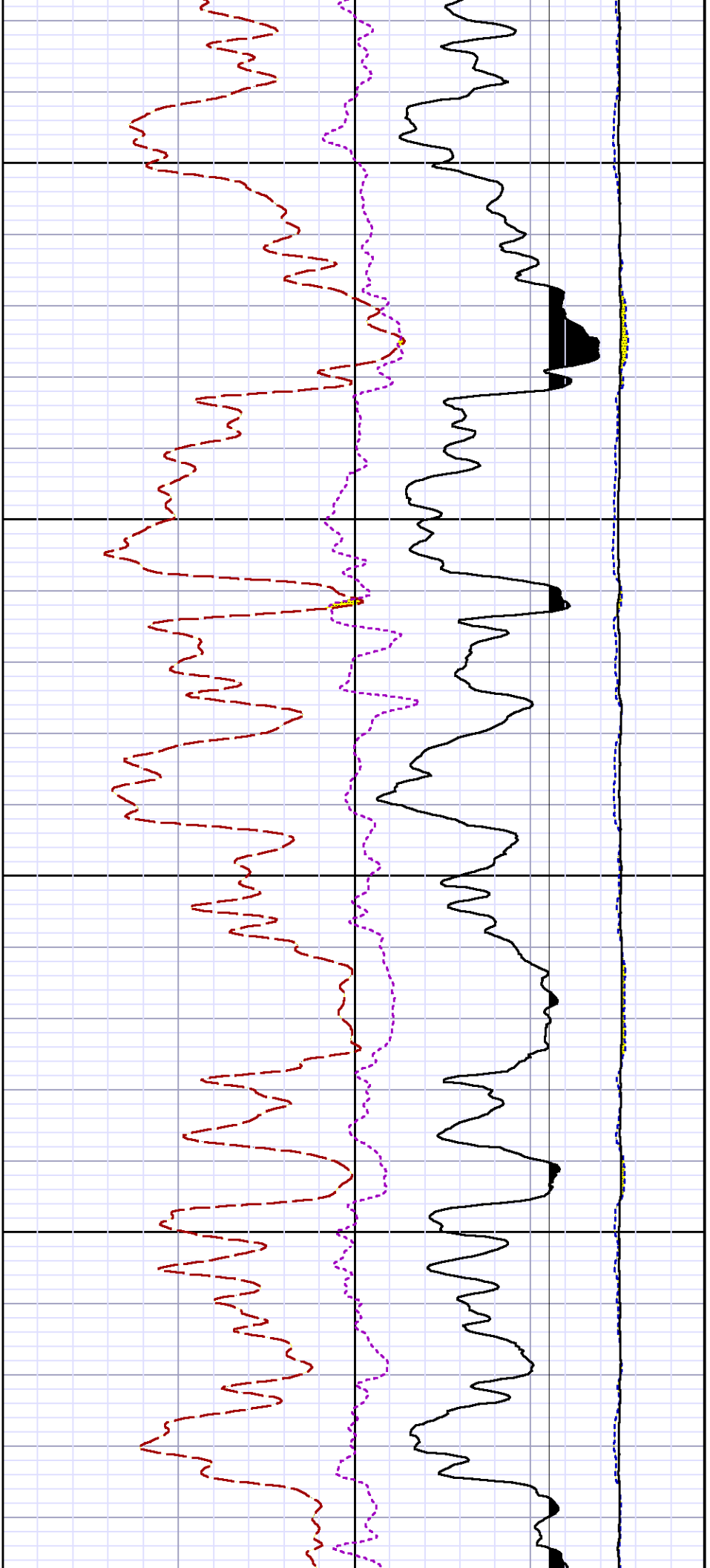


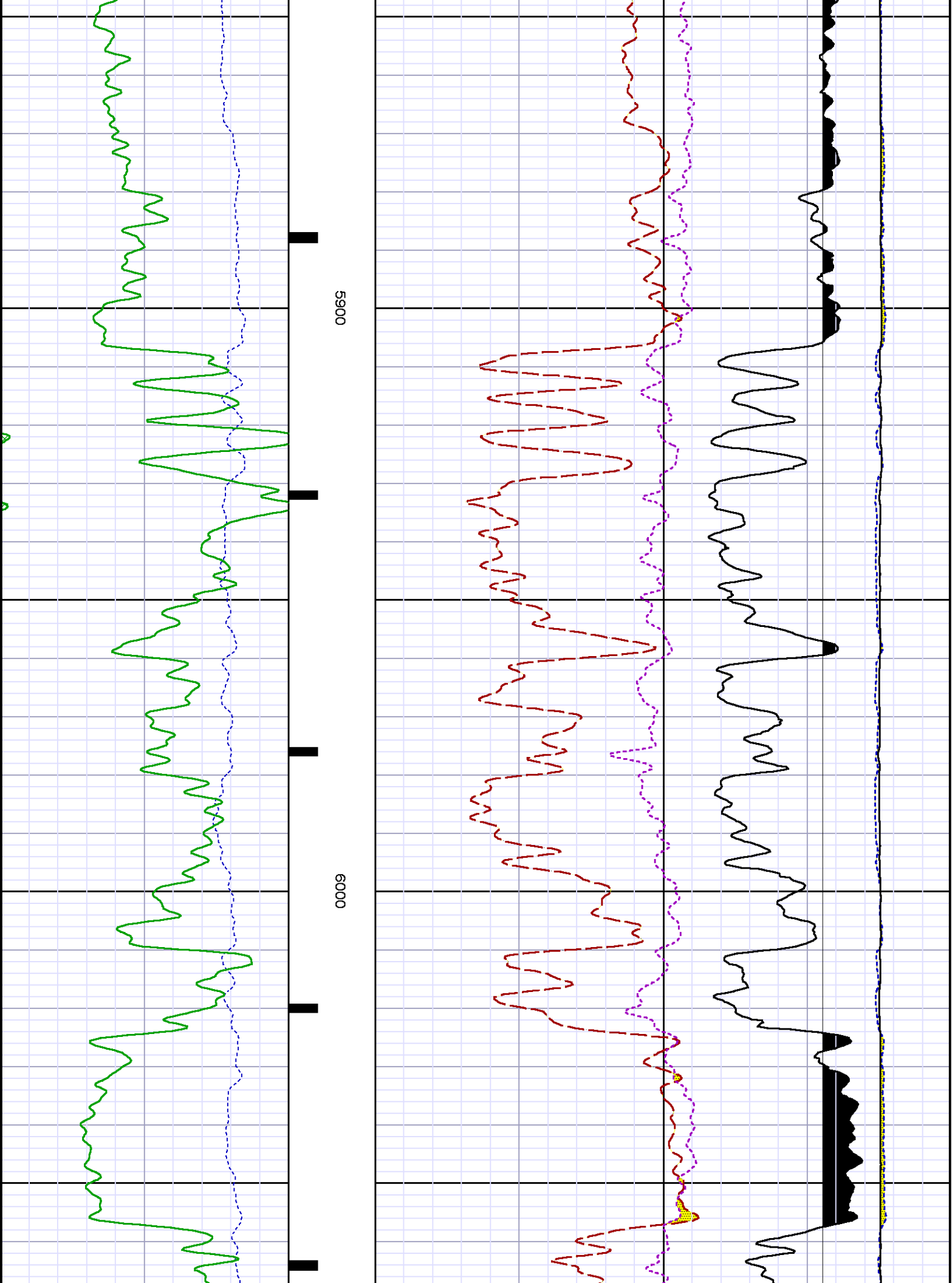


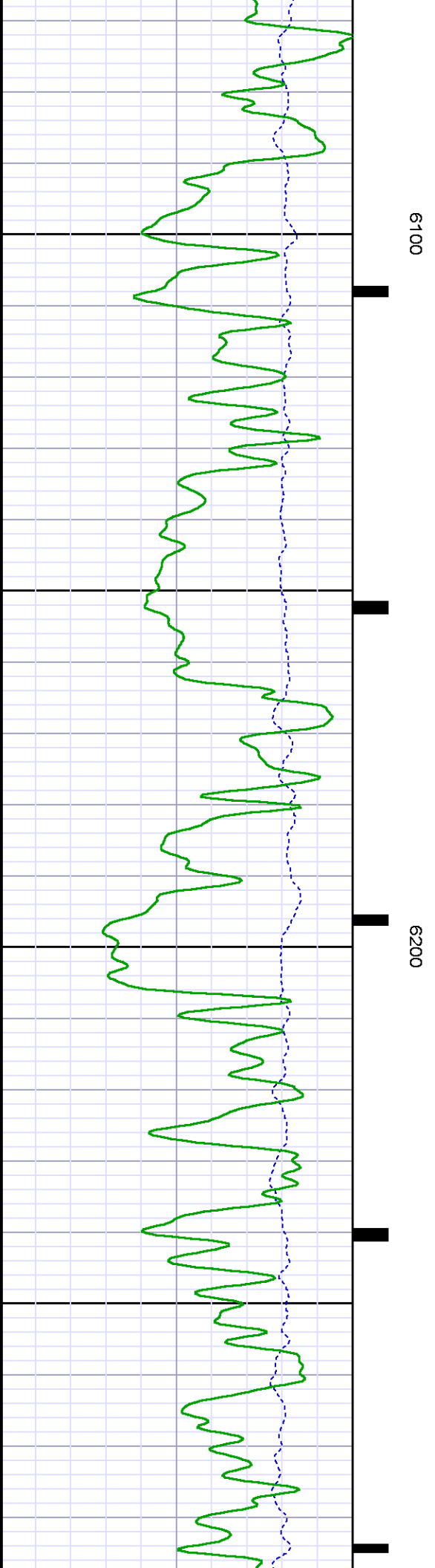
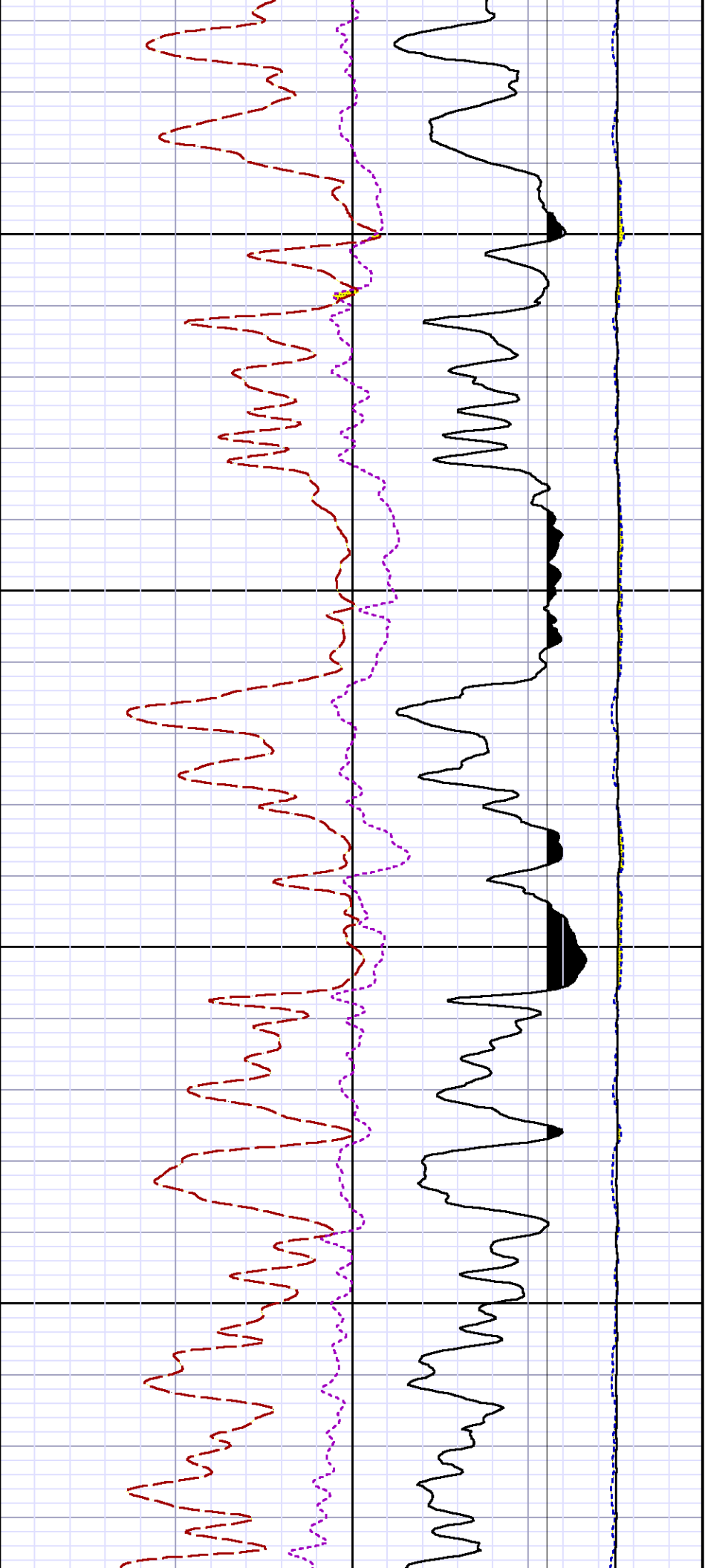


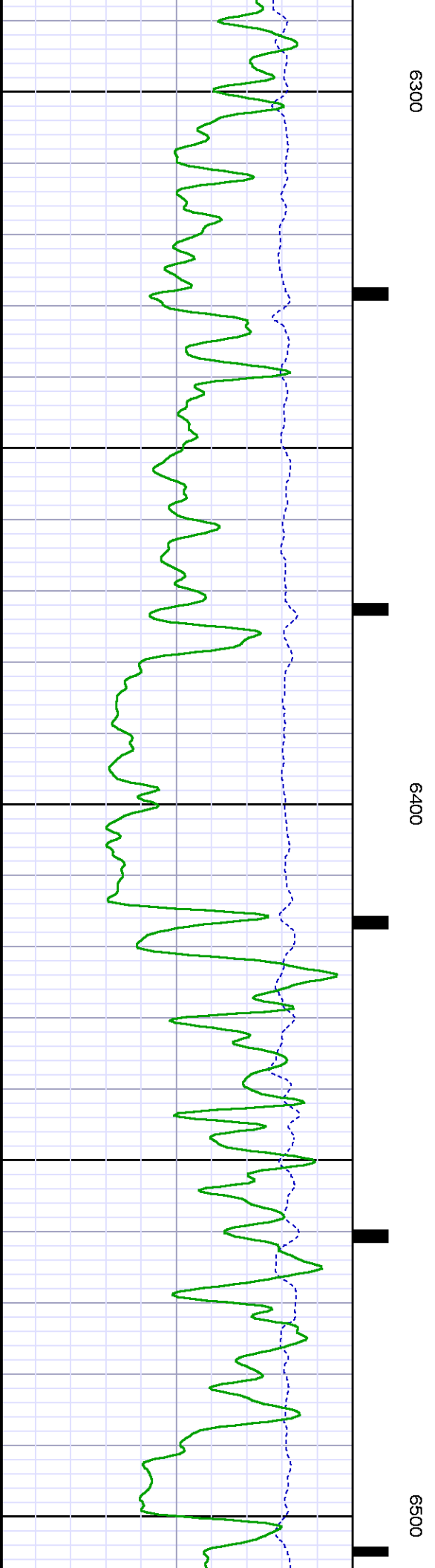
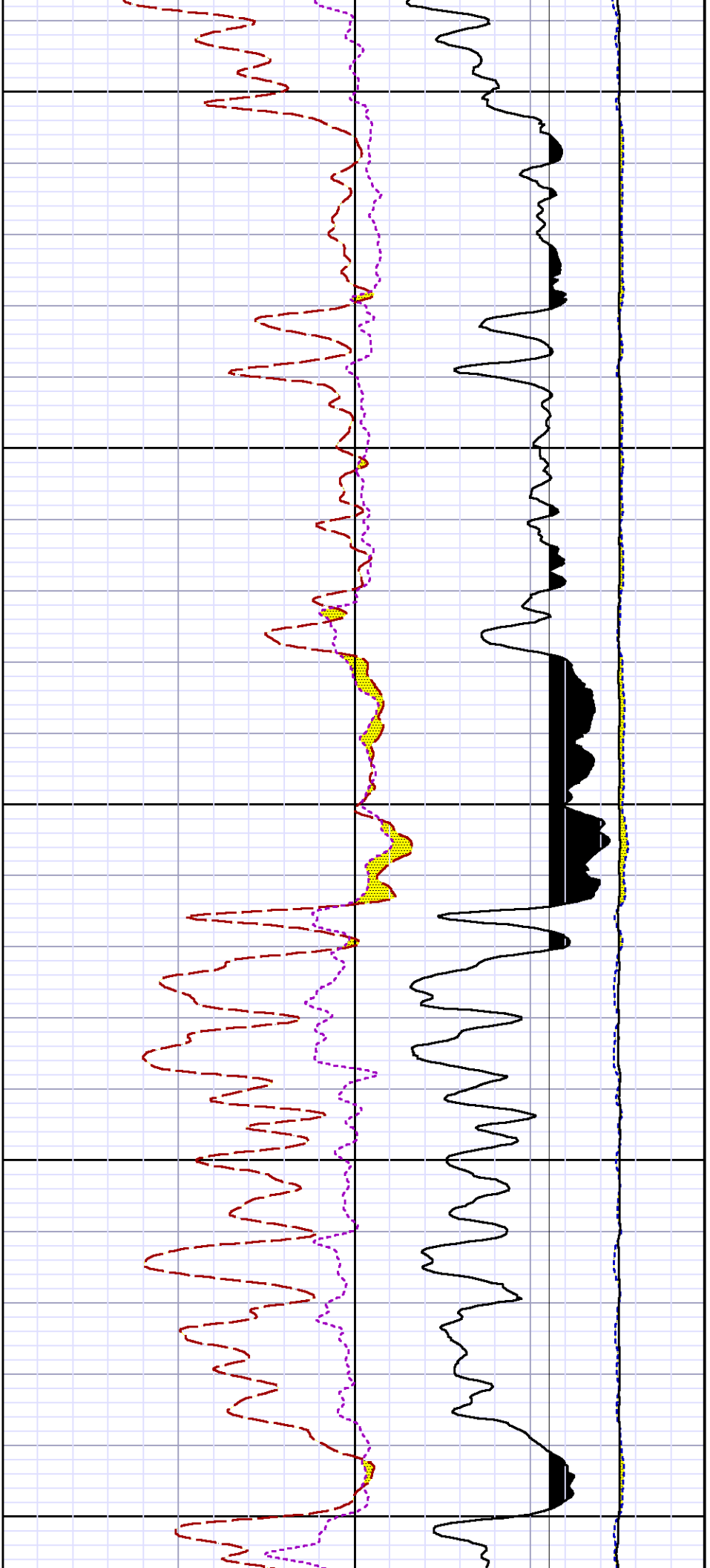


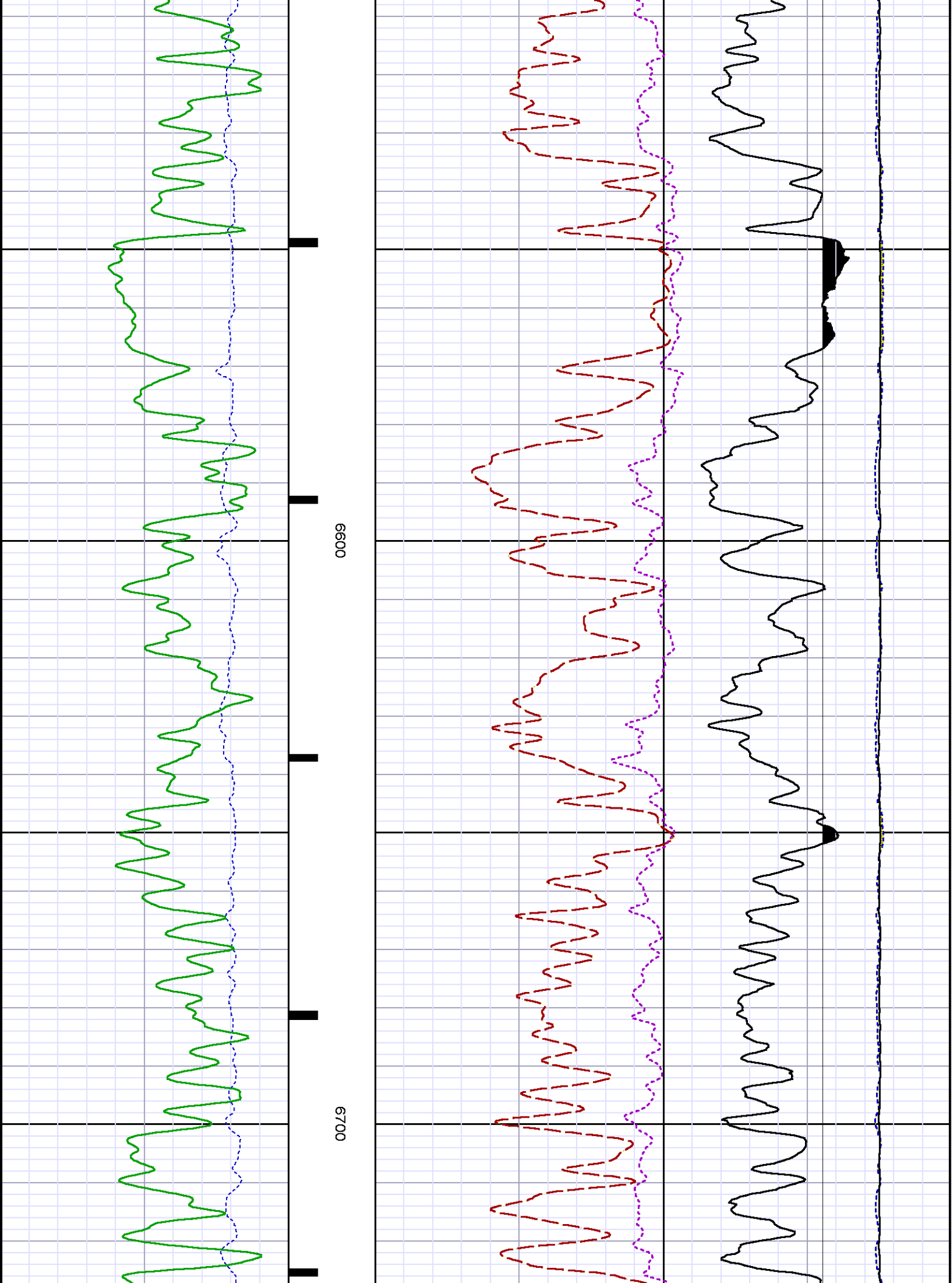


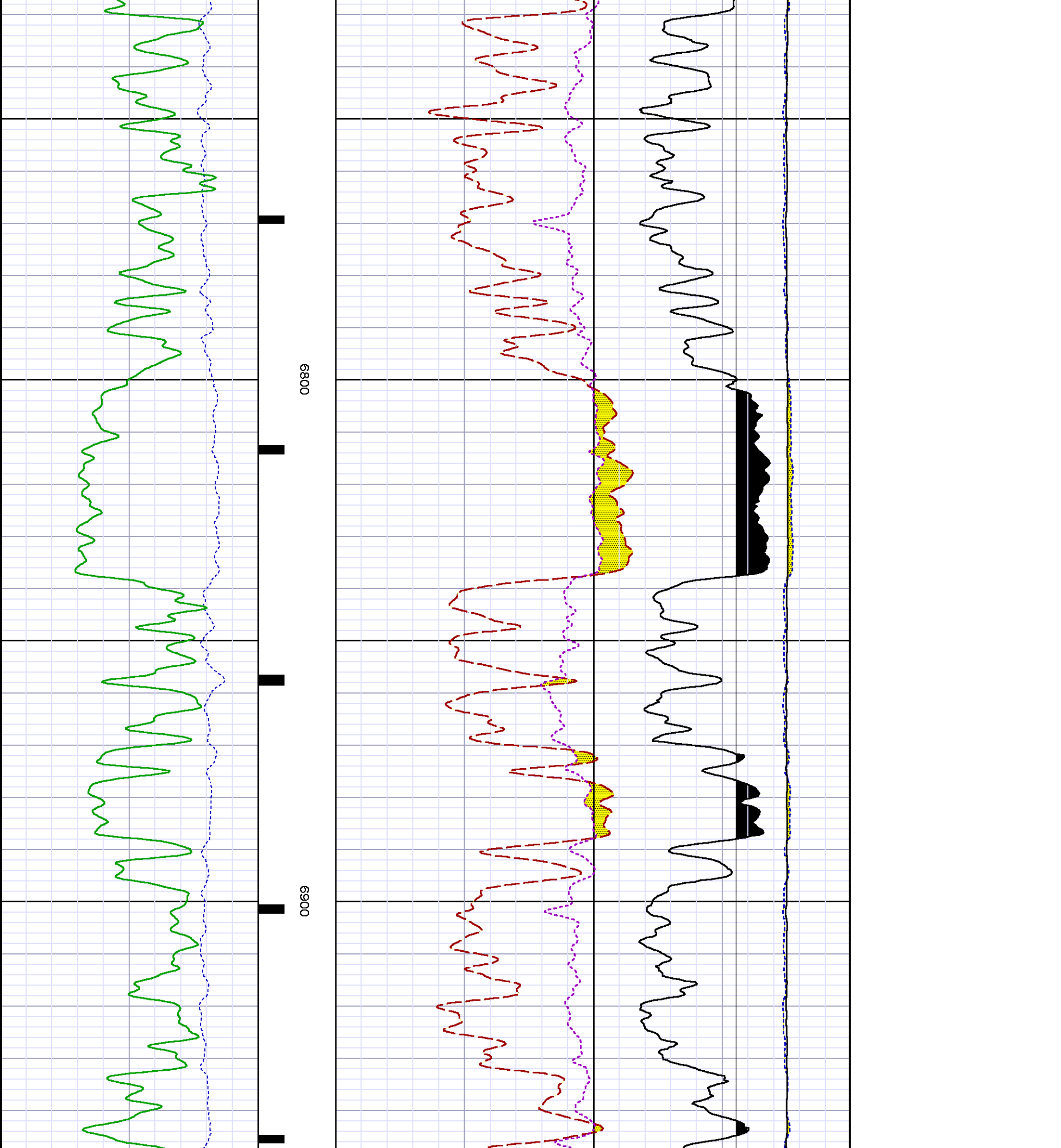


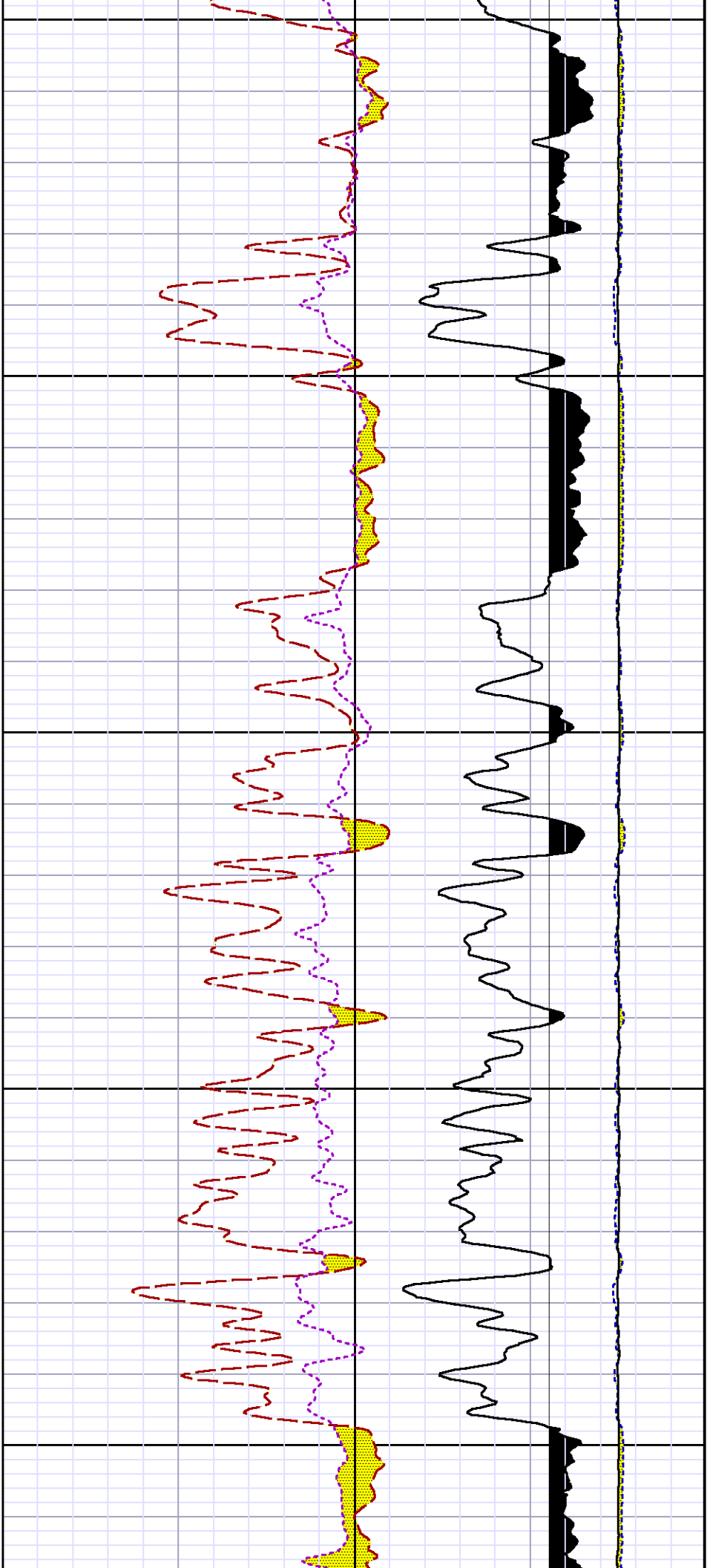






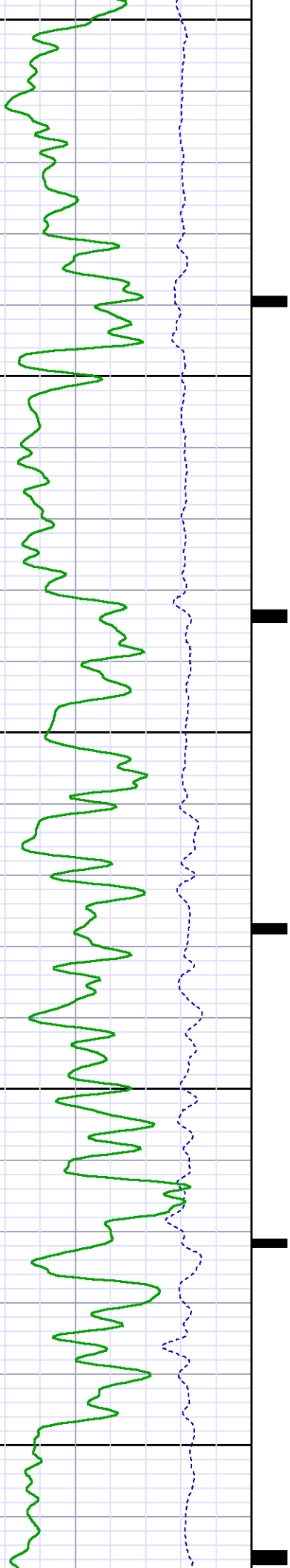


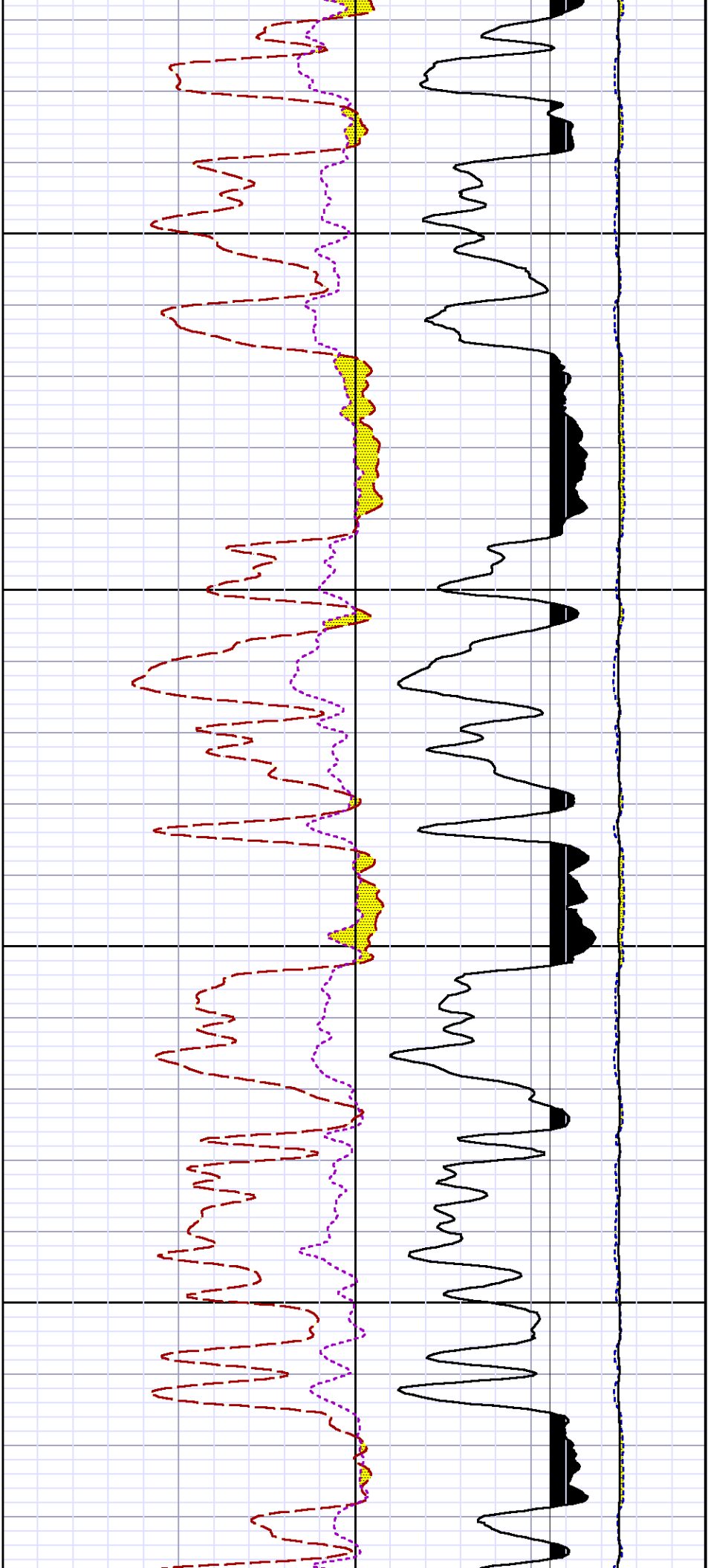




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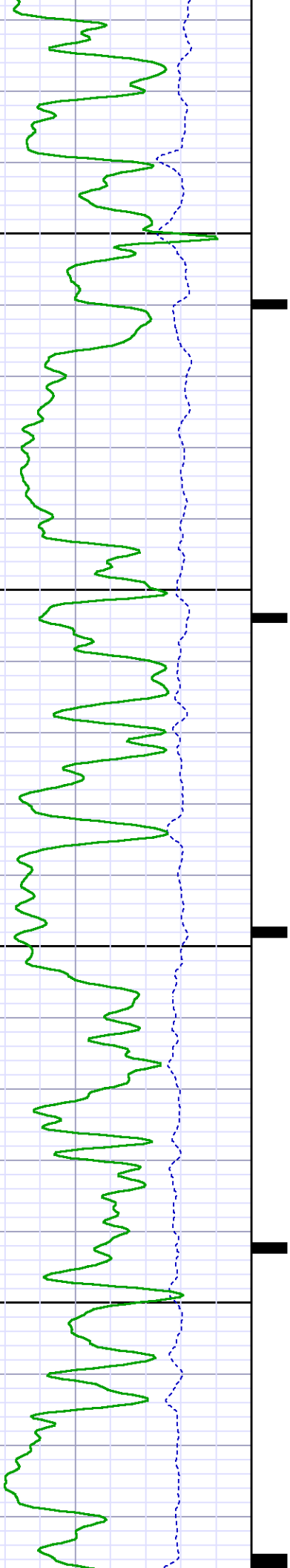
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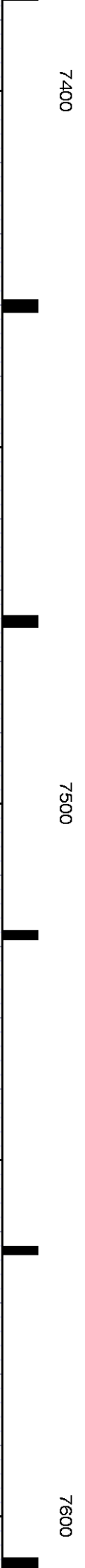
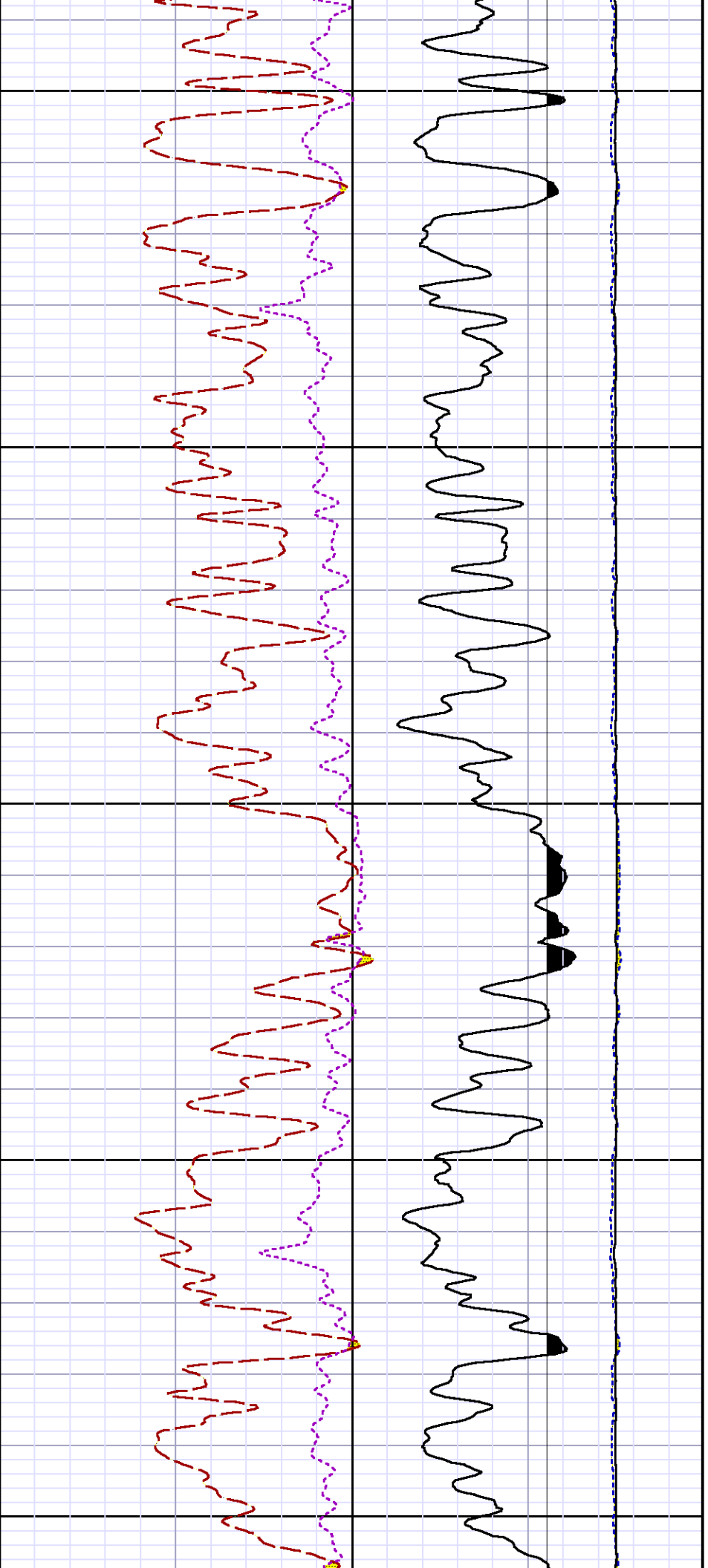


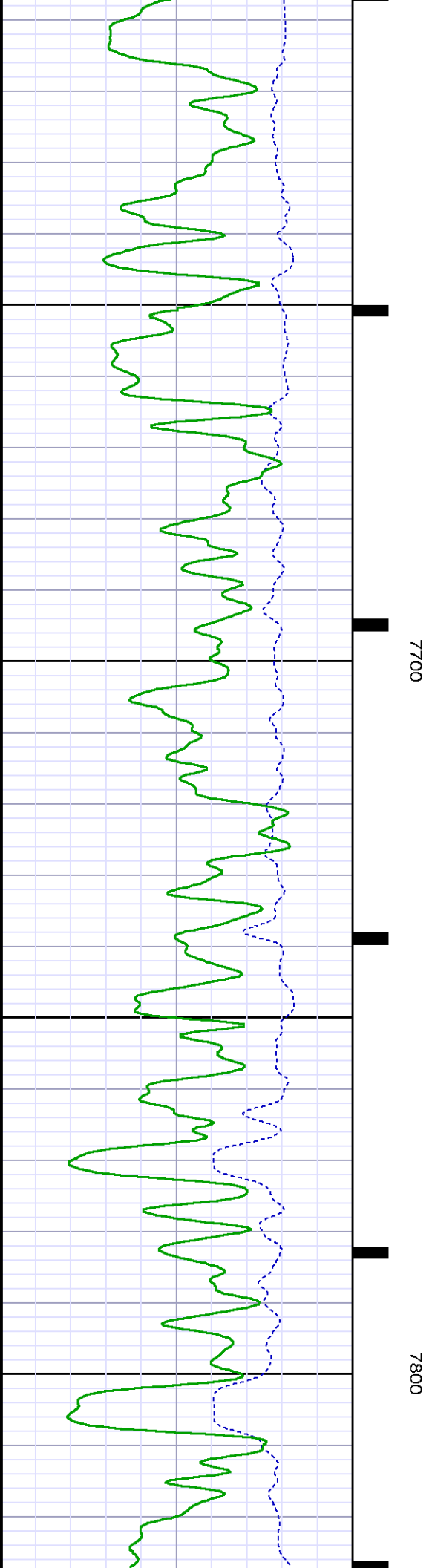
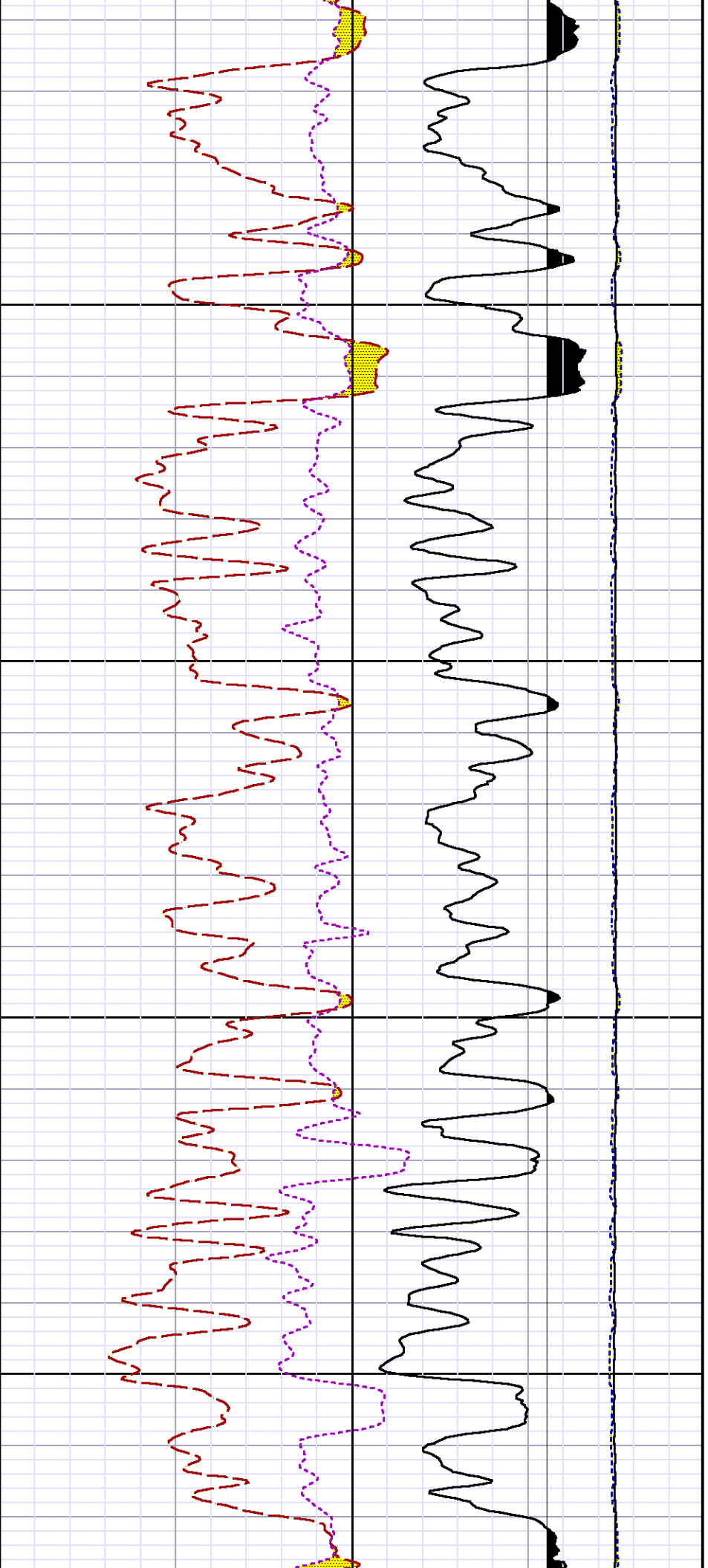


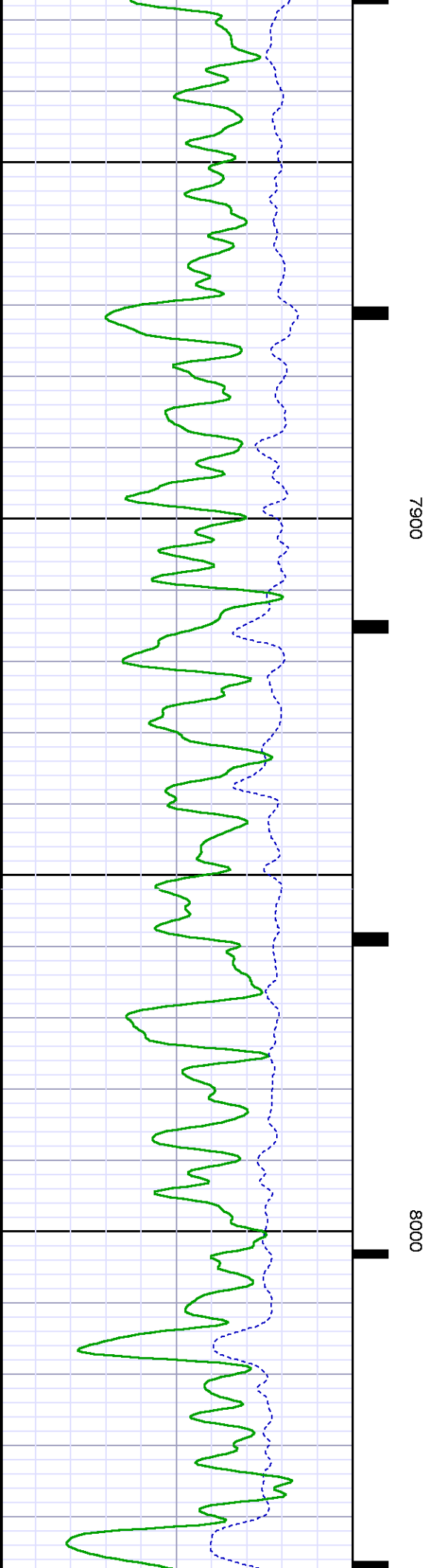
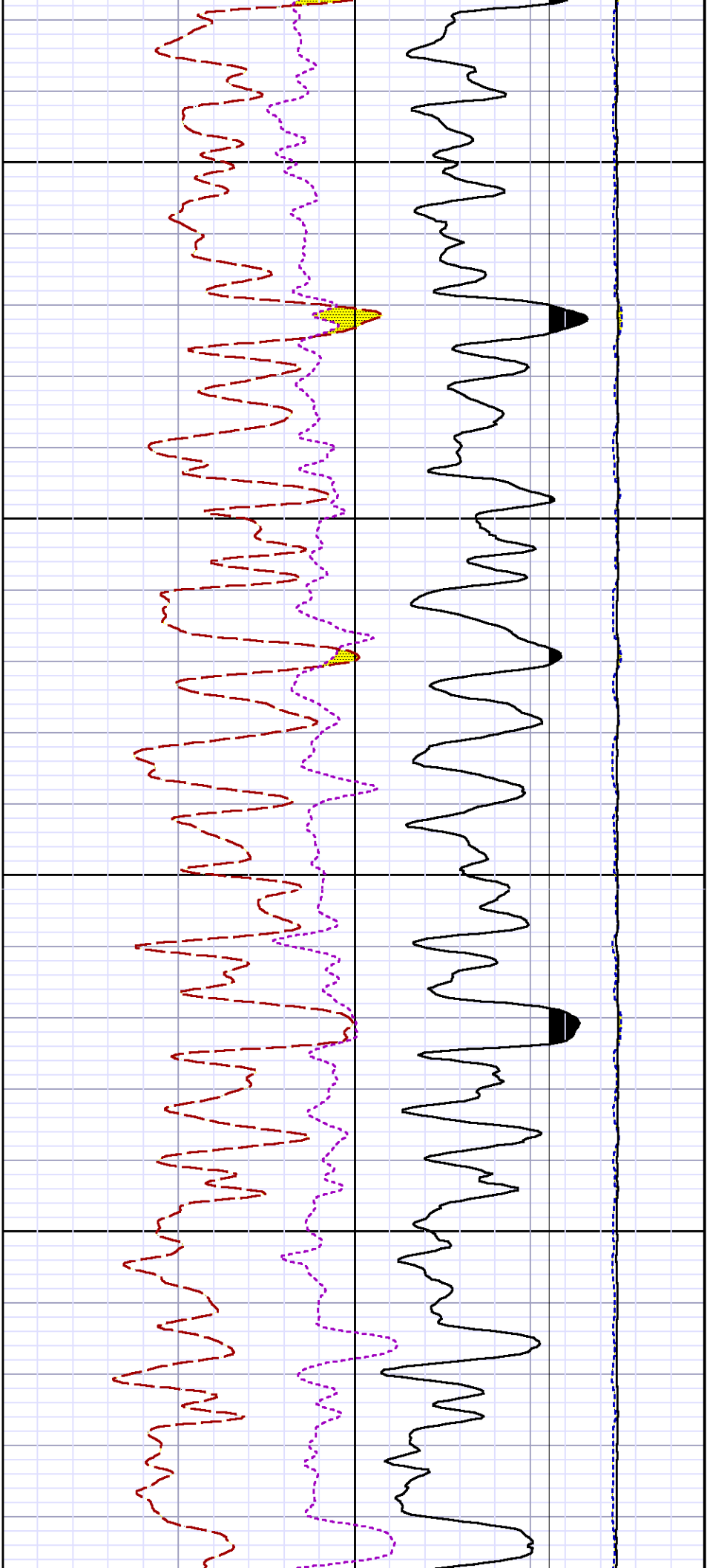
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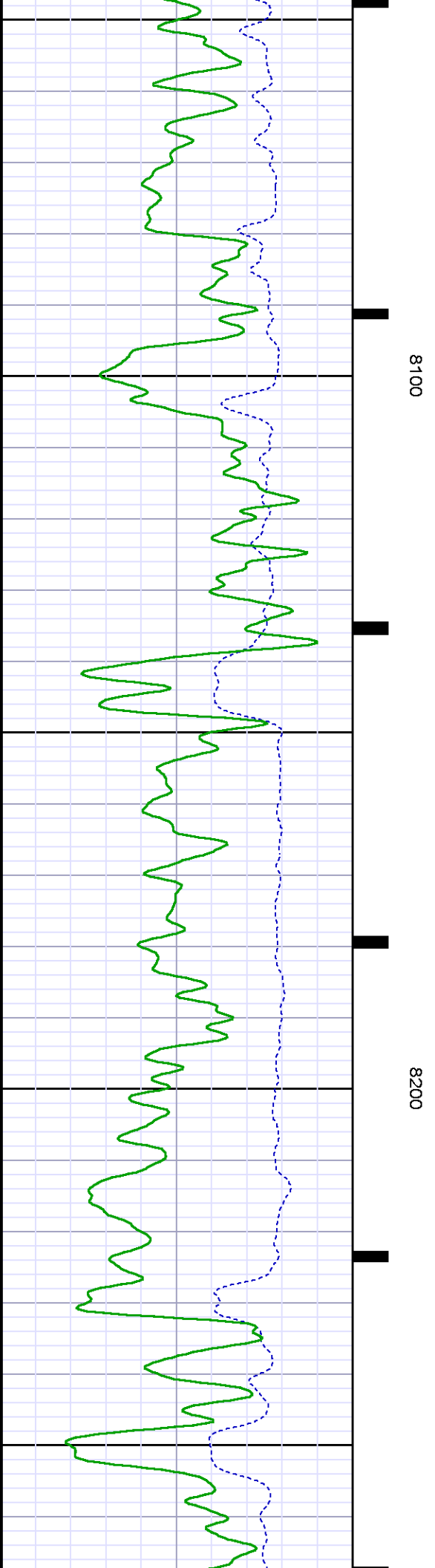
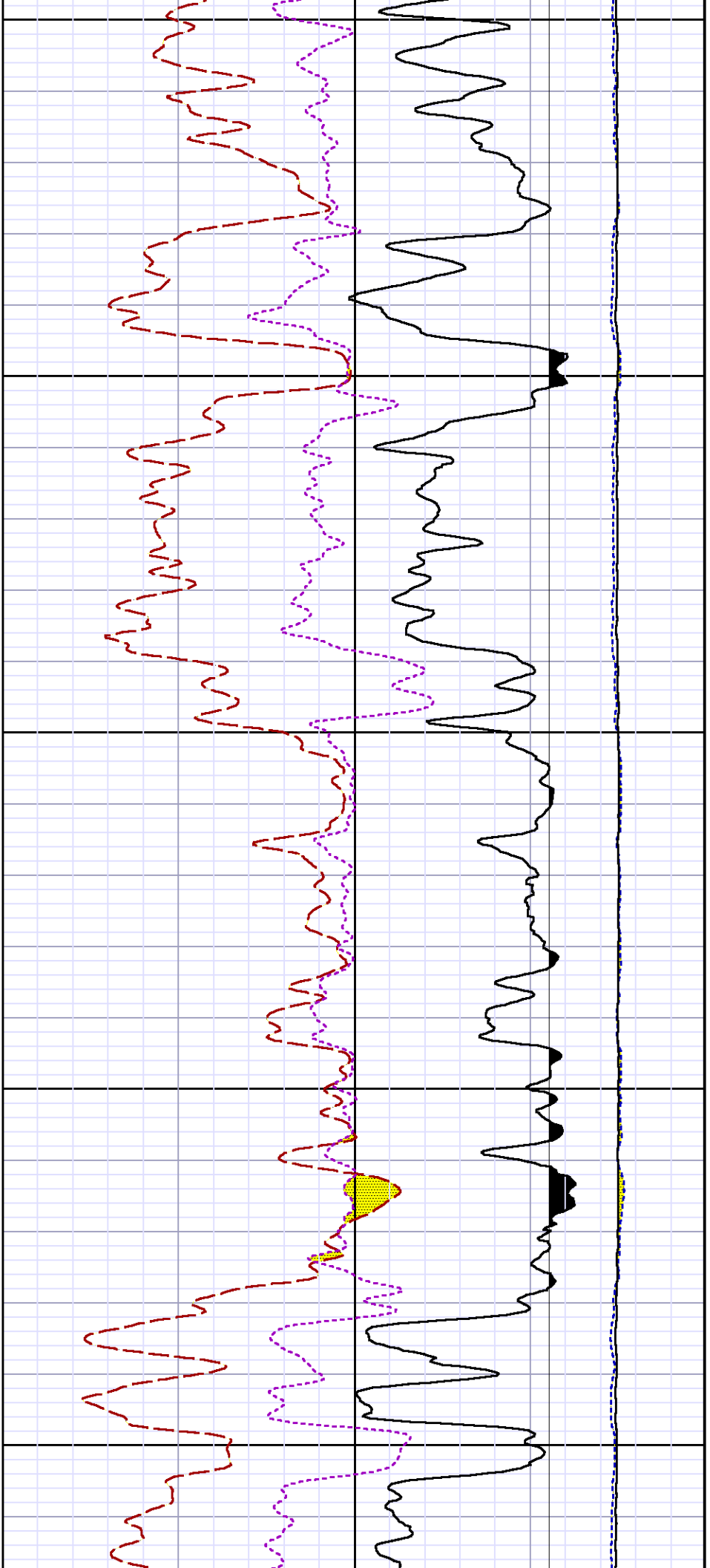
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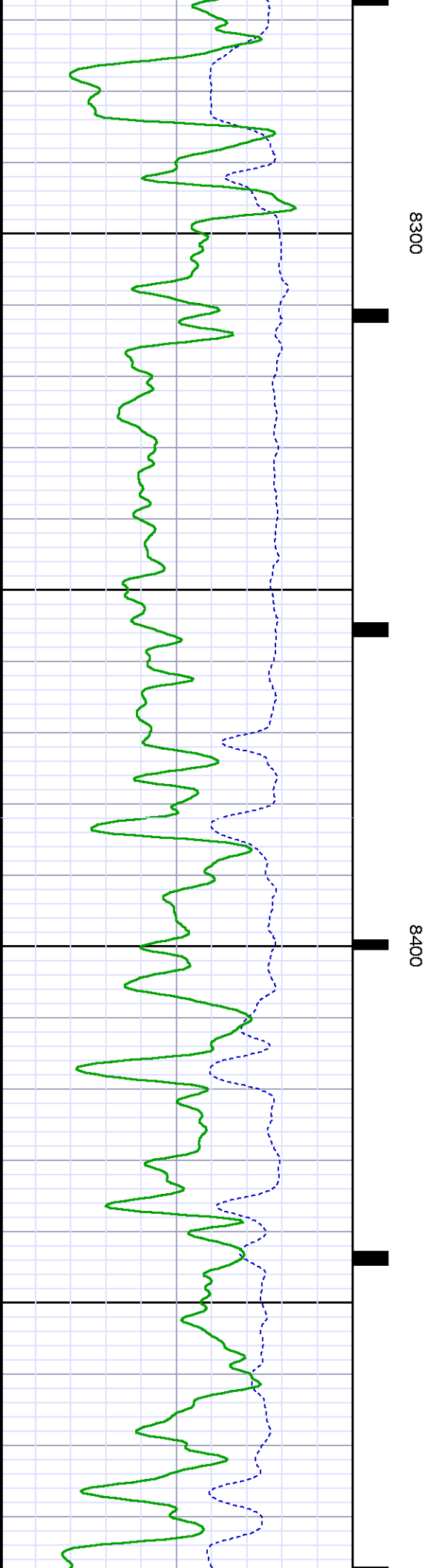
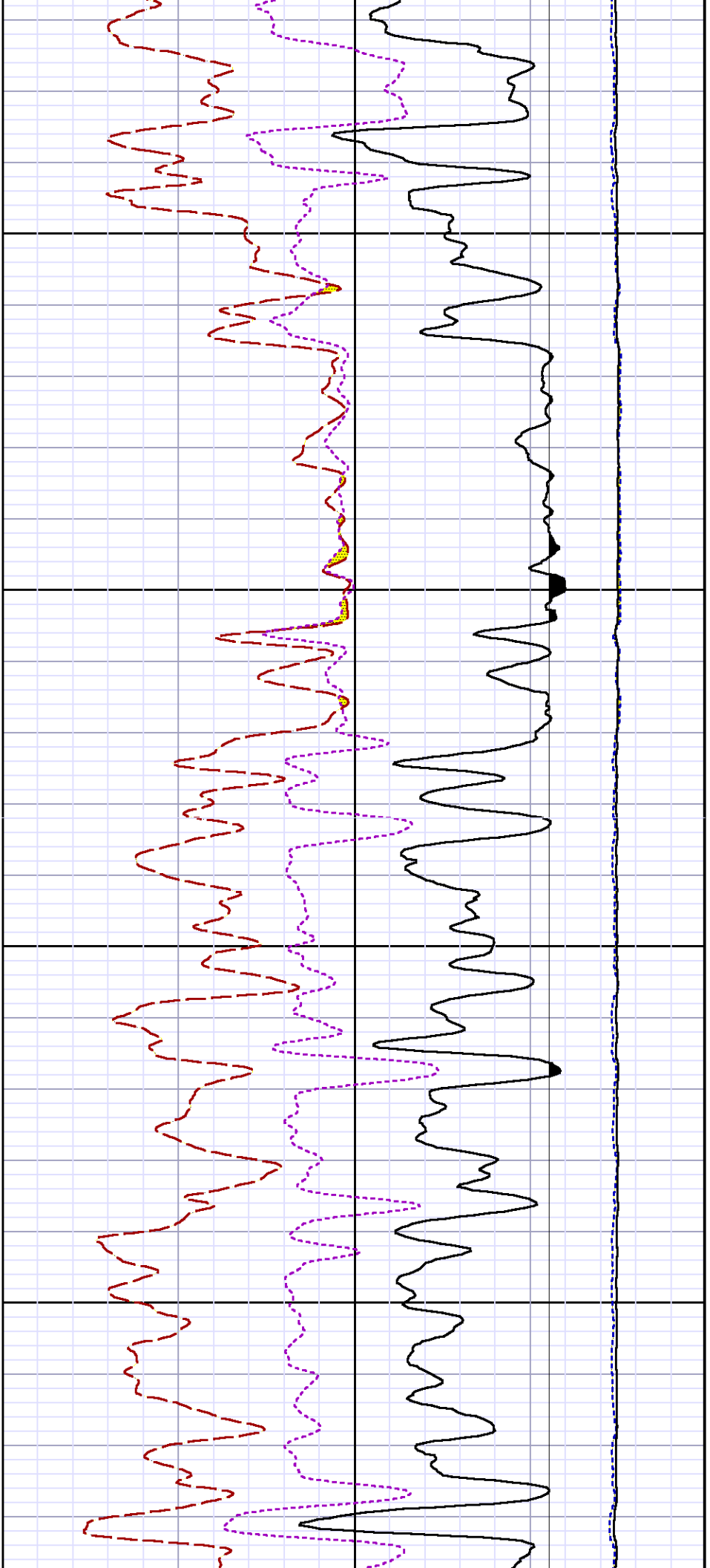


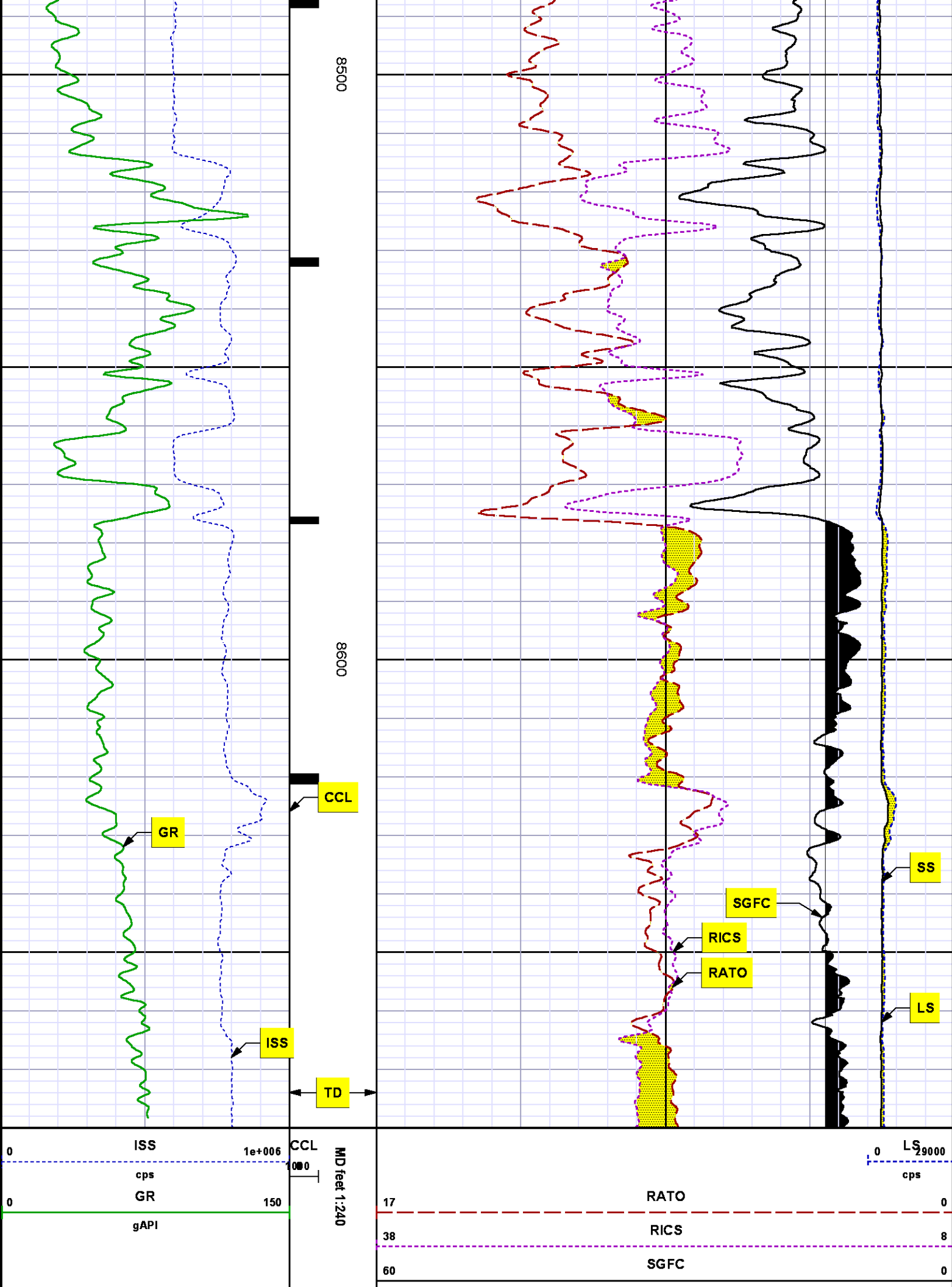












REPEAT SECTION
PNC 3-D MODE

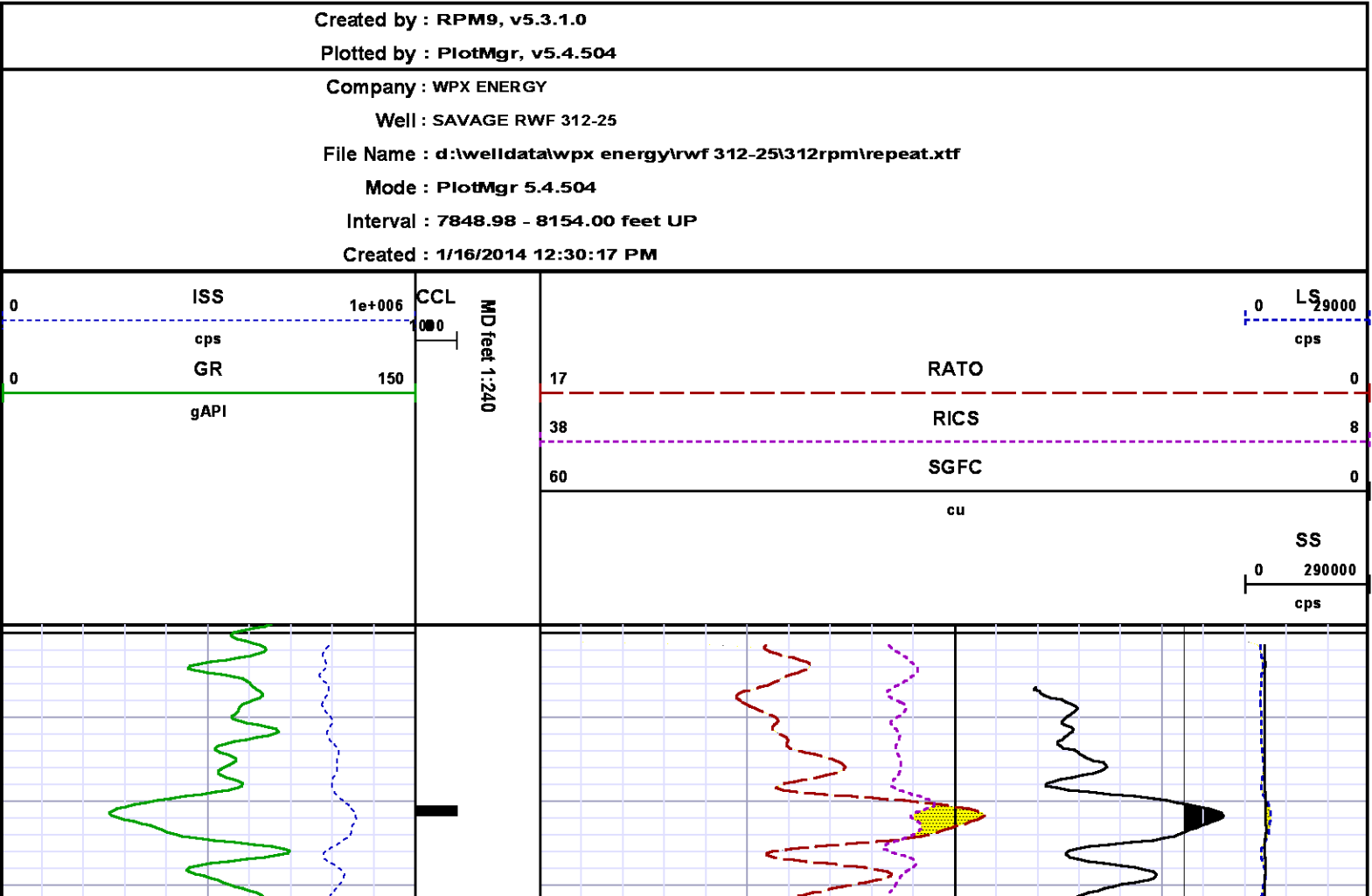
SPL PROCESSING

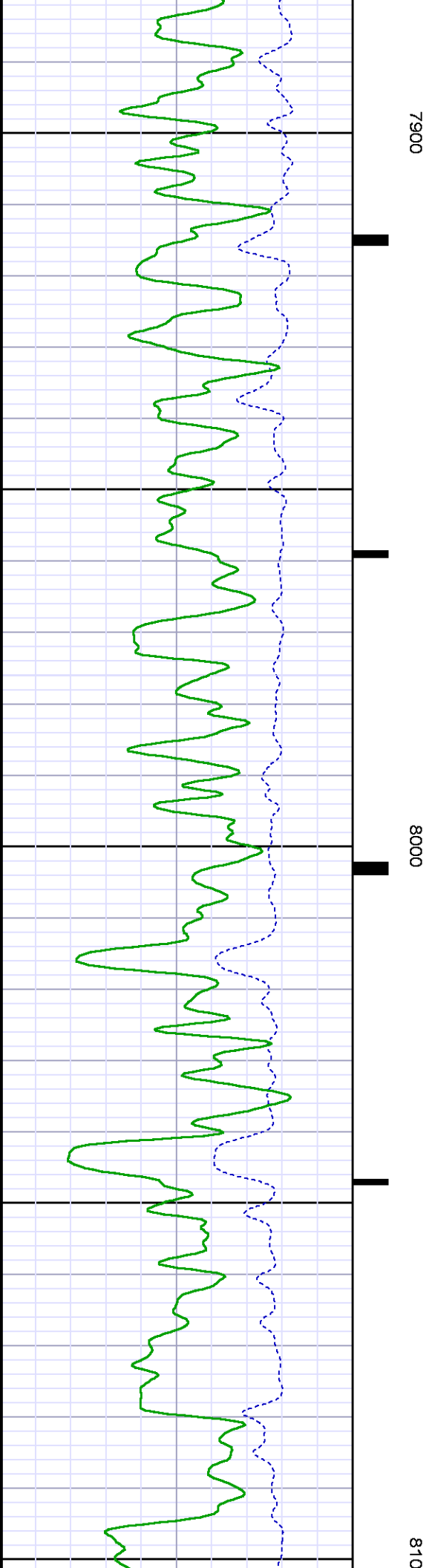
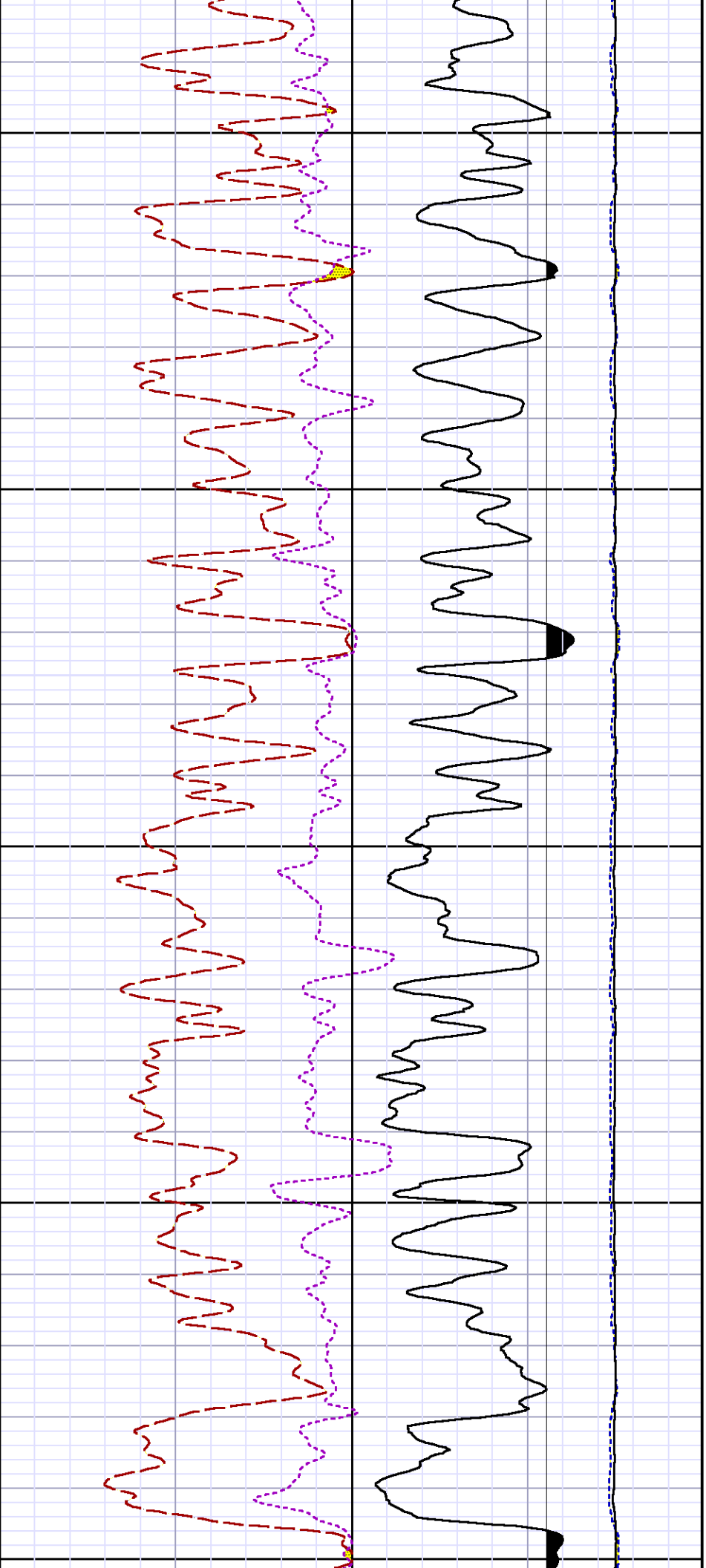
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
PNC Porosity	Borehole	Cased		7848.885	8166.230
PNC Porosity	Borehole Size	8.750	inch	7848.885	8166.230
PNC Porosity	Casing Size	4.500	inch	7848.885	8166.230
PNC Porosity	Gas Filled	Non Gas Filled		7848.885	8166.230
PNC Porosity	Matrix	Sandstone		7848.885	8166.230

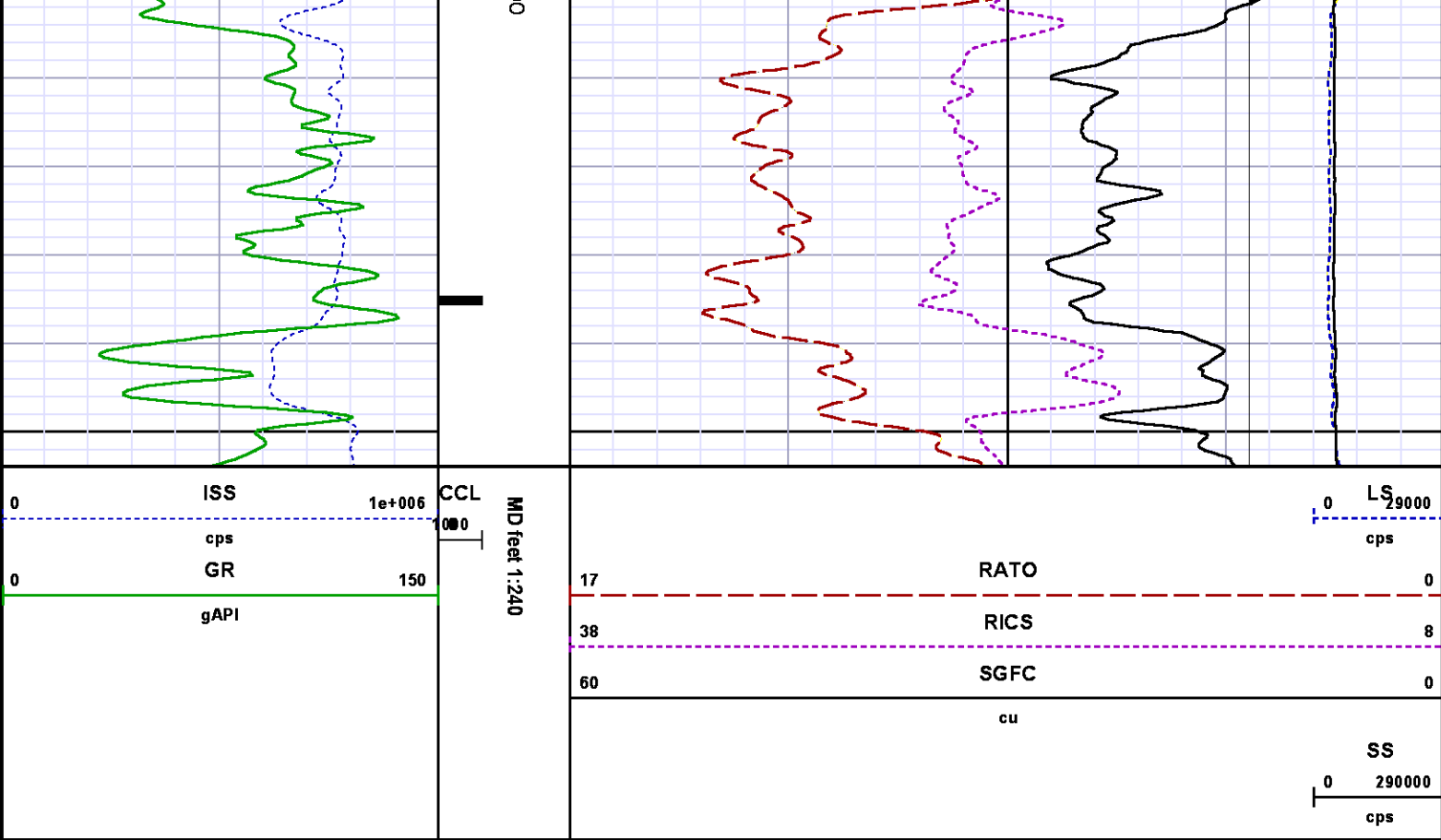
DEPTH OFFSETS
(for Acquired Curves)

SERIES	DEPTH OFFSET	ACQUIRED CURVES
8248ED	-14.478	FLTM
8248ED	-12.478	CCLCHV
2812LA	-9.928	GR
8281XA	-0.662	HVC3Q0SEQ3AMA3AML3BKXCXS CPT3Q0CPT3Q2CPT3Q3CPT3Q4ET3IXS MCS3MCS3Q0QCAL3RGN3RICXSDA3 SDL3SGA3SGL3STA3XSASPEC3 AMB3AMF3CHF3IXSCIXSNRATO23 RICXC RIN13C RIN23 RIN23C SD3D SG3D SGB3SGF3WDTH3CXSRIXSRXSR RICXR
8281XA	-0.250	HVC2Q0SEQ2AMA2AMB2AMF2AML2 BKLCHF2CLS CPT2Q0CPT2Q2CPT2Q3 CPT2Q4ET2ILSLSMCS2MCS2Q0 QCAL2RGN2RICLRONE23RTWO23SDA2 SDL2SGA2SGB2SGF2SGK2SGL2 STA2ASPEC2ILSCILSNWDTH2RICLC

8281XA	0.000	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	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					
SYSTEM	0.000	TEN	TTEN				







CALIBRATION SUMMARY

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\385J9.VP

PRIMARY VERIFICATION						
DATE/TIME PERFORMED:		Thu Jan 09 15:29:10 2014		TOOL SERIES:	2812LA	ASSET: 385 SEQ: J9
Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K WA612	63.02	280.18	0.951	59.93	266.45	206.51

PNC

Calibration File: C:\case\calver\PNC\23109.cal

PNC 3D CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Jan 09 11:00:09 2014 TOOL SERIES: 8281XA ASSET: 231 SEQ: 09

Calibrator #

2437xb 112674

Source #

8281AA 11724361

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	811530	119.00	2270.00	2292.00	2289.00	104.06	7.00	0.9637
Interpolated	1300000	140.18	2248.77	2286.36	2284.50			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	811530	6704.99	1062.91	139.64	25.78	0.14	24.48	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	811530	171239.95	26568.92	90128.21	32072.29	8198.67	54502.86	13146.01
Fit Quality %		1.07	1.32	1.29	1.28	1.11	1.19	1.15

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	811530	1.43	4.74	30.55	14.89	10.99	3.91	4.15
		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 %		0.09	0.08	0.03	0.08	0.13	0.12	0.08
Reduced	1401386	1.43	4.76	30.65	14.95	10.98	3.91	4.14
		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

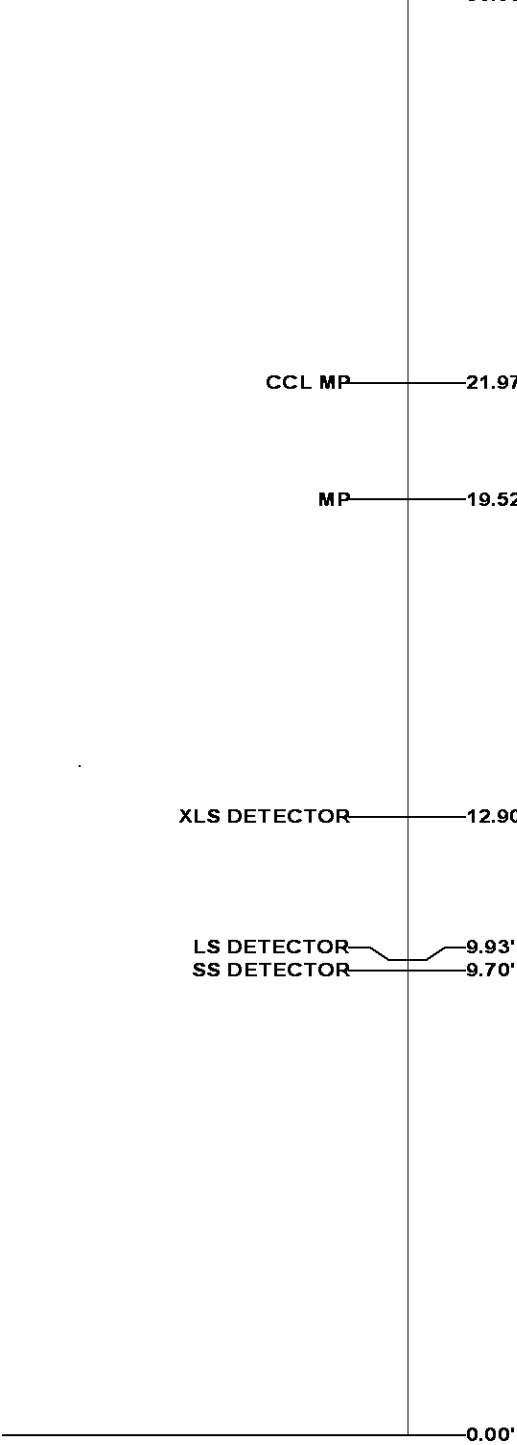
TOOL DIAGRAM

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



Total Length: 30.06'
Total Weight: Not Available
Max Diameter: 0' 1.70"

<div> BAKER HUGHES</div> <div>Baker Atlas</div> <div></div>	Company	WPX ENERGY			File No:	CH081916
	Well	SAVAGE RWF 312-25				
	Field	RULISON			API No:	05045219750000
	County	GARFIELD	State	COLORADO		
	Location			Elevations		
	SHL: 2482' FNL & 1397' FWL			KB	6058 ft	25 6S 94W
	BHL: 1439' FNL & 762' FWL (SWNW)			DF		RWF 22-25 PAD
				GL	6037 ft	CYCLONE 17
	SEC	25	TWP	6S	RGE	94W

