



FILE NO: CH108515	COMPANY TERRA ENERGY PARTNERS LLC
API NO: 05045225270000	WELL FEDERAL GM 411-9
	FIELD GRAND VALLEY
	COUNTY GARFIELD
	STATE COLORADO
Version S.9 T.7S R.96W PAD: MV 16-9 RIG: H&P 318	LOCATION: SHL: 637 FNL & 582 FWL BHL: 842 FNL & 1265 FWL SEC 9 TWP 7S RGE 96W
	OTHER SERVICES RAL
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	G.L. ELEVATION 6087 FT K.B. 24 FT ABOVE P.D. K.B. ELEVATIONS: KB 6111 FT DF GL 6087 FT

DATE	27-JUL-2016
RUN	1
TRIP	1
SERVICE ORDER	US108515
DEPTH DRILLER	6675 FT
DEPTH LOGGER	6595 FT
BOTTOM LOGGED INTERVAL	6593 FT
TOP LOGGED INTERVAL	3442 FT
TIME STARTED	06:45
TIME FINISHED	11:15
OPERATOR RIG TIME	4.5 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	49 FT
LOGGED CEMENT TOP	SEE LOG
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	206 DEGF
REFERENCE LOG	BAKER HUGHES BOND LOG
REFERENCE LOG DATE	26-JUL-2016
EQUIP. NO.	HL-6685
LOCATION	GRAND JCT.
RECORDED BY	SPENCER
WITNESSED BY	D. WELSH

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	1303 FT
8.75 IN	1303 FT	6654 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
9.625 IN			24 FT	1303 FT
4.5 IN	11.6 LB/F		24 FT	6654 FT

REMARKS
RUN 1 TRIP 1: ALL DATA ON THIS LOG HAS BEEN DEPTH MATCHED WITH THE GAMMA RAY CURVE ON THE BAKER HUGHES BOND LOG DATED 26-JUL-2016. DEPTH MATCHING MAY ALTER COLLAR LENGTHS.
AMOUNT OF LINEAR SHIFT = +4.25 FEET
LOGGED WITH 0PSI AT SURFACE LOGGED IN PNC-3D MODE
BHT = 206 DEGF SJ = 3412' - 3434'
THANKS FOR CHOOSING BAKER HUGHES WIRELINE CREW: NEWELL / FAVORITE

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11745584	FREE
1	1	TEL / CCL	8248ED	11908681	FREE
1	1	GR	8262XA	10317216	FREE
1	1	RPM ELEC.	8281EA	10294755	FREE
1	1	RPM SOURCE	8283PA	10160383	FREE
1	1	RPM TMTR.	8281FA	10401926	FREE
1	1	TEMP	8255XA	Z166341	FREE

MAIN SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1,36 Patches: 9

Plotted: Wed Jul 27 11:01:04 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108515/n353hx03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 3436.250 ft BOTTOM DEPTH: 6607.500 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM

RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP BOTTOM
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	8.75	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jul 27 07:48:54 2016	CASING COLLAR LOCATOR
F1:GR	Jul 27 07:48:54 2016	GAMMA RAY
F1:ISS	Jul 27 07:48:54 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jul 27 07:48:54 2016	LONG SPACE COUNT RATE
F1:RATO	Jul 27 07:48:54 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jul 27 07:48:54 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jul 27 07:48:54 2016	CORRECTED FORMATION SIGMA
F1:SS	Jul 27 07:48:54 2016	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	23.00	LS	12.75	RICS	12.75	SS	12.75

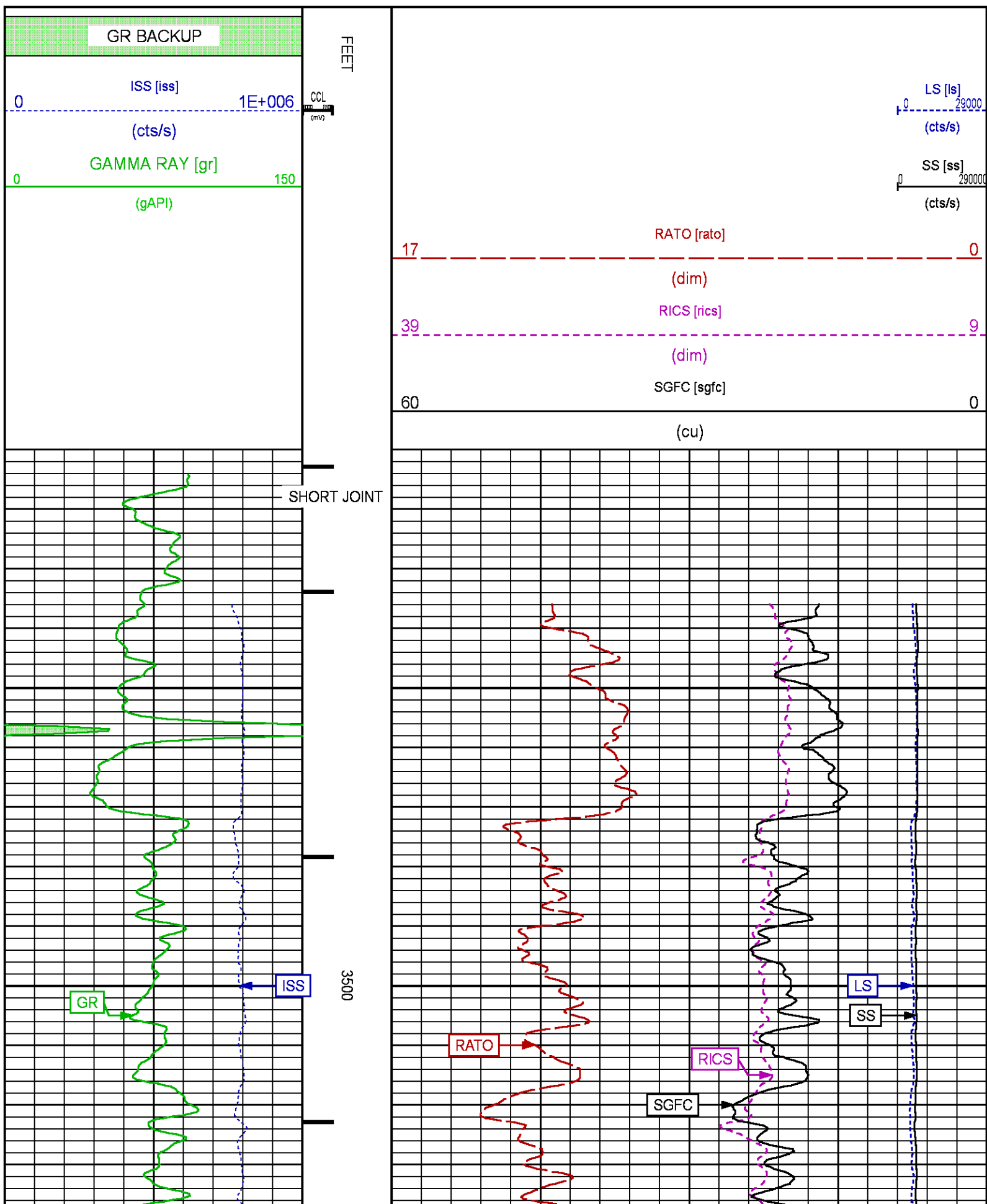
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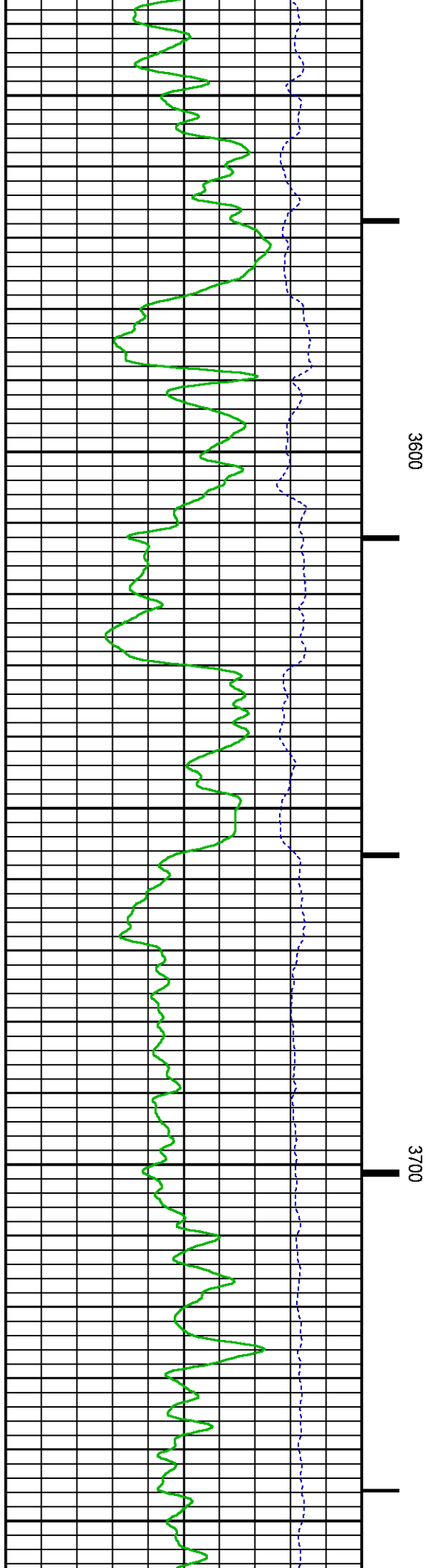
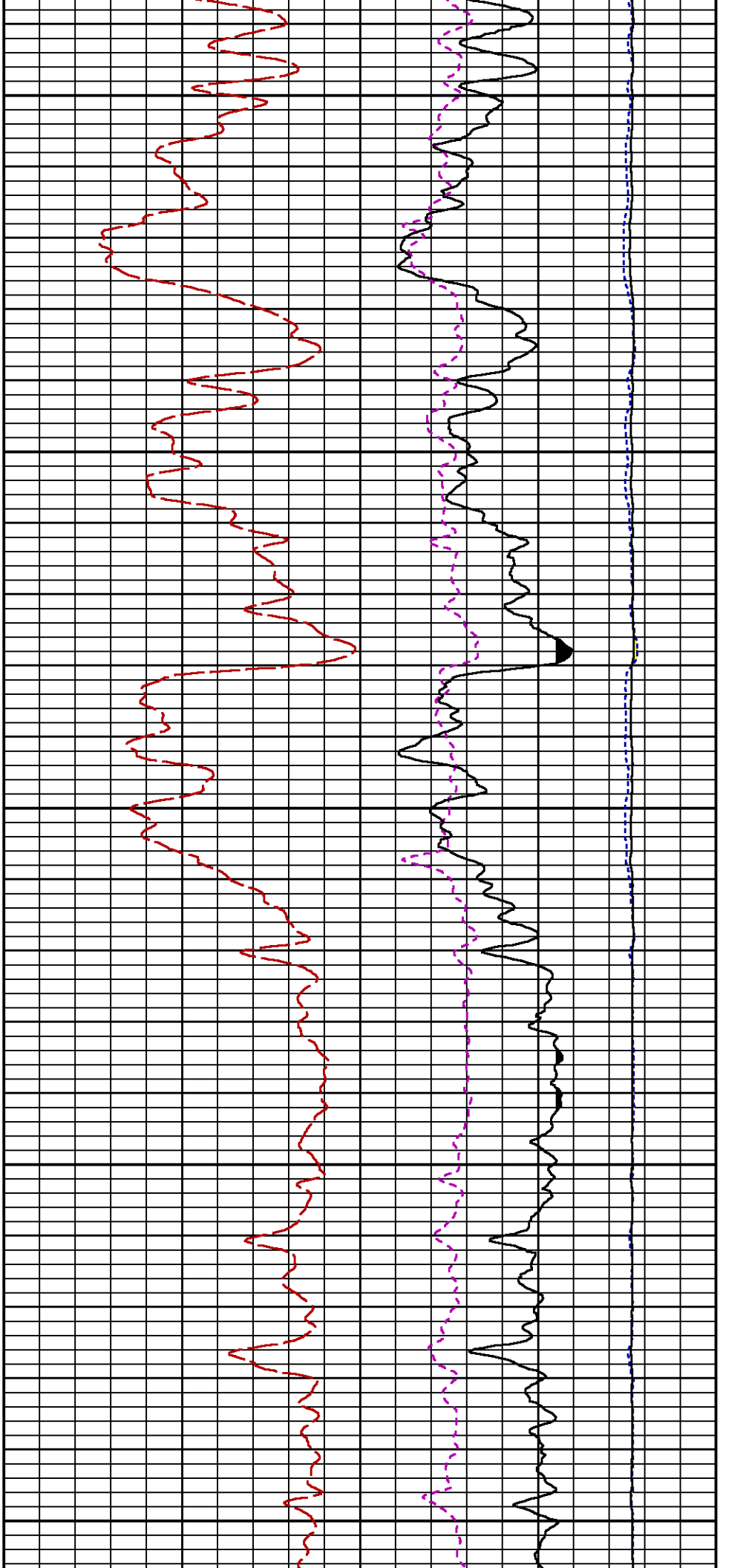
Plot Interval : 3410 - 6591.25 Feet

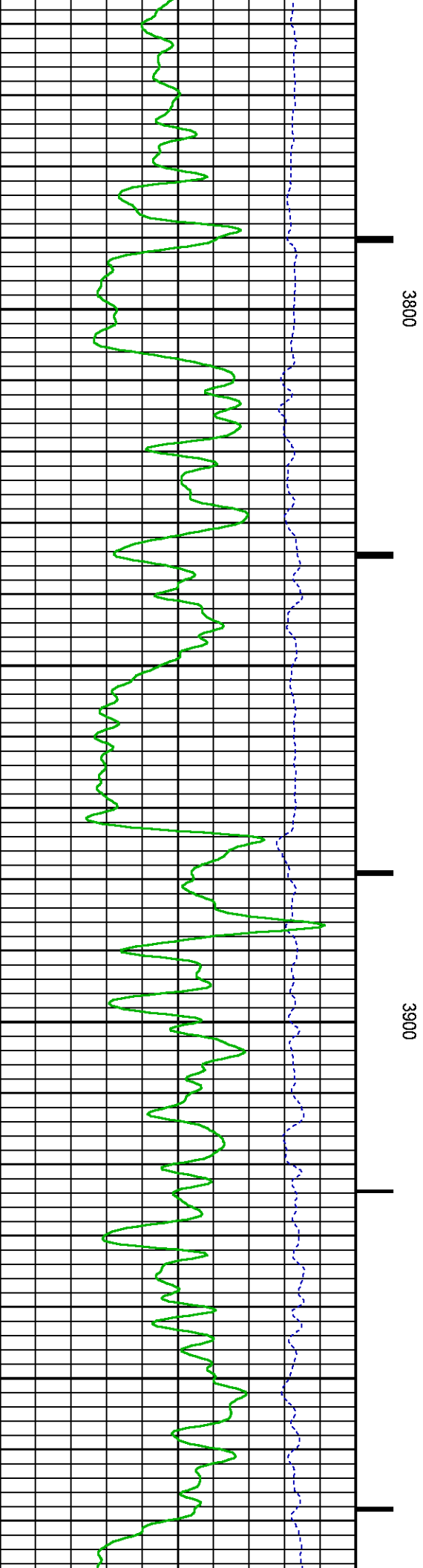
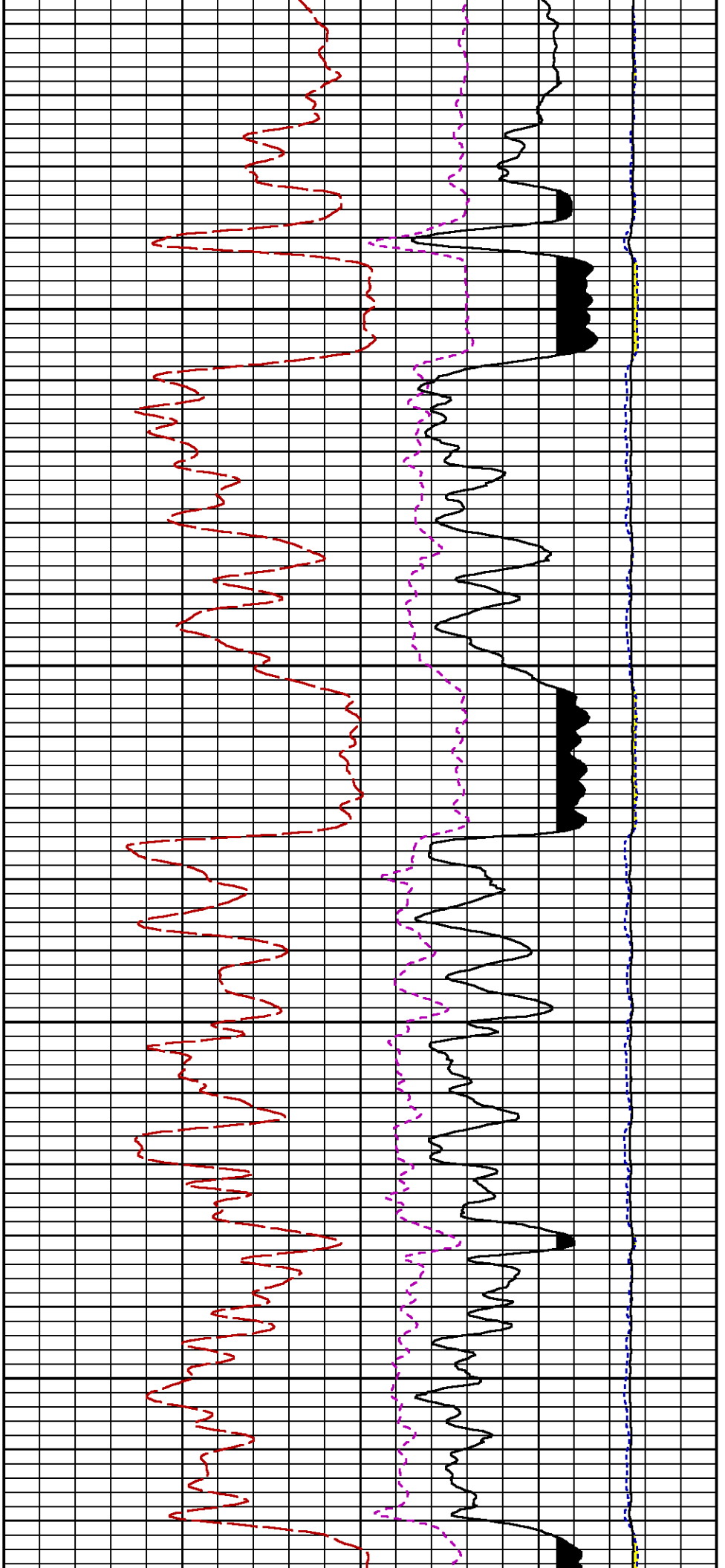
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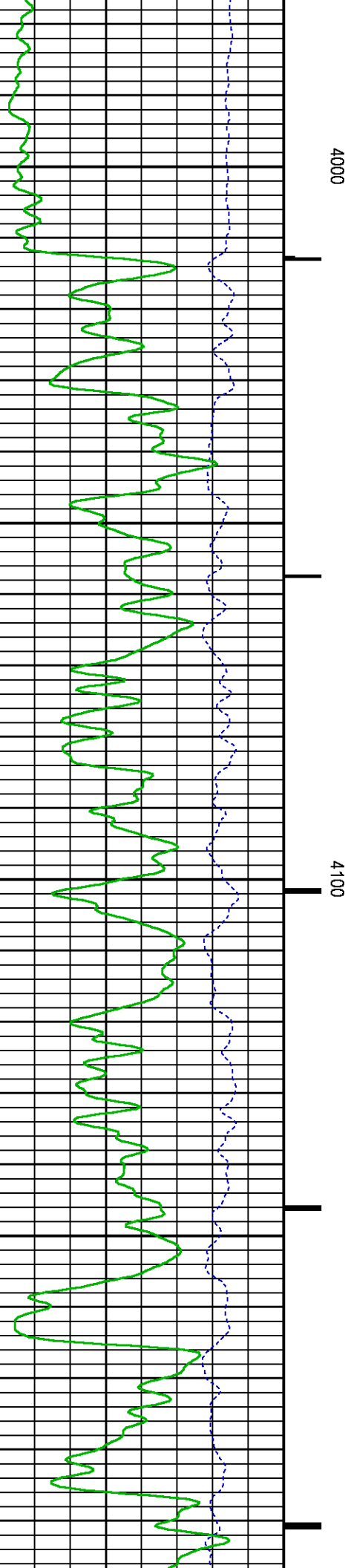
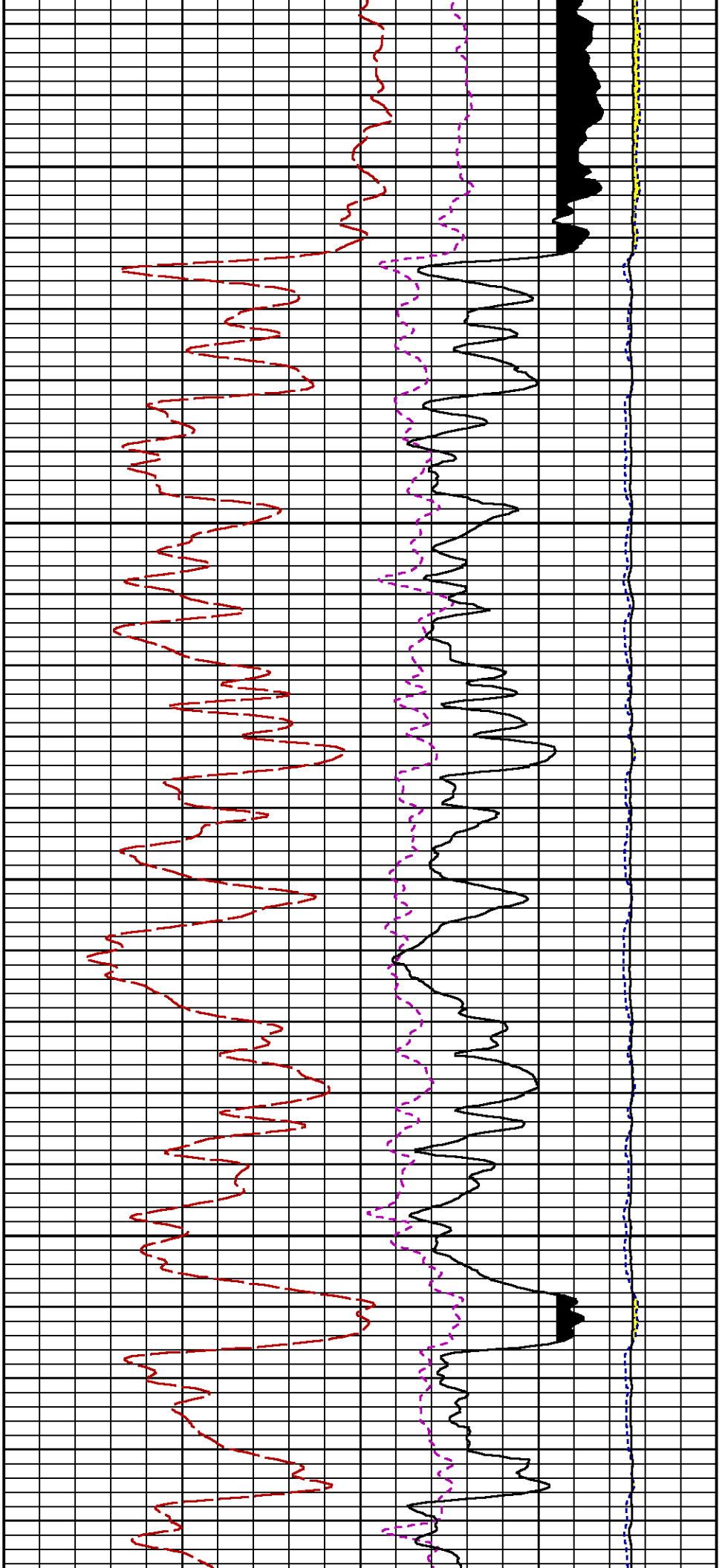
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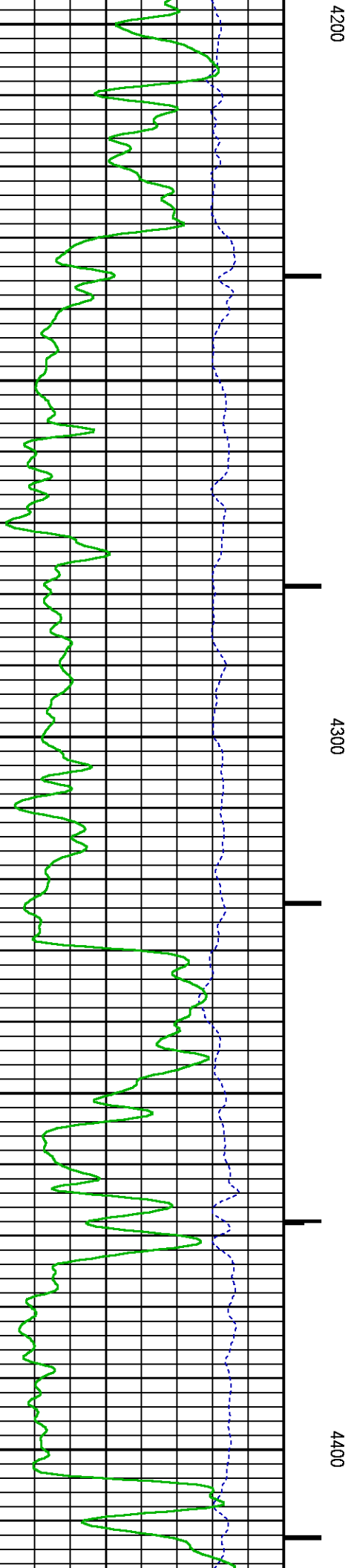
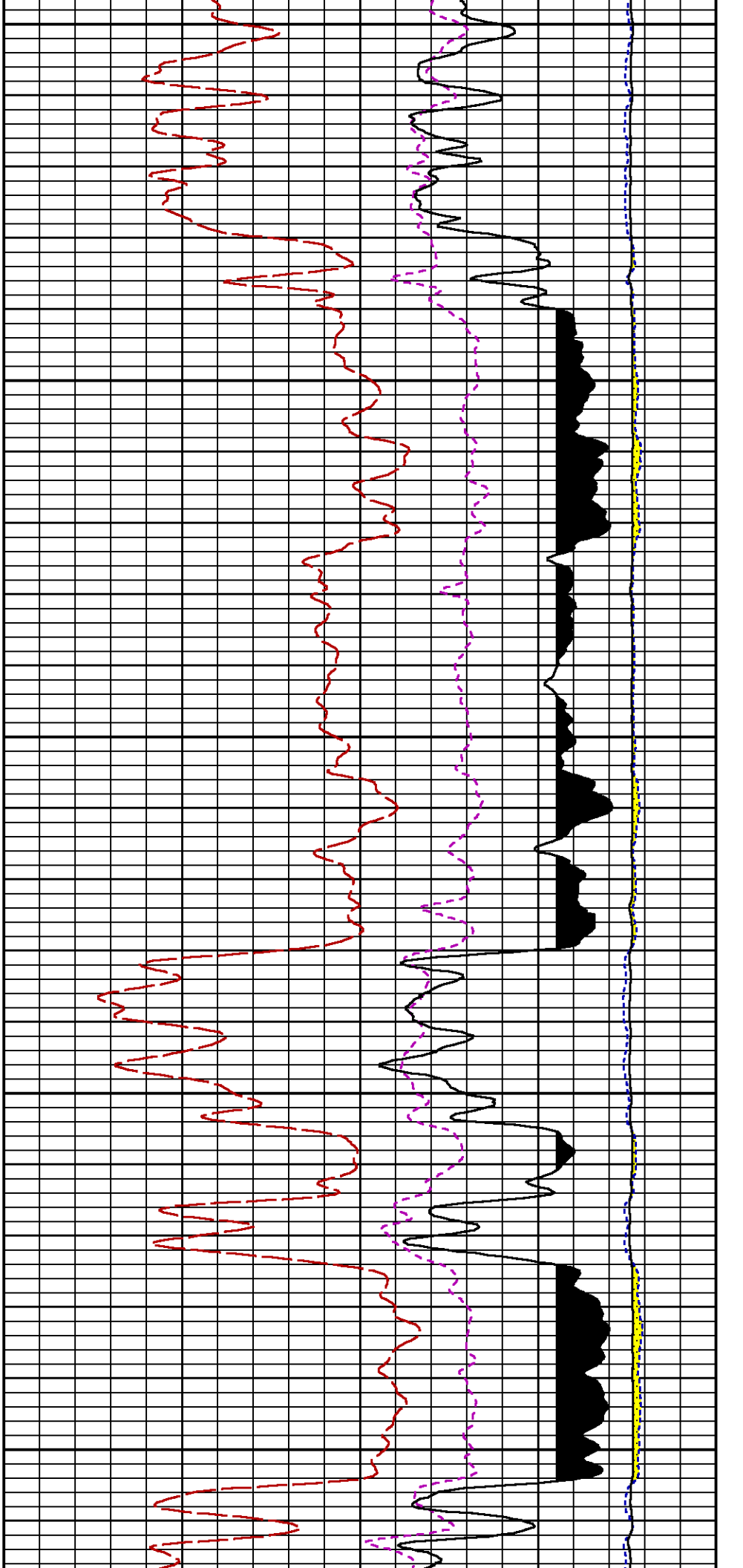
Created On : 3/31/2016 10:54 AM
Company : TERRA ENERGY PARTNERS LLC
Well : FEDERAL GM 411-9
Field : GRAND VALLEY
File Interval : 3408 - 6607.5 Feet
OCT : n353hx

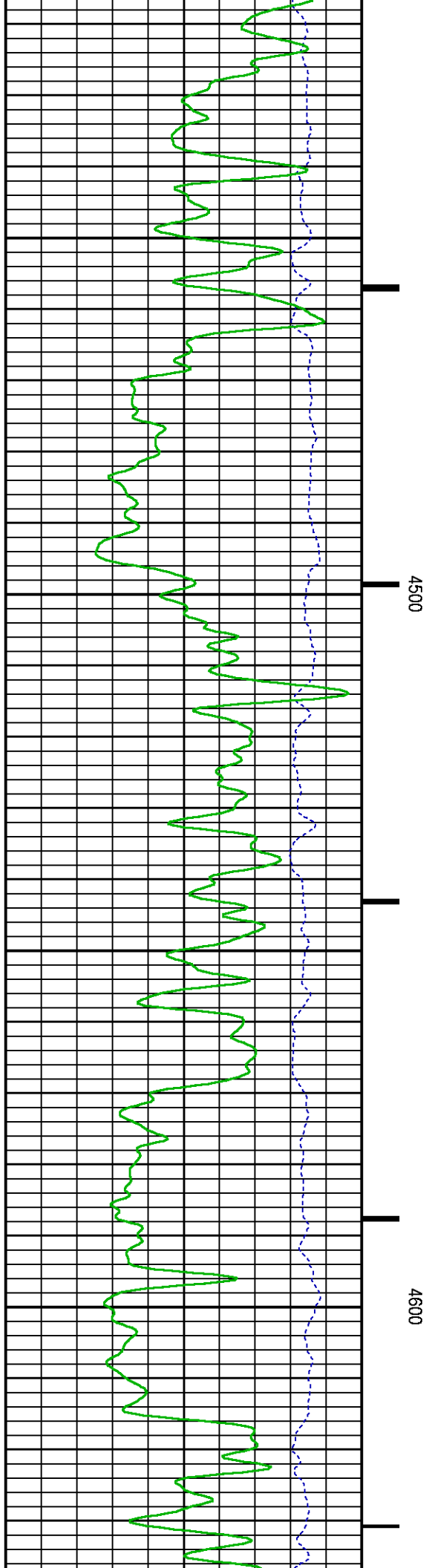
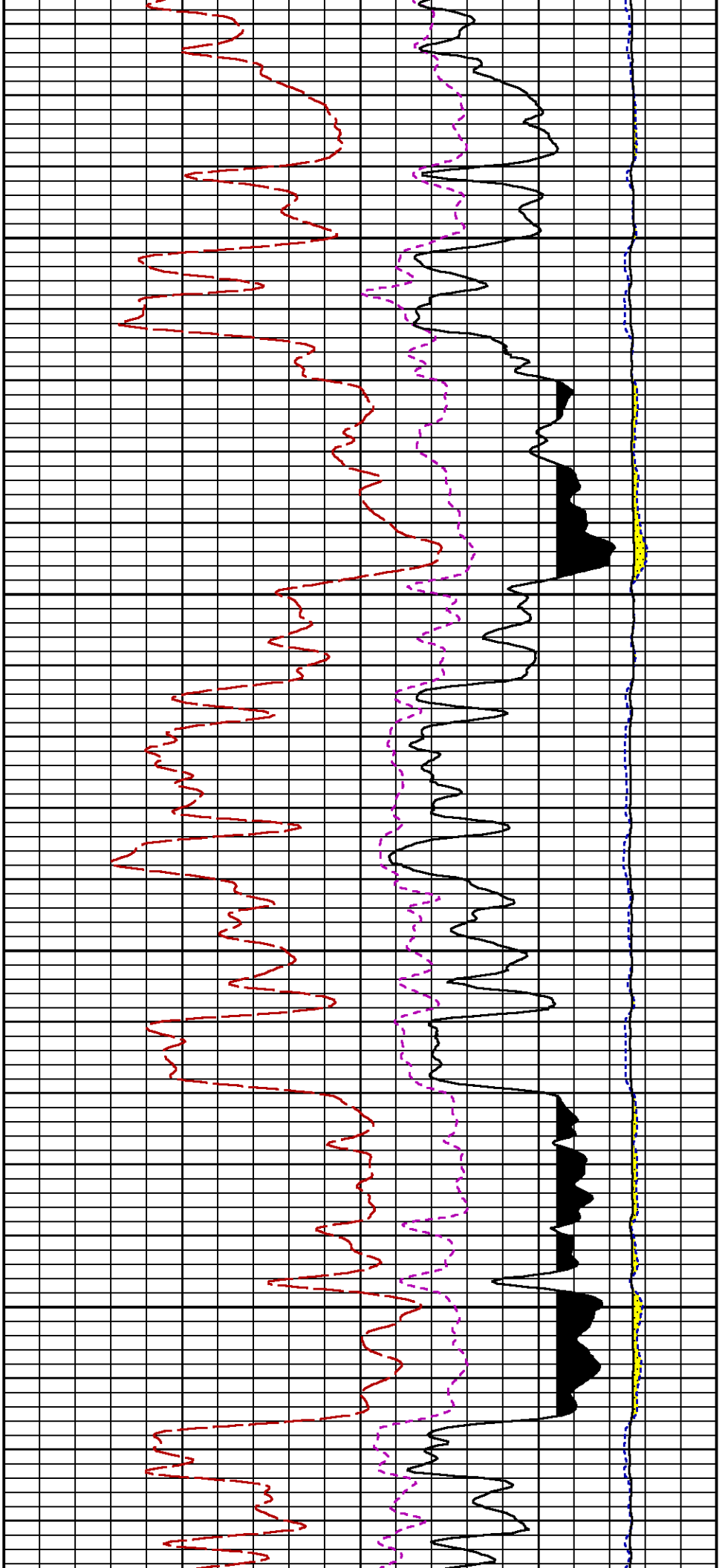


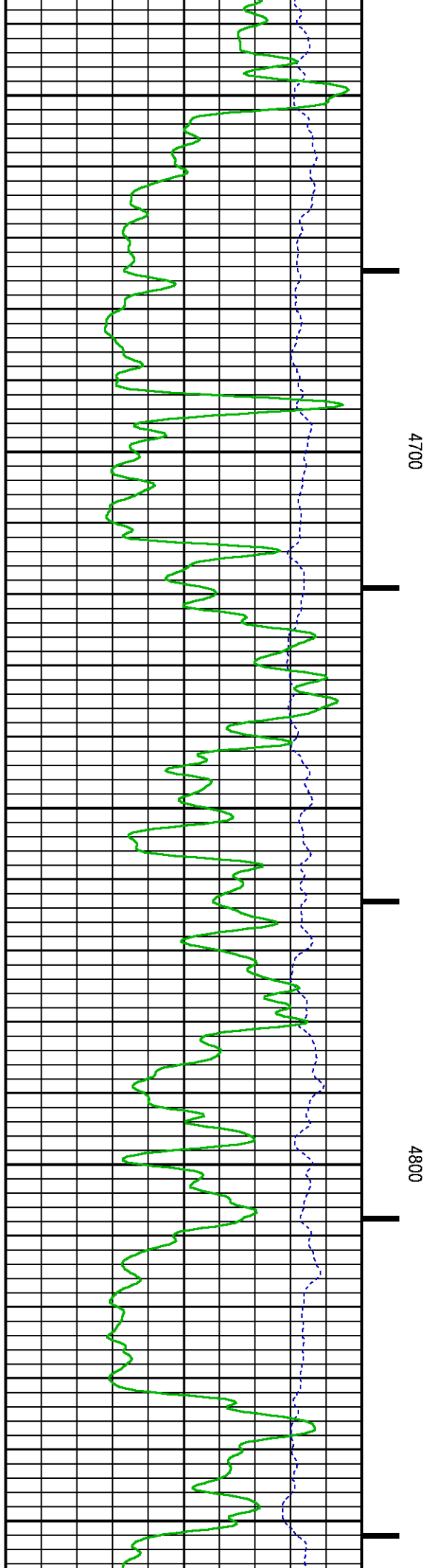
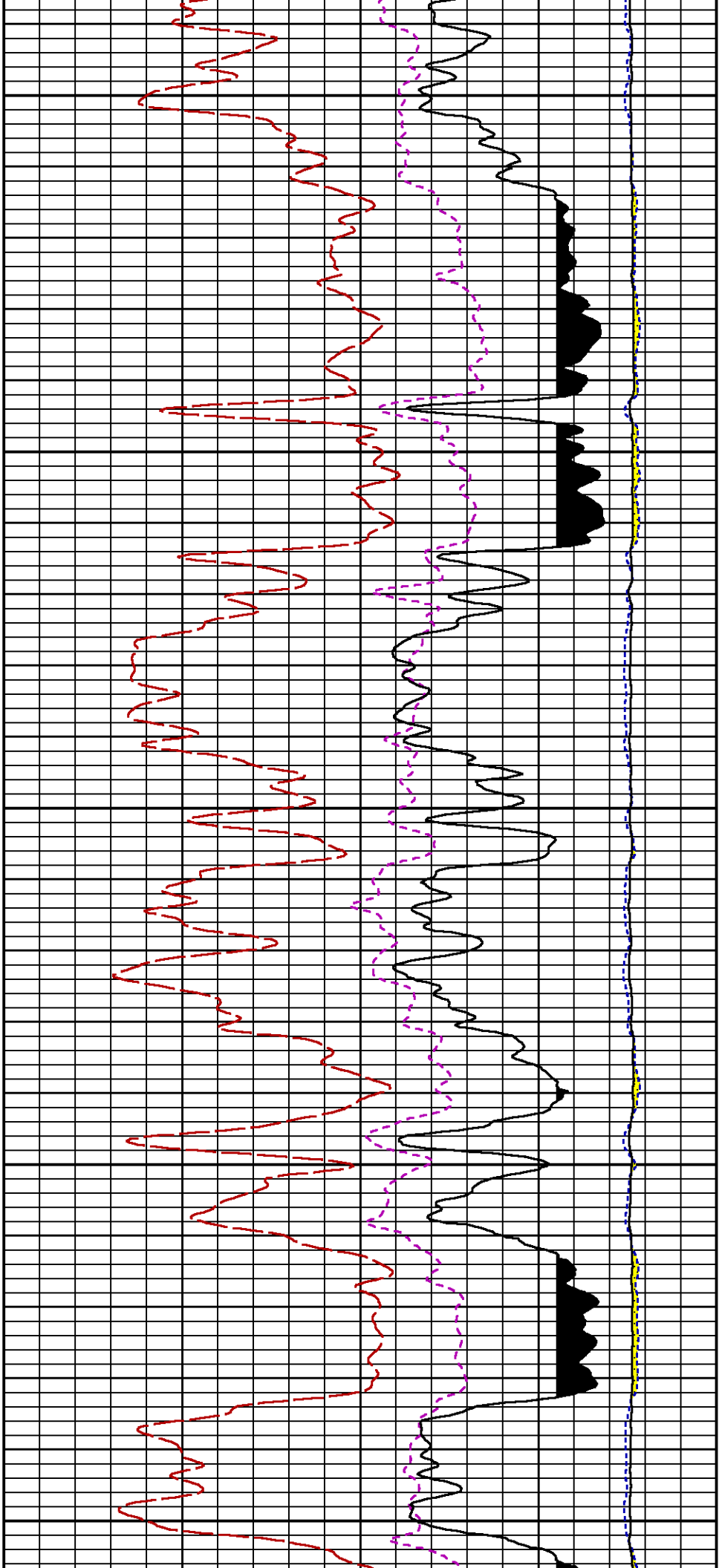


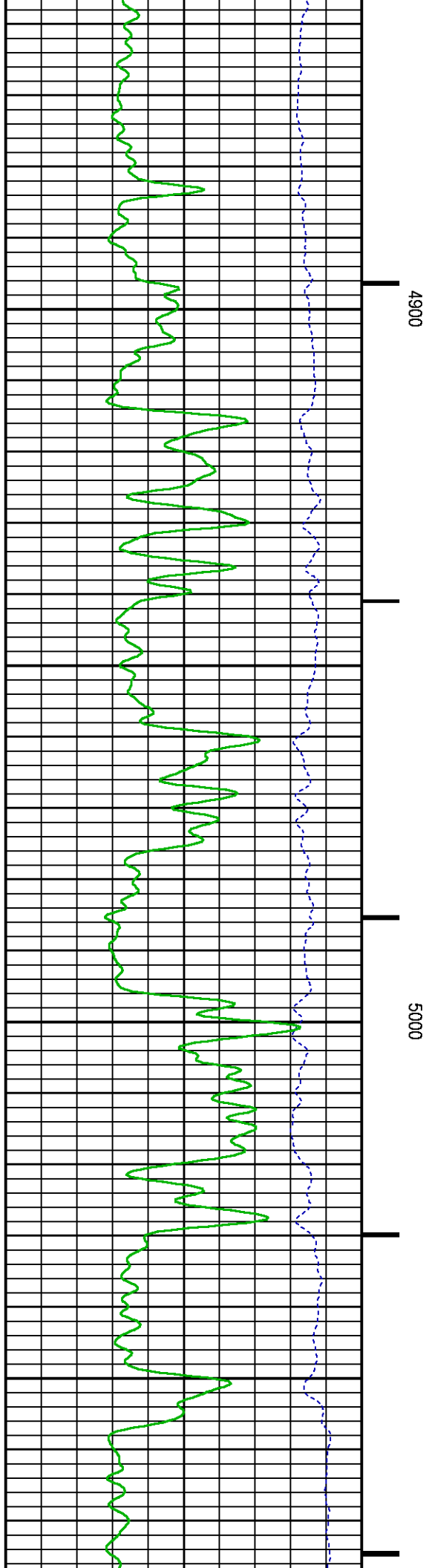
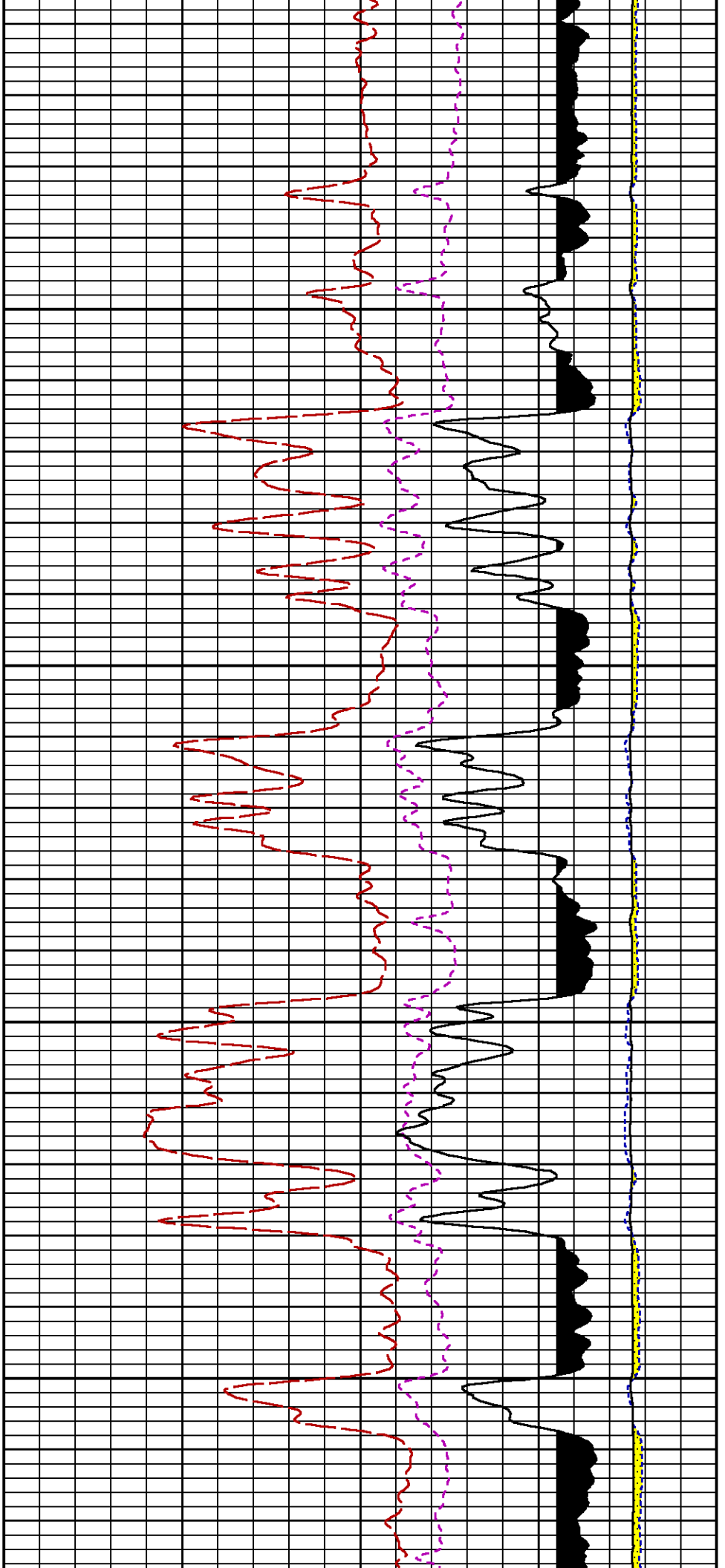


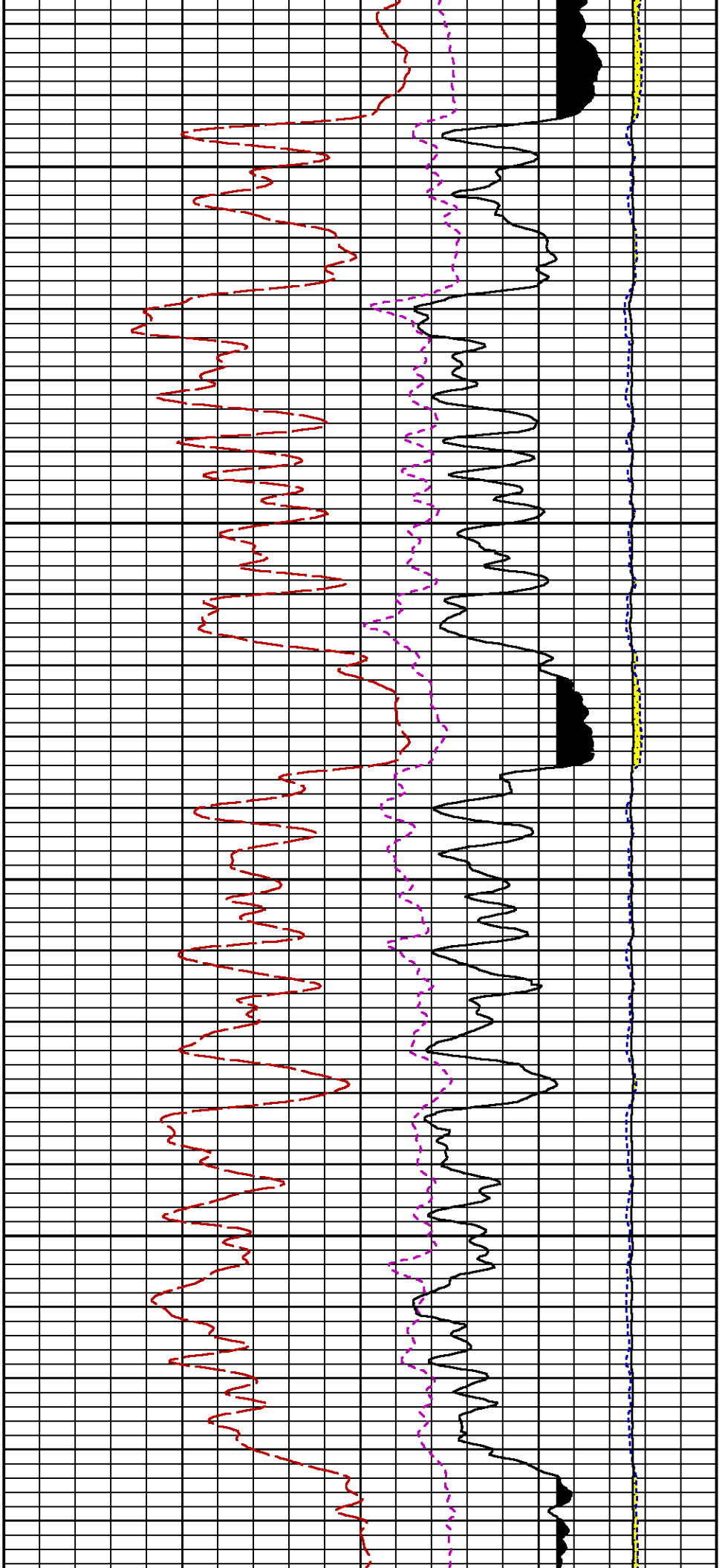






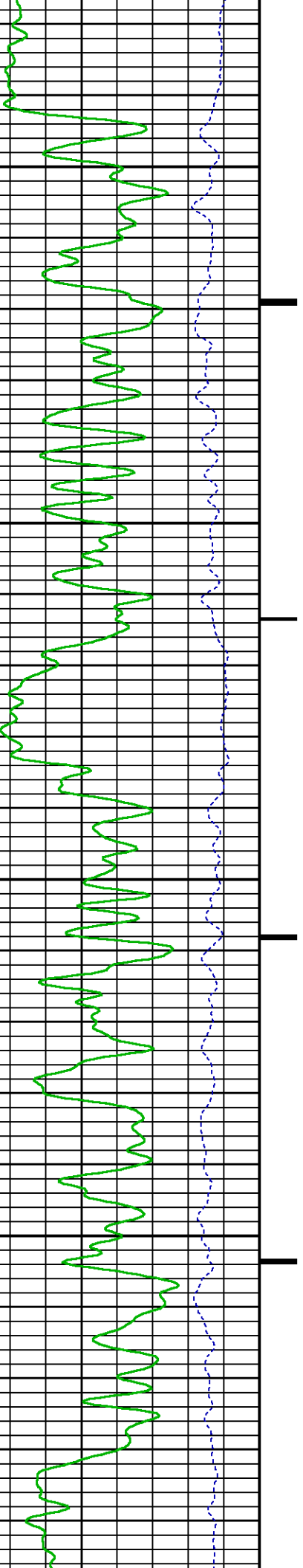


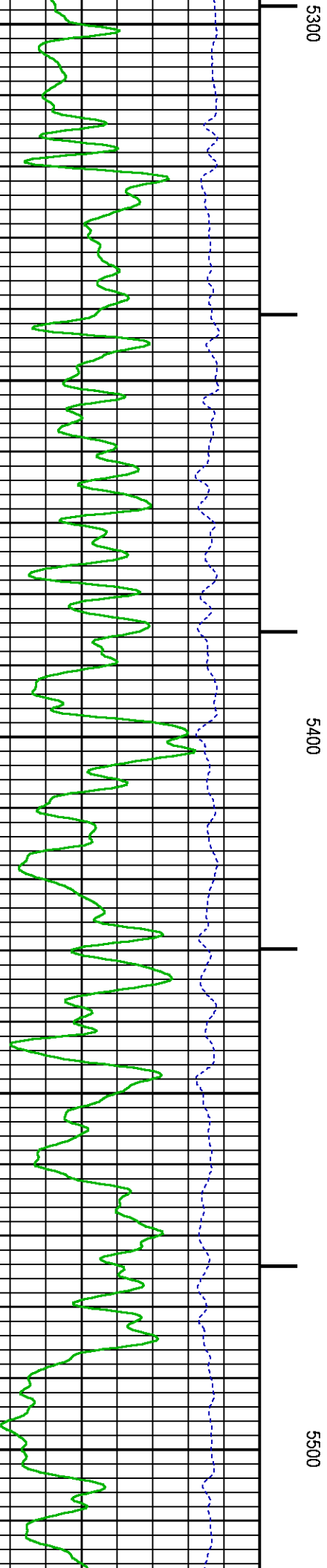
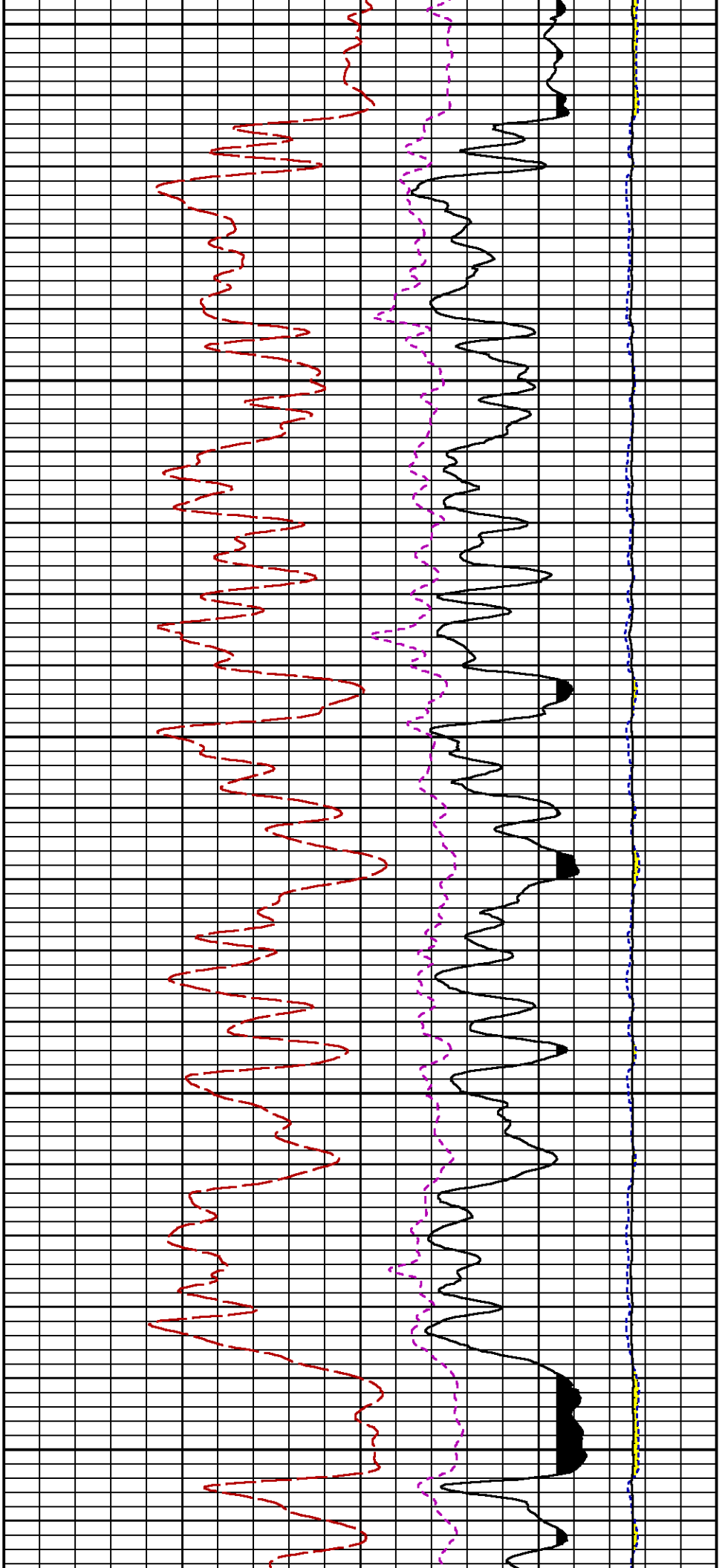


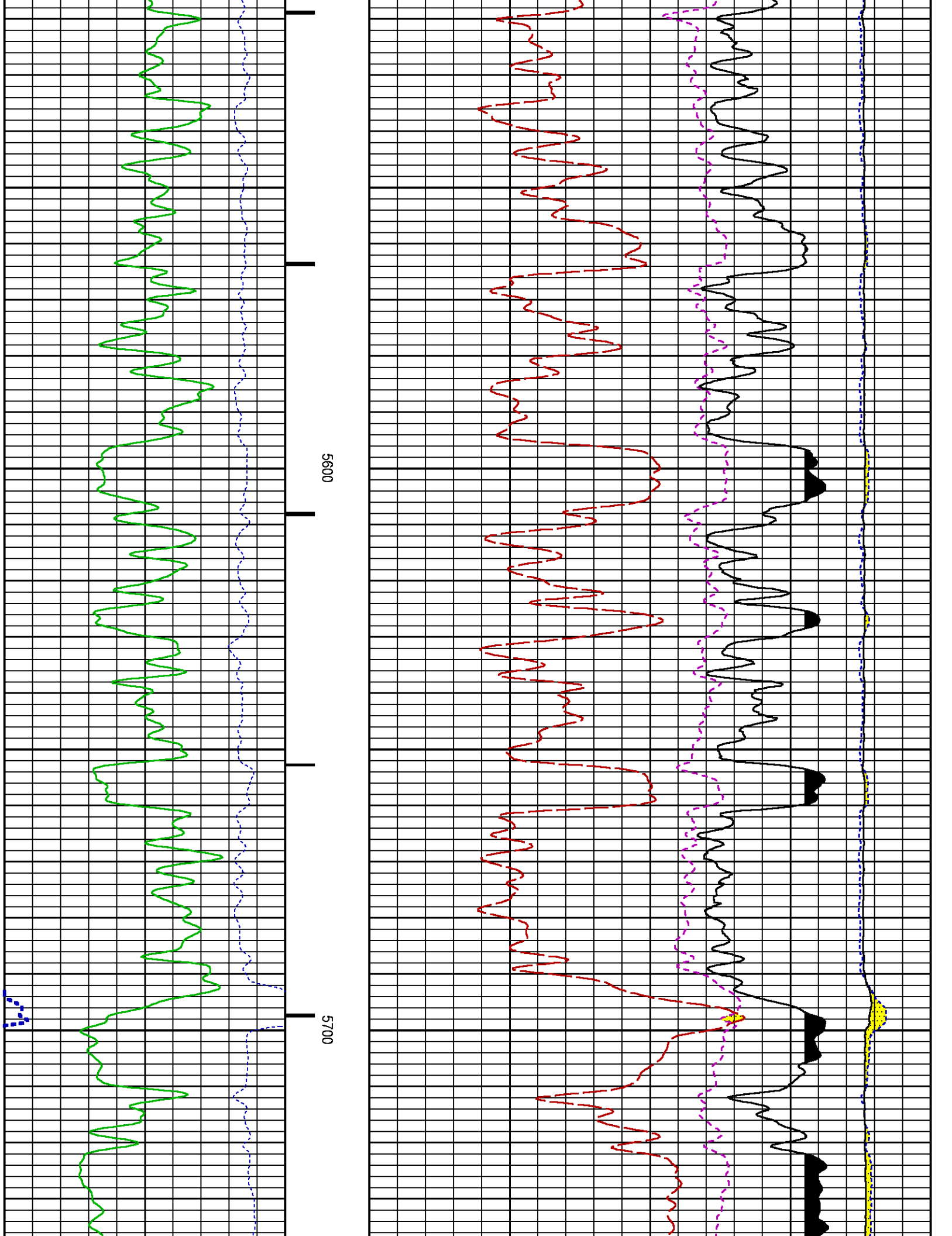


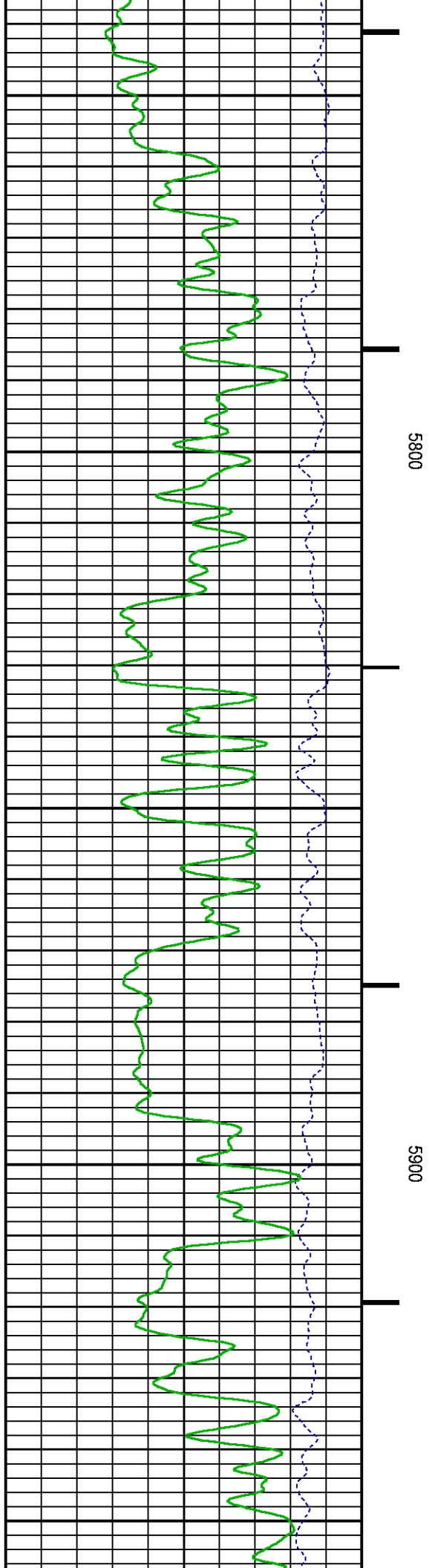
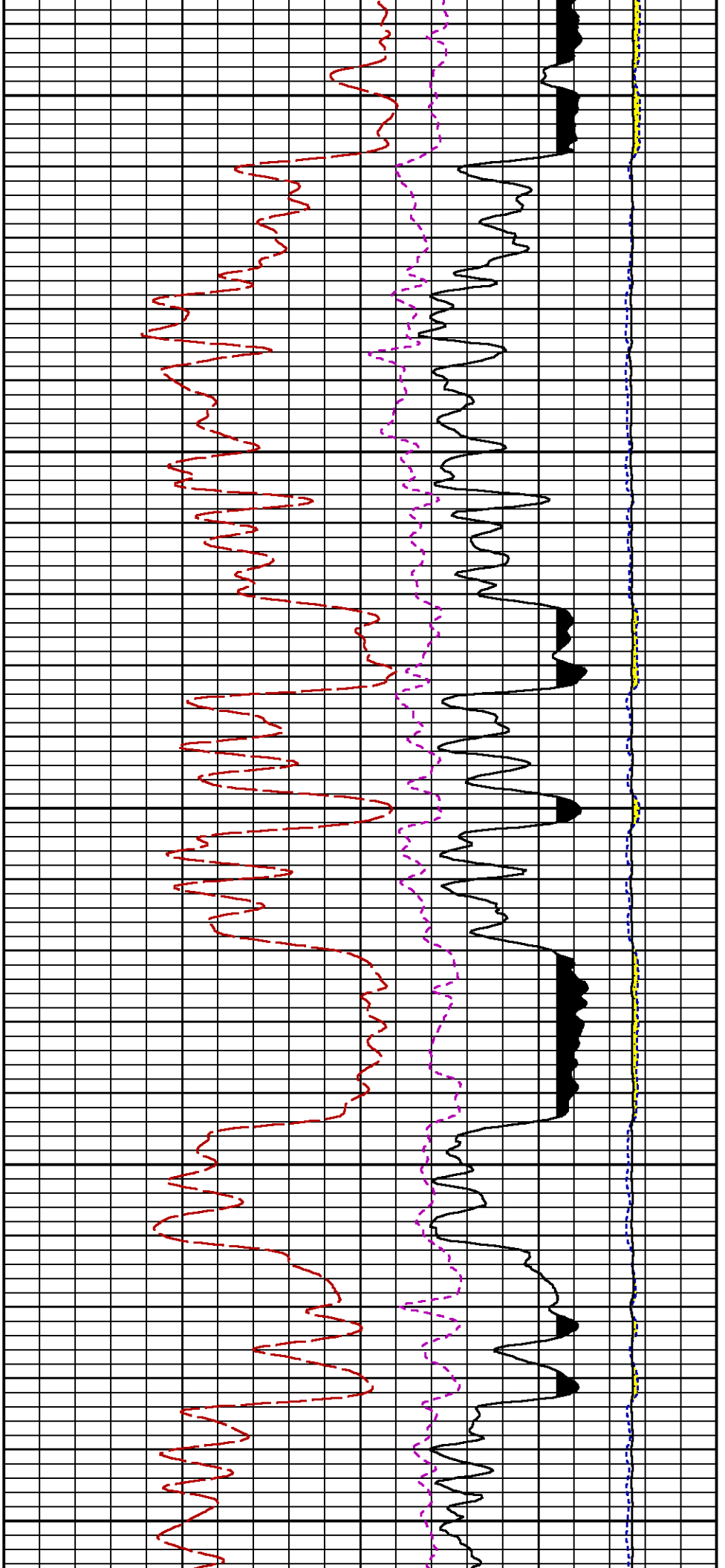
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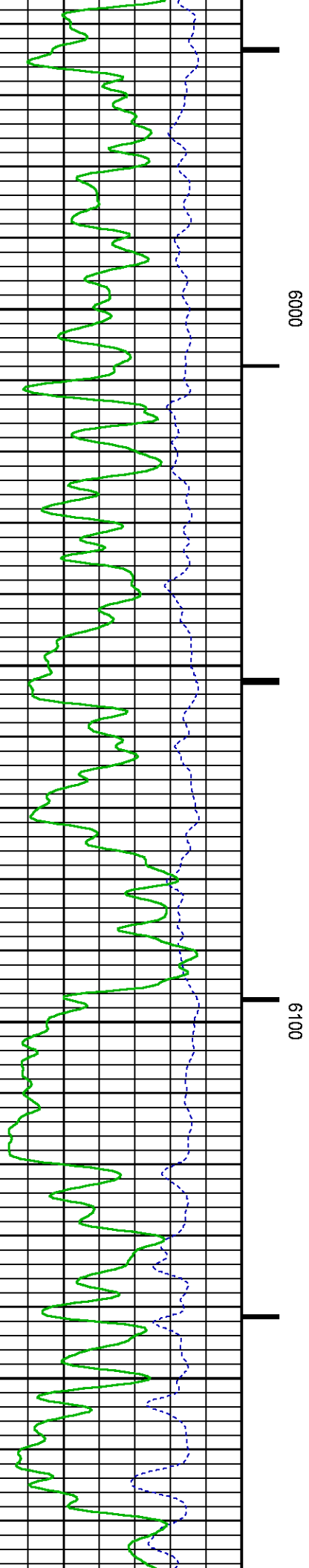
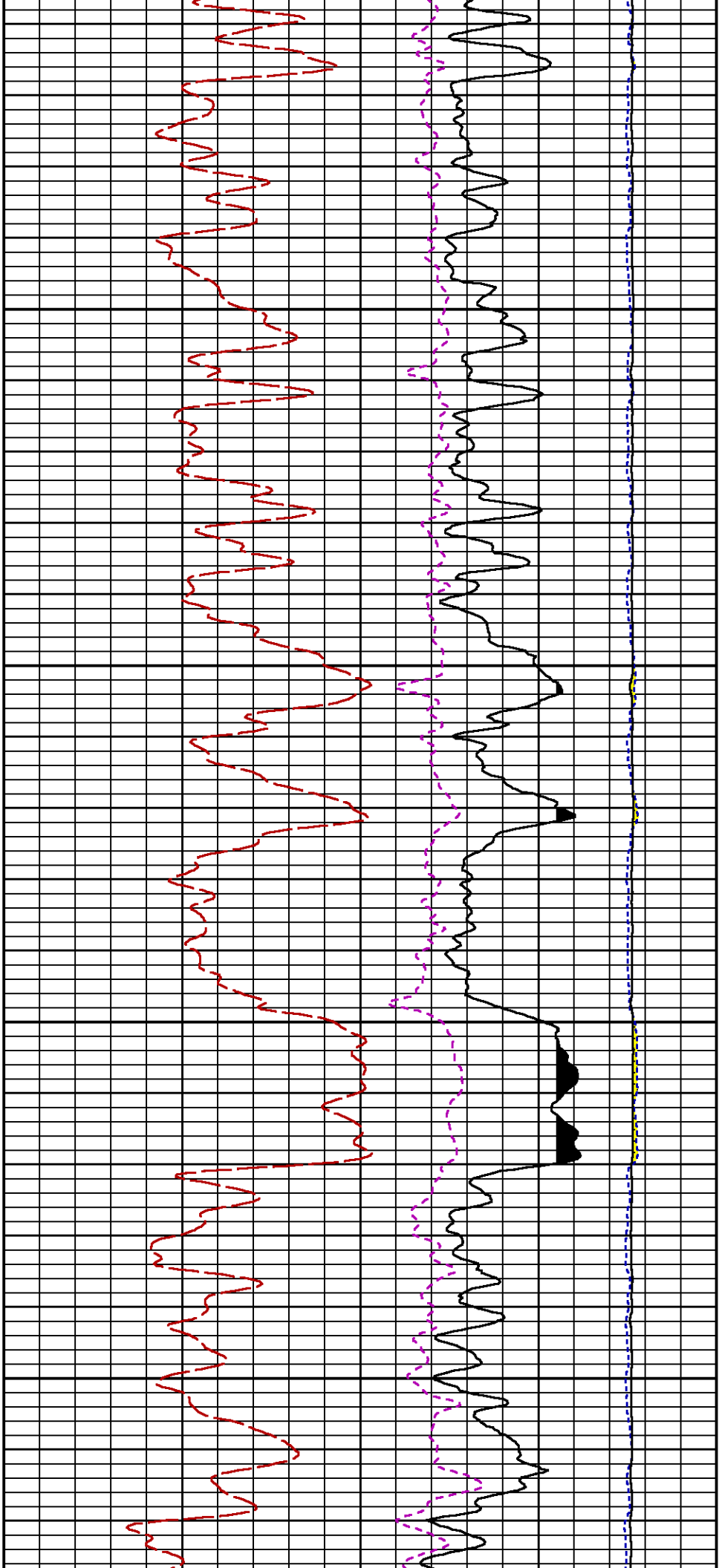
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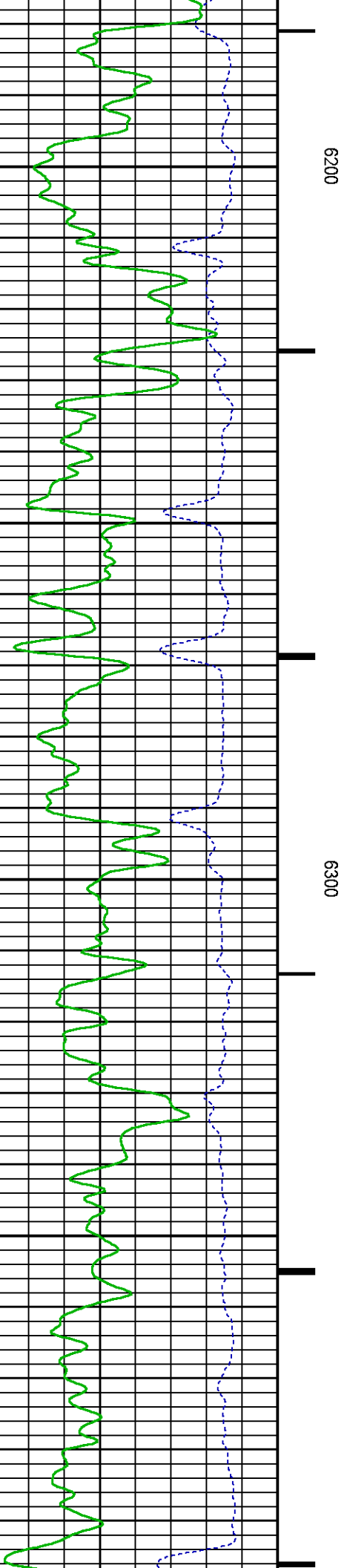
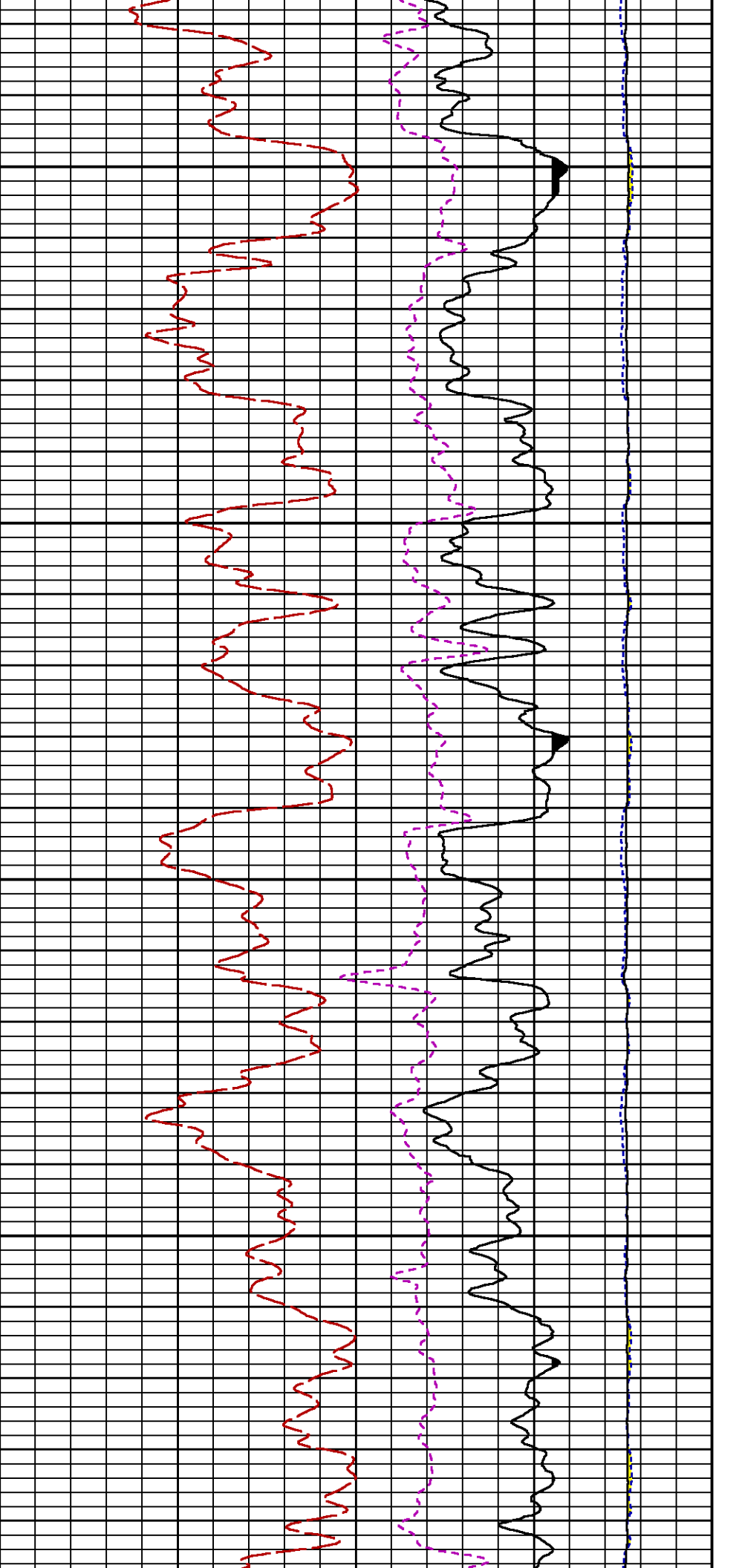












6400

6500

FEET

2 1/2
m

ISS [iss]

1E+006

(cts/s)

FR GR

FR ISS

GR BACKUP

FR LS

FR SS

FR RATE

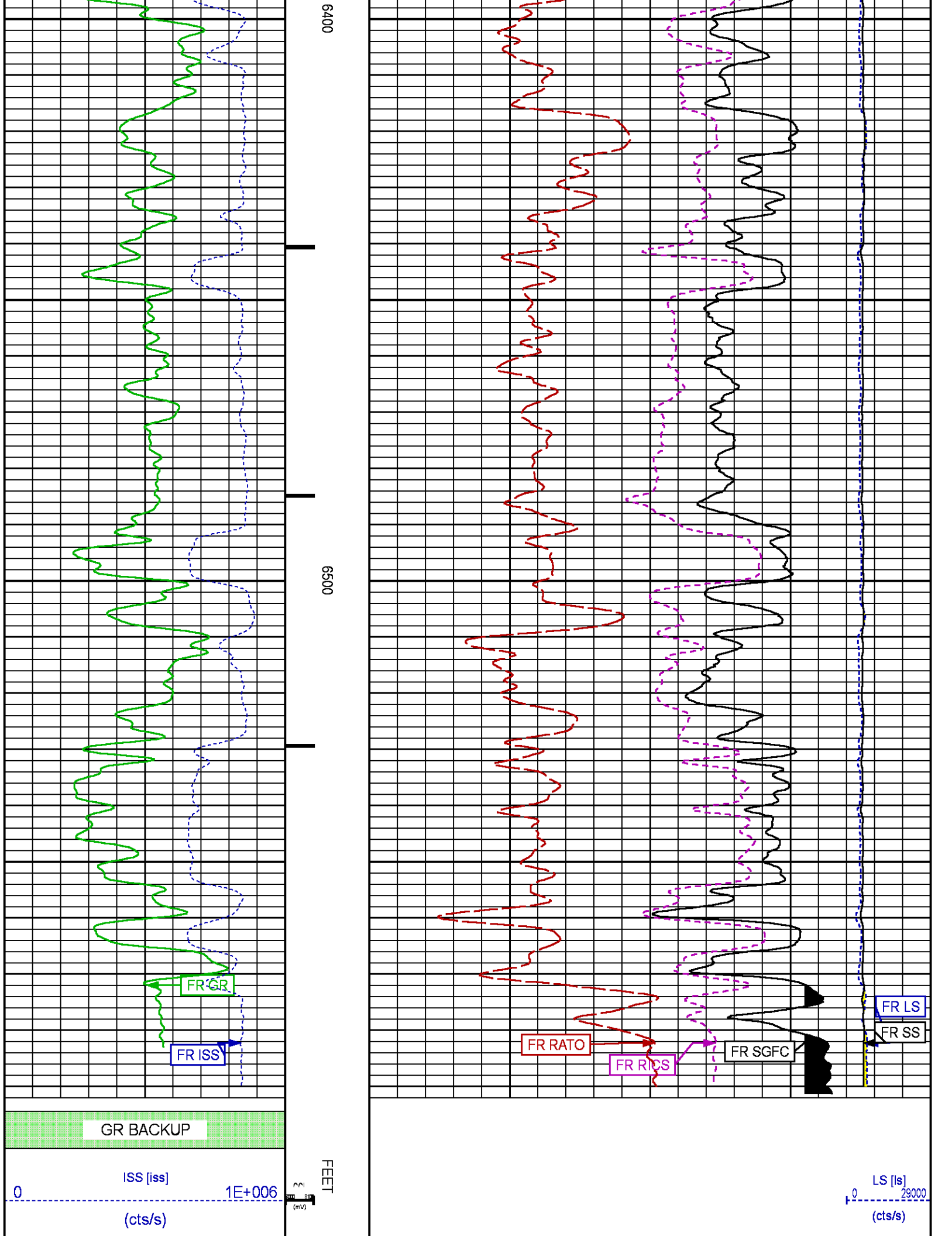
FR RICS

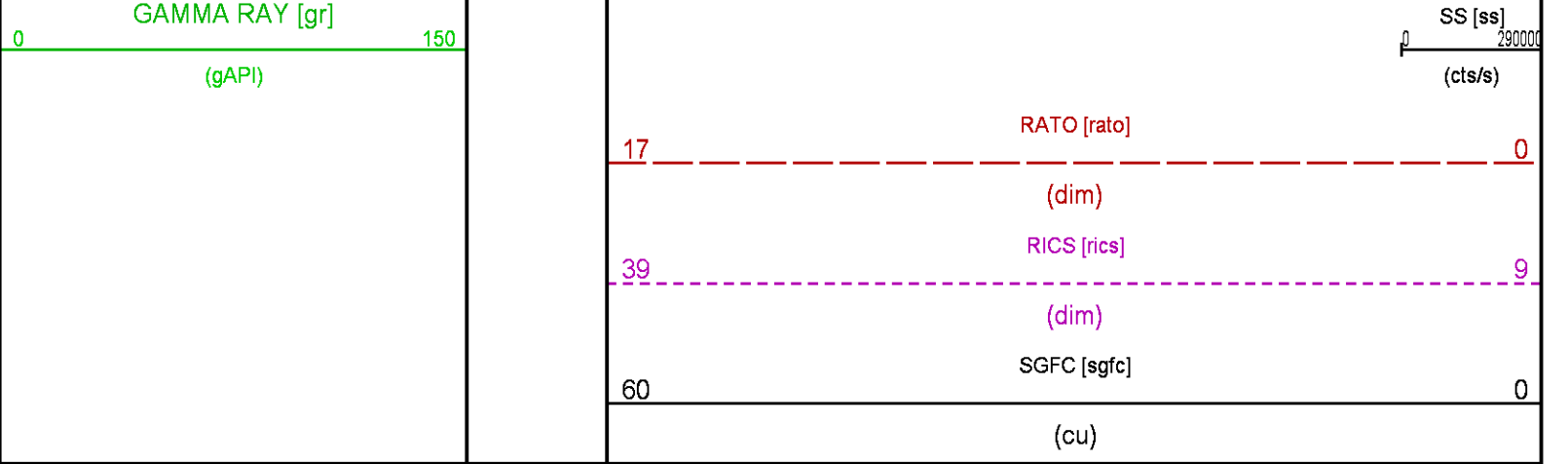
FR SGFC

LS [ls]

29000

(cts/s)



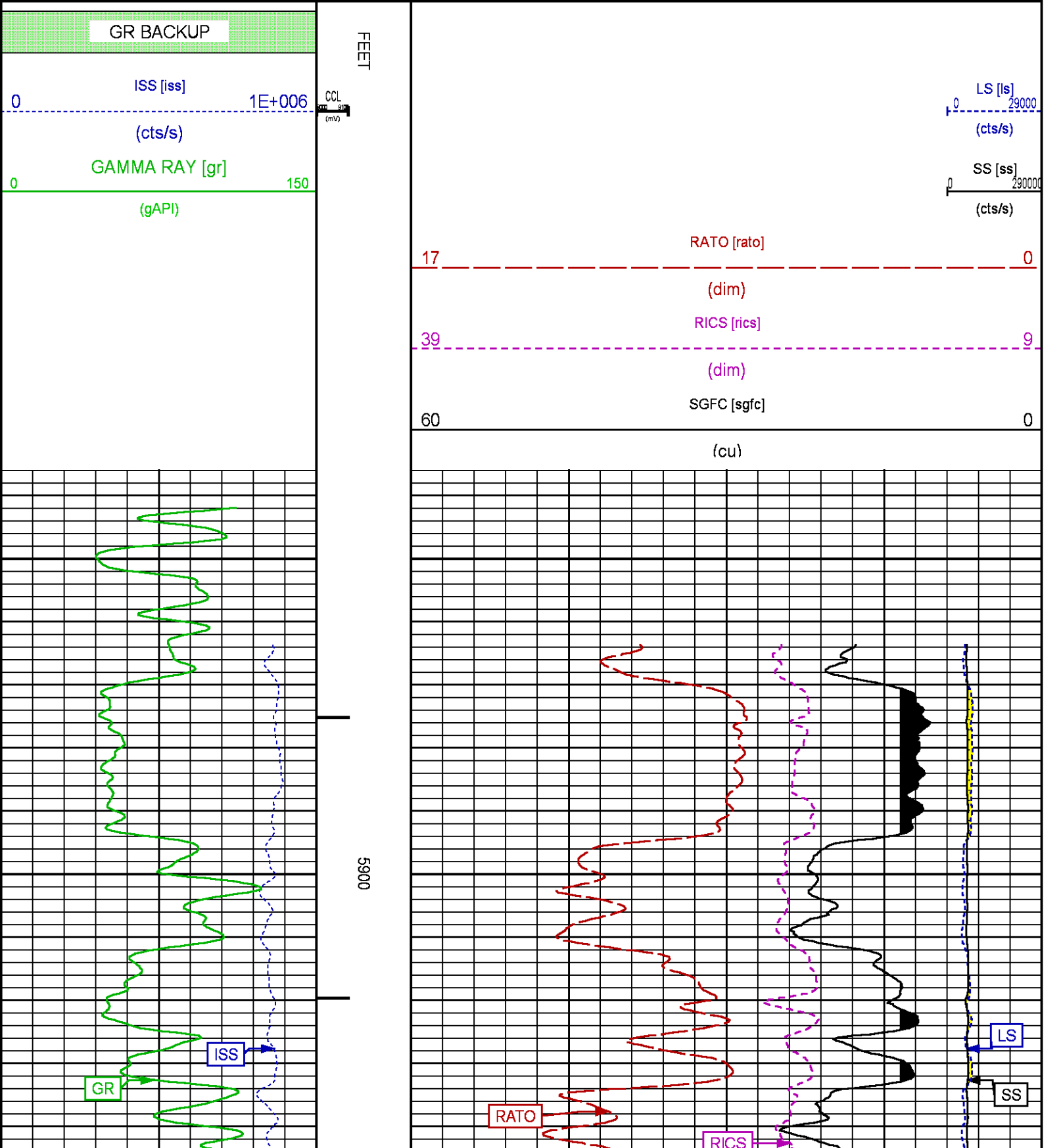


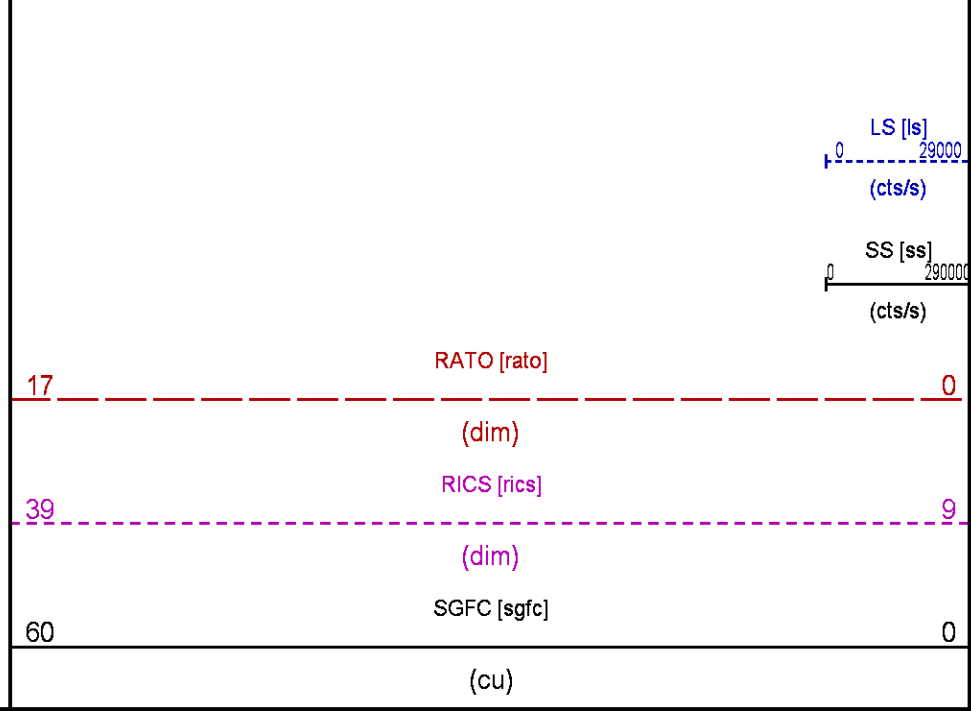
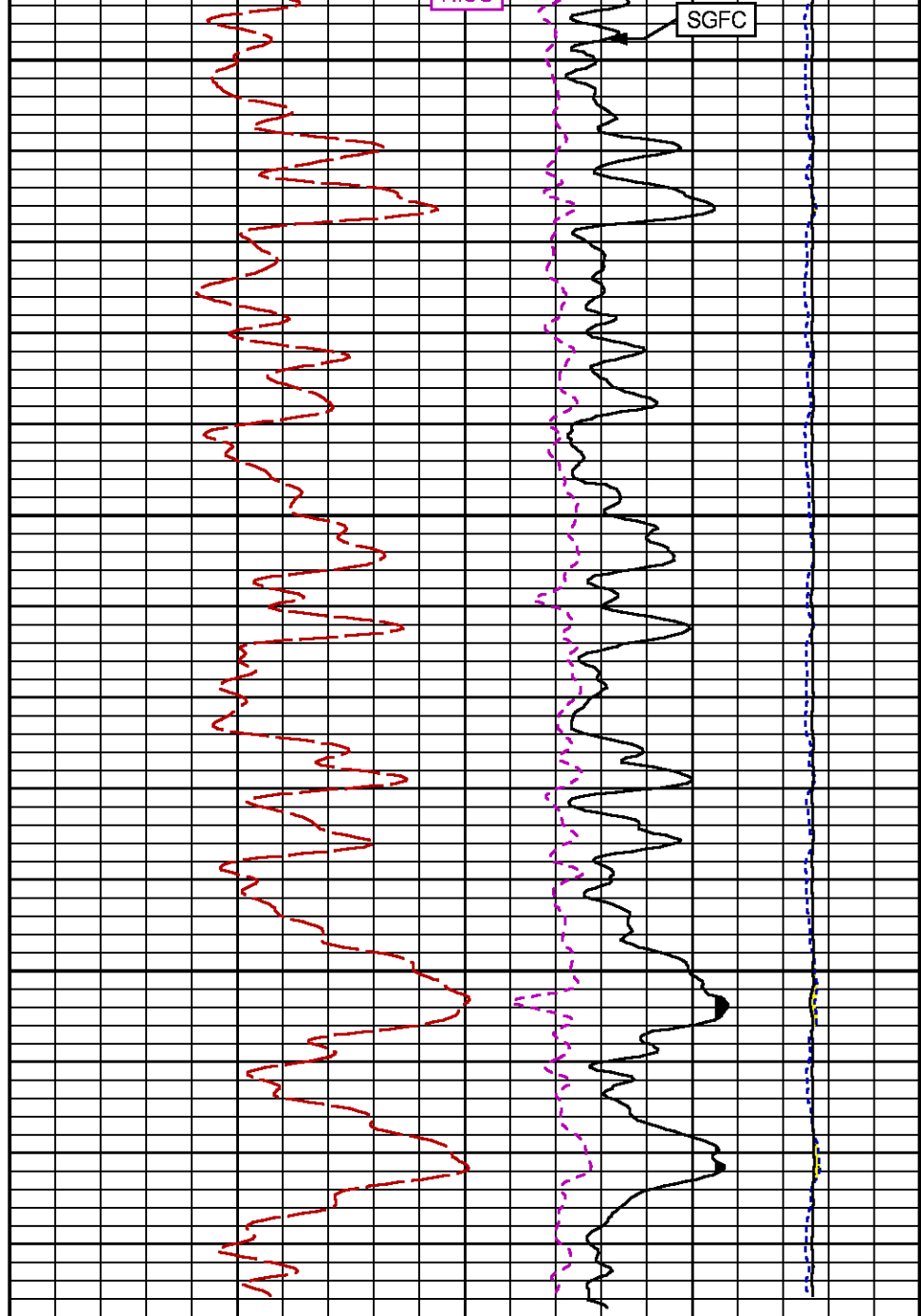
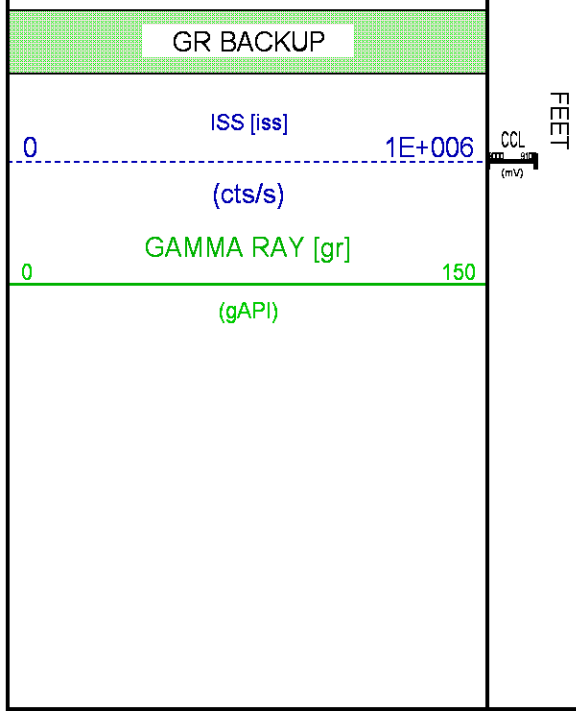
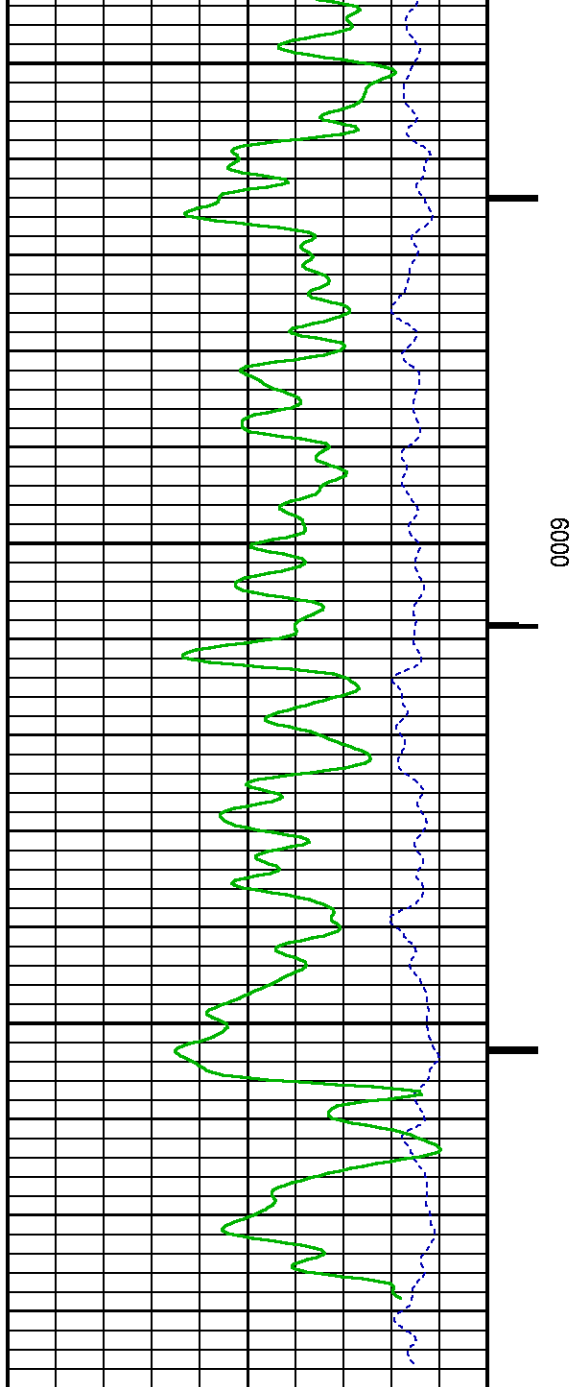
REPEAT SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013
Updates: 1,36 Patches: 9
Plotted: Wed Jul 27 07:45:54 2016

PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/CH108515/n353hx02.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 5859.500 ft BOTTOM DEPTH: 6099.000 ft					
SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
RPM PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	8.75	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"
CURVE DESCRIPTION REPORT					
CURVE NAME	CREATION DATE	CURVE DESCRIPTION			
F1:CCL	Jul 27 07:28:42 2016	CASING COLLAR LOCATOR			
F1:GR	Jul 27 07:28:42 2016	GAMMA RAY			
F1:ISS	Jul 27 07:28:42 2016	INELASTIC SHORT SPACE COUNT RATE			
F1:LS	Jul 27 07:28:42 2016	LONG SPACE COUNT RATE			
F1:RATO	Jul 27 07:28:42 2016	SHORT/LONG SPACE COUNT RATE RATIO			
F1:RICS	Jul 27 07:28:42 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)			
F1:SGFC	Jul 27 07:28:42 2016	CORRECTED FORMATION SIGMA			
F1:SS	Jul 27 07:28:42 2016	SHORT SPACE COUNT RATE			

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75	SGFC	12.75





CALIBRATION / VERIFICATION SUMMARY

Source File: C:\Users\spenjosj\Documents\VDIS\Jobs\WPX\GM411-9\CH108515\353hx.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Mon Jul 25 09:52:18 2016

UNIT #: 3885TC 6685

CALB JIG #: 4702NK BA-905

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	111.69	457.64	346.0	0.520	58.11	238.11	180

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Mon Jul 25 09:54:51 2016

UNIT #: 3885TC 6685

VERI JIG #: 4702NK BA-905

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	114.13	462.96	0.520	59.38	240.87	181.49
						170.00 190.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10160383

DATE/TIME PERFORMED: Fri Jun 17 12:45:25 2016

UNIT: 3885TC 6685

CALIBRATOR: 2437XB GJ_SHOP

SOURCE: 8281AA 10148476

HOURS: 8281AA 586

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	794956	122	2314	2246	2197	124	7.0	0.9852
Interpolated	1300000	142	2297	2240	2195			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794956	6080	963	132	25.94	0.15	24.12	0.33
					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	794956	163446	25264	84936	30293	7960	51434	12703
Fit Quality %		0.408	0.339	0.327	0.295	0.417	0.280	0.403

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	794956	1.43	4.86	31.48	15.46	10.67	3.81	4.05
		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 %		0.016	0.325	0.292	0.322	0.069	0.094	0.097
Reduced	1401134	1.43	4.87	31.50	15.45	10.68	3.81	4.06
		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

TPSETEMP PRIMARY CALIBRATION SUMMARY

TOOL #: 8255XA Z166341

DATE/TIME PERFORMED: Wed Oct 21 14:25:56 2015

UNIT #: 3885TC 6685

T(0)

T(1)

T(2)

T(3)

Corr Coeff for Temp

-1.828341E+01

9.988427E-02

8.122243E-07

-3.138442E-11

INSTRUMENT CONFIGURATION

Source File: C:\Users\spenjosi\Documents\VDIS\Jobs\WPX\IGM411-9\CH108515\353hx~joe-tdg

A3 CABLEHEAD

PCM POWER SUPPLY

Diameter : 1.70"
Length : 3.86'
Weight : 18 lbs
Series : 8250EA
Mnemonic : PCM

TELEMETRY / CCL

Diameter : 1.70"
Length : 4.46'
Weight : 20 lbs
Series : 8248ED
Mnemonic : PCM
Measure Point: 1.00': CCL MP

GAMMA RAY

Diameter : 1.70"
Length : 3.02'
Weight : 15 lbs
Series : 8262XA
Mnemonic : GR
Measure Point: 0.89': GR MP

RPM ELECTRONICS

Diameter : 1.70"
Length : 4.48'
Weight : 16 lbs
Series : 8281EA
Mnemonic : RPM

RPM C DETECTOR SECTION

Diameter : 1.70"
Length : 9.40'
Weight : 41 lbs
Series : 8283PA
Mnemonic : RPM
Measure Point: 5.45': XLS DETECTOR
Measure Point: 5.04': LS DETECTOR
Measure Point: 4.79': SS DETECTOR

34.08'

CCL MP 26.03'

GR MP 22.90'

XLS DETECTOR 13.58'
LS DETECTOR 13.16'
SS DETECTOR 12.91'

RPM SOURCE SECTION

Diameter : 1.70"
 Length : 4.70'
 Weight : 18 lbs
 Series : 8281FA
 Mnemonic : RPM

TEMPERATURE / PRESSURE

Diameter : 1.70"
 Length : 3.30'
 Weight : 13 lbs
 Series : 8255XA
 Mnemonic : SRPL
 Measure Point: 1.52': TEMP MP


TEMP MP
 PRES MP

1.65'

0.00'

BULL PLUG 1 11/16

TOTAL LENGTH: 34.08'
 TOTAL WEIGHT: 144 lbs
 MAX DIAMETER: 0'1.70"

	COMPANY <u>TERRA ENERGY PARTNERS LLC</u> WELL <u>FEDERAL GM 411-9</u> FIELD <u>GRAND VALLEY</u> COUNTY <u>GARFIELD</u> STATE <u>COLORADO</u>	FILE NO: <u>CH108515</u> API NO: <u>05045225270000</u>	
	LOCATION: SHL: 637' FNL & 582' FWL BHL: 842' FNL & 1265' FWL	ELEVATIONS: KB 6111 FT DF GL 6087 FT	S.9 T.7S R.96W PAD: MV 16-9 RIG: H&P 318
	SEC <u>9</u> TWP <u>7S</u> RGE <u>96W</u>	DATE <u>27-Jul-2016</u>	