Schlumberger

Company: **SANDRIDGE ENERGY**

Well: **JELLISON A 3319 9−5H 2L**
Field: **BIRD SOUTH**
County: **COMANCHE** State: **KANSAS**

County: COMANCHE
Field: BIRD SOUTH
Location: 600' FSL & 1015' FNL
Well: JELLISON A 3319 9−5H 2L
Company: SANDRIDGE ENERGY

SPECTRAL DENSITY
DUAL SPACED NEUTRON
MEMORY LOG

LOCATION

600' FSL & 1015' FNL

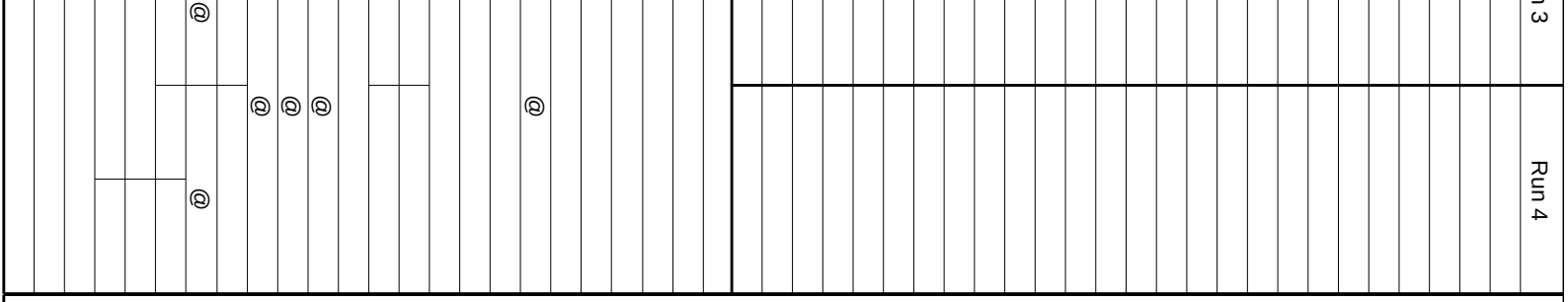
Elev.: K.B. 1906.00 ft
G.L. 1884.00 ft
D.F. 1906.00 ft

Permanent Datum: GROUND LEVEL Elev.: 1884.00 ft
Log Measured From: DRILL FLOOR 22.00 ft above Perm. Datum
Drilling Measured From: DRILL FLOOR

API Serial No.	Section	Township	Range
15033217690200	32	32S	19W

	Run 1	Run 2	Run
Logging Date	15−Sep−2014		
Run Number	1		
Depth Driller	9967 ft		
Schlumberger Depth	9949 ft		
Bottom Log Interval	9933 ft		
Top Log Interval	5200 ft		
Casing Driller Size @ Depth	7.000 in @ 5678 ft	@	@
Casing Schlumberger	5678 ft		
Bit Size	6.125 in		
Type Fluid In Hole	WBM		
MUD Density / Viscosity	8.5 lbm/gal / 27 s		
MUD Fluid Loss / PH	60 cm3 / 9		
MUD Source Of Sample	MUD SENSOR		
RM @ Measured Temperature	1.370 ohm.m @ 72 degF	@	@
RMF @ Measured Temperature	1.160 ohm.m @ 72 degF	@	@
RMC @ Measured Temperature	1.580 ohm.m @ 72 degF	@	@
Source RMF / RMC	CALCULATED / CALCULATED		
RM @ MRT / RMF @ MRT	0.838 @ 122 / 0.710 @ 122	@ / @	@ / @
Maximum Recorded Temperatures	122 degF		
Circulation Stopped Time	15−Sep−2014 22:00		
Logger On Bottom Time	15−Sep−2014 23:15		
Unit Number / Location	4 / OKC, OK		
Recorded By	B. FRANTOM		
Witnessed By	J.T. HUNTER		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ / @		
Maximum Recorded Temperatures			
Circulation Stopped Time			
Logger On Bottom Time			
Unit Number / Location			
Recorded By			
Witnessed By			



DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: THRUBIT	OS1:
OS2: PORTAL	OS2:
OS3: BIT	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
SERVICE LEVEL 4 − HOR. MEMORY PUMPDOWN − BIT DEPTH: 9895 LOG TO: 5200	
ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST	
LIMESTONE MATRIX 2.71 G/CC USED TO MEASURE POROSITIES	
TOOLSTRING RAN WITH S. DECENTRALIZER, SWIVEL, NO STANDOFFS	
CEMENT VOLUME CALCULATED USING 4.5" FUTURE CASING	
HSPM AND PASON USED TO CREATE LOG DEPTH	
LOG DEPTH CORRELATED TO MWD GAMMA RAY	
RIG: PATTERSON 56	
CREW: B. FRANTOM/J. HIRST/K. REED	

RUN 1		RUN 2	
SERVICE ORDER #:	3233	SERVICE ORDER #:	
PROGRAM VERSION:	19C2−270	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

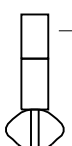
SURFACE EQUIPMENT

WITM (ThruBit)

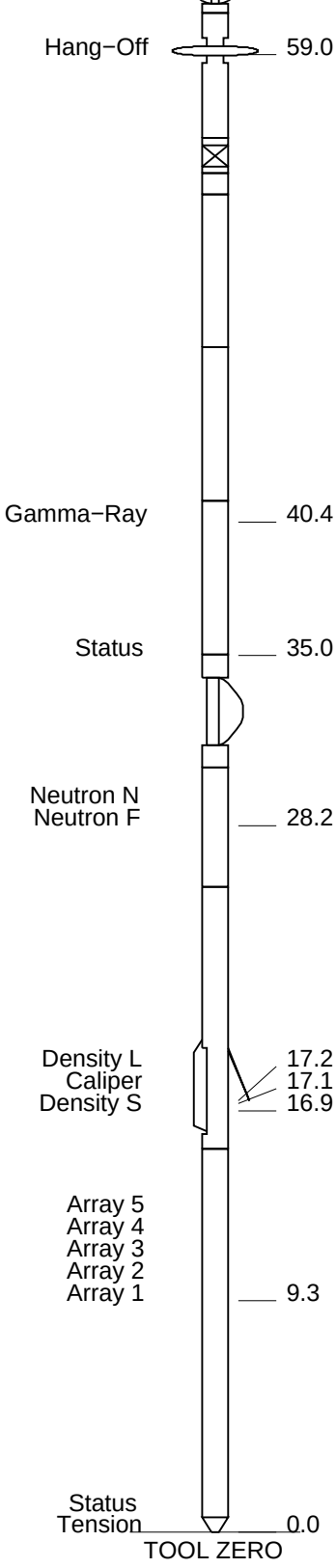
DOWNHOLE EQUIPMENT

TBT−A 68.6
THEAD
CCL
BDOT−B
THOT
TBUJ2
T10_1
TBAT1 7

CCL 65.6



TBAT2 40
TMG−A 34
TILE−A
TBN−A 32
NNLS−EWA
TBD−A 23
GGLS−FZ
TBI−A 3



MAXIMUM STRING DIAMETER 2.13 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS

MAXIS Field Log

Company: SANDRIDGE ENERGY **Well: JELLISON A 3319 9−5H 2L**

Input DLIS Files

DEFAULT	ThruBit_007PUP	FN:6	PRODUCER	16−Sep−2014 06:15	9949.0 FT	5082.0 FT

Output DLIS Files

TBT .009	FN:8	16−Sep−2014 06:30	9949.0 FT	5465.0 FT

OP System Version: 19C2−270

TBT **SRPC−5303−ThruBit**

	Relative Bearing (RB)
	0 (DEG) 940
gr wrap4 From LHT1 to GR4	
gr wrap3 From LHT1 to GR3	
gr wrap2 From LHT1 to GR2	

gr wrap1
From LHT1 to GR1

Gamma Ray (GR)
0 (GAPI) 150

Caliper (CALI)
4 (IN) 14

Gamma Ray 4 (GR)
600 (GAPI) 750

Gamma Ray 3 (GR)
450 (GAPI) 600

Gamma Ray 2 (GR)
300 (GAPI) 450

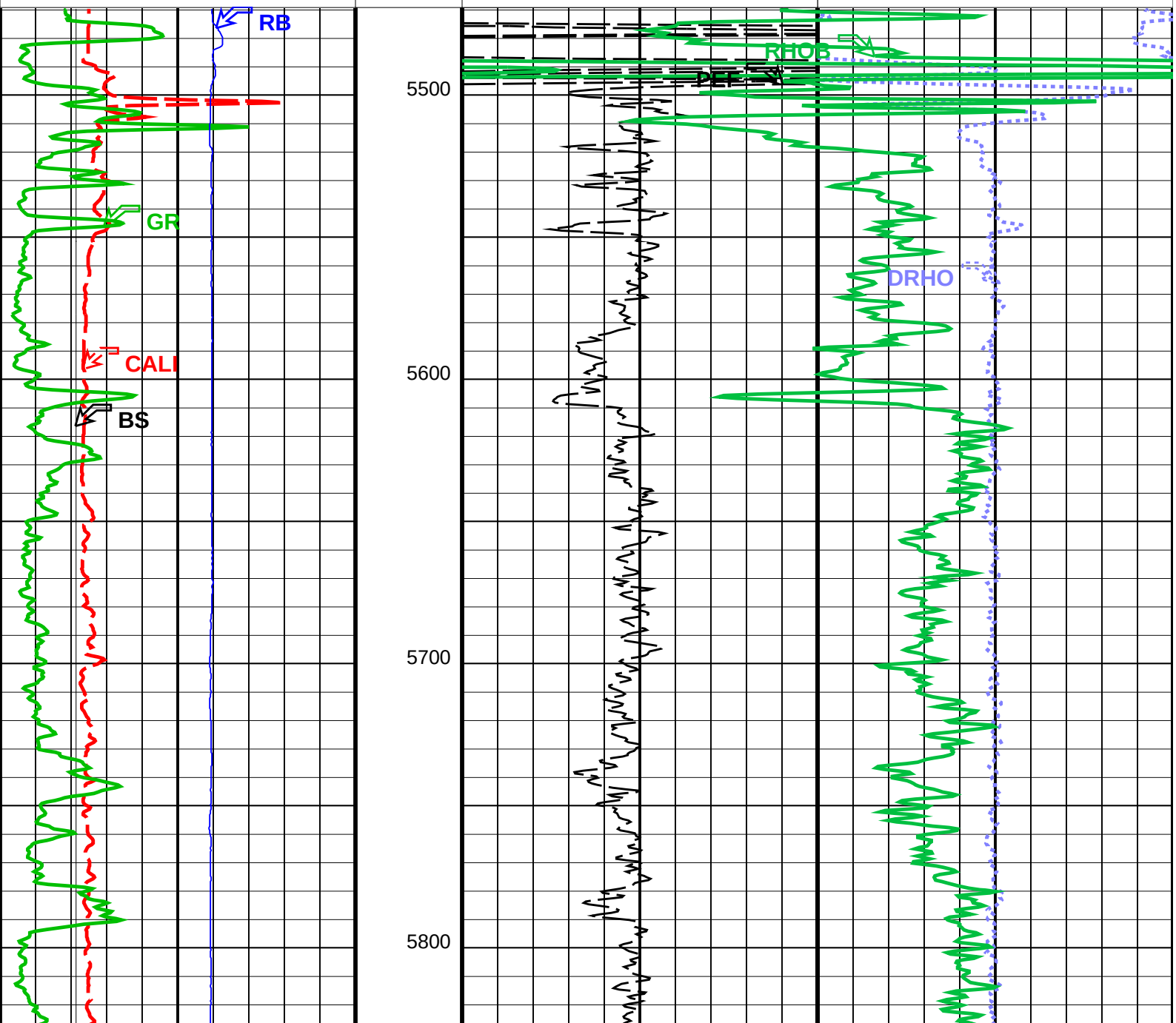
Gamma Ray 1 (GR)
150 (GAPI) 300

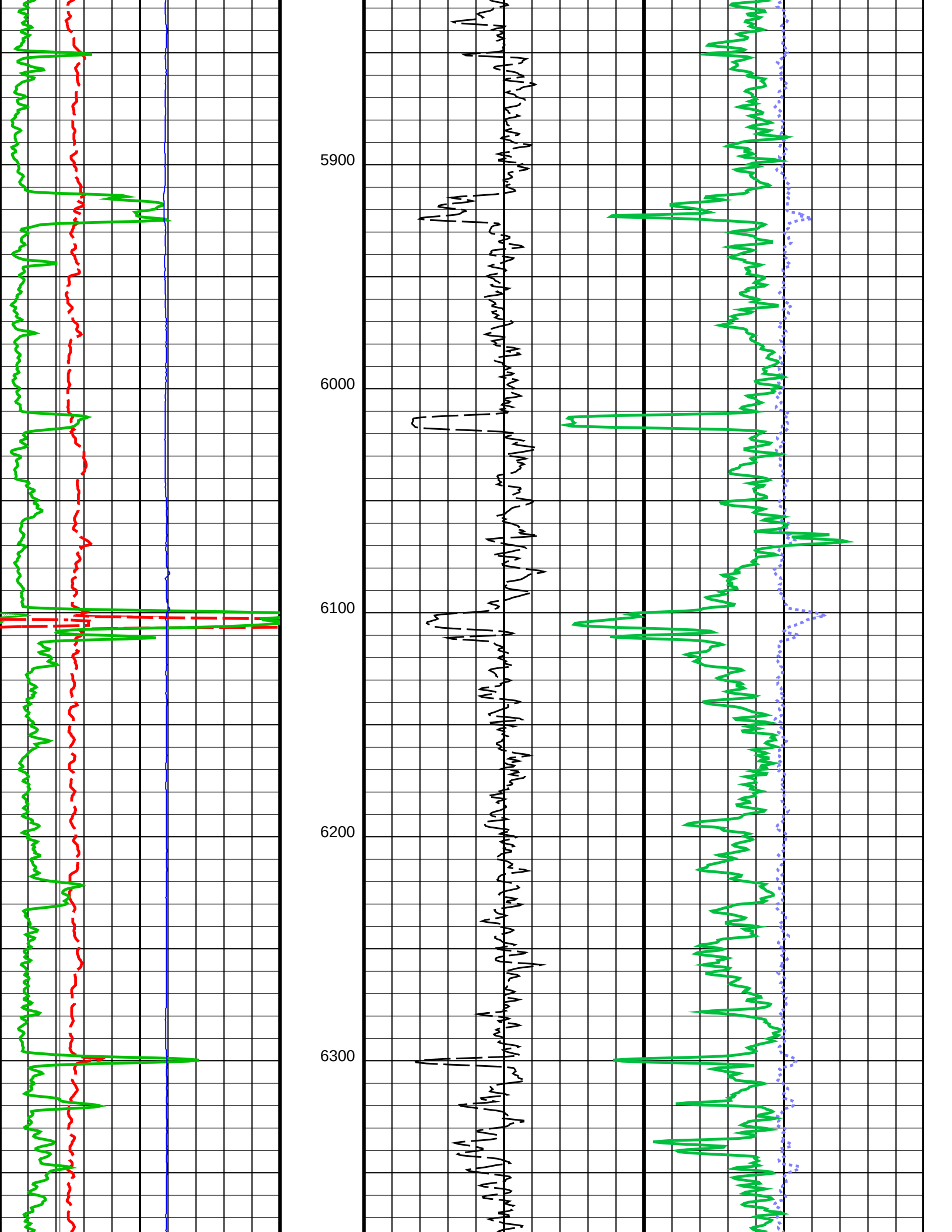
Bit Size (BS)
4 (IN) 14

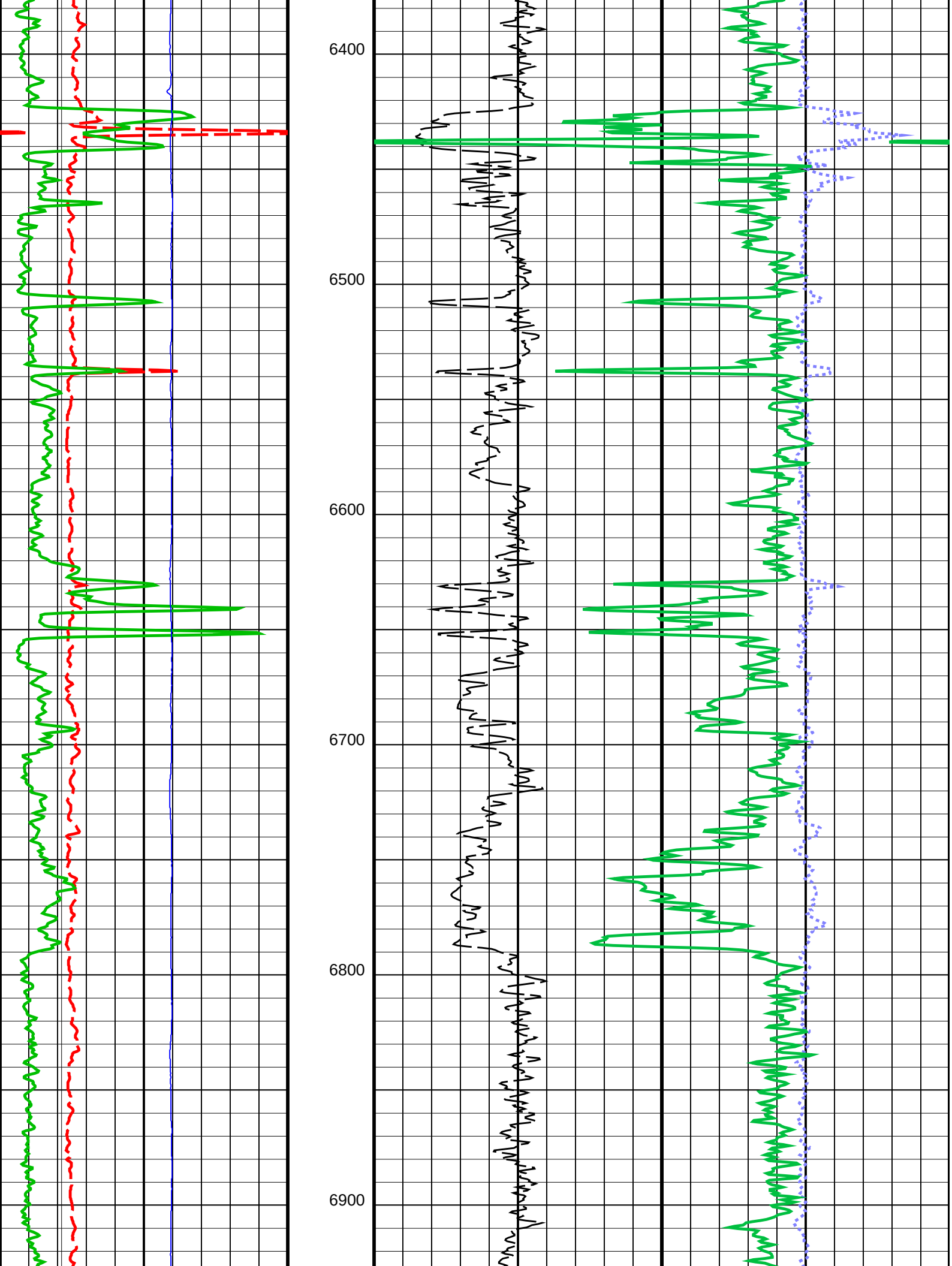
RHOB (RHOB)
2 (G/C3) 3

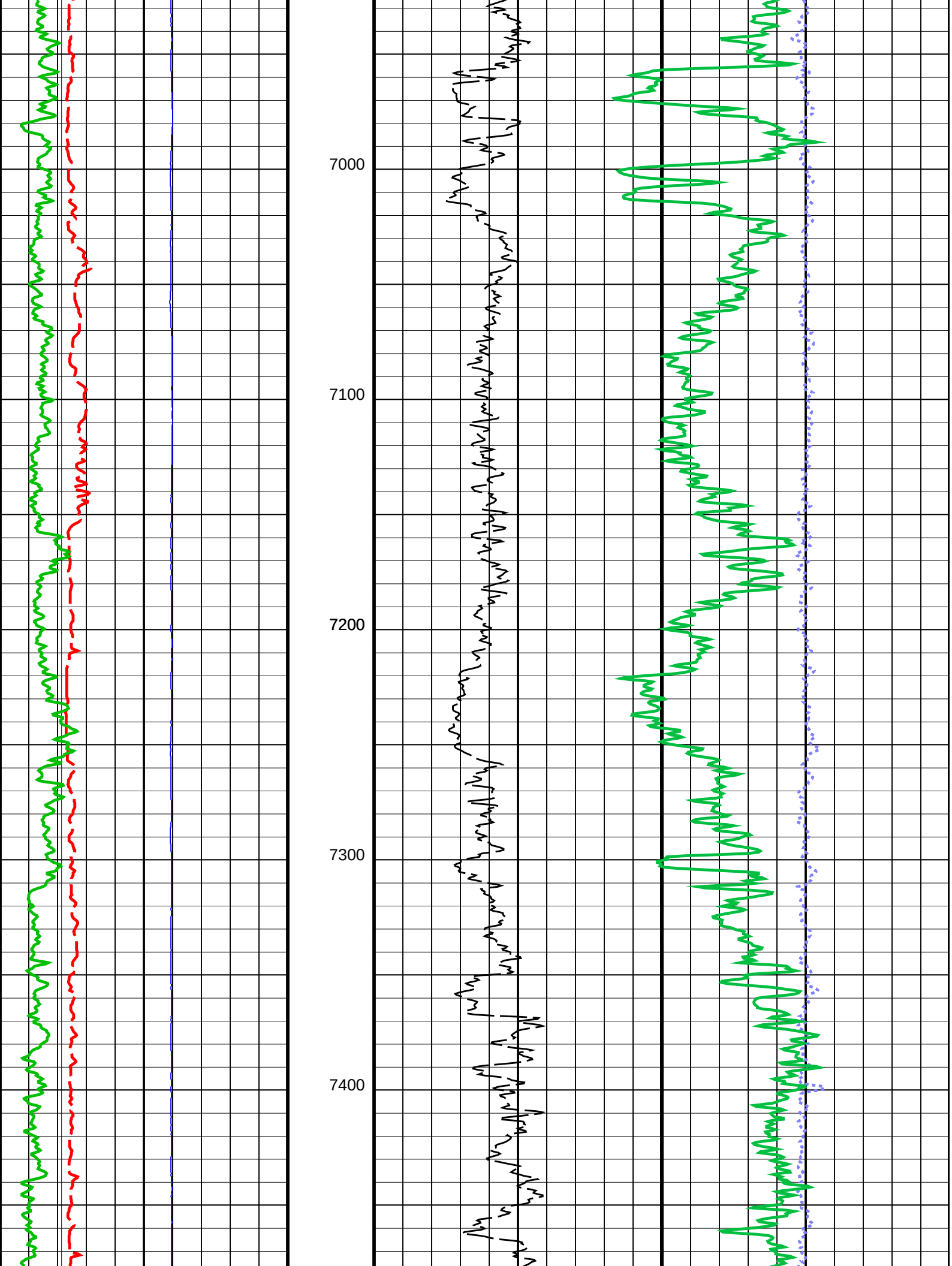
PEF (PEF)
0 (----- 10

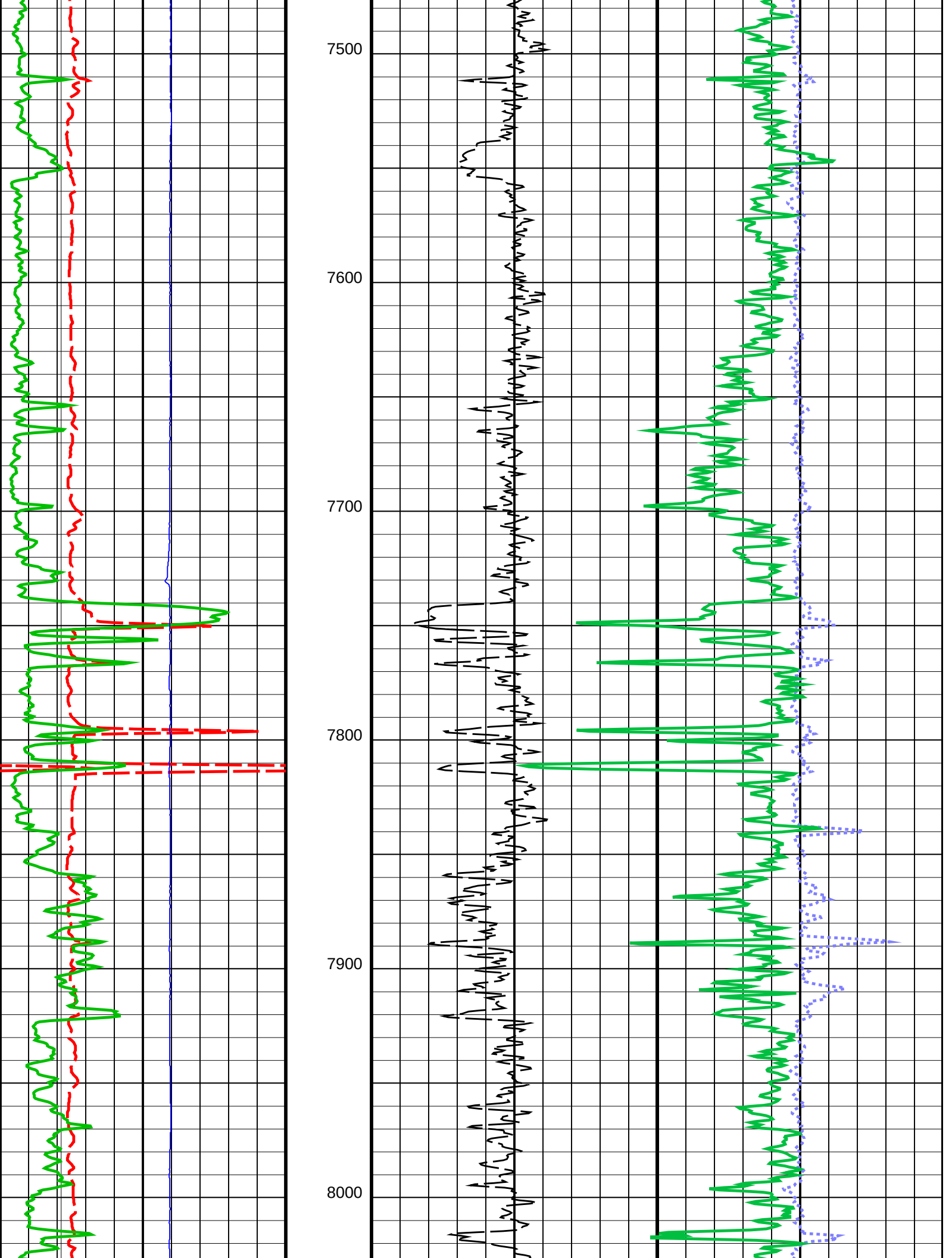
DRHO (DRHO)
−0.5 (G/C3) 0.5

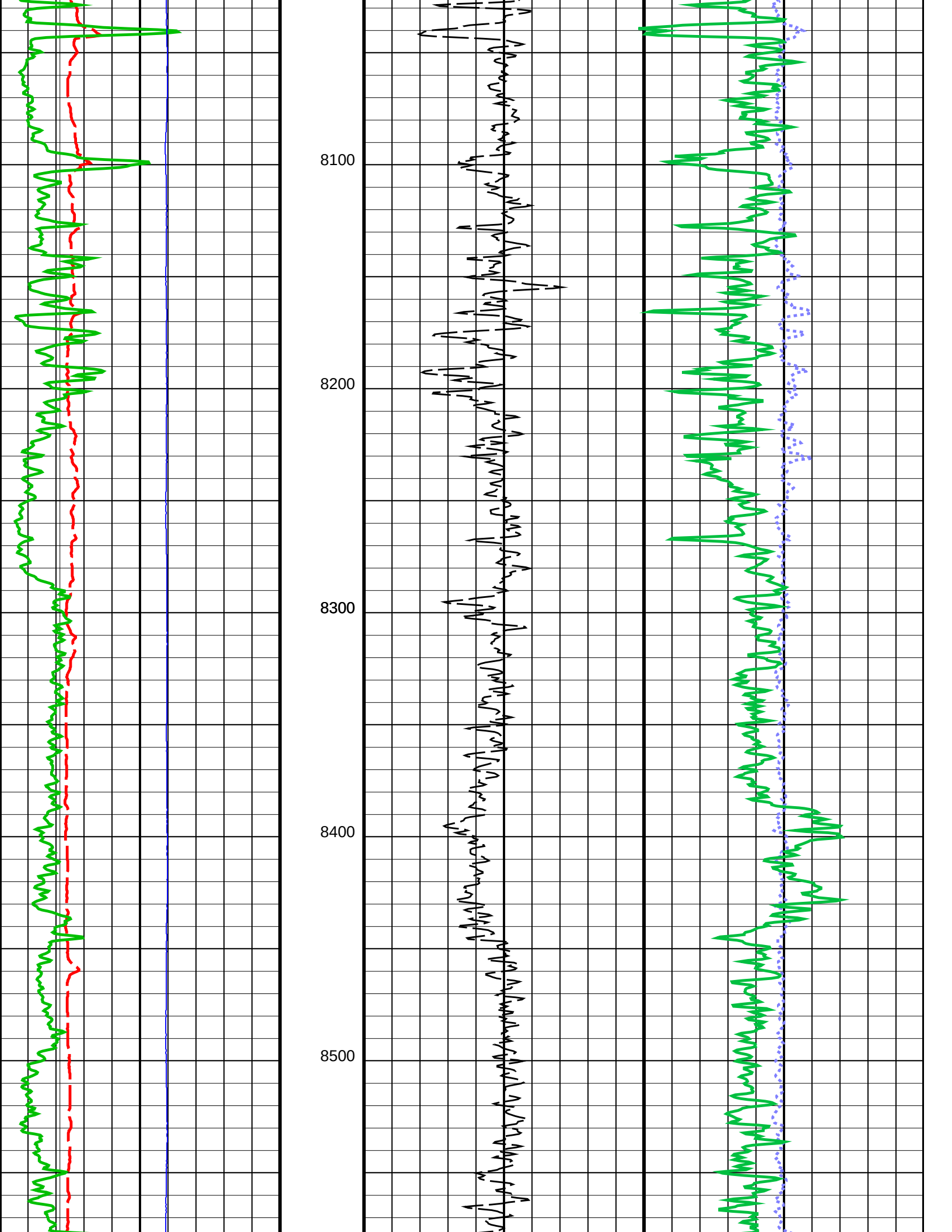


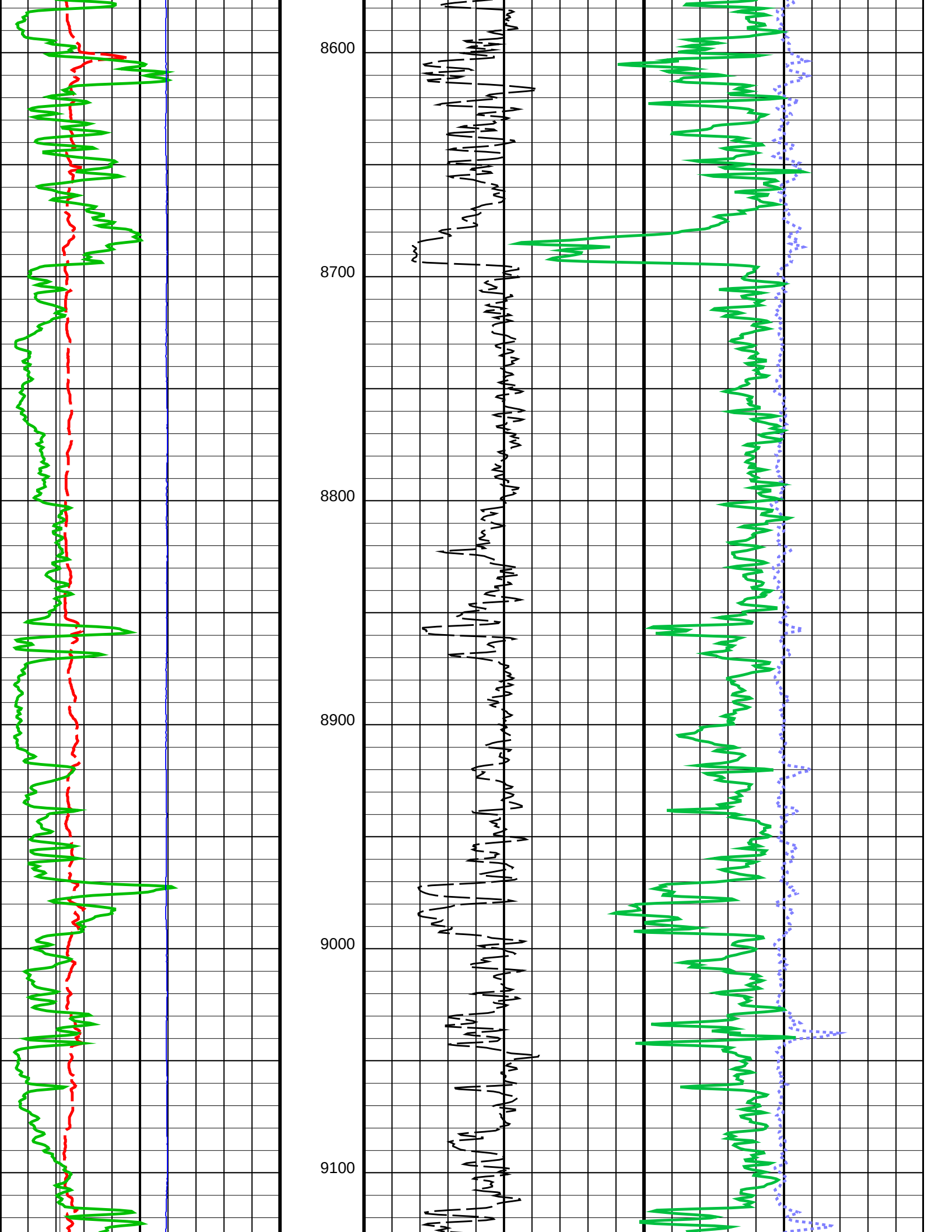

5900
6000
6100
6200
6300

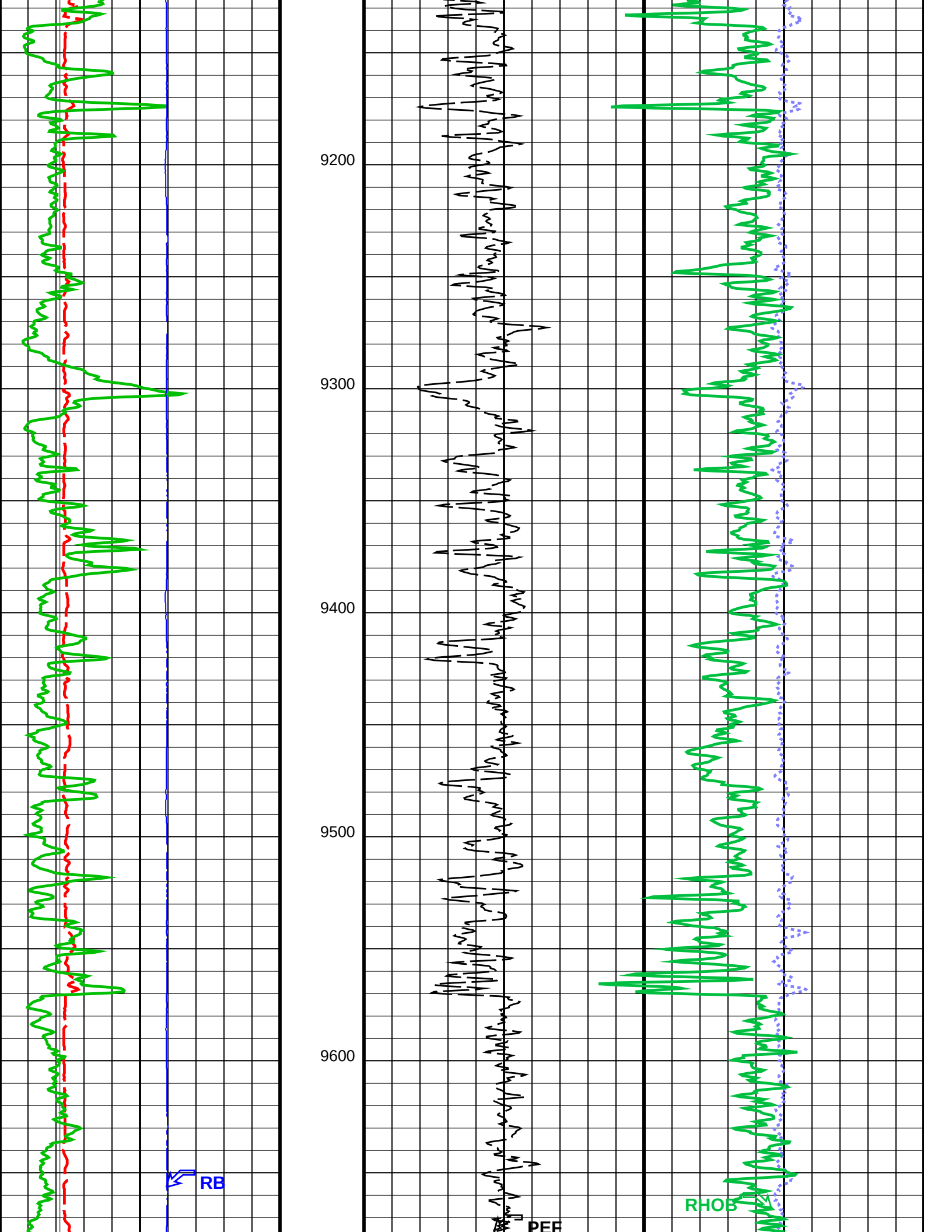

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6600
6700
6800
6900

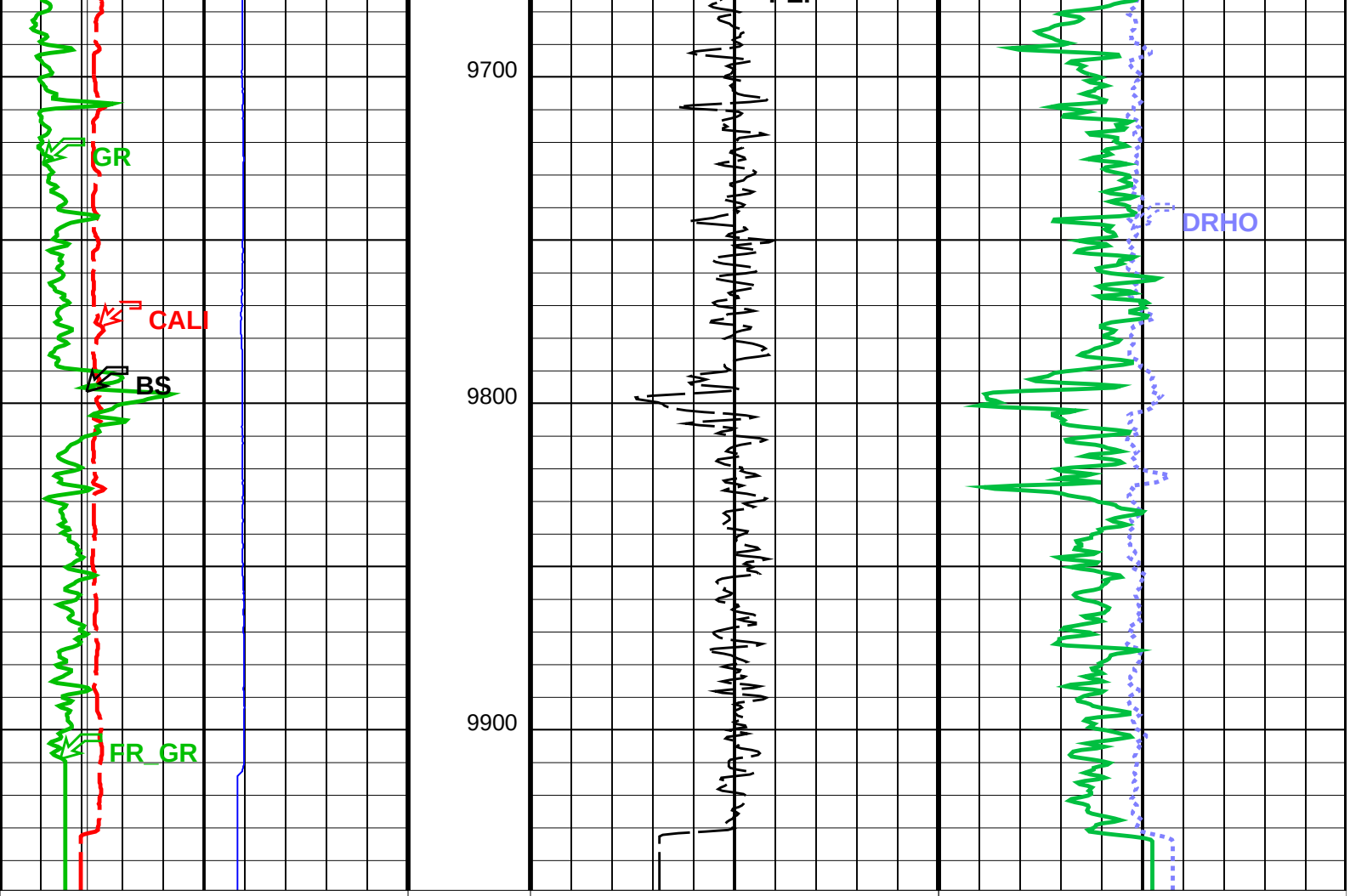

7000
7100
7200
7300
7400


7500
7600
7700
7800
7900
8000


8100
8200
8300
8400
8500


8600
8700
8800
8900
9000
9100


9200
9300
9400
9500
9600
RB
RHOB
PEF



Bit Size (BS)		
4	(IN)	14
Gamma Ray 1 (GR)		
150	(GAPI)	300
Gamma Ray 2 (GR)		
300	(GAPI)	450
Gamma Ray 3 (GR)		
450	(GAPI)	600
Gamma Ray 4 (GR)		
600	(GAPI)	750
Caliper (CALI)		
4	(IN)	14
Gamma Ray (GR)		
0	(GAPI)	150
gr wrap1 From LHT1 to GR1		
gr wrap2 From LHT1 to GR2		
gr wrap3 From LHT1 to GR3		
gr wrap4 From LHT1 to GR4		
Relative Bearing (RB)		

PEF (PEF)		**DRHO (DRHO)**
0	(-----	10 −0.5 (G/C3) 0.5
RHOB (RHOB)		
2	(G/C3)	3

	(RB)	
0	(DEG)	940

Parameters

DLIS Name	Description	Value	
	TBT−A: ThruBit String		
DHC	Density Hole Correction	CALIPER	
RB_OFFSET	Additional RB offset (degrees)	0.000	deg
TBD_CAL_BLOCK	TBD Calibration Block Type	THRUBIT	
TBD_SPIKE_REJECT	TBD Spike Detection Option	DETECT	
TBD_SPIKE_THRESHOLD	TBD Attenuation Change Threshold for Spike Detection	5.000	%
WMUD	Mud Weight	8.345	lbm/gal
	System and Miscellaneous		
BS	Bit Size	6.125	in

Format: TB_2INCH_NUCLEAR Vertical Scale: 2" per 100' Graphics File Created: 16−Sep−2014 06:30

OP System Version: 19C2−270

TBT	SRPC−5303−ThruBit

Input DLIS Files

DEFAULT	ThruBit_007PUP	FN:6	PRODUCER	16−Sep−2014 06:15	9949.0 FT	5082.0 FT

Output DLIS Files

TBT	.009	FN:8	16−Sep−2014 06:30	

Schlumberger

MAIN PASS

MAXIS Field Log

Company: SANDRIDGE ENERGY Well: JELLISON A 3319 9−5H 2L

Input DLIS Files

DEFAULT	ThruBit_007PUP	FN:6	PRODUCER	16−Sep−2014 06:15	9949.0 FT	5082.0 FT

Output DLIS Files

TBT	.010	FN:9	16−Sep−2014 06:32	9949.0 FT	5192.5 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 991.70 ft3

Cement Volume = 520.00 ft3 (assuming 4.50 in casing O.D.)

Computed from 9948.5 ft to 5678.0 ft

OP System Version: 19C2−270

TBT	SRPC−5303−ThruBit

PIP SUMMARY

⊣ Integrated Cement Volume Major Pip Every 100 F3

⊣ Integrated Cement Volume Minor Pip Every 10 F3

⊢ Integrated Hole Volume Major Pip Every 100 F3

⊢ Integrated Hole Volume Minor Pip Every 10 F3

Relative Bearing (RB)
0 (DEG) 940

gr wrap4
From LHT1 to GR4

gr wrap3
From LHT1 to GR3

gr wrap2
From LHT1 to GR2

gr wrap1
From LHT1 to GR1

Gamma Ray (GR)
0 (GAPI) 150

Caliper (CALI)
4 (IN) 14

Gamma Ray 4 (GR)
600 (GAPI) 750

Gamma Ray 3 (GR)
450 (GAPI) 600

Gamma Ray 2 (GR)
300 (GAPI) 450

Gamma Ray 1 (GR)
150 (GAPI) 300

Bit Size (BS)
4 (IN) 14

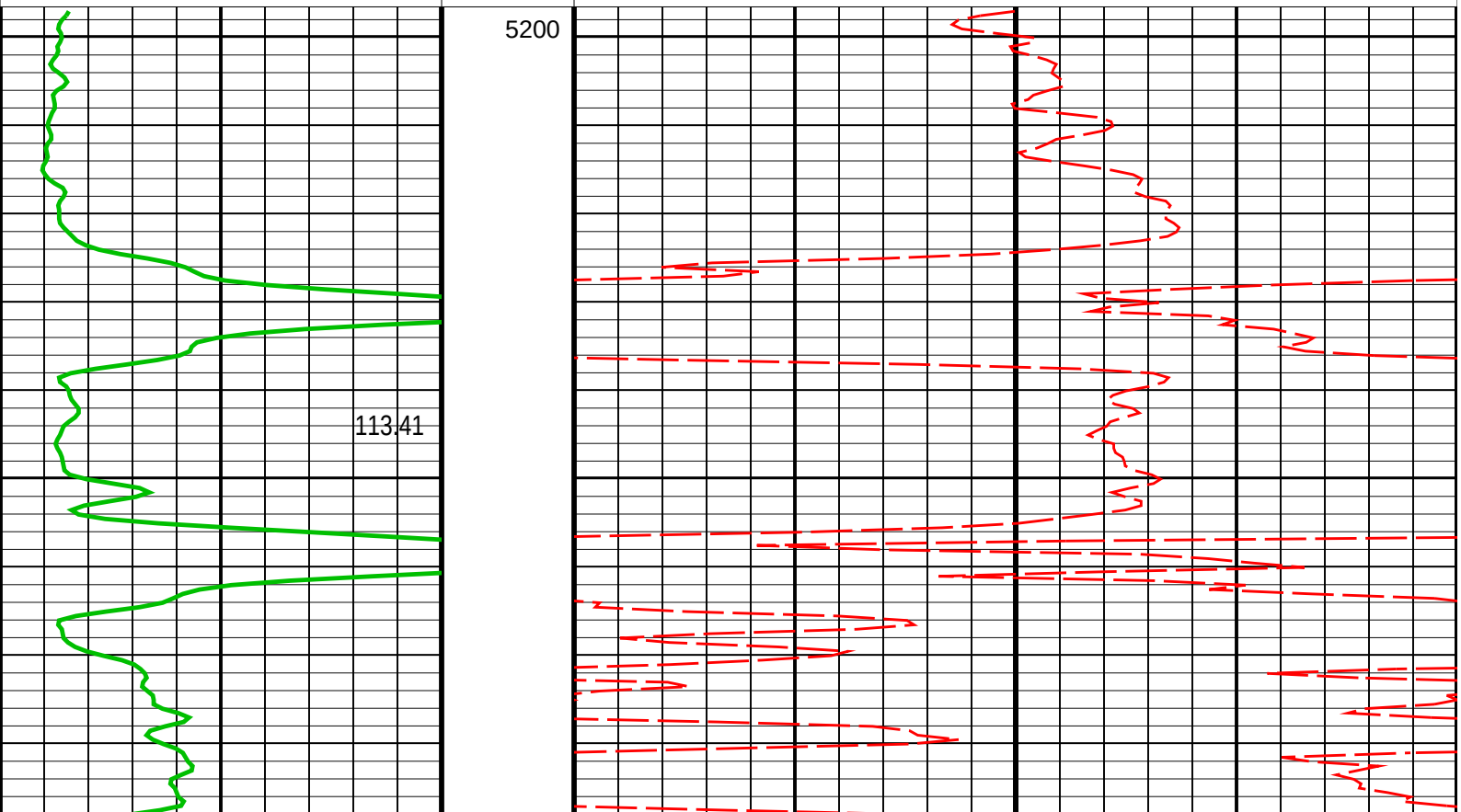
GR Temp (WTEP)
(DEGF)

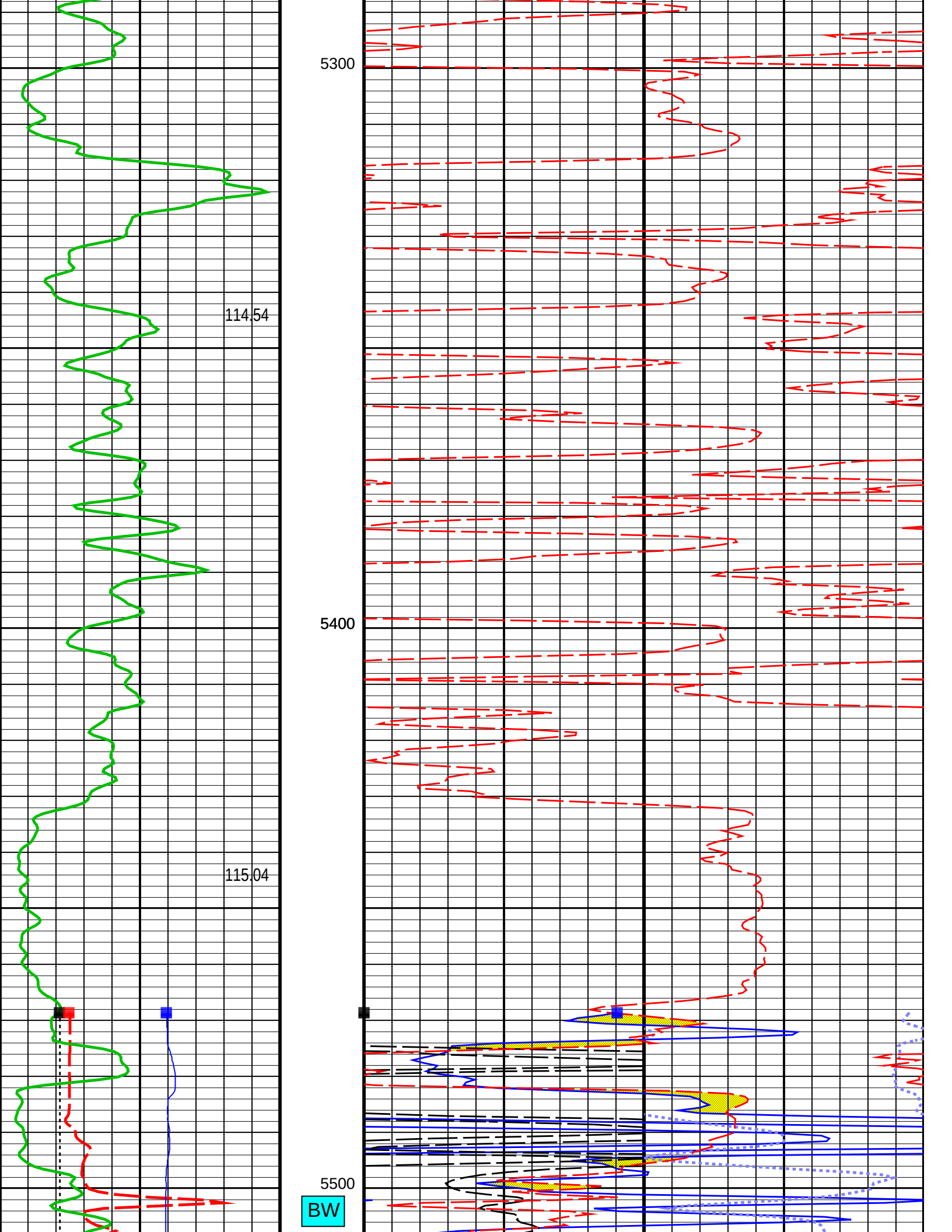
TNPH (TNPH)
30 (%) −10

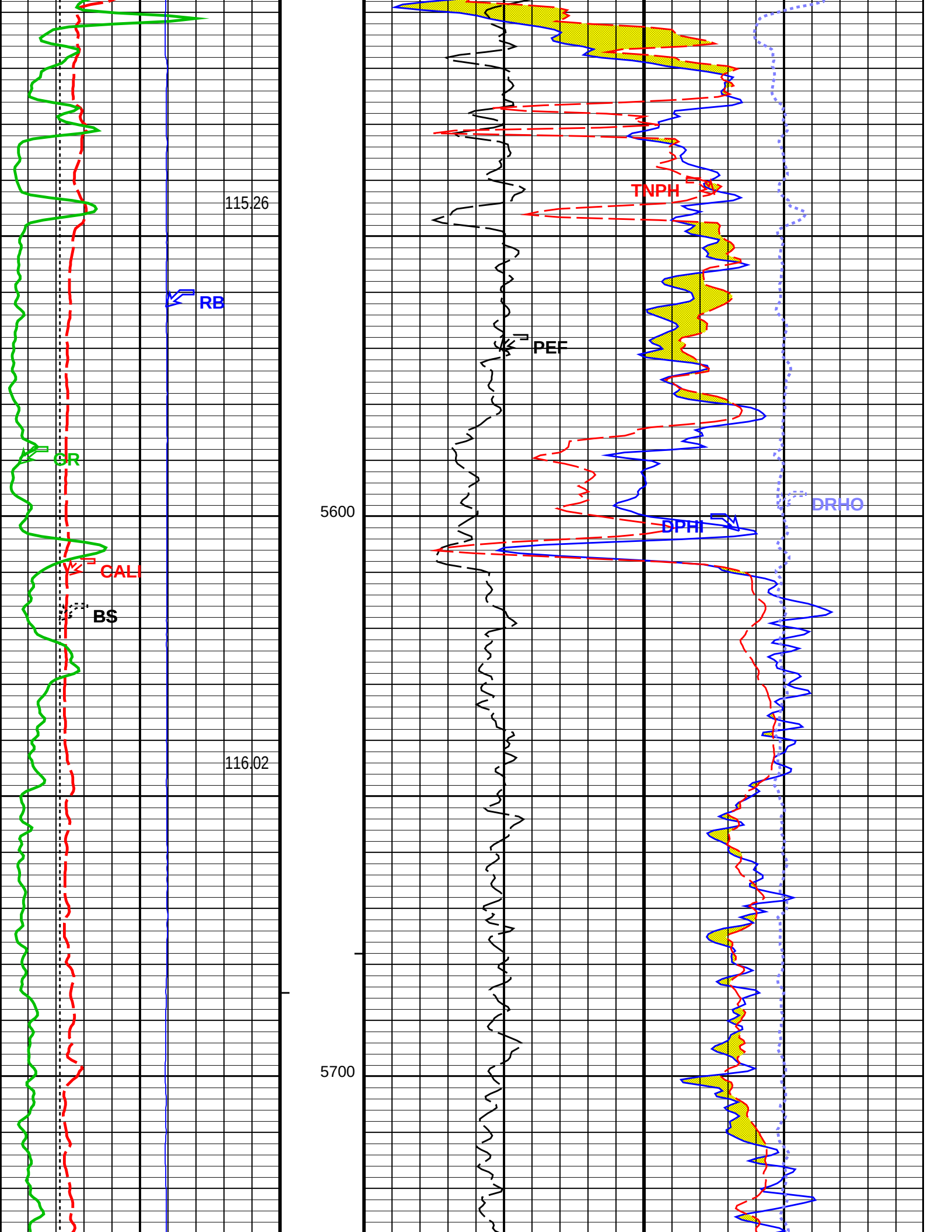
PEF (PEF)
0 (−−−− 10

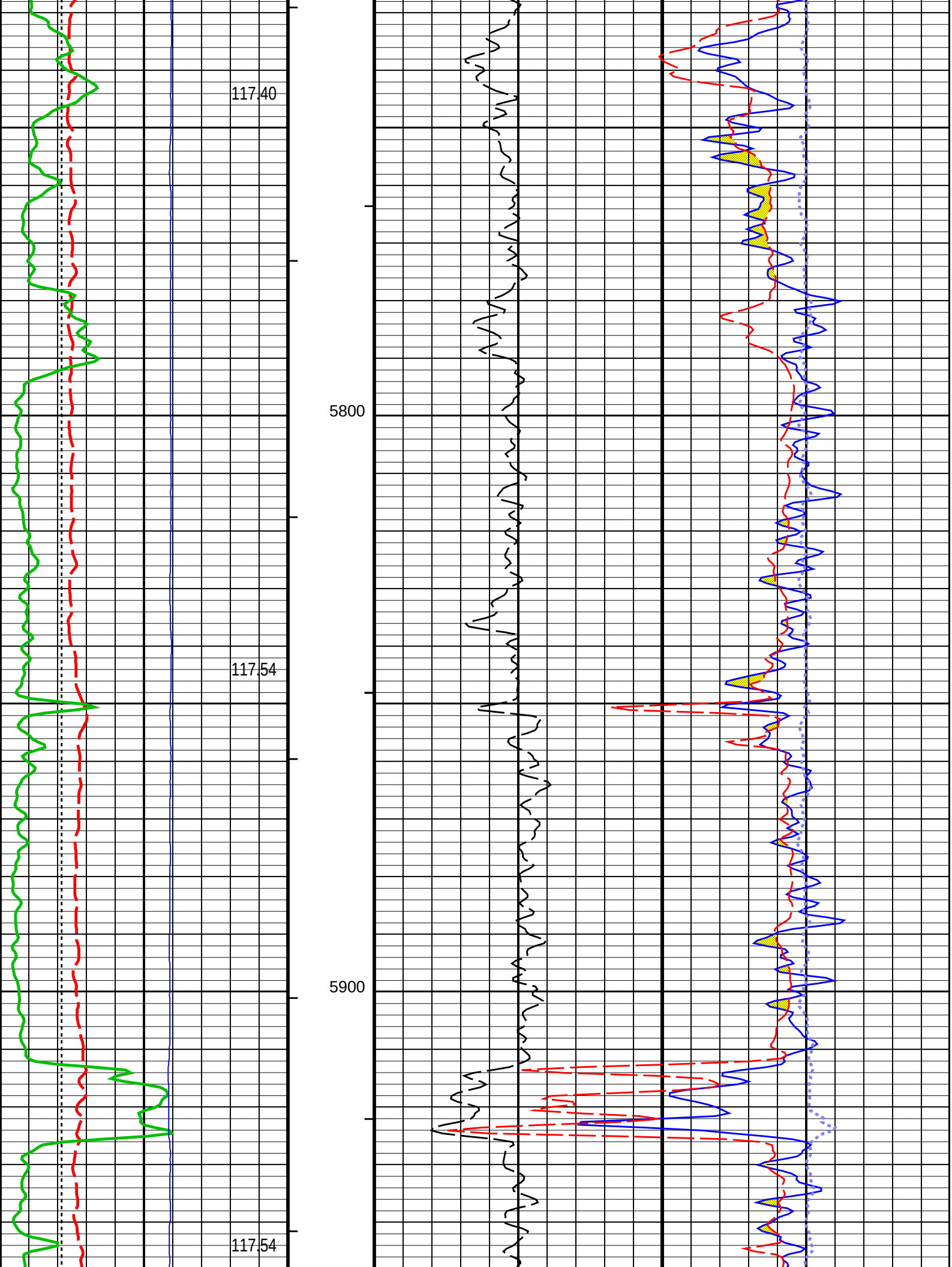
DRHO (DRHO)
−0.5 (G/C3) 0.5

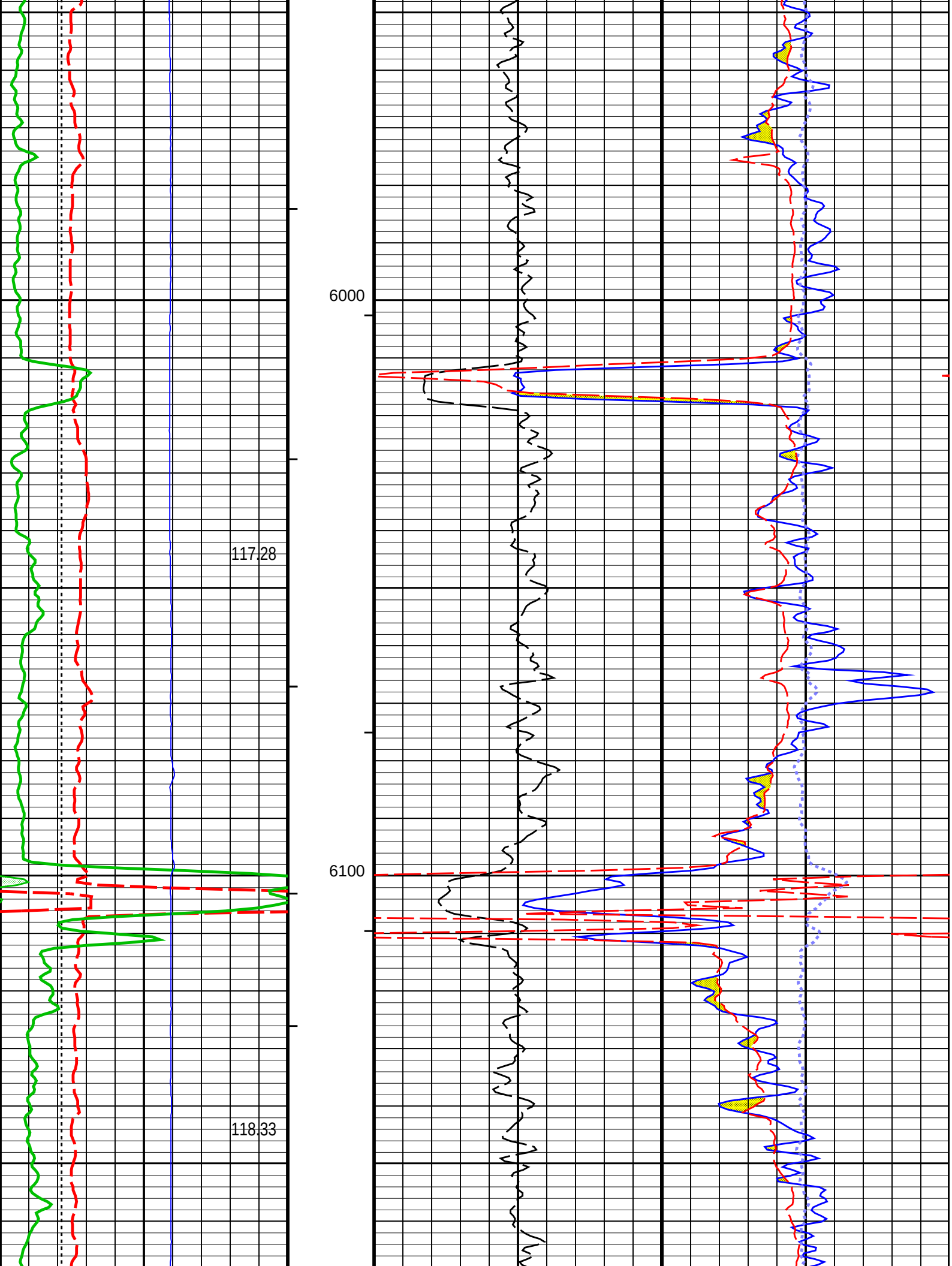
DPHI (DPHI)
30 (PU) −10

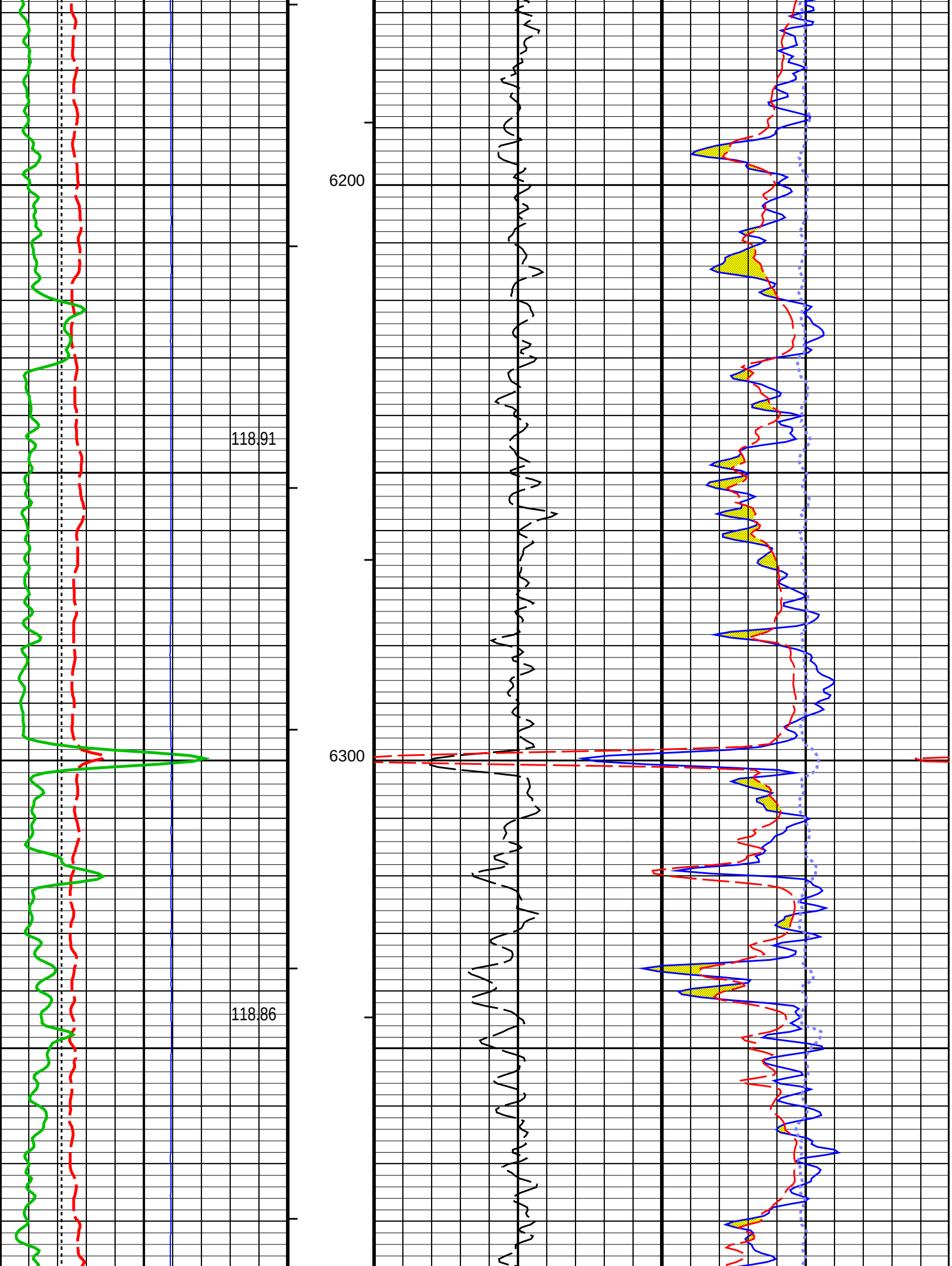


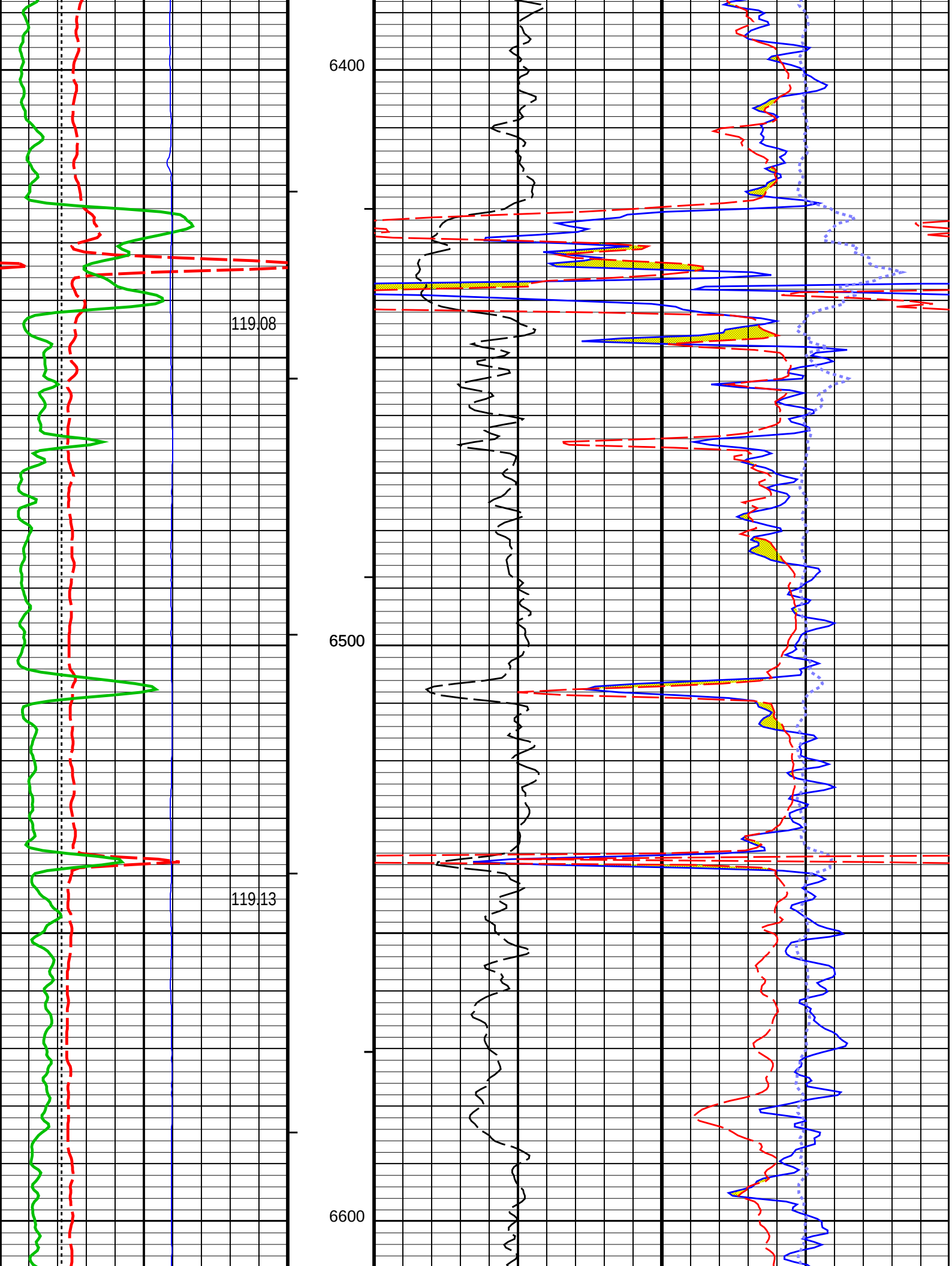

5300
114.54
5400
115.04
5500
BW

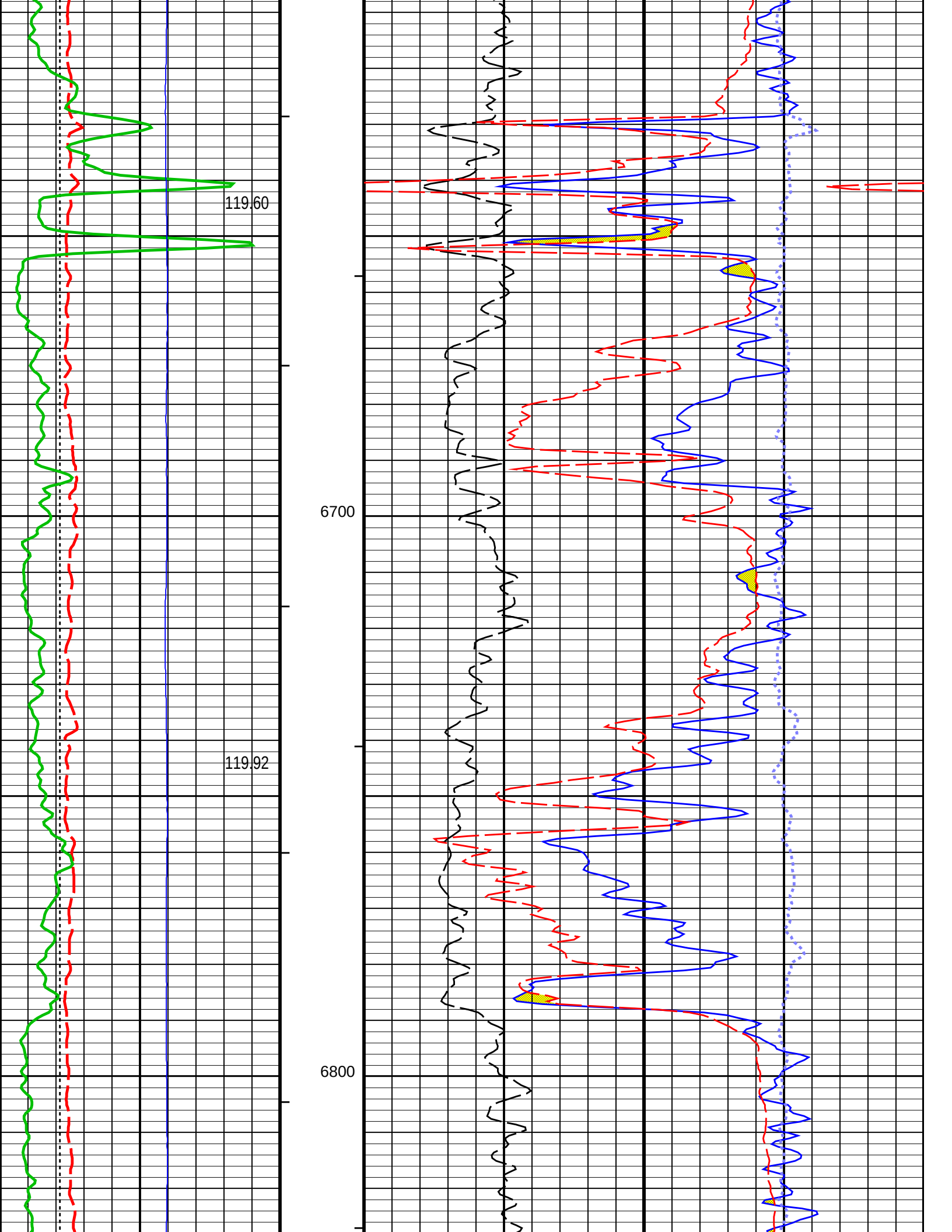

115.26
RB
GR
CALI
BS
116.02
5600
5700
TNPH
PEF
DRHO
DPHI

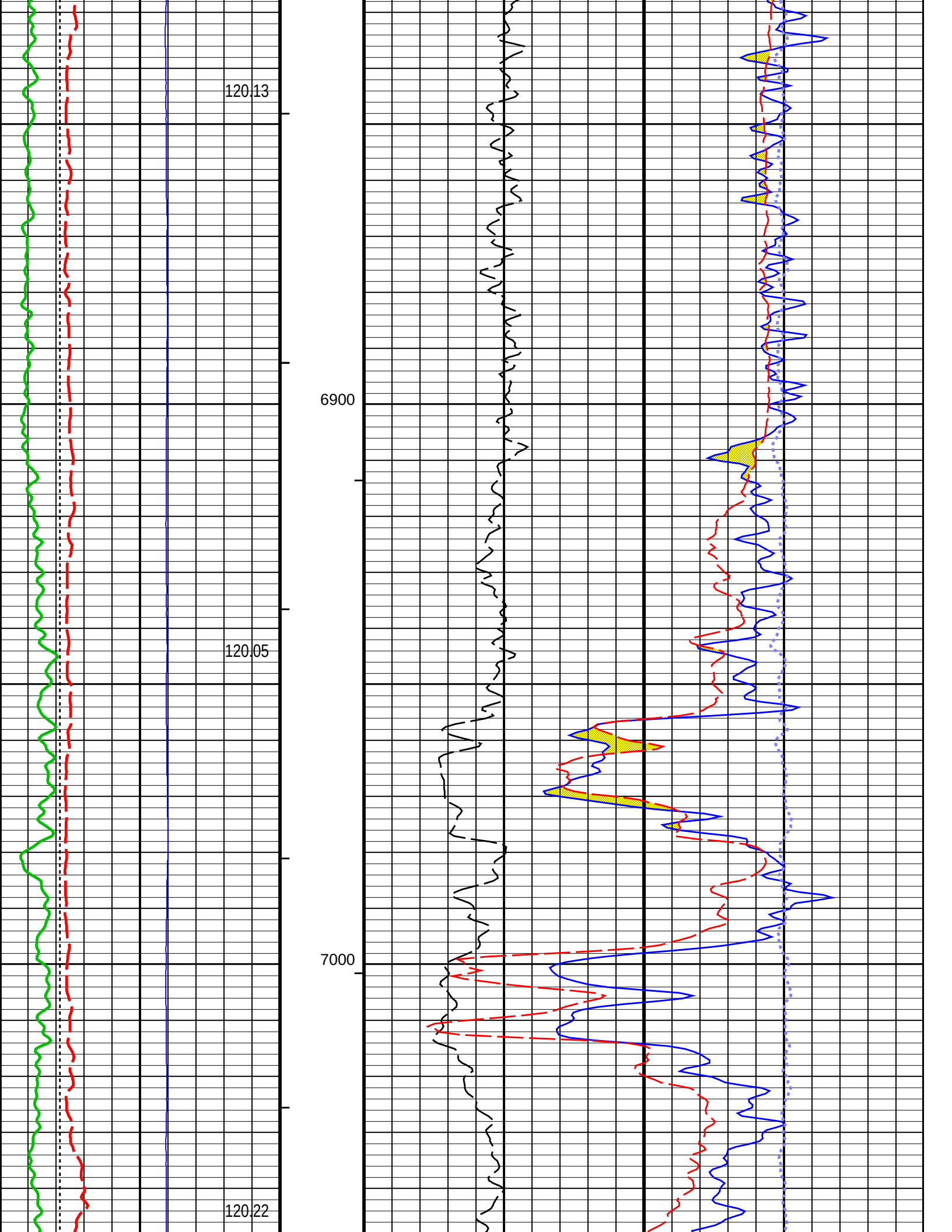

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5800
117.54
5900
117.54

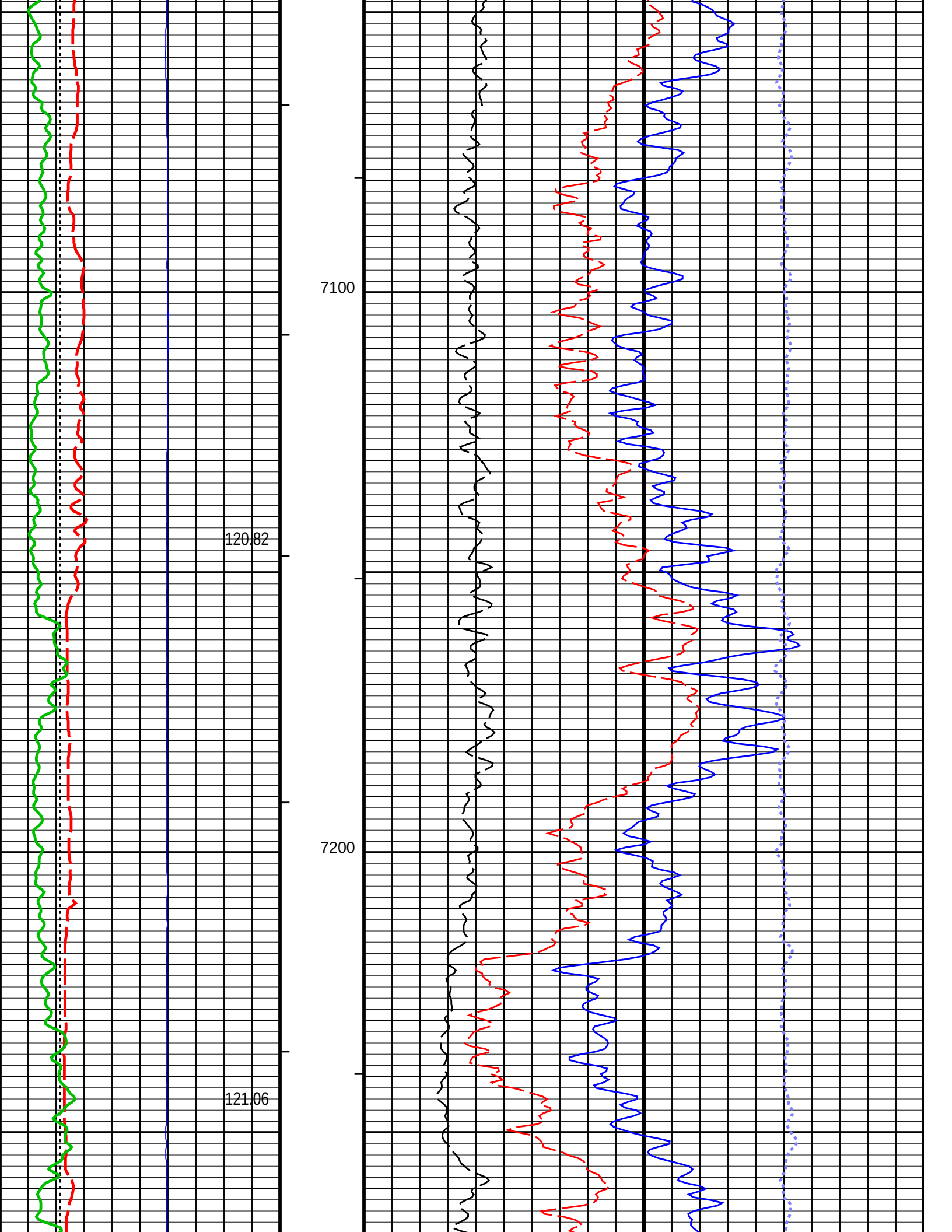

6000
6100
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118.33

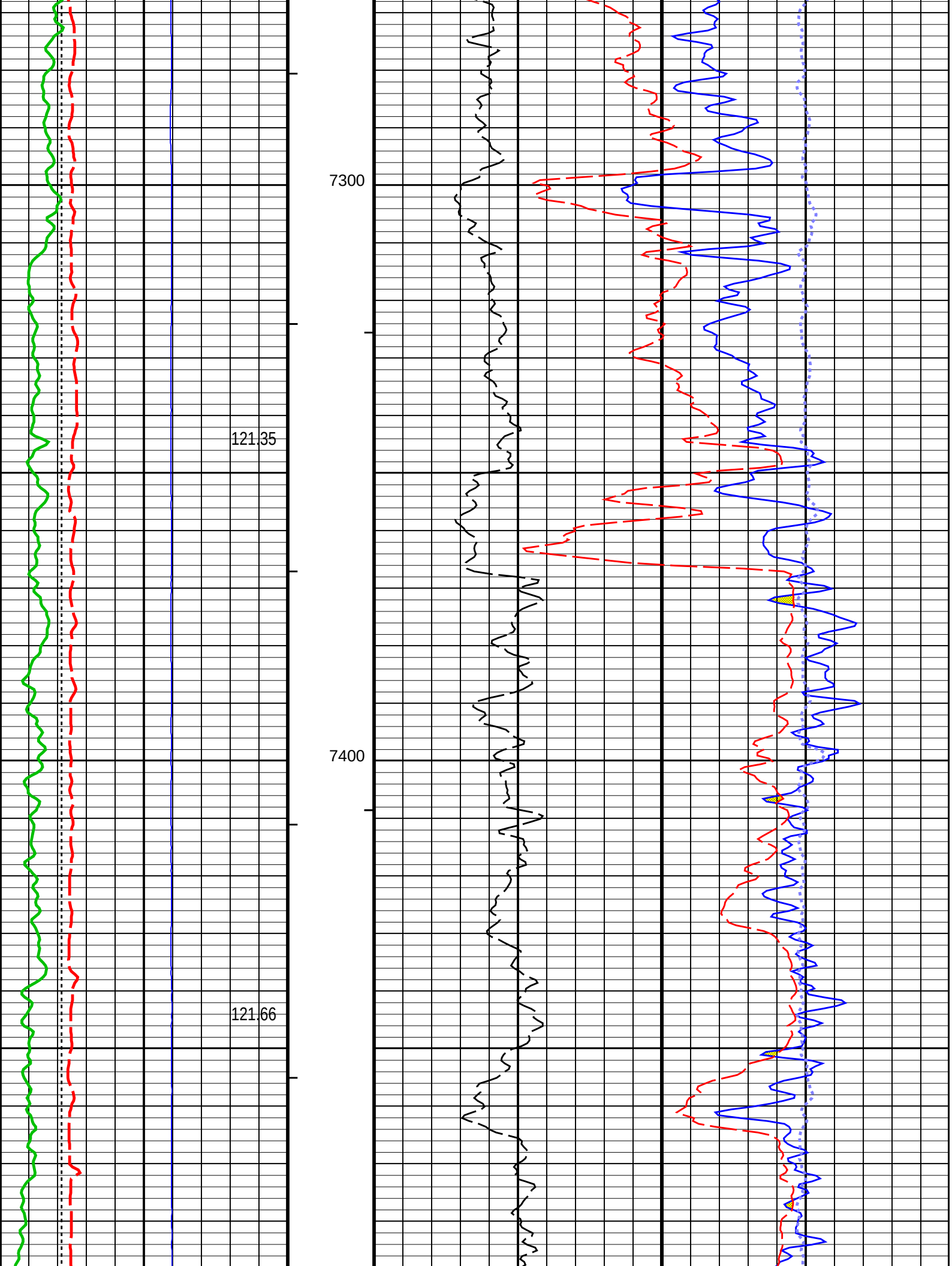

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6300
118.86

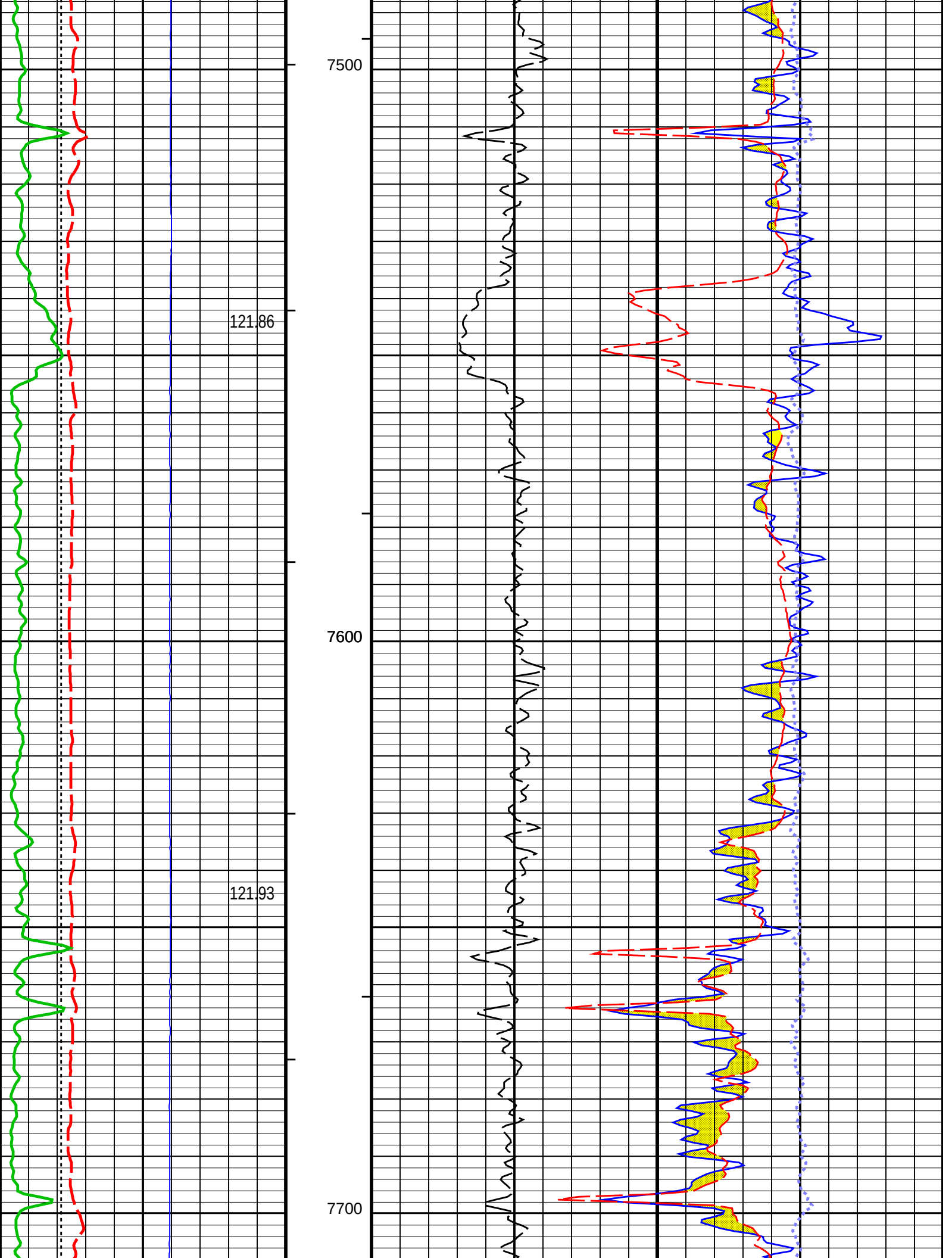

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6500
119.13
6600

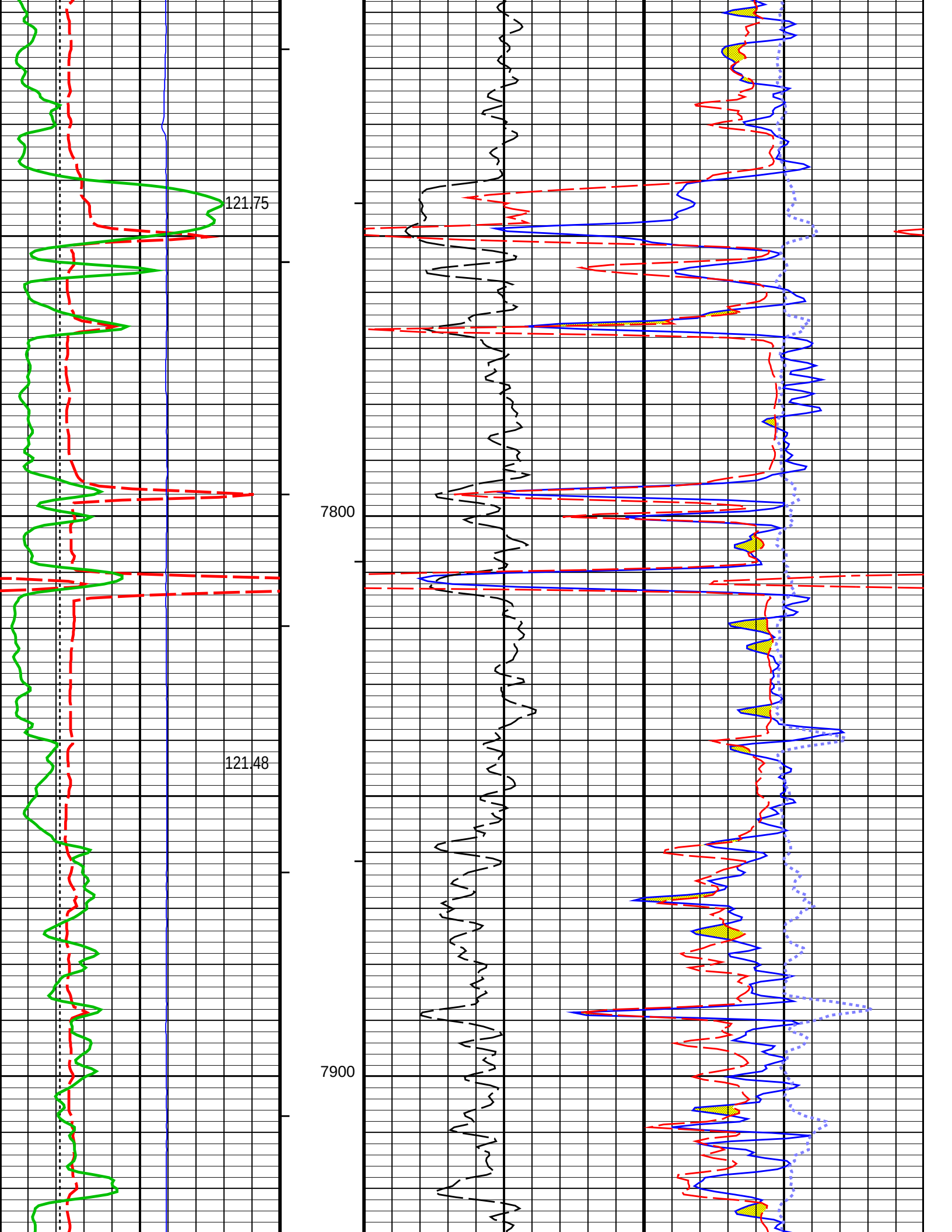

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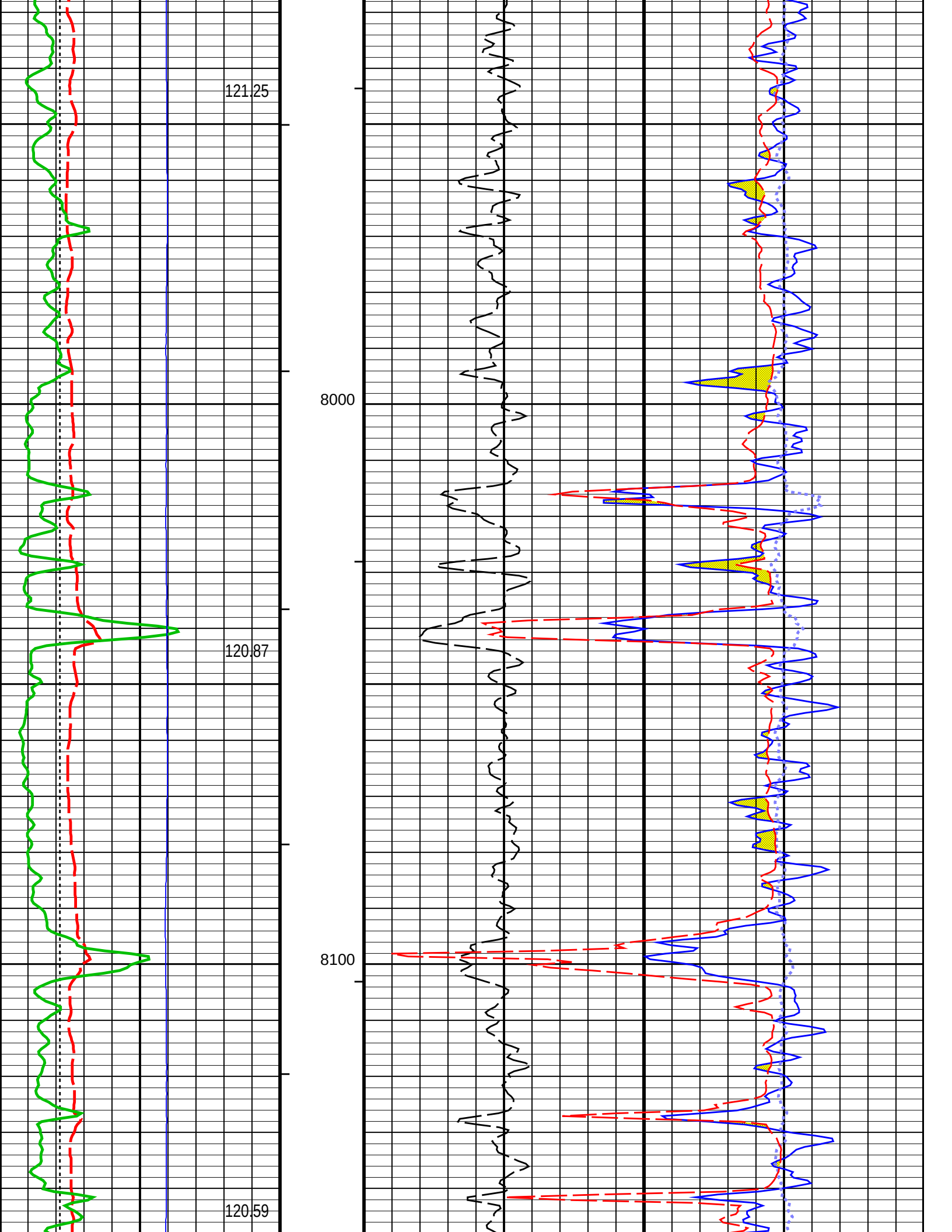

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6900
120.05
7000
120.22

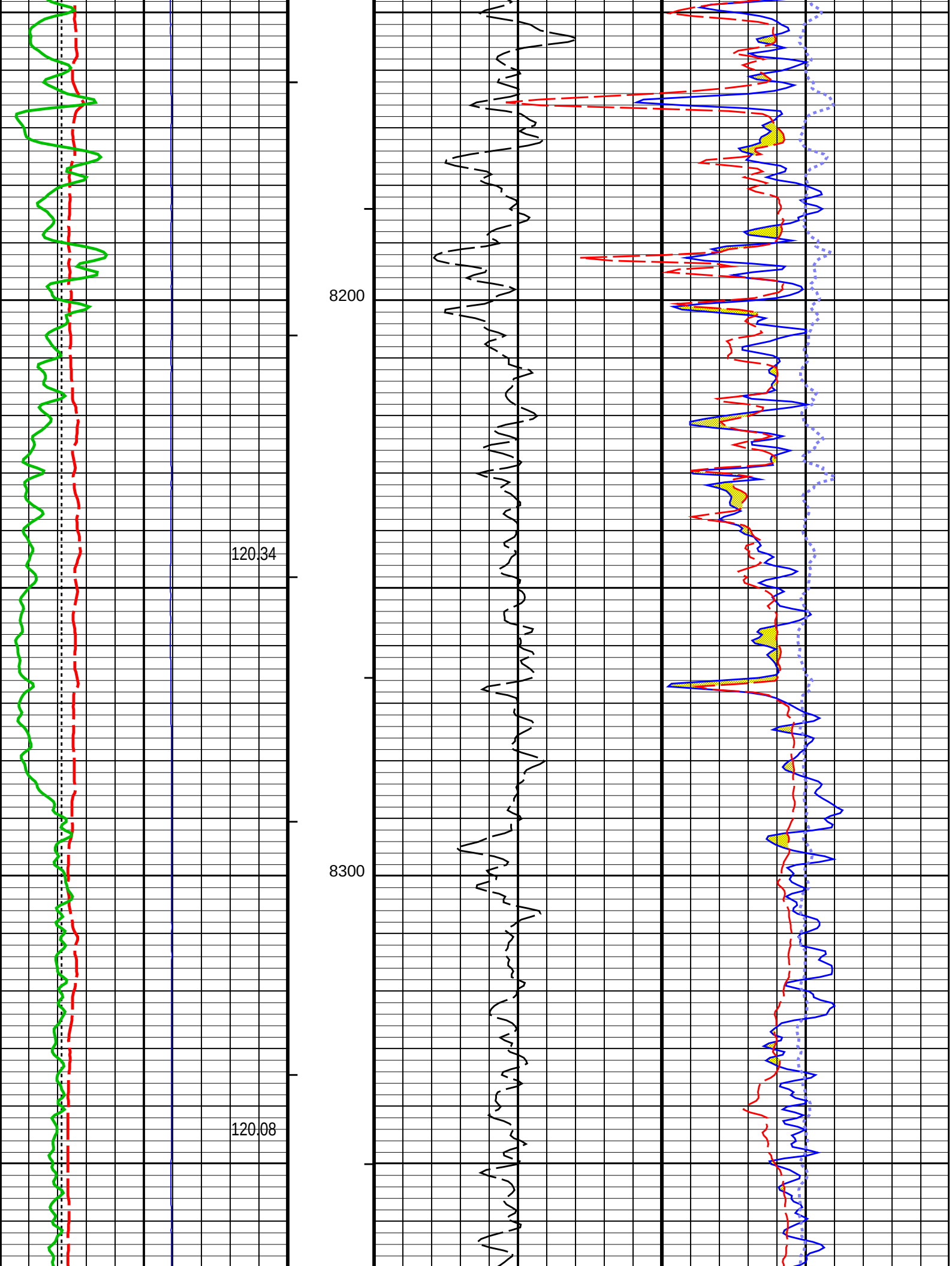

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7200
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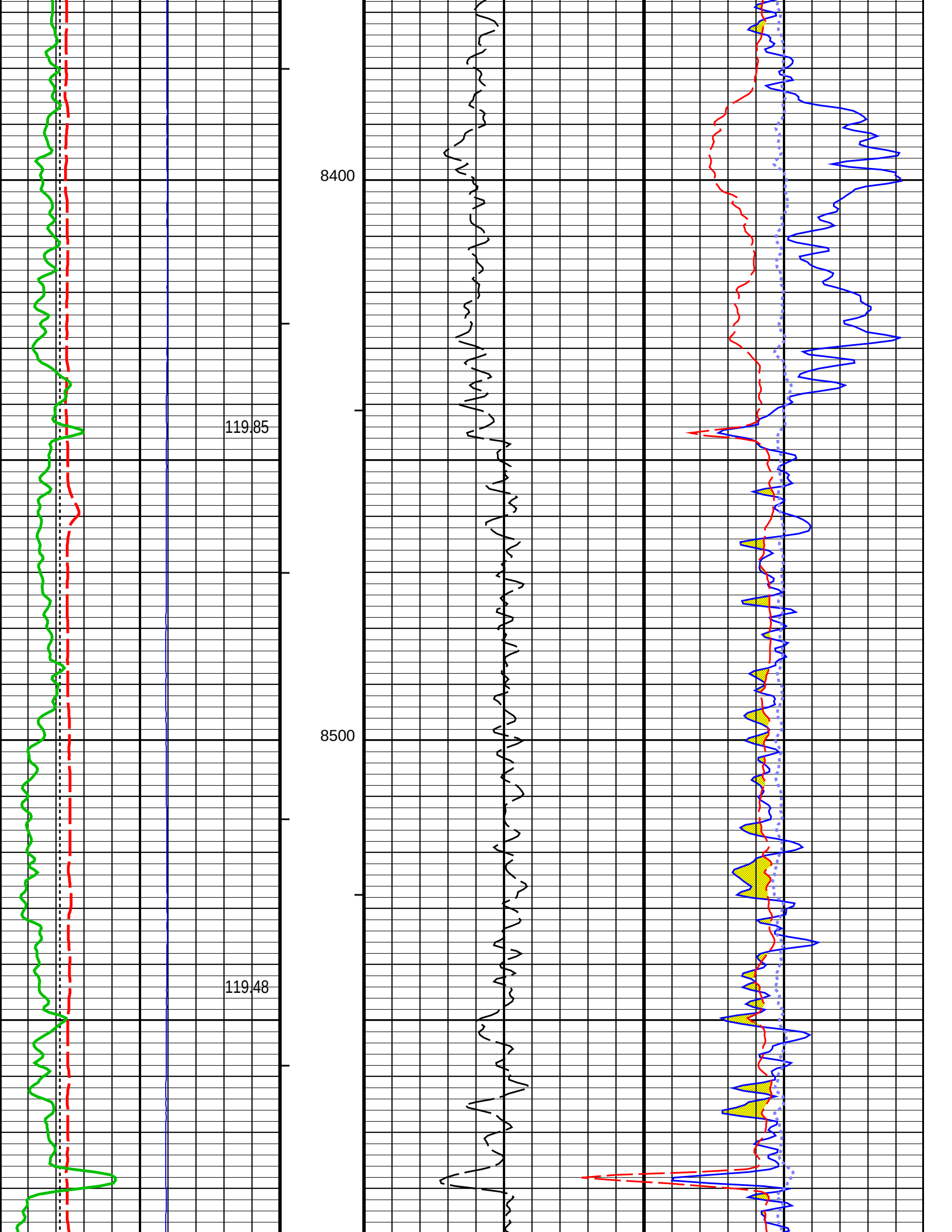

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121.66

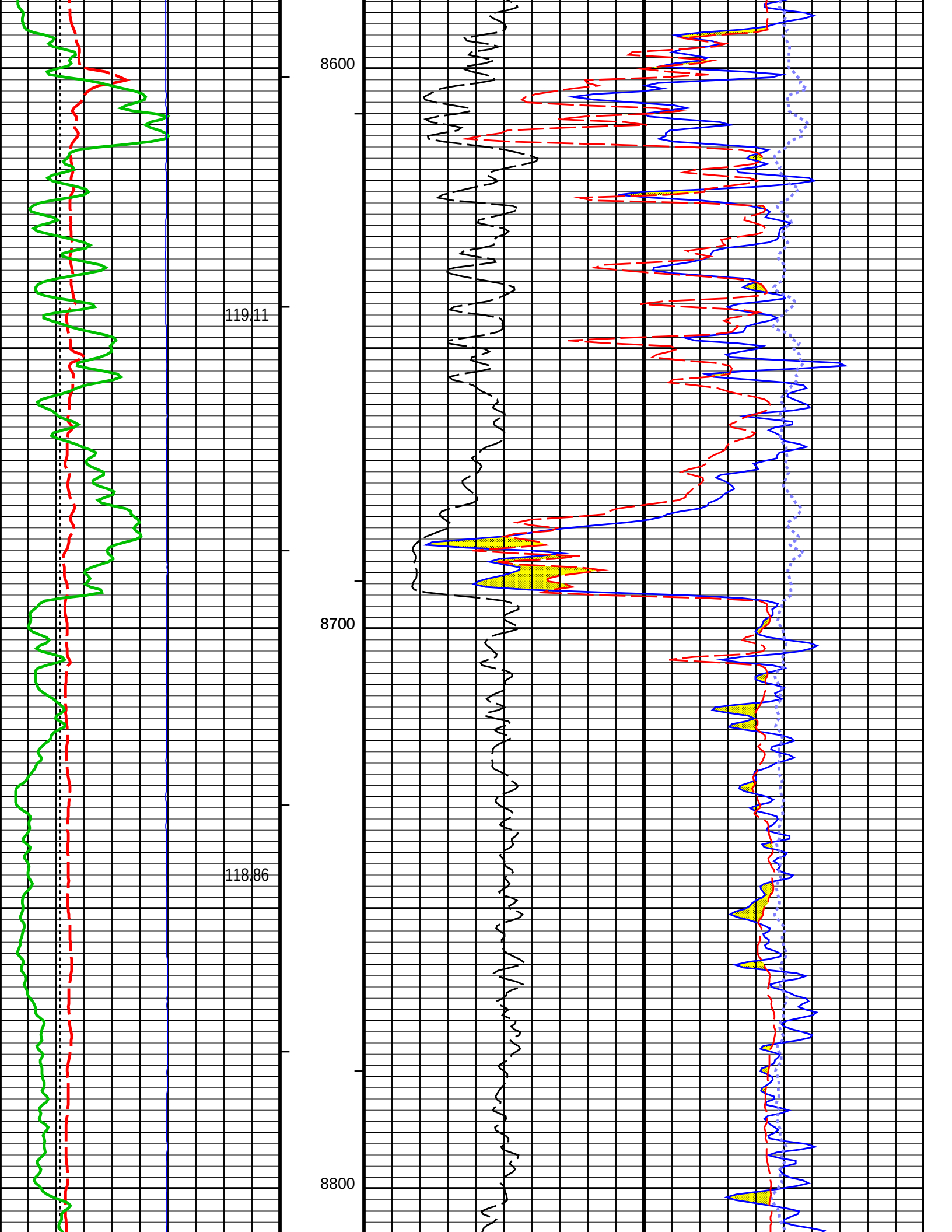

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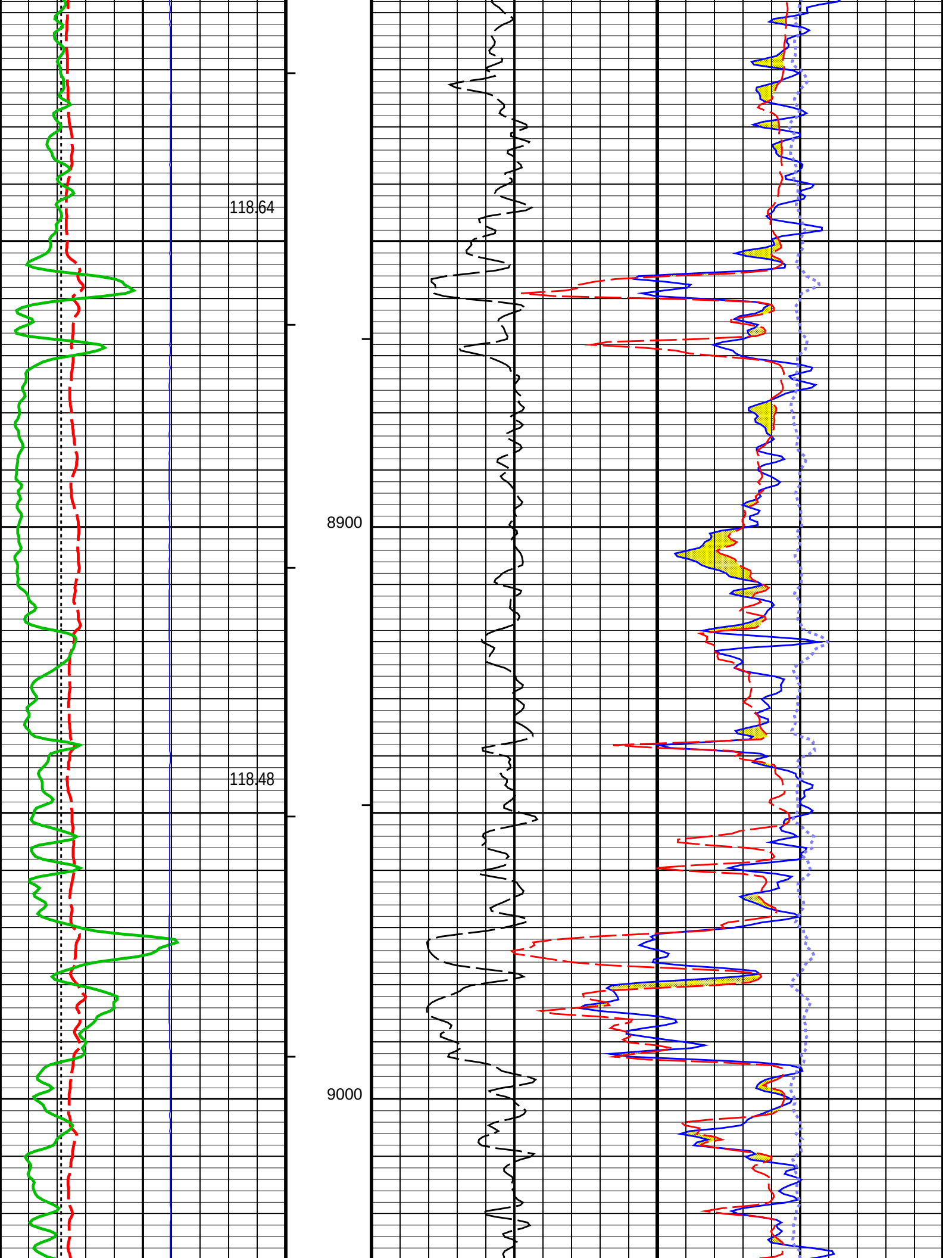

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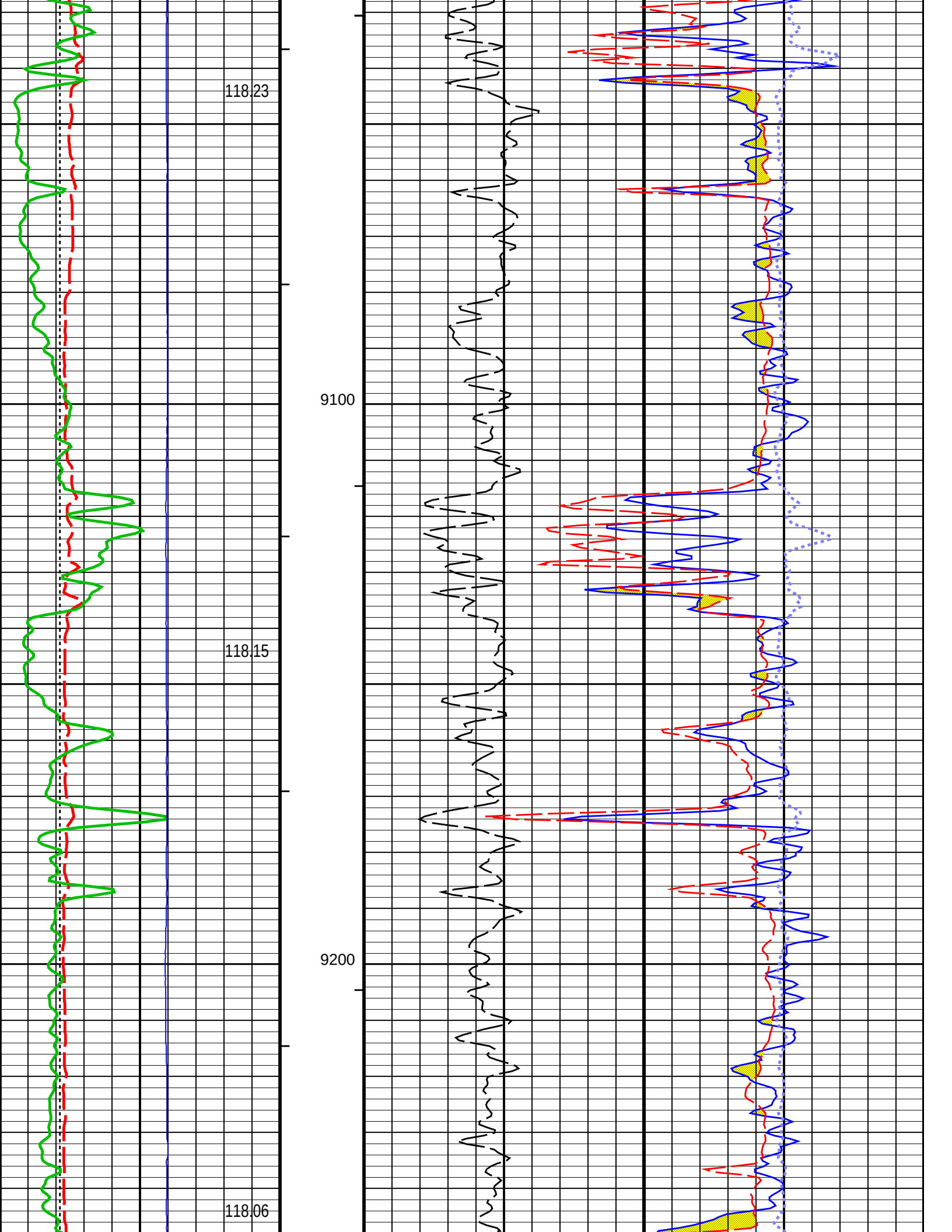

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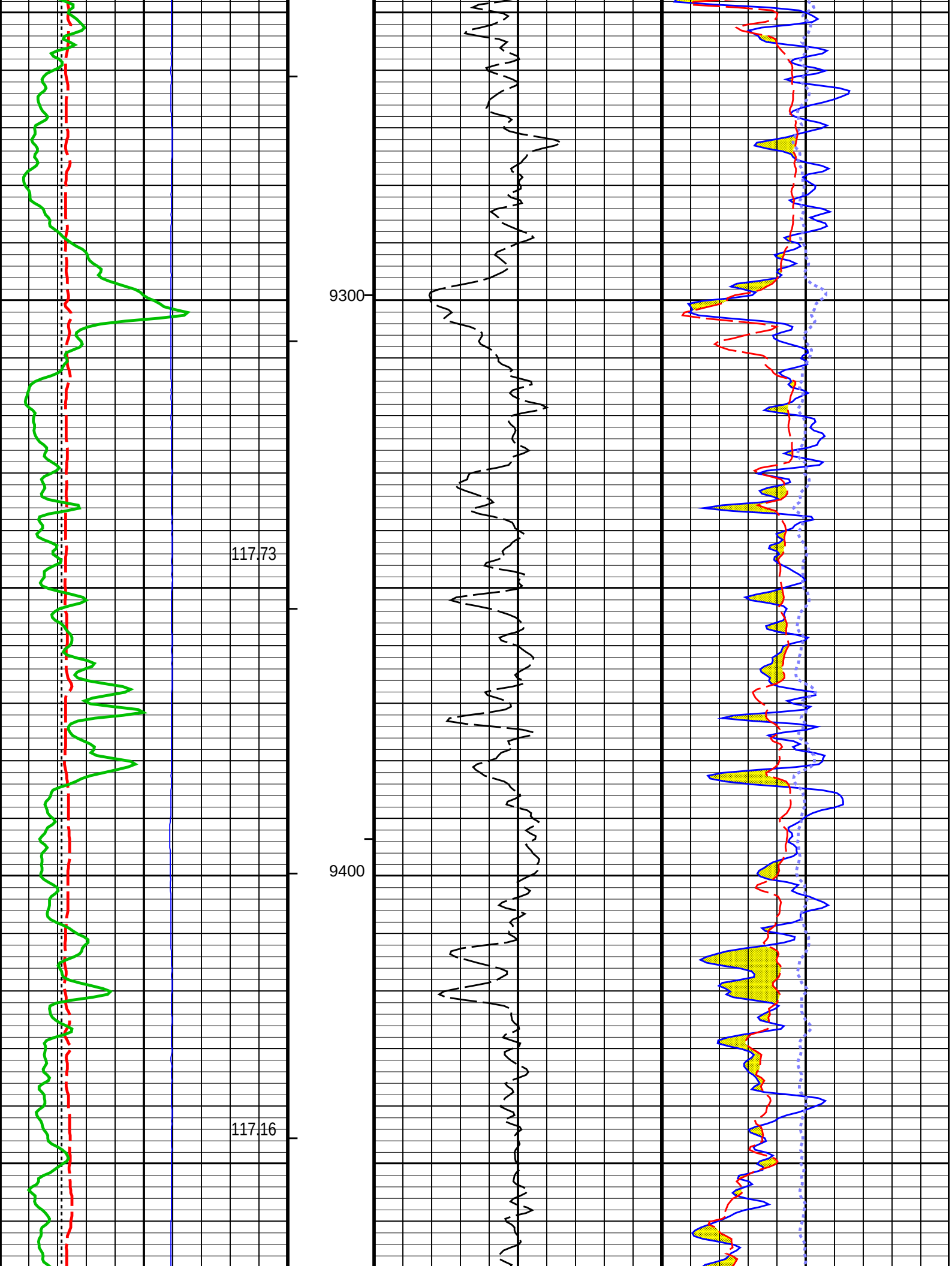

8200
120.34
8300
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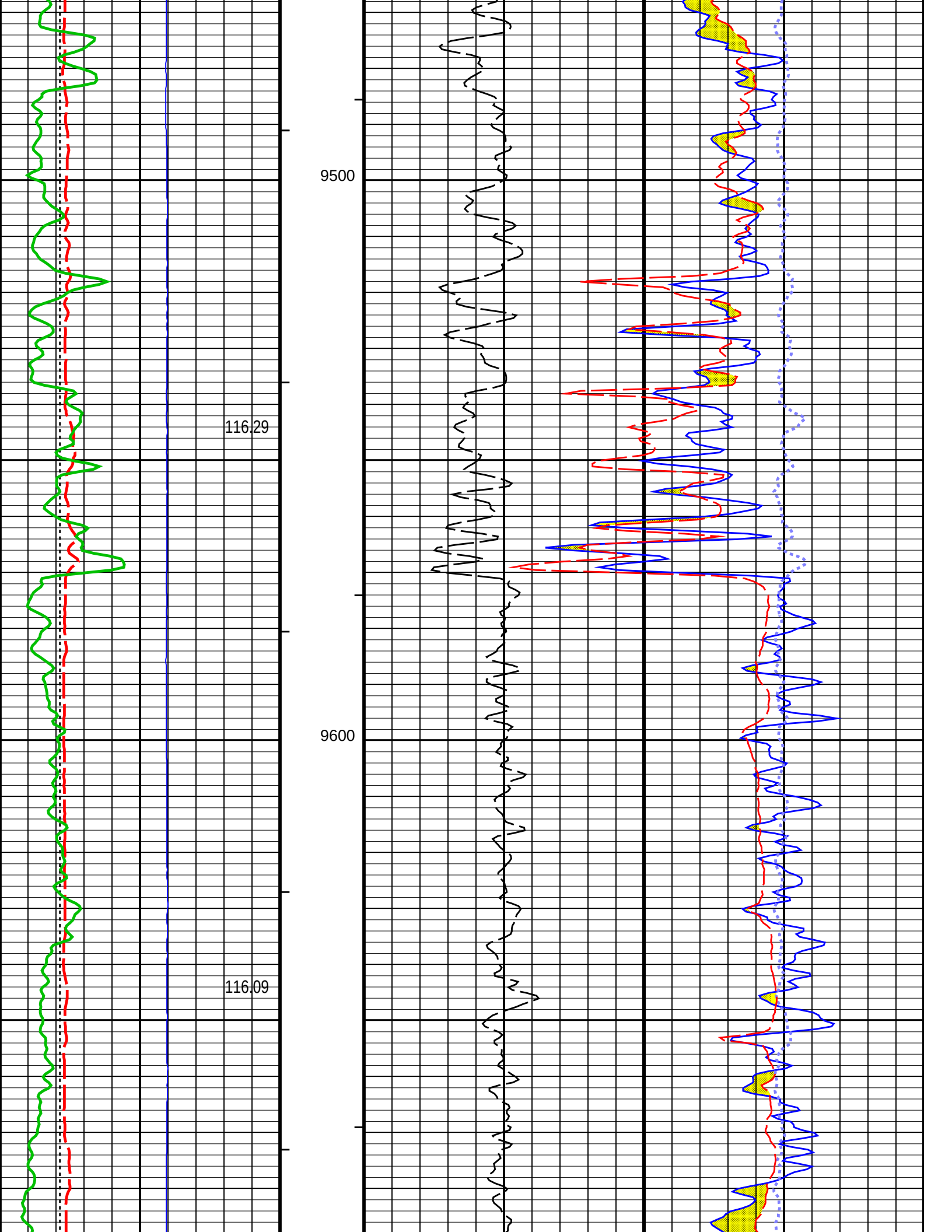

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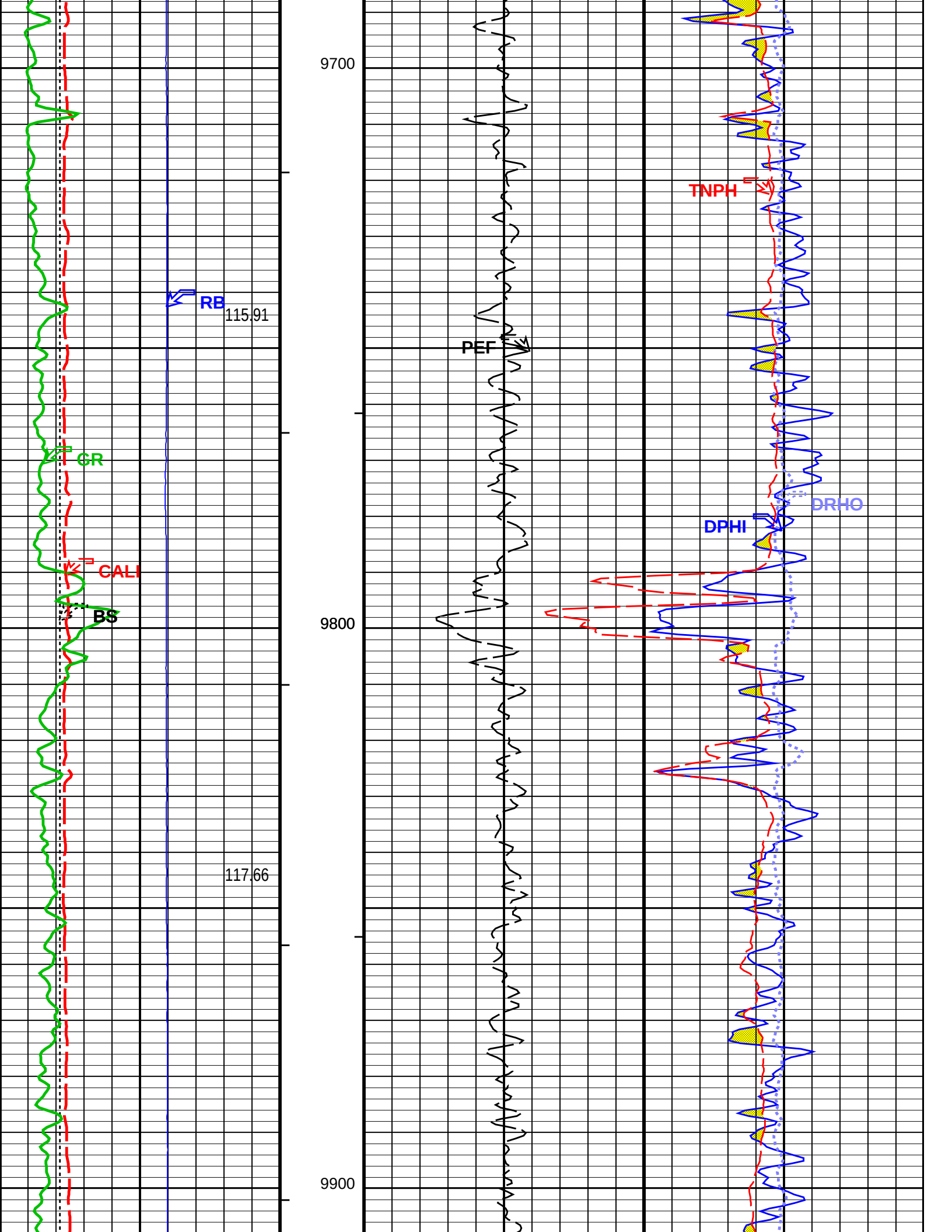

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8800

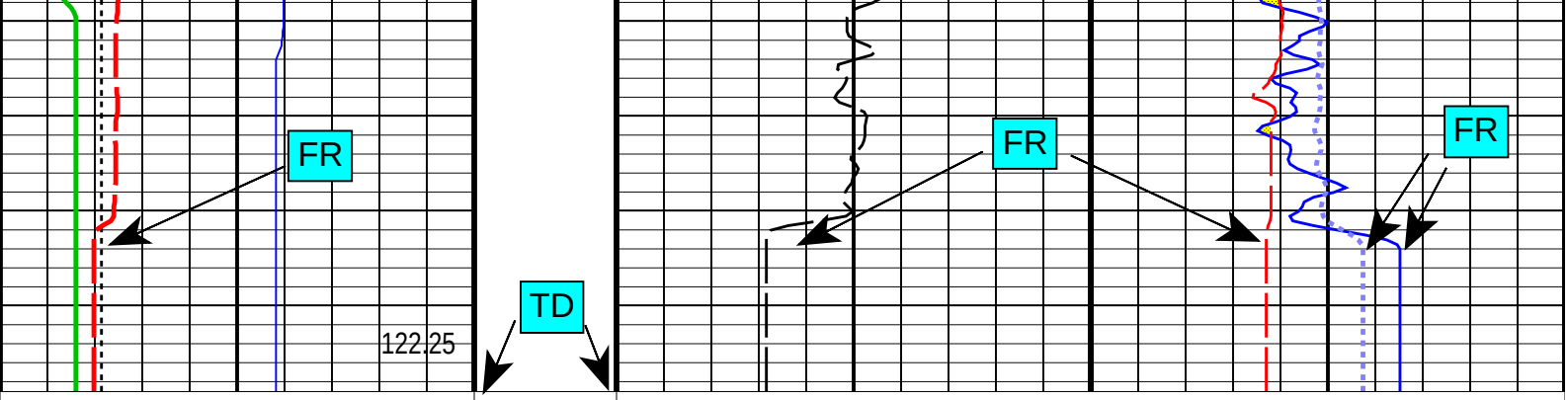

118.64
8900
118.48
9000


118.23
118.15
118.06
9100
9200


9300
9400
117.73
117.16


9500
116.29
9600
116.09


9700
9800
9900
RB
115.91
GR
CALI
BS
117.66
PEF
TNPH
DRHO
DPHI



GR Temp (WTEP)
(DEGF)

Bit Size (BS)
4 (IN) 14

Gamma Ray 1 (GR)
150 (GAPI) 300

Gamma Ray 2 (GR)
300 (GAPI) 450

Gamma Ray 3 (GR)
450 (GAPI) 600

Gamma Ray 4 (GR)
600 (GAPI) 750

Caliper (CALI)
4 (IN) 14

Gamma Ray (GR)
0 (GAPI) 150

gr wrap1
From LHT1 to GR1

gr wrap2
From LHT1 to GR2

gr wrap3
From LHT1 to GR3

gr wrap4
From LHT1 to GR4

Relative Bearing
(RB)
0 (DEG) 940

DPHI (DPHI)
30 (PU) −10

PEF (PEF)
0 (−−−− 10

DRHO (DRHO)
−0.5 (G/C3) 0.5

TNPH (TNPH)
30 (%) −10

PIP SUMMARY

⊣ Integrated Cement Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊢ Integrated Hole Volume Minor Pip Every 10 F3

Parameters

DLIS Name	Description	Value	
	TBT−A: ThruBit String		
BHS	Borehole Status	OPEN	
CSAL	Cement Salinity	0.000	ppm
CSID	Casing Size I.D.	6.300	in
DHC	Density Hole Correction	CALIPER	
FD	Fluid Density	1.000	g/cm3
FSAL	Formation Salinity	0.000	ppm

FSCO	Formation Salinity Correction Enabled? (for TBN)	NO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
MDEN	Matrix Density	2.710	g/cm3
MT	Mud Type (for TBN and TBI correction)	WBM	
MWCO	Mud−Weight Correction Enabled? (for TBN)	NO	
RB_OFFSET	Additional RB offset (degrees)	0.000	deg
SOCO	Stand−Off Correction Enabled? (for TBN)	NO	
SOFF	TBN Standoff	0.000	in
TBD_CAL_BLOCK	TBD Calibration Block Type	THRUBIT	
TBD_SPIKE_REJECT	TBD Spike Detection Option	DETECT	
TBD_SPIKE_THRESHOLD	TBD Attenuation Change Threshold for Spike Detection	5.000	%
TBN_BHC_OP	Borehole Correction Option (for TBN)	CALIPER	
TBN_CAL_TANK	TBN Calibration Tank Type	THRUBIT	
TBN_PRES_OP	Pressure Correction Enabled? (for TBN)	NO	
TBN_TEMP_OP	Temperature Correction Enabled? (for TBN)	NO	
TBN_WPRE	Well Pressure (for TBN)	14.696	psi
WMUD	Mud Weight	8.345	lbm/gal
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
System and Miscellaneous			
BS	Bit Size	6.125	in
BSAL	Borehole Salinity	23000.0	ppm

Format: TB_5INCH_NUCLEAR **Vertical Scale: 5" per 100'** **Graphics File Created: 16−Sep−2014 06:32**

OP System Version: 19C2−270

TBT **SRPC−5303−ThruBit**

Input DLIS Files

DEFAULT	**ThruBit_007PUP**	**FN:6**	**PRODUCER**	**16−Sep−2014 06:15**	**9949.0 FT**	**5082.0 FT**

Output DLIS Files

TBT .010 **FN:9** **16−Sep−2014 06:32**

Schlumberger

CALIBRATIONS

MAXIS Field Log

ThruBit String / Equipment Identification

Primary Equipment:		
Induction Resistivity	TBI − A	3
Density	TBD − A	23
Gamma−Ray Logging Source	GGLS − FZ	
Thermal Neutron	TBN − A	32
Neutron Logging Source	NNLS − EWA	
Telemetry Memory GR	TMG − A	34
Battery	TBAT −	40
Battery	TBAT −	7
Auxiliary Equipment:		

ThruBit String Master Calibration

TBI Master Calibration Sonde Errors

Freq 1, A1, R	Value	Nominal	Freq 1, A1, X	Value	Nominal
	−456.524	−457.000		80.1519	300.000
−556.000 (Minimum) (Nominal) −387.000 (Maximum)			−500.000 (Minimum) (Nominal) 1100.00 (Maximum)		
Freq 1, A2, R	Value	Nominal	Freq 1, A2, X	Value	Nominal

	Value	Nominal		Value	Nominal
	−147.640	−141.000		7.28902	320.000
−182.000 (Minimum)	−120.000 (Nominal)	−120.000 (Maximum)	−75.0000 (Minimum)	700.000 (Nominal)	700.000 (Maximum)
Freq 1, A3, R	Value	Nominal	Freq 1, A3, X	Value	Nominal
	−29.9611	−28.0000		−7.26270	50.0000
−38.0000 (Minimum)	−18.0000 (Nominal)	−18.0000 (Maximum)	−375.000 (Minimum)	475.000 (Nominal)	475.000 (Maximum)
Freq 1, A4, R	Value	Nominal	Freq 1, A4, X	Value	Nominal
	−18.6840	−16.0000		194.696	300.000
−24.0000 (Minimum)	−8.00000 (Nominal)	−8.00000 (Maximum)	25.0000 (Minimum)	575.000 (Nominal)	575.000 (Maximum)
Freq 1, A5, R	Value	Nominal	Freq 1, A5, X	Value	Nominal
	−18.0029	−14.0000		105.192	150.000
−21.0000 (Minimum)	−7.00000 (Nominal)	−7.00000 (Maximum)	25.0000 (Minimum)	300.000 (Nominal)	300.000 (Maximum)
Freq 2, A1, R	Value	Nominal	Freq 2, A1, X	Value	Nominal
	−237.532	−237.000		21.7984	150.000
−313.000 (Minimum)	−186.000 (Nominal)	−186.000 (Maximum)	−375.000 (Minimum)	675.000 (Nominal)	675.000 (Maximum)
Freq 2, A2, R	Value	Nominal	Freq 2, A2, X	Value	Nominal
	−95.7068	−92.0000		−25.6539	160.000
−126.000 (Minimum)	−76.0000 (Nominal)	−76.0000 (Maximum)	−100.000 (Minimum)	425.000 (Nominal)	425.000 (Maximum)
Freq 2, A3, R	Value	Nominal	Freq 2, A3, X	Value	Nominal
	−21.6735	−21.0000		−57.5084	−20.0000
−28.0000 (Minimum)	−13.0000 (Nominal)	−13.0000 (Maximum)	−325.000 (Minimum)	250.000 (Nominal)	250.000 (Maximum)
Freq 2, A4, R	Value	Nominal	Freq 2, A4, X	Value	Nominal
	−23.0699	−20.0000		35.7392	100.000
−28.0000 (Minimum)	−10.0000 (Nominal)	−10.0000 (Maximum)	−75.0000 (Minimum)	275.000 (Nominal)	275.000 (Maximum)
Freq 2, A5, R	Value	Nominal	Freq 2, A5, X	Value	Nominal
	−23.9040	−20.0000		−32.9961	−25.0000
−27.0000 (Minimum)	−10.0000 (Nominal)	−10.0000 (Maximum)	−125.000 (Minimum)	100.000 (Nominal)	100.000 (Maximum)
Freq 3, A1, R	Value	Nominal	Freq 3, A1, X	Value	Nominal
	−149.962	−149.000		−58.1783	25.0000
−213.000 (Minimum)	−108.000 (Nominal)	−108.000 (Maximum)	−375.000 (Minimum)	425.000 (Nominal)	425.000 (Maximum)
Freq 3, A2, R	Value	Nominal	Freq 3, A2, X	Value	Nominal
	−72.8319	−70.0000		−62.6397	70.0000
−101.000 (Minimum)	−57.0000 (Nominal)	−57.0000 (Maximum)	−125.000 (Minimum)	250.000 (Nominal)	250.000 (Maximum)
Freq 3, A3, R	Value	Nominal	Freq 3, A3, X	Value	Nominal
	−17.3737	−17.0000		−101.554	−90.0000
−23.0000 (Minimum)	−11.0000 (Nominal)	−11.0000 (Maximum)	−300.000 (Minimum)	125.000 (Nominal)	125.000 (Maximum)
Freq 3, A4, R	Value	Nominal	Freq 3, A4, X	Value	Nominal
	−25.8531	−22.0000		−73.0456	−50.0000
−31.0000 (Minimum)	−11.0000 (Nominal)	−11.0000 (Maximum)	−200.000 (Minimum)	100.000 (Nominal)	100.000 (Maximum)
Freq 3, A5, R	Value	Nominal	Freq 3, A5, X	Value	Nominal
	−27.9836	−22.0000		−135.634	−110.000
−32.0000 (Minimum)	−11.0000 (Nominal)	−11.0000 (Maximum)	−250.000 (Minimum)	0 (Nominal)	0 (Maximum)
Freq 4, A1, R	Value	Nominal	Freq 4, A1, X	Value	Nominal
	−83.0375	−80.0000		−198.075	−190.000
−128.000 (Minimum)	−54.0000 (Nominal)	−54.0000 (Maximum)	−450.000 (Minimum)	75.0000 (Nominal)	75.0000 (Maximum)
Freq 4, A2, R	Value	Nominal	Freq 4, A2, X	Value	Nominal
	−52.6790	−50.0000		−129.313	−75.0000
−80.0000 (Minimum)	−41.0000 (Nominal)	−41.0000 (Maximum)	−200.000 (Minimum)	50.0000 (Nominal)	50.0000 (Maximum)
Freq 4, A3, R	Value	Nominal	Freq 4, A3, X	Value	Nominal

		−13.5332	−14.0000		−178.474	−190.000
−19.0000 (Minimum)	−8.00000 (Nominal)	(Maximum)		−350.000 (Minimum)	−25.0000 (Nominal)	(Maximum)

Freq 4, A4, R	Value	Nominal	Freq 4, A4, X	Value	Nominal
	−30.6911	−25.0000		−239.561	−235.000
−37.0000 (Minimum)	−11.0000 (Nominal)	(Maximum)	−400.000 (Minimum)	−75.0000 (Nominal)	(Maximum)

Freq 4, A5, R	Value	Nominal	Freq 4, A5, X	Value	Nominal
	−36.4876	−28.0000		−312.354	−300.000
−43.0000 (Minimum)	−12.0000 (Nominal)	(Maximum)	−475.000 (Minimum)	−100.000 (Nominal)	(Maximum)

Master: 10−Sep−2014 10:09

ThruBit String Master Calibration

TBI Master Calibration COMPLEX GAINS

Freq 1, R	Value	Nominal	Freq 1, X	Value	Nominal
	0.9923	1.000		0.003750	0
	0.9949	1.000		0.003459	0
	0.9984	1.000		−0.004777	0
	0.9930	1.000		0.004003	0
	0.9994	1.000		0.002304	0
0.9500 (Minimum)	1.050 (Nominal)	(Maximum)	−0.05000 (Minimum)	0.05000 (Nominal)	(Maximum)

Freq 2, R	Value	Nominal	Freq 2, X	Value	Nominal
	0.9884	1.000		−0.005613	0
	0.9905	1.000		−0.005595	0
	0.9883	1.000		−0.006254	0
	0.9893	1.000		−0.004509	0
	0.9964	1.000		−0.006852	0
0.9500 (Minimum)	1.050 (Nominal)	(Maximum)	−0.05000 (Minimum)	0.05000 (Nominal)	(Maximum)

Freq 3, R	Value	Nominal	Freq 3, X	Value	Nominal
	0.9926	1.000		0.004222	0
	0.9950	1.000		0.004625	0
	0.9926	1.000		0.003735	0
	0.9927	1.000		0.005805	0
	1.001	1.000		0.003798	0
0.9500 (Minimum)	1.050 (Nominal)	(Maximum)	−0.05000 (Minimum)	0.05000 (Nominal)	(Maximum)

Freq 4, R	Value	Nominal	Freq 4, X	Value	Nominal
	0.9893	1.000		−0.005682	0
	0.9918	1.000		−0.005082	0
	0.9915	1.000		−0.007732	0
	0.9880	1.000		−0.003652	0
	1.004	1.000		−0.007422	0
0.9300 (Minimum)	1.070 (Nominal)	(Maximum)	−0.05000 (Minimum)	0.05000 (Nominal)	(Maximum)

Master: 10−Sep−2014 10:09

ThruBit String Master Calibration

TBD Caliper Master Calibration

Caliper 12in Ring IN	Value	Nominal	Caliper 9in Ring IN	Value	Nominal	Caliper 6in Ring IN	Value	Nominal
	1877.8	1949.8		2047.8	2096.7		2211.0	2285.7
1799.8 (Minimum) 2099.8 (Nominal) (Maximum)			1946.7 (Minimum) 2246.7 (Nominal) (Maximum)			2135.7 (Minimum) 2435.7 (Nominal) (Maximum)		

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ThruBit String Master Calibration

TBD Density Master Calibration. Be Window, Thrubit blocks

Aluminium Density G/C3	Value	Nominal
	2.607	2.607
2.557 (Minimum) 2.657 (Nominal) 2.657 (Maximum)		

Magnesium Density G/C3	Value	Nominal
	1.752	1.752
1.702 (Minimum) 1.802 (Nominal) 1.802 (Maximum)		

LS1 Background CPS	Value	Nominal
	133.78	140.00
100.00 (Minimum) 187.00 (Nominal) 187.00 (Maximum)		

SS1 Background CPS	Value	Nominal
	133.57	140.00
100.00 (Minimum) 185.00 (Nominal) 185.00 (Maximum)		

LS4 Background CPS	Value	Nominal
	27.51	29.00
20.00 (Minimum) 38.00 (Nominal) 38.00 (Maximum)		

SS1 Aluminium CPS	Value	Nominal
	4391.85	4850.00
4076.00 (Minimum) 5613.00 (Nominal) 5613.00 (Maximum)		

LS1 Aluminium CPS	Value	Nominal
	861.03	870.00
750.00 (Minimum) 982.00 (Nominal) 982.00 (Maximum)		

SS1 Magnesium CPS	Value	Nominal
	7323.24	8000.00
6695.00 (Minimum) 9269.00 (Nominal) 9269.00 (Maximum)		

LS4 Aluminium CPS	Value	Nominal
	872.02	955.00
796.00 (Minimum) 1169.0 (Nominal) 1169.0 (Maximum)		

LS1 Al + Sleeve CPS	Value	Nominal
	778.91	725.00
650.00 (Minimum) 838.00 (Nominal) 838.00 (Maximum)		

LS4 Al + Sleeve CPS	Value	Nominal
	426.36	426.50
382.00 (Minimum) 638.00 (Nominal) 638.00 (Maximum)		

LS1 Magnesium CPS	Value	Nominal
	5639.93	5800.00
5158.00 (Minimum) 6486.00 (Nominal) 6486.00 (Maximum)		

SS Slope	Value	Nominal
	1.614	1.645
1.520 (Minimum) 1.770 (Nominal) 1.770 (Maximum)		

LS Slope	Value	Nominal
	0.4192	0.4150
0.3800 (Minimum) 0.4500 (Nominal) 0.4500 (Maximum)		

Pef K Factor	Value	Nominal
	4.343	4.840
3.510 (Minimum) 6.170 (Nominal) 6.170 (Maximum)		

Pef B Factor	Value	Nominal
	−0.5325	−0.5550
−0.7000 (Minimum) −0.4100 (Nominal) −0.4100 (Maximum)		

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ThruBit String Master Calibration

Thermal Neutron Master Calibration

TNF, Background CPS	Value	Nominal
	0	1.0
0 (Minimum) 2.0 (Nominal) 2.0 (Maximum)		

TNN, Background CPS	Value	Nominal
	0.017	1.0
0 (Minimum) 2.0 (Nominal) 2.0 (Maximum)		

TNF, Tank CPS	Value	Nominal
	69.02	96.00
25.00 (Minimum) 200.0 (Nominal) 200.0 (Maximum)		

TNN, Tank CPS	Value	Nominal
	2039.8	2860.0
750.00 (Minimum) 5700.0 (Nominal) 5700.0 (Maximum)		

TNF, Tank + Al Sleeve CPS	Value	Nominal
	2176.7	3040.0

TNN, Tank + Al Sleeve CPS	Value	Nominal
	22410.4	32350.0

727.00 (Minimum)	6080.0 (Nominal)	(Maximum)		8000.00 (Minimum)	64700.0 (Nominal)	(Maximum)	
Tank + Al Sleeve Ratio		Value	Nominal	Tank + Al Sleeve Porosity PU		Value	Nominal
		10.785	10.797			14.46	14.40
10.300 (Minimum)	11.300 (Nominal)	(Maximum)		13.40 (Minimum)	15.40 (Nominal)	(Maximum)	
Tank, Ratio		Value	Nominal	Tank, Temperature DEGF		Value	Nominal
		29.554	30.958			77.0	70.0
28.000 (Minimum)	34.000 (Nominal)	(Maximum)		20.0 (Minimum)	120 (Nominal)	(Maximum)	

Master: 22−Aug−2014 10:46

ThruBit String Master Calibration

TMG Accelerometer Calibration

Minimum Ax, m/s2		Value	Nominal	Maximum Ax, m/s2		Value	Nominal
NOT DONE		N/A	−9.810	NOT DONE		N/A	9.810
−10.81 (Minimum)	−8.810 (Nominal)	(Maximum)		8.810 (Minimum)	10.81 (Nominal)	(Maximum)	
Minimum Ay, m/s2		Value	Nominal	Maximum Ay, m/s2		Value	Nominal
NOT DONE		N/A	−9.810	NOT DONE		N/A	9.810
−10.81 (Minimum)	−8.810 (Nominal)	(Maximum)		8.810 (Minimum)	10.81 (Nominal)	(Maximum)	
Minimum Az, m/s2		Value	Nominal	Maximum Az, m/s2		Value	Nominal
NOT DONE		N/A	0	NOT DONE		N/A	9.810
−1.000 (Minimum)	1.000 (Nominal)	(Maximum)		8.810 (Minimum)	10.81 (Nominal)	(Maximum)	
RB Offset, degrees		Value	Nominal				
		−17.00	0				
−360.0 (Minimum)	360.0 (Nominal)	(Maximum)					

Master: Calibration not done

ThruBit String Master Calibration

TMG Gamma−Ray Calibration

GR Background GAPI		Value	Nominal	GR Jig−Background GAPI		Value	Nominal
		27.65	30.00			161.9	170.7
0 (Minimum)	120.0 (Nominal)	(Maximum)		136.6 (Minimum)	204.8 (Nominal)	(Maximum)	

Master: 5−Sep−2014 13:28

Company: **SANDRIDGE ENERGY**

Schlumberger

Well: **JELLISON A 3319 9−5H 2L**
Field: **BIRD SOUTH**
County: **COMANCHE**
State: **KANSAS**

SPECTRAL DENSITY
DUAL SPACED NEUTRON
MEMORY LOG