Weatherford®

CML IMPULSE SHUTTLE
COMPACT PHOTO DENSITY
COMPENSATED NEUTRON

COMPANY	SANDRIDGE ENERGY
WELL	JAMES 3318 1-13H
FIELD	COLLIER FLAT
PROVINCE/COUNTY	COMANCHE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	200' FSL & 1780' FEL

SEC	TWP	RGE	Other Services
13	33S	18W	MAI/MFE

API Number 15-033-21662
Permit Number

Permanent Datum G.L., Elevation 1890 feet
Log Measured From KB
Drilling Measured From K.B. @ 19.5 FEET

Elevations:	feet
KB	1909.50
DF	1909.50
GL	1890.00

Date	29-AUG-2012			
Run Number	ONE			
Depth Driller	9550.00	feet		
Depth Logger	9550.00	feet		
First Reading	9485.00	feet		
Last Reading	5000.00	feet		
Casing Driller	5620.00	feet		
Casing Logger	5620.00	feet		
Bit Size	6.125	inches		
Hole Fluid Type	WBM			
Density / Viscosity	8.50 g/c3			
PH / Fluid Loss	11.00			
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.92 @ 81.0	ohm-m		
Rmf @ Measured Temp	0.74 @ 81.0	ohm-m		
Rmc @ Measured Temp	1.10 @ 81.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.57 @131.0	ohm-m		
Time Since Circulation	1 HOUR			
Max Recorded Temp	131.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	18077	OKC		
Recorded By	STEVEN TOTTEY			
Witnessed By	KATHY GENTRY			
S.O. #	3536736			

BOREHOLE RECORD

Last Edited: 30-AUG-2012 03:11

Bit Size inches	Depth From feet	Depth To feet
6.125	5620.00	9550.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTER	7.000	0.00	5620.00	23.00

REMARKS

TOOLS RAN: 200V SRT-69,MBS-115,SKJ-207,MMSE158,SHA-167,MTI-061,
MGS-136,MCL-069,SKJ-479,SHA-431,MIS-606,MDN-391,MPD-394,MIS-275,SHA-434,SKJ-478,MISB 336, MFE-175,MISB-336,MAI-392 RAN
IN COMBINATION

HARDWARE: MAI: MIS-B 0.5" STANDOFF USED ABOVE MAI, ISA 0.5" STANDOFF USED BELOW MAI.
MDN: MIS-A DOUBLE BOWSPRING USED ABOVE MDN.
MPD: 4INCH PROFILE PLATE USED, MIS-A SINGLE BOWSPRING USED BELOW MPD

2.71 G/C:C DENSITY MATRIX USED TO CALCULATE POROSITY
ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

DRILL PIPE DEPTH DURING DEPLOYMENT: 9431
LOGGING TOOL DEPTH AFTER DEPLOYMENT: 9521

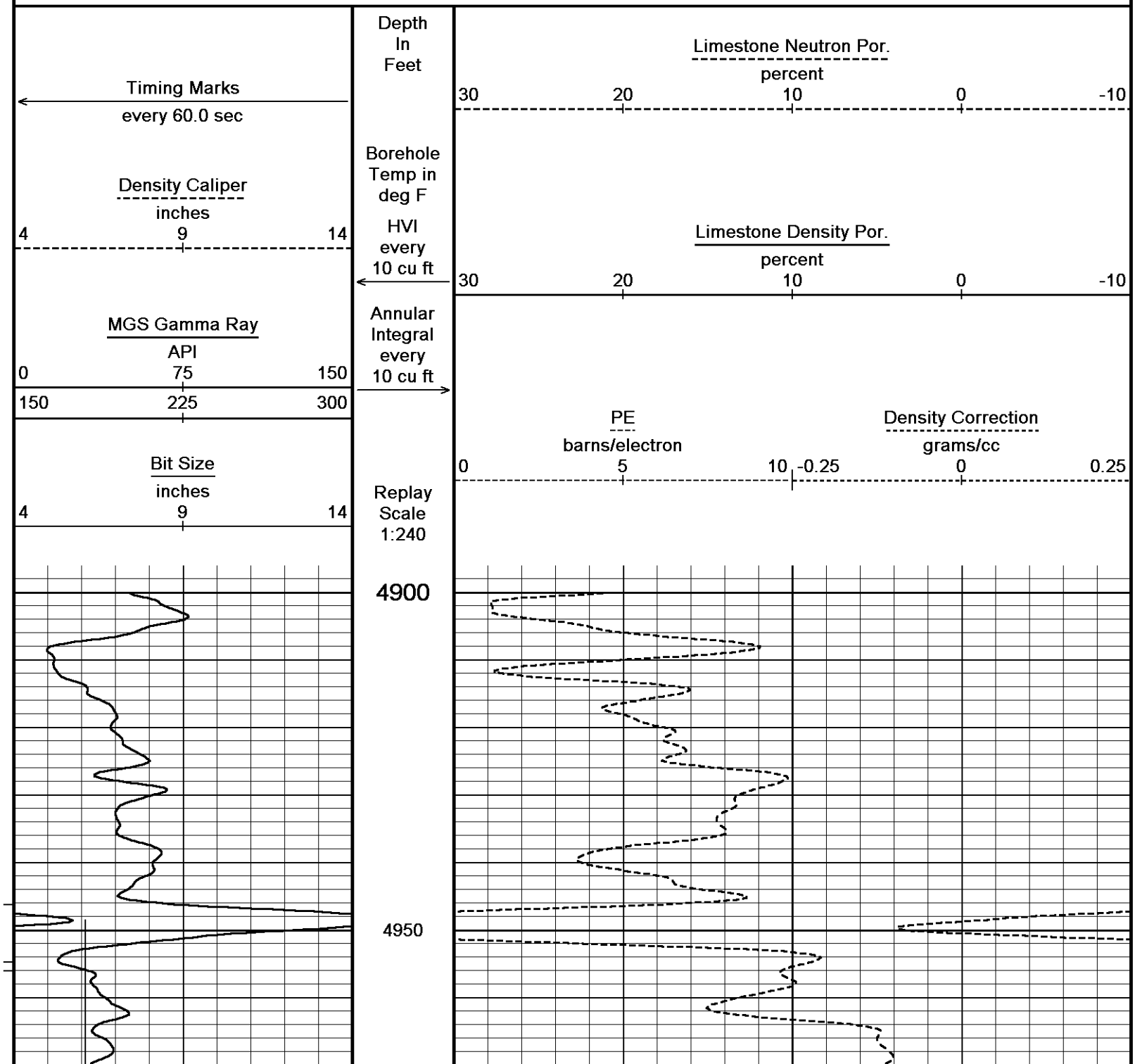
ANNULAR HOLE VOLUME CALCULATED USING WITH 4.5 INCH PRODUCTION CASING

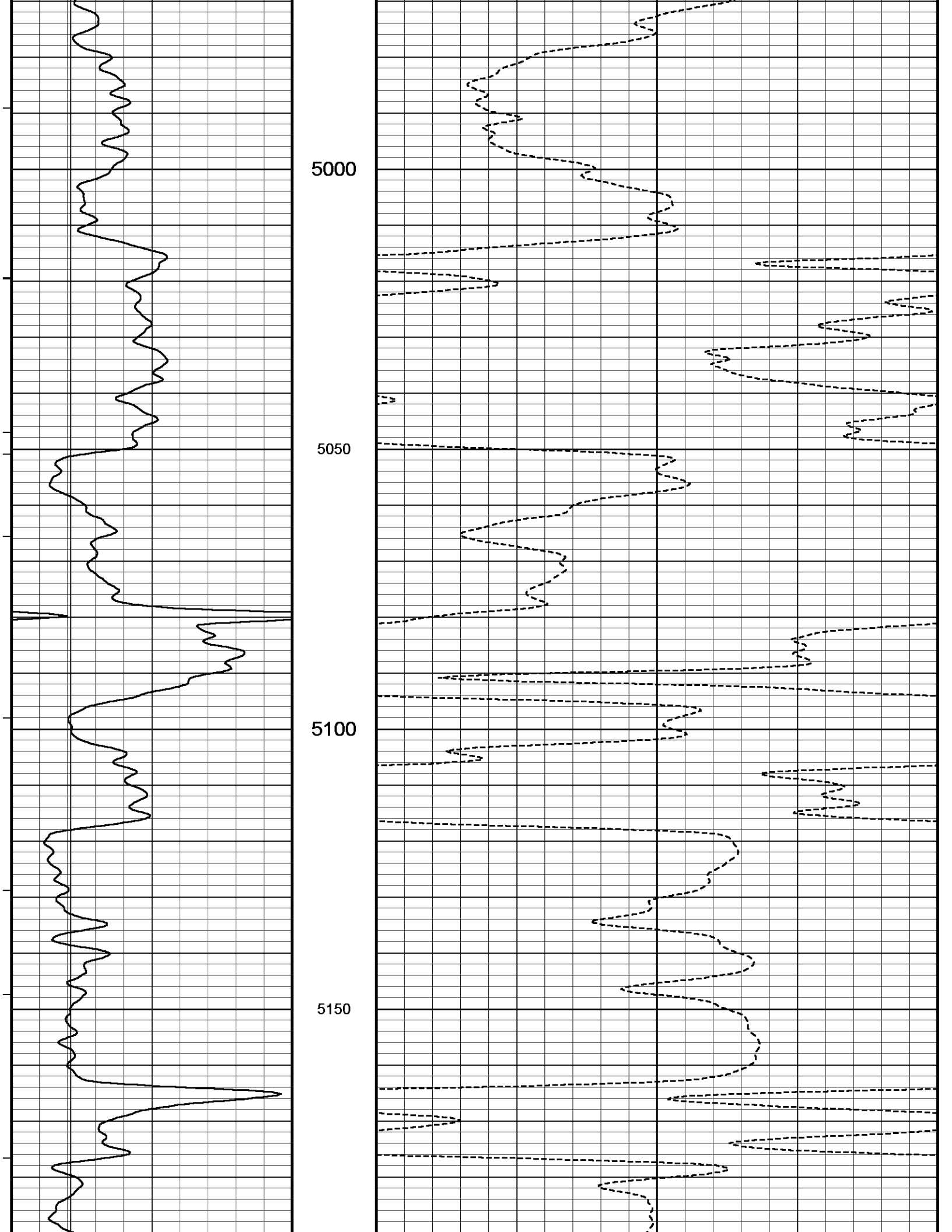
SERVICE ORDER # 3536736
RIG: LARIAT 38

OPERATOR(S): G. GARCIA AND R. CASPARIAN

HOLE RUGOSITY MAY AFFECT LOG QUALITY.

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 30-AUG-2012 03:33
Filename: C:\Data\SANDRIDGE JAMES 3318 1-...\SANDRIDGE JAMES 3318 1-13H RTAP DEPTH.dta — Recorded on 30-AUG-2012 02:49
System Versions: Processed with 13.02.6600 Plotted with 13.02.6600

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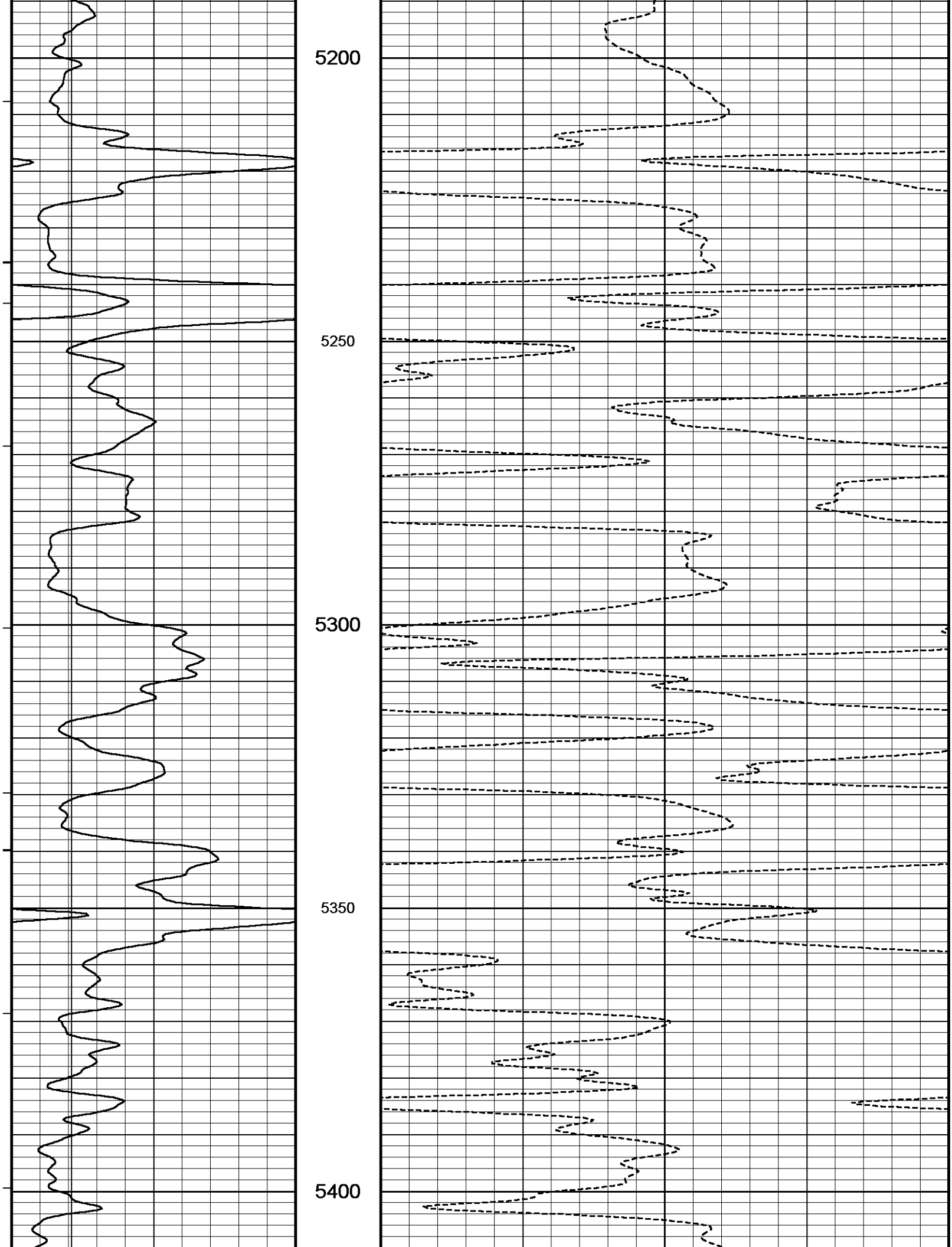
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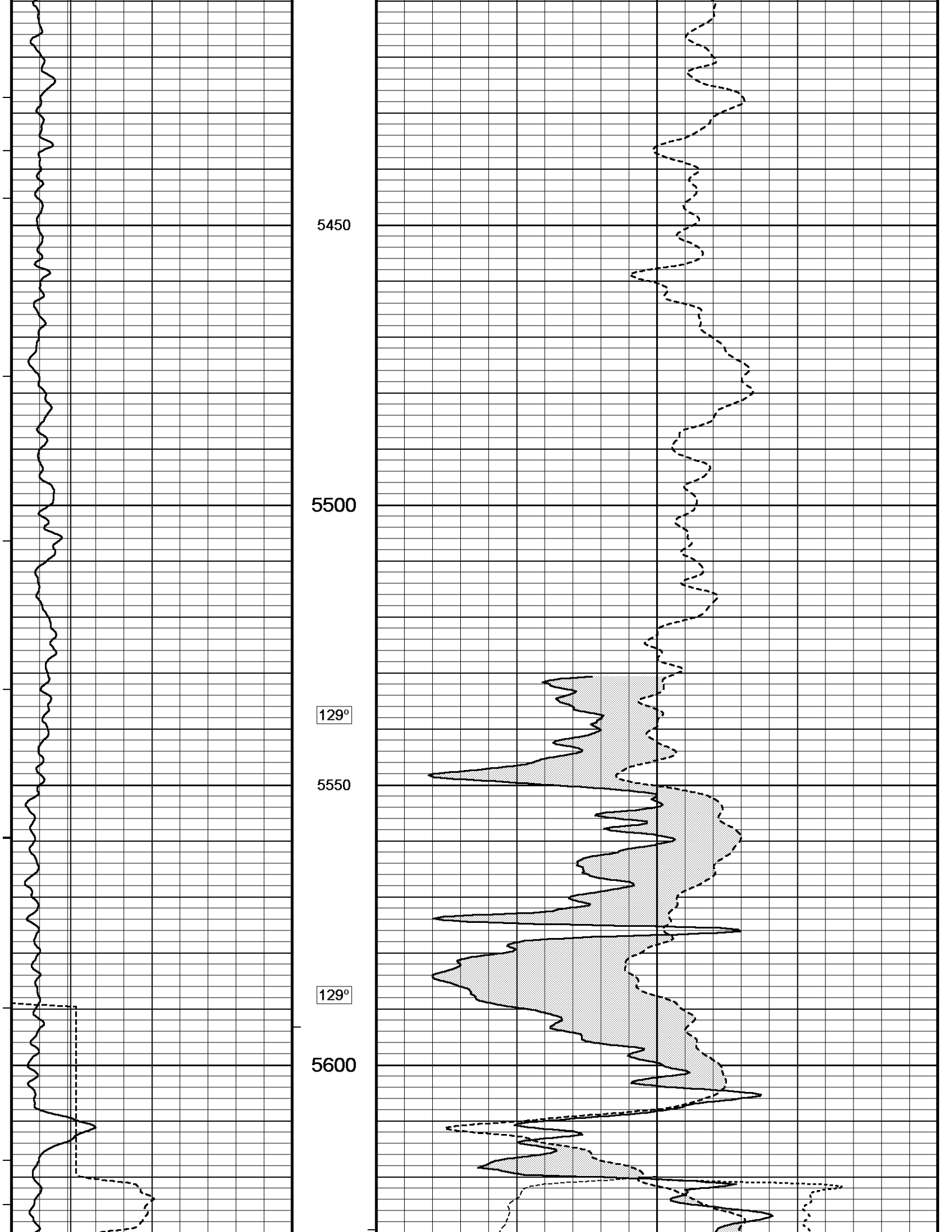
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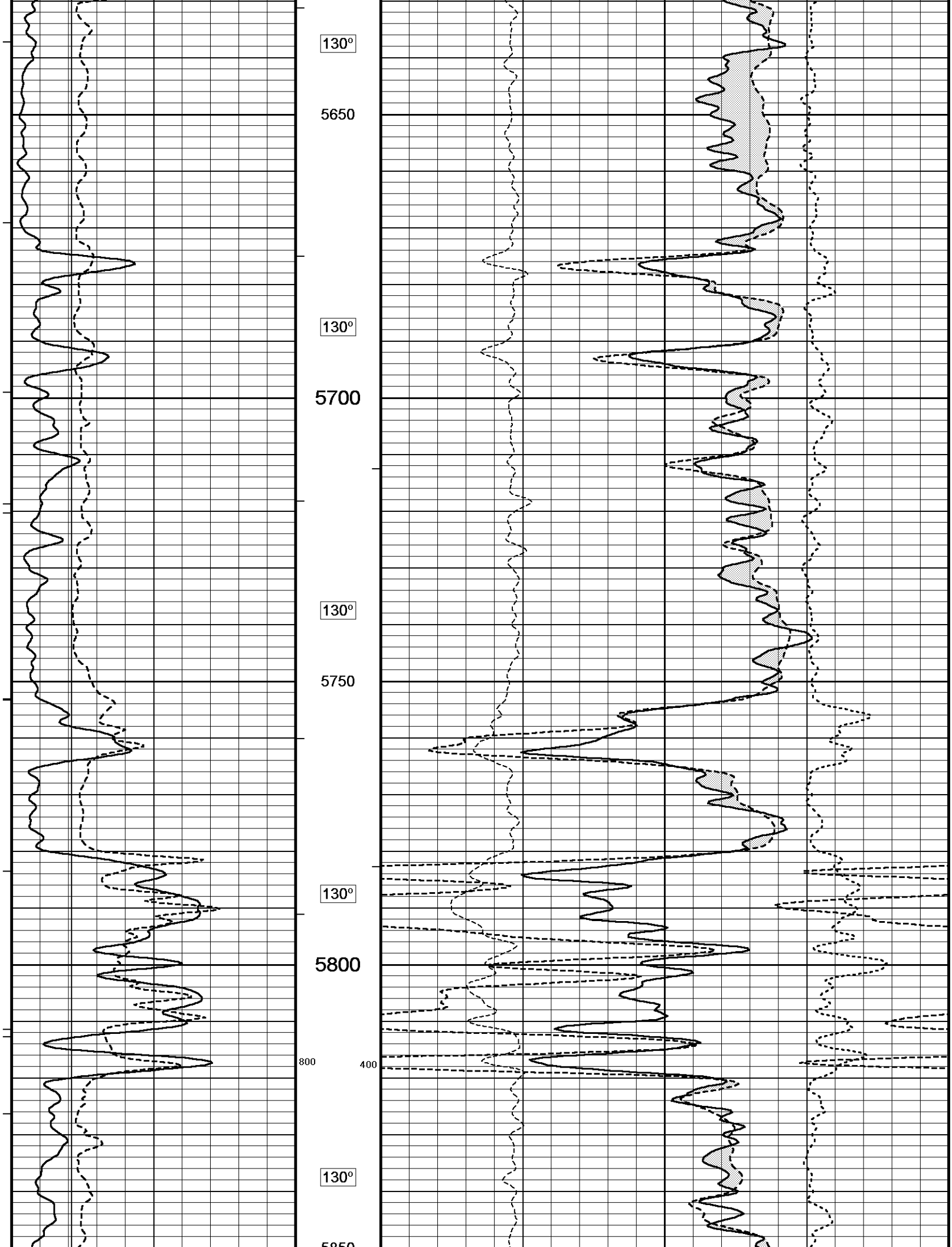
5500
129°
5550
129°
5600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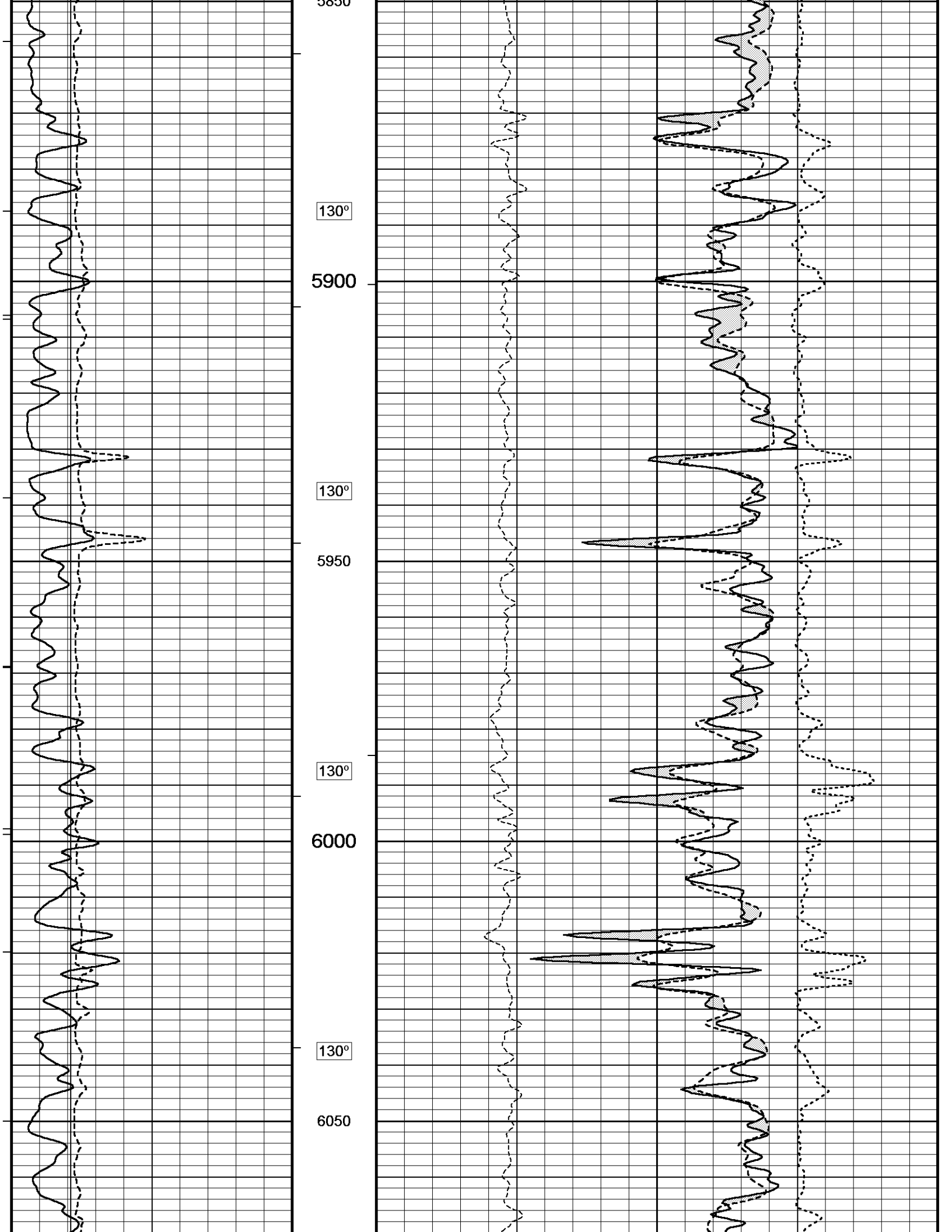
5650
130°
5700
130°
5750
130°
5800
800
400
130°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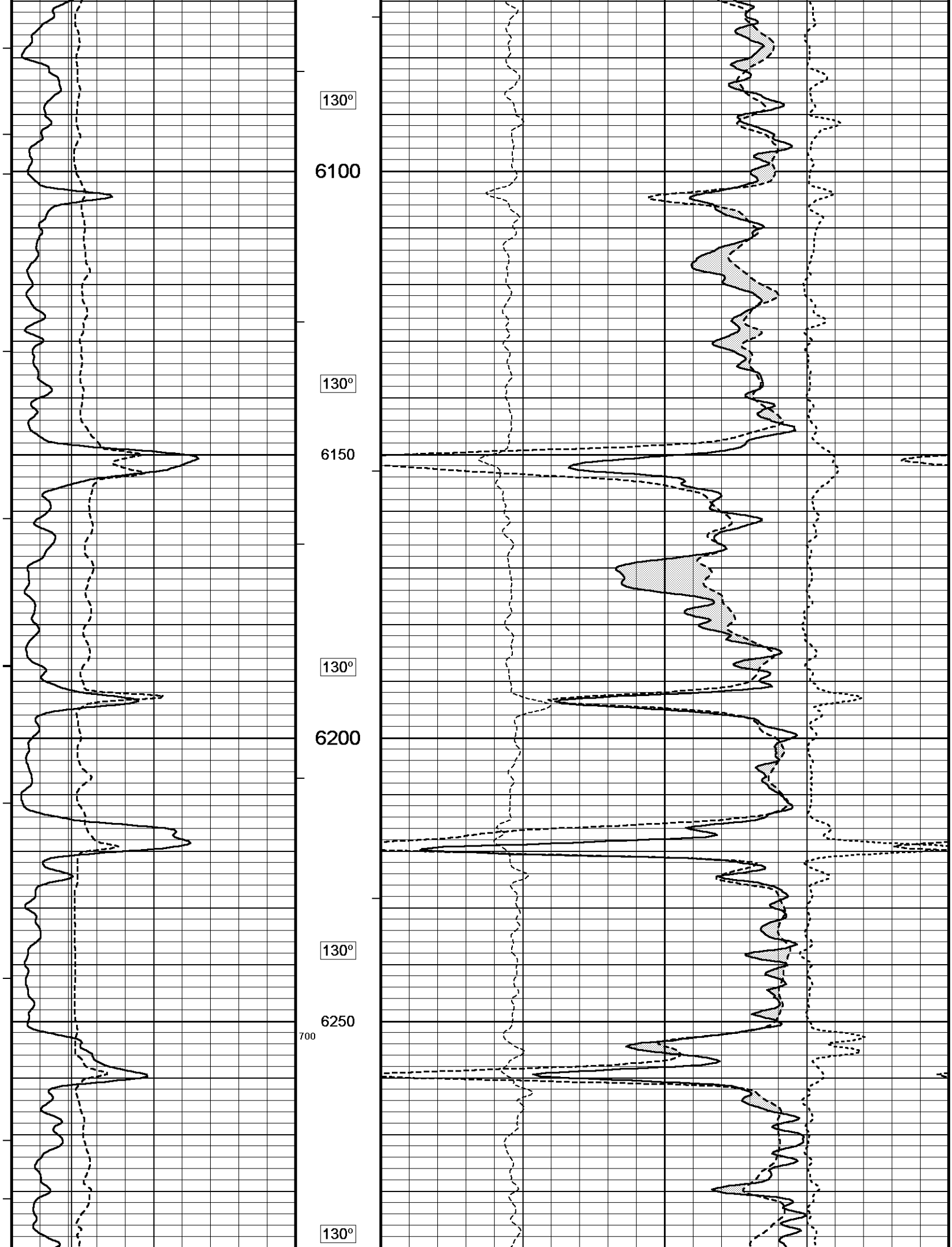
6050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130°
6150
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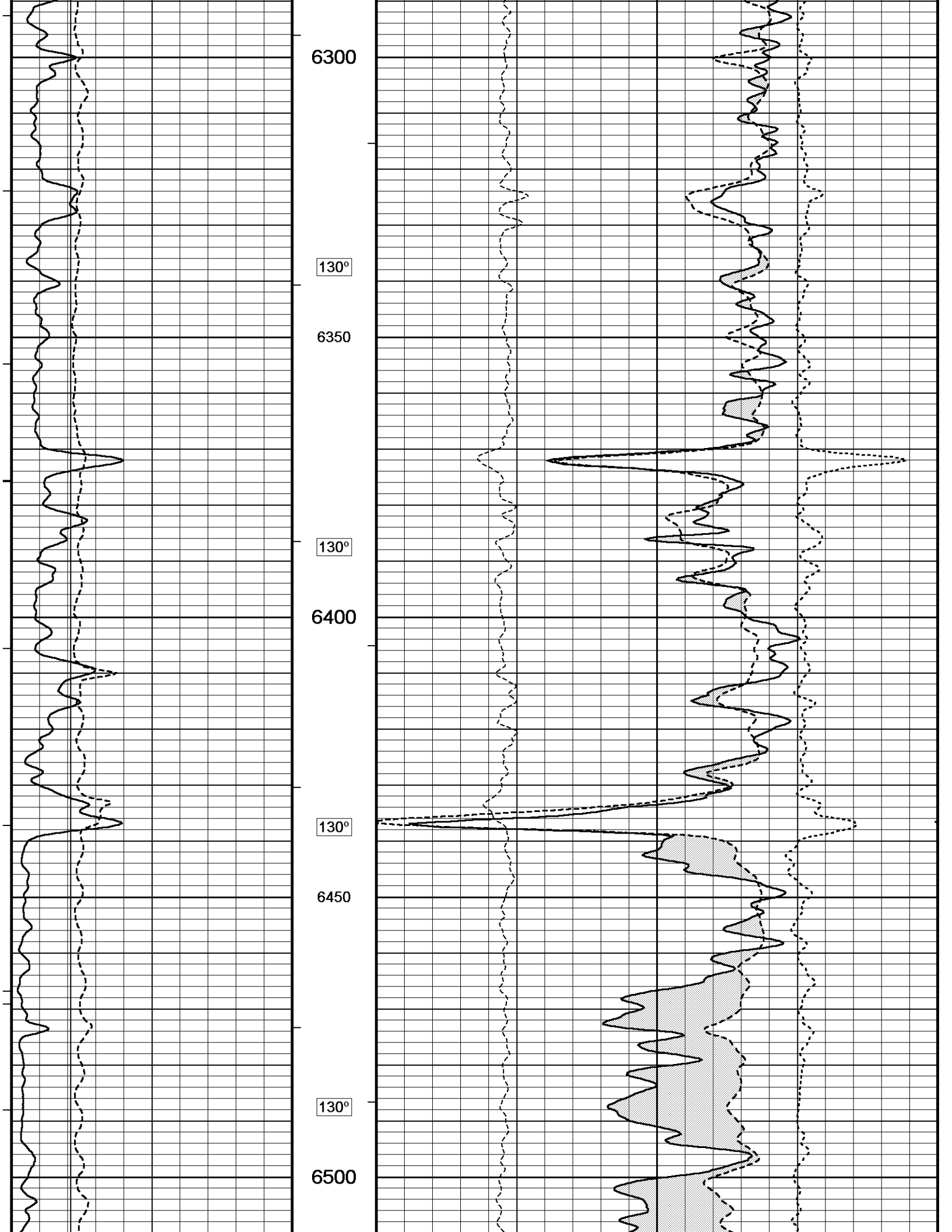
130°
6250
700
130°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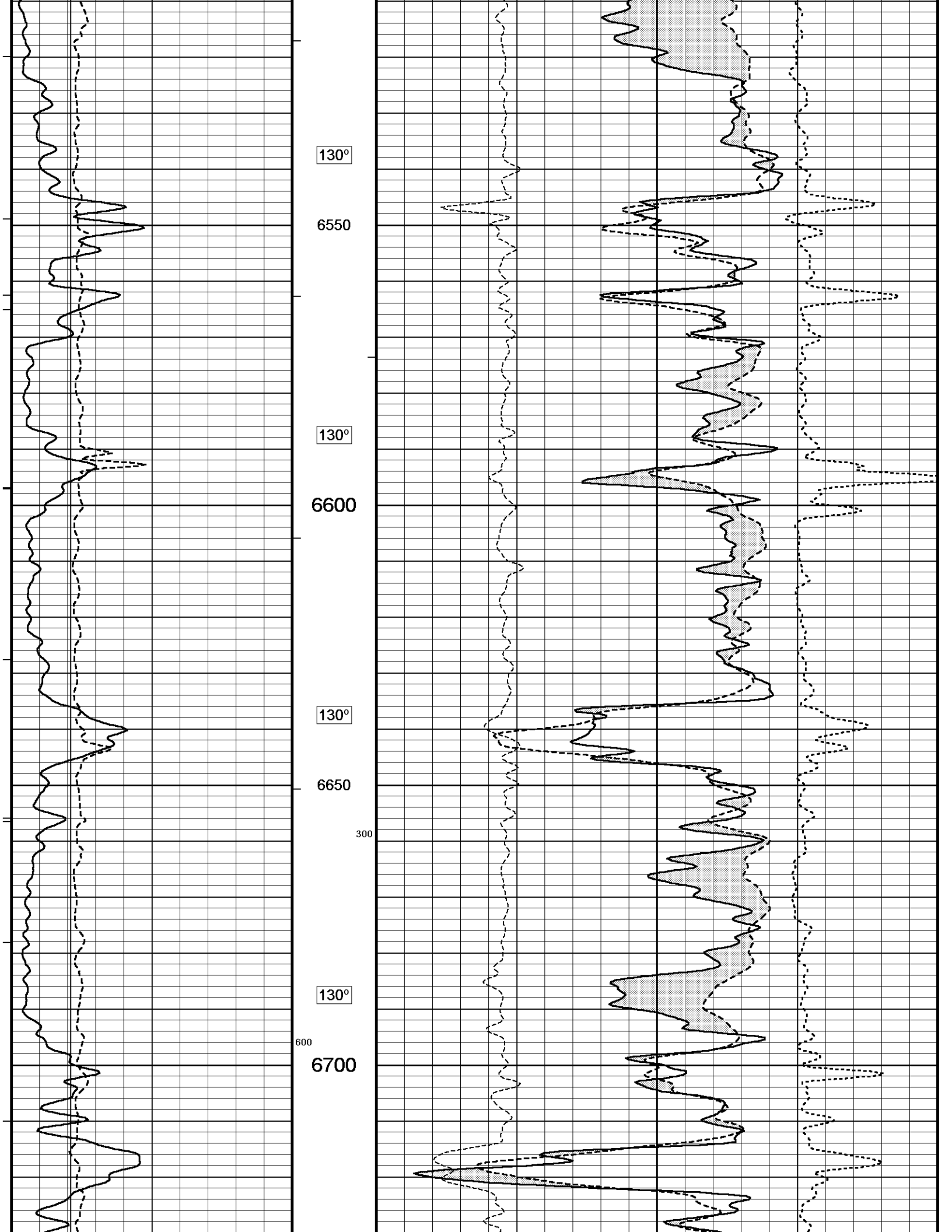
130°
6350
130°
6400
130°
6450
130°
6500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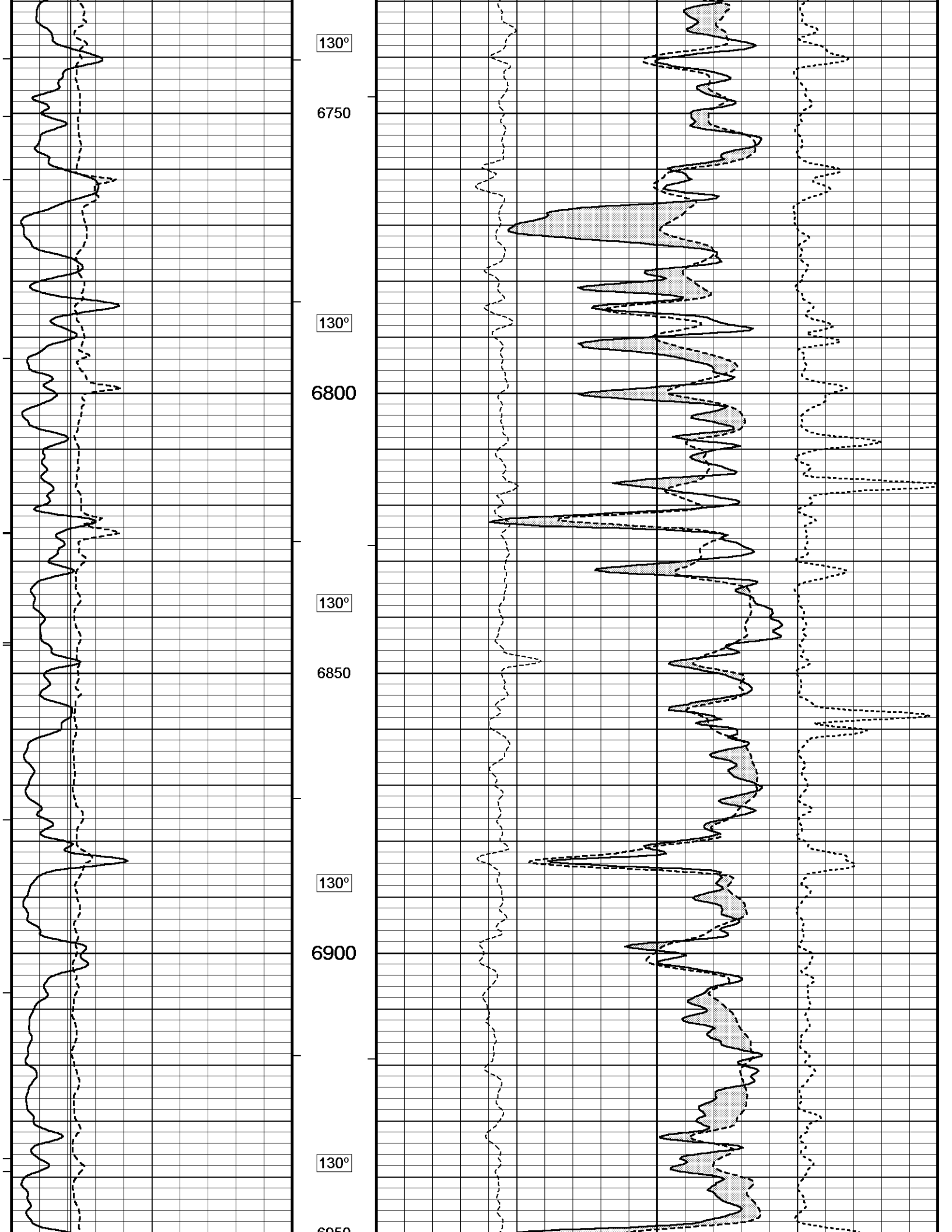
130°
6650
300
130°
600
6700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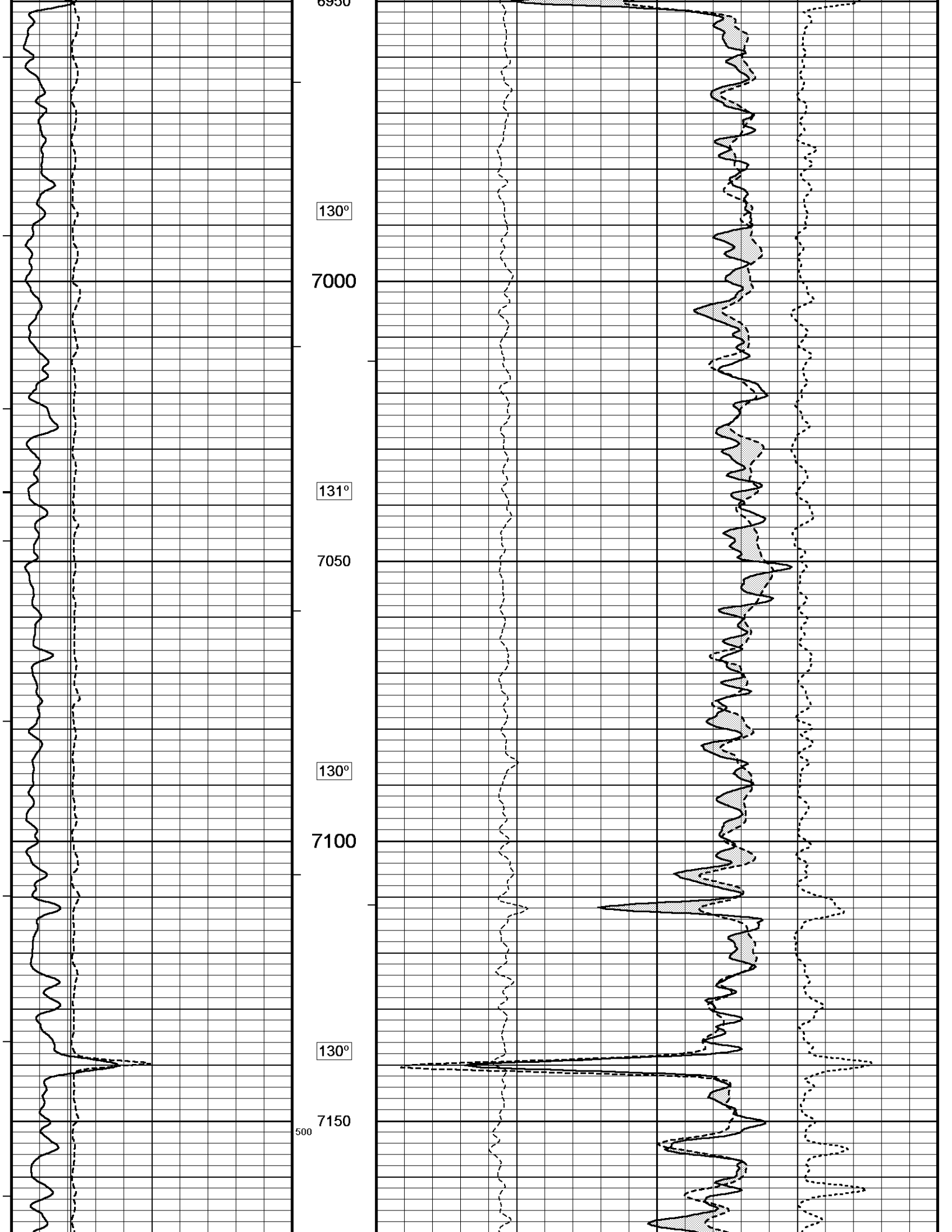
130°
6850
130°
6900
130°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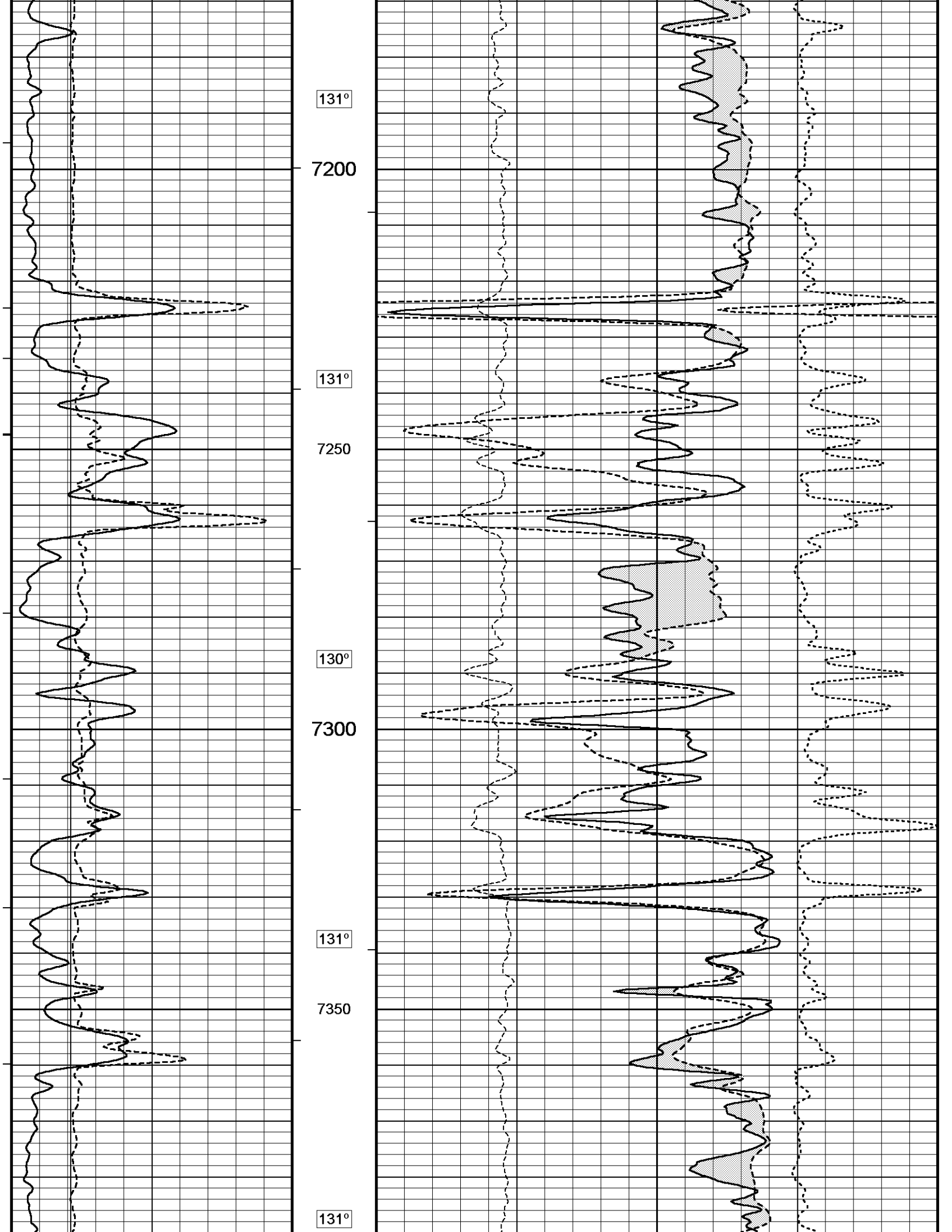
7000
131°
7050
130°
7100
130°
7150
500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7200
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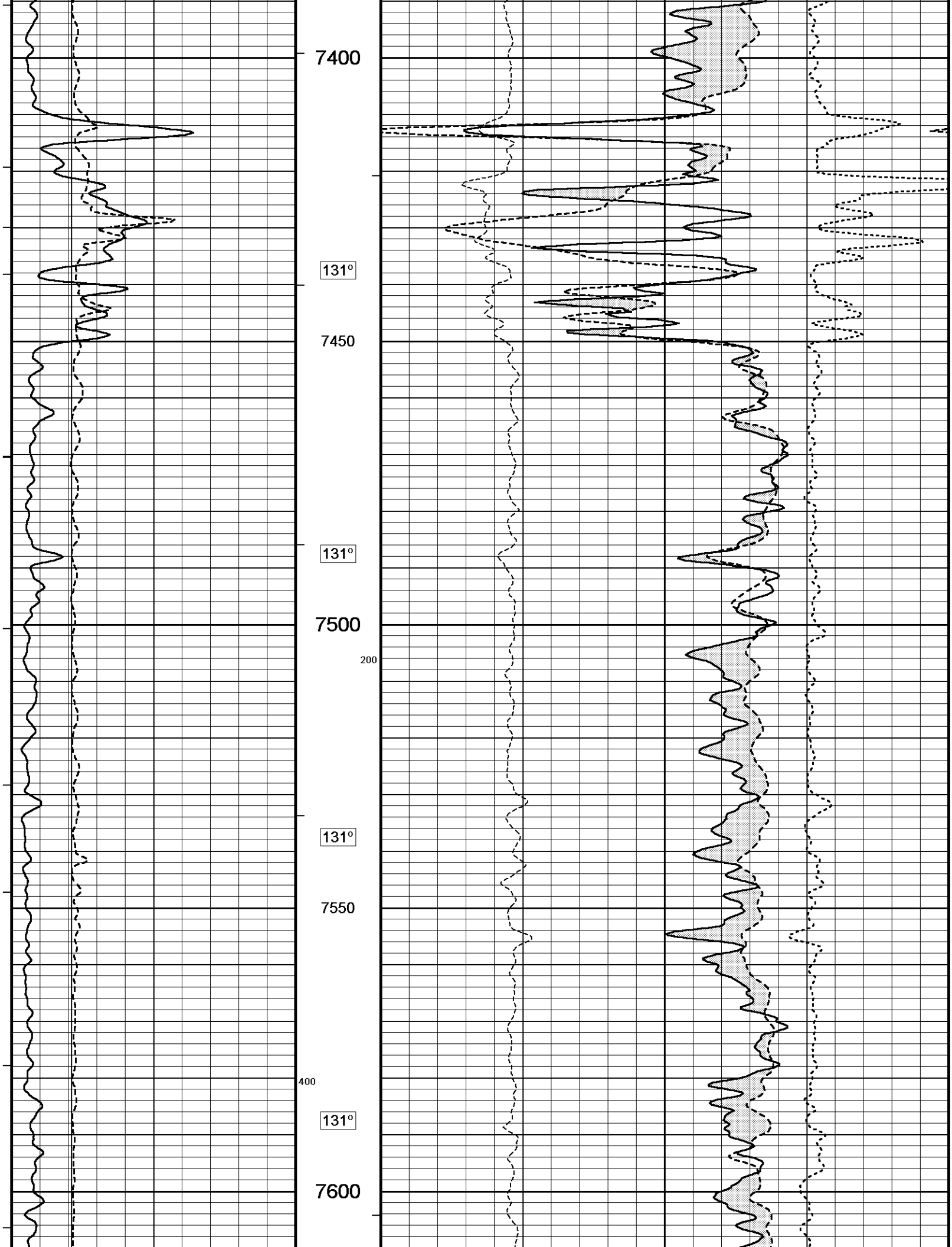
7250
130°
7300
131°
7350
131°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131°
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131°
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200
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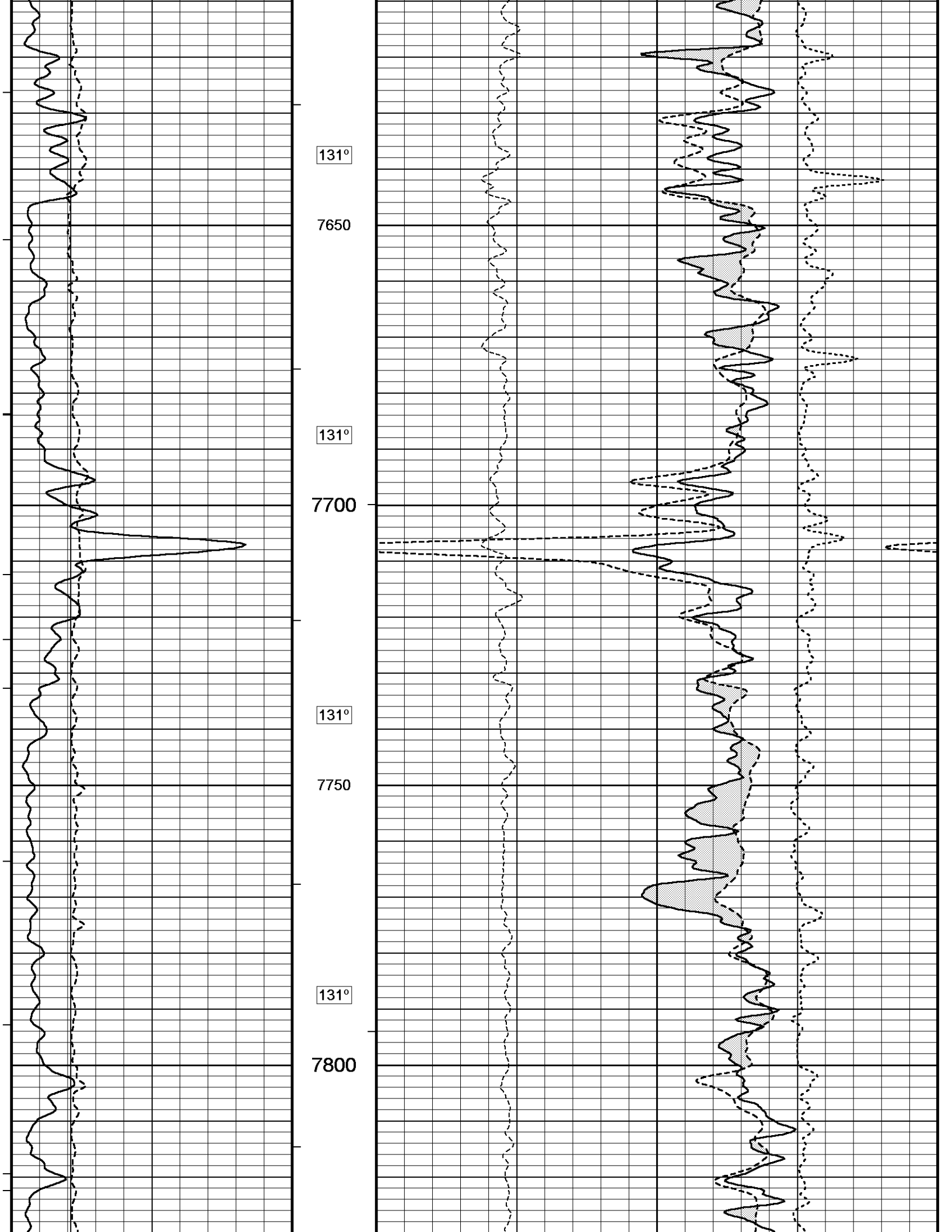
400
131°
7600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7700
131°
7750
131°
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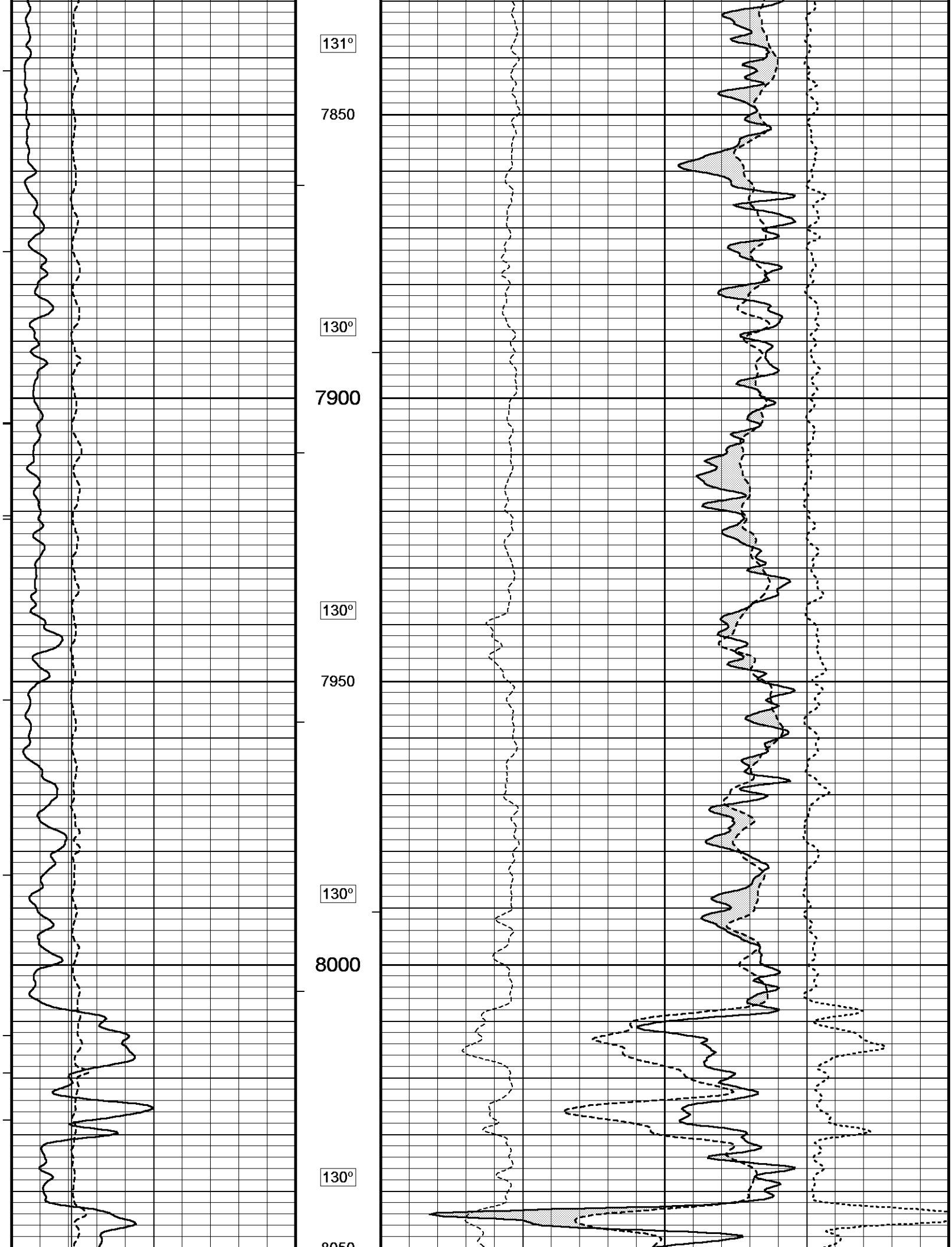
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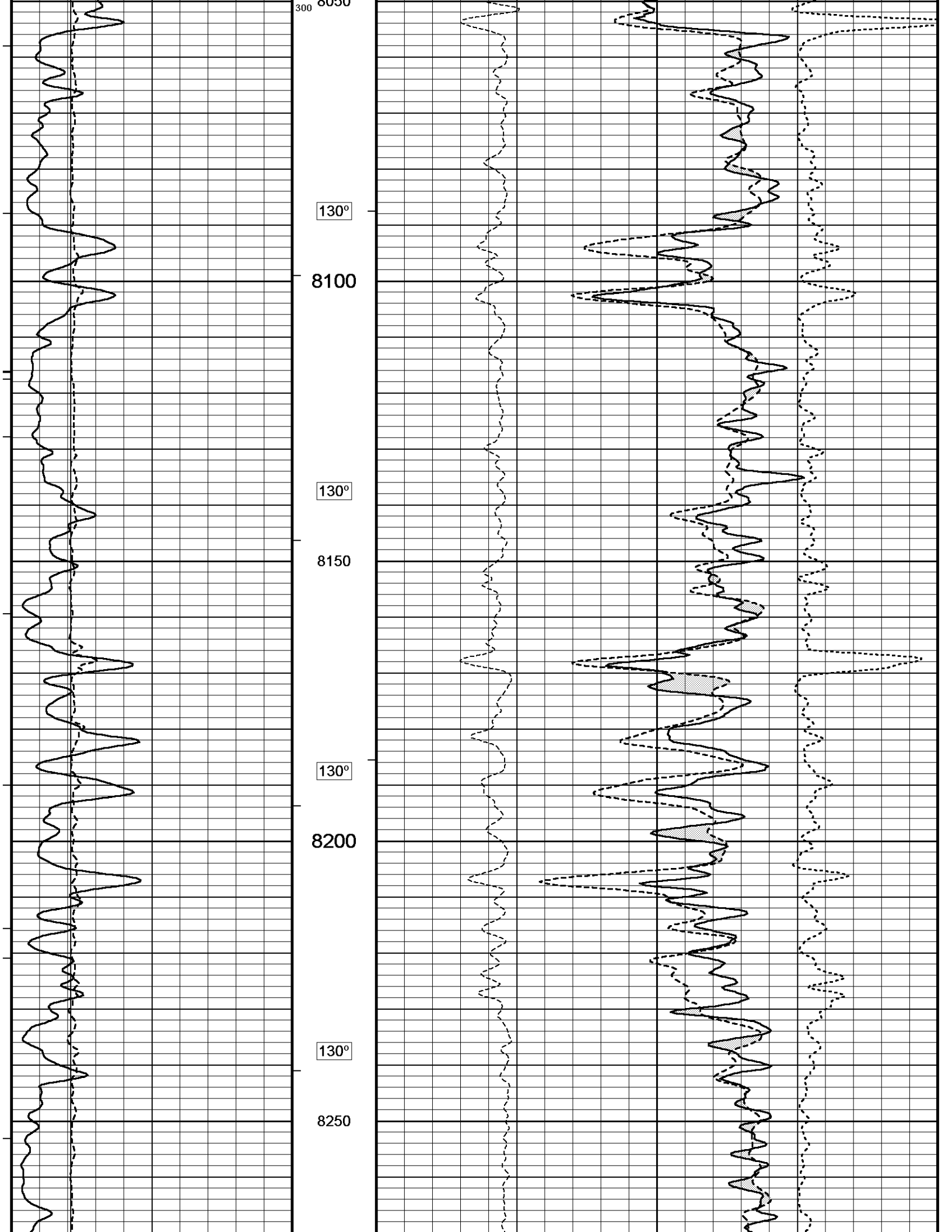
130°
7900
130°
7950
130°
8000
130°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130°
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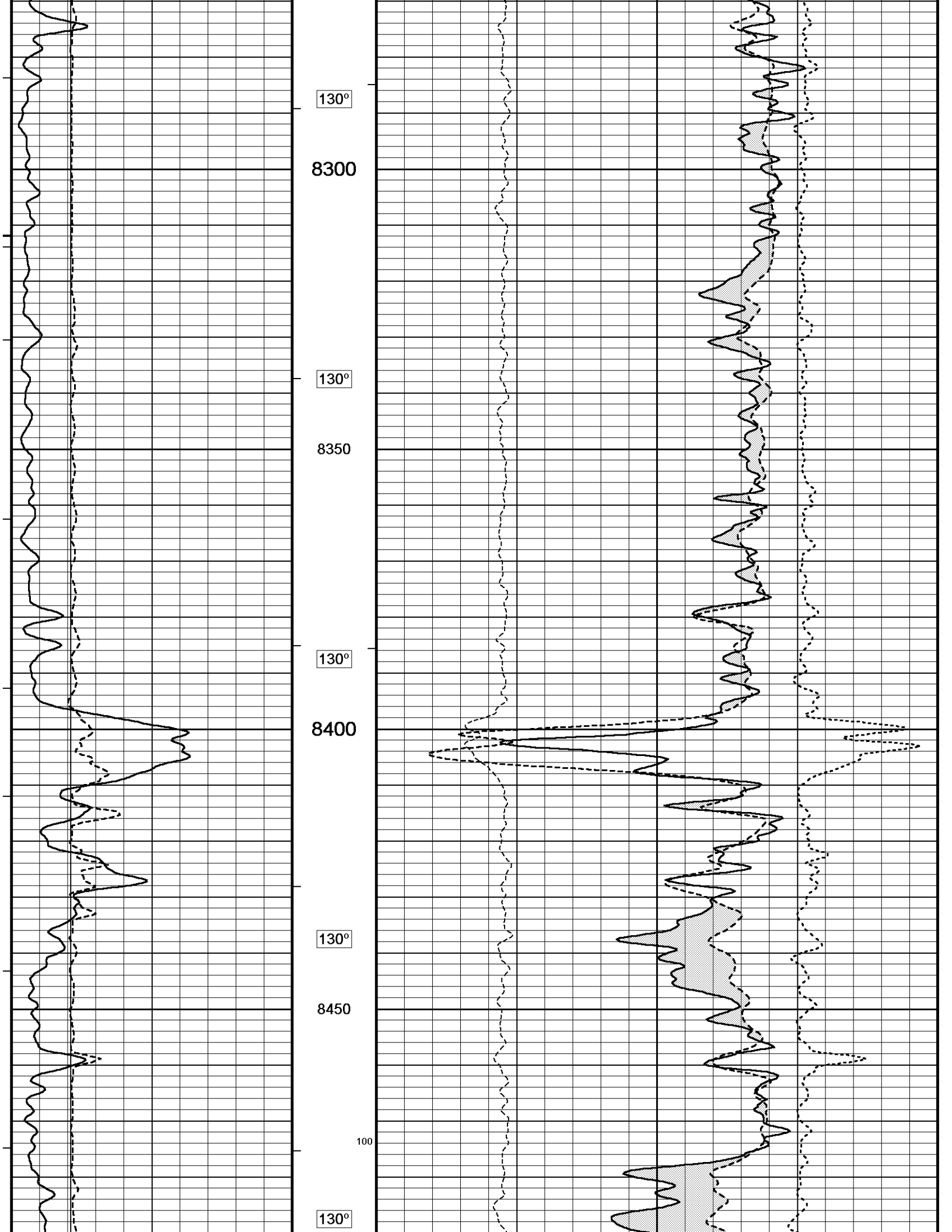
130°
8200
130°
8250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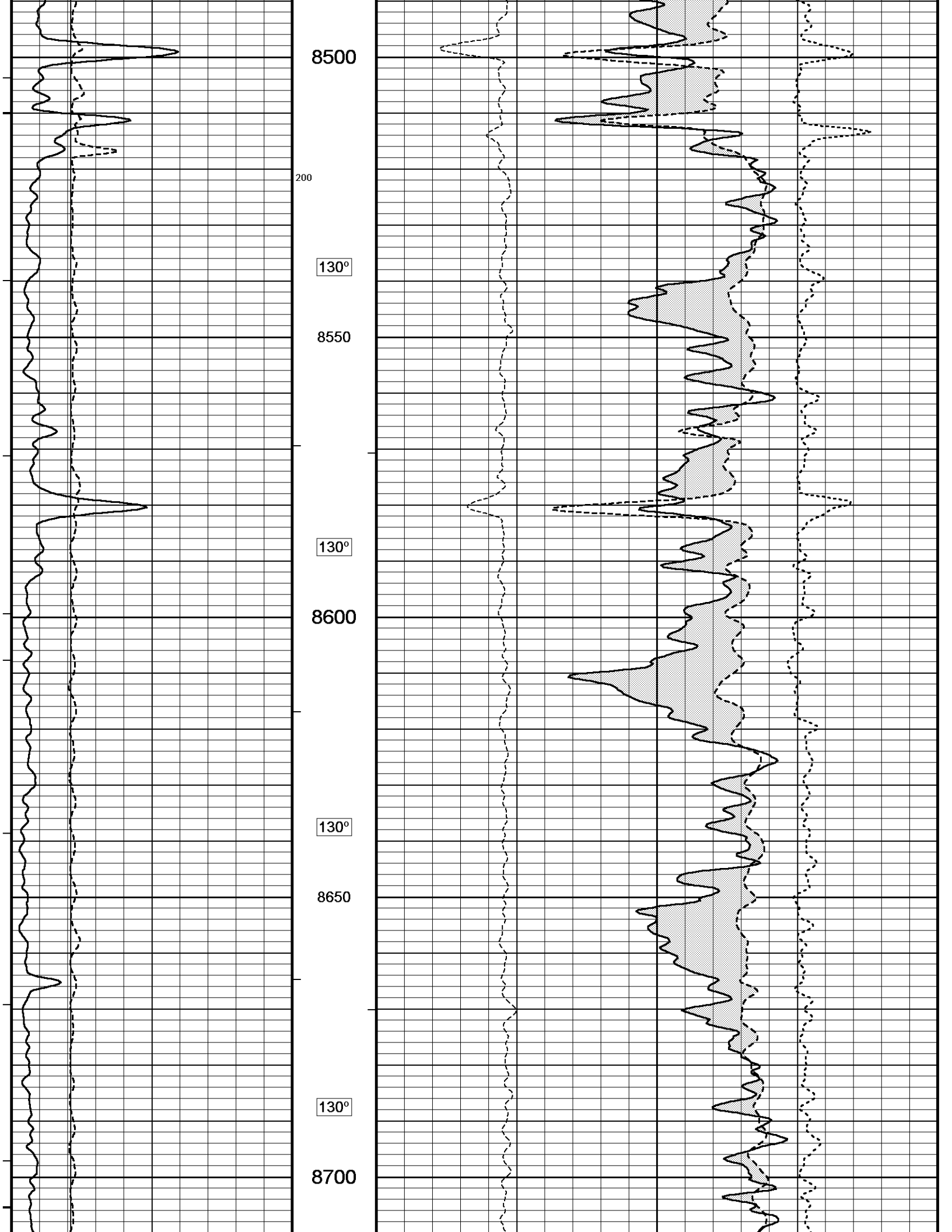
130°
8450
100
130°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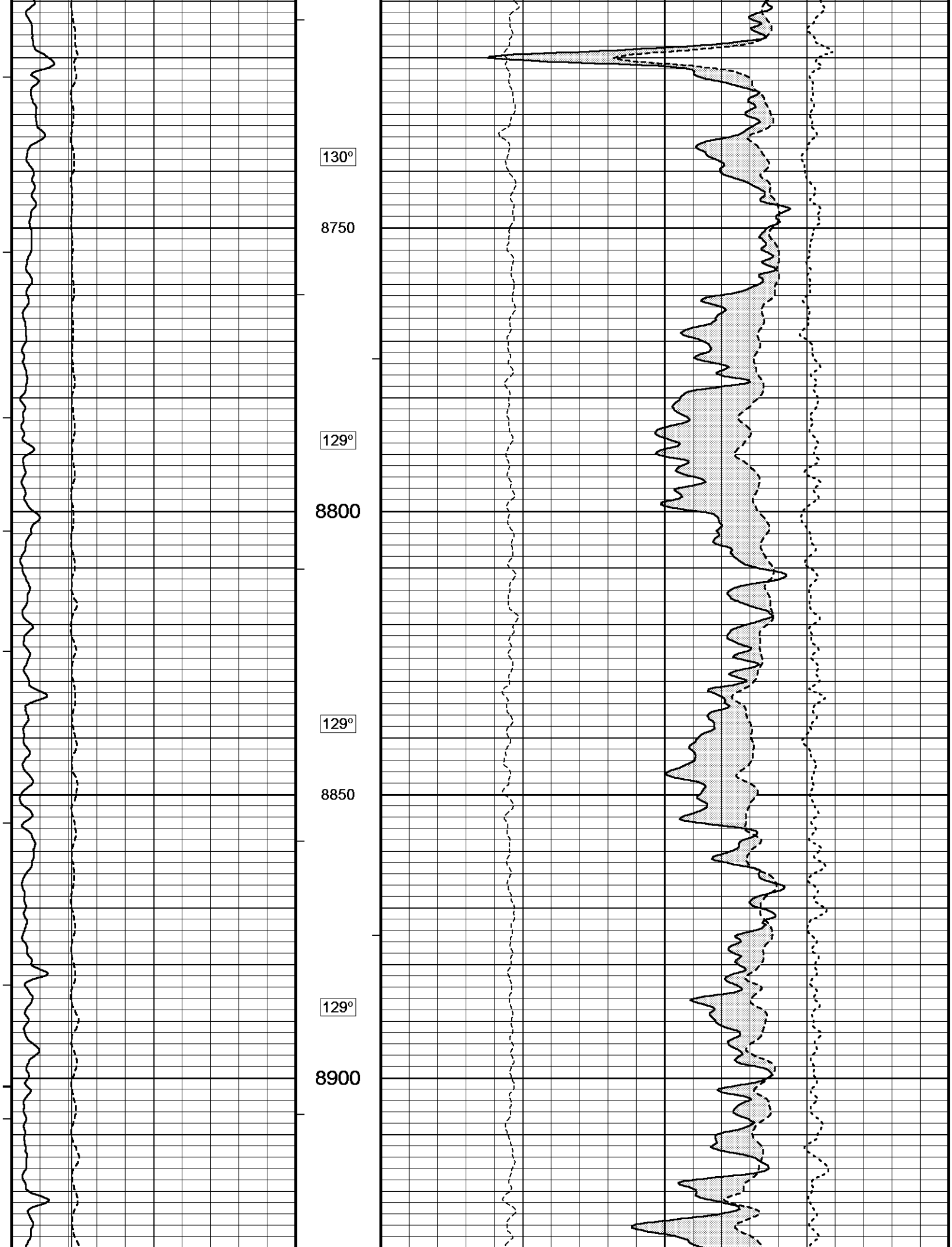
130°
8600
130°
8650
130°
8700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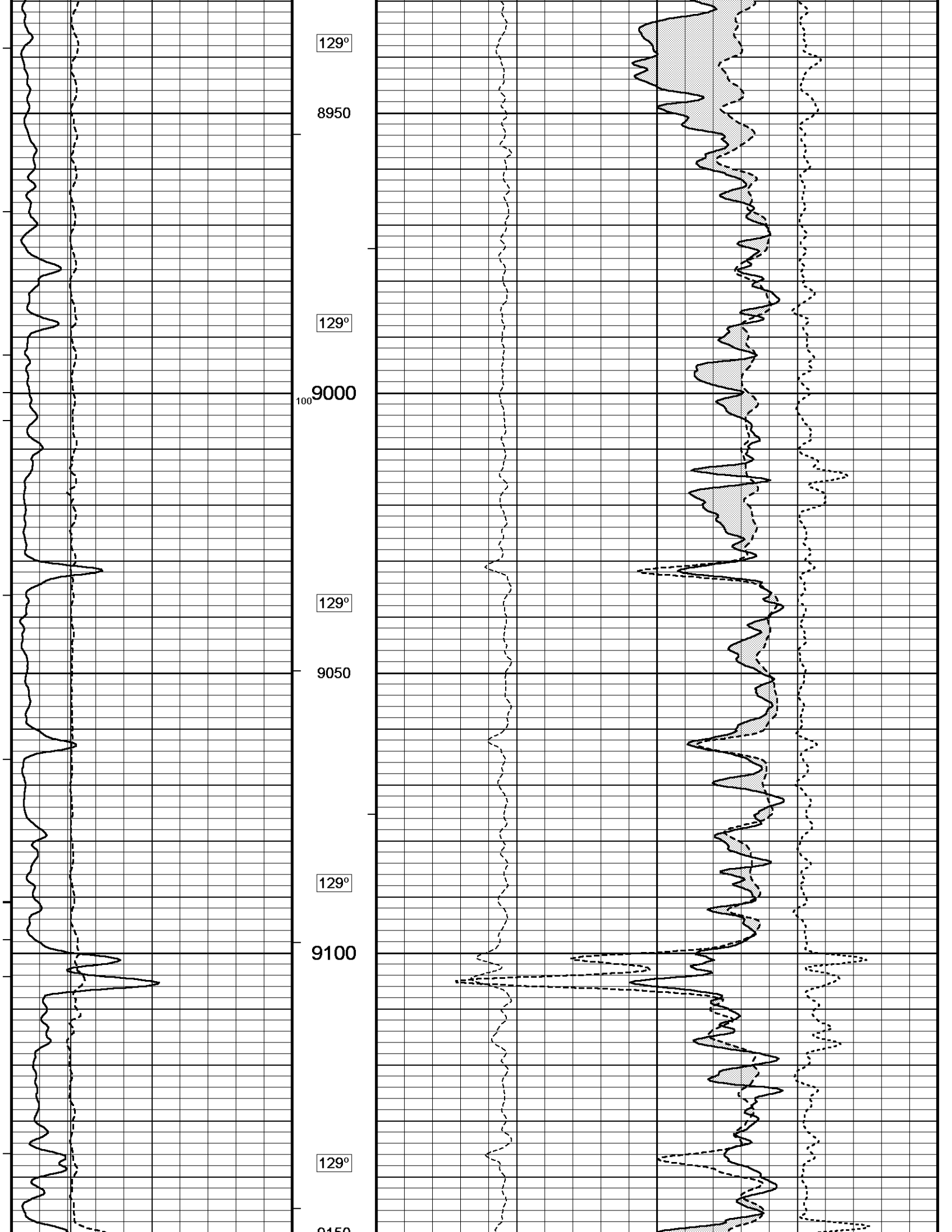
129°
8850
129°
8900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129°
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9000
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9050
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9100
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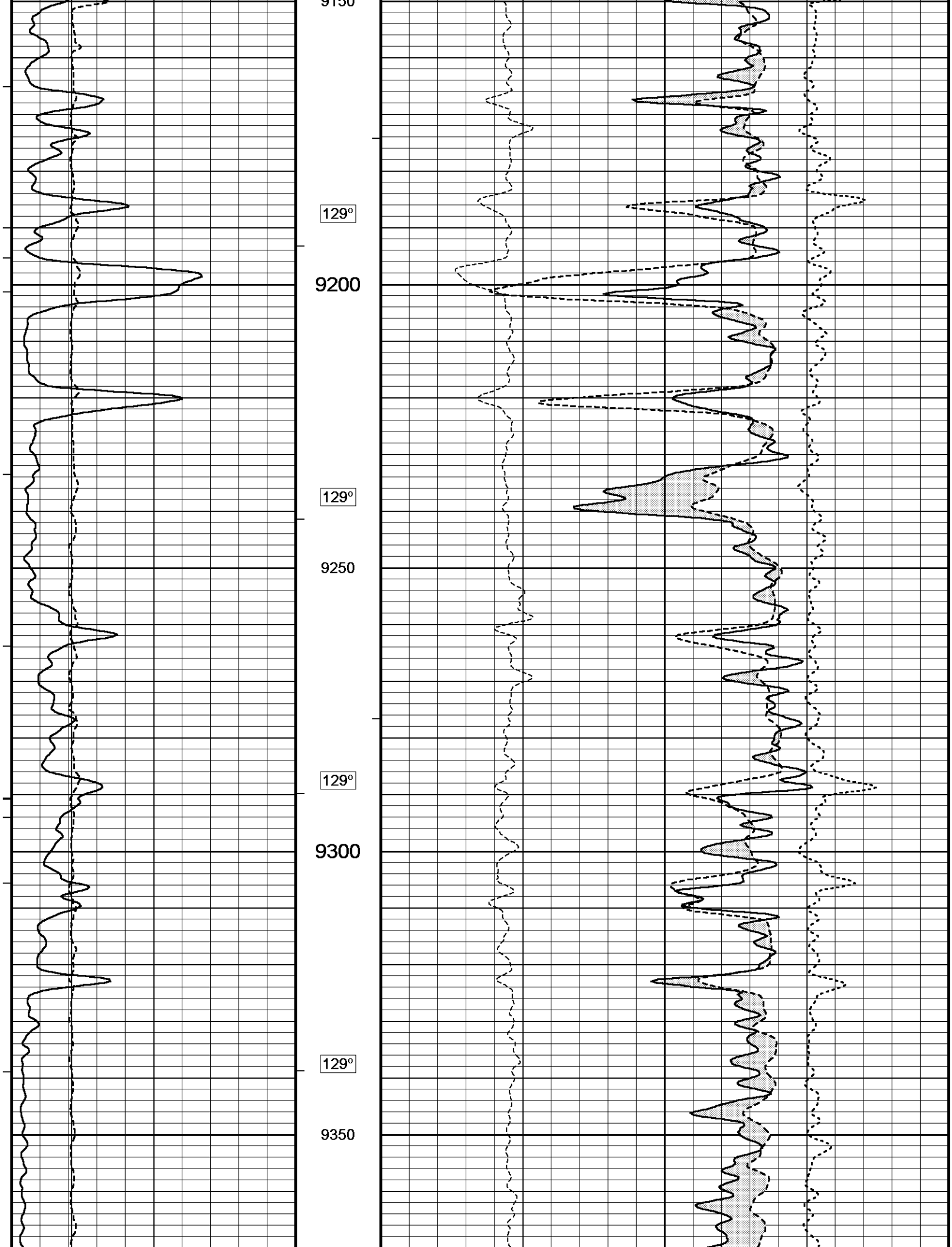
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129°
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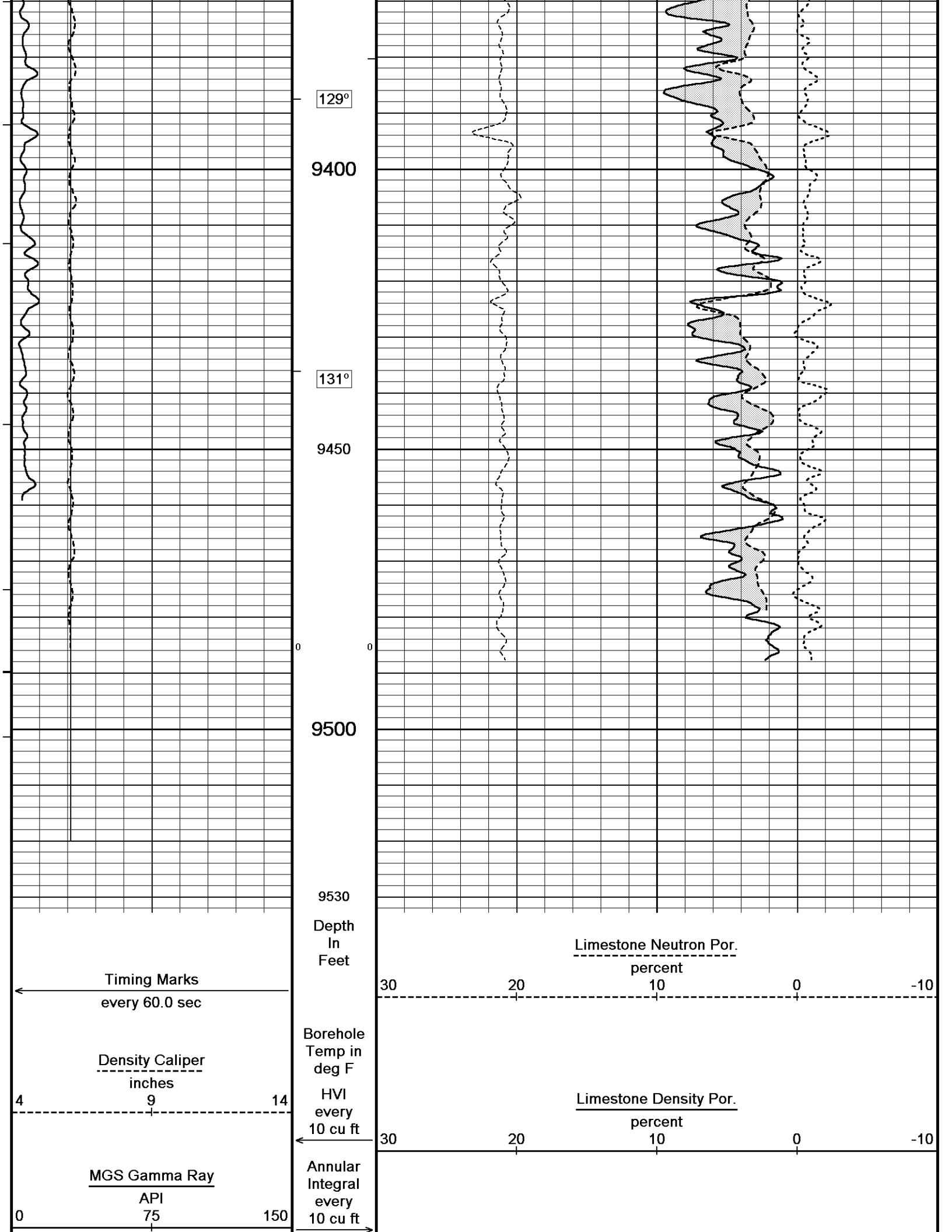
129°
9300
129°
9350


129°
9400
131°
9450
0
0
9500
9530
Depth
In
Feet
Timing Marks
every 60.0 sec
Density Caliper
inches
4
9
14
MGS Gamma Ray
API
0
75
150
Borehole
Temp in
deg F
HVI
every
10 cu ft
Annular
Integral
every
10 cu ft
Limestone Neutron Por.
percent
30
20
10
0
-10
Limestone Density Por.
percent
30
20
10
0
-10

150 225 300

Bit Size
inches
4 9 14

PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25

Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 30-AUG-2012 03:33
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Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 30-AUG-2012 03:33
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System Versions: Processed with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Depth
In
Feet

Compensated Density
grams/cc
2 2.25 2.50 2.75 3

Density Caliper
inches
4 9 14

HVI
every
10 cu ft

Limestone Density Por.
percent
30 20 10 0 -10
70 60 50 40 30

MGS Gamma Ray
API
0 75 150
150 225 300

Annular
Integral
every
10 cu ft

Bit Size
inches
4 9 14

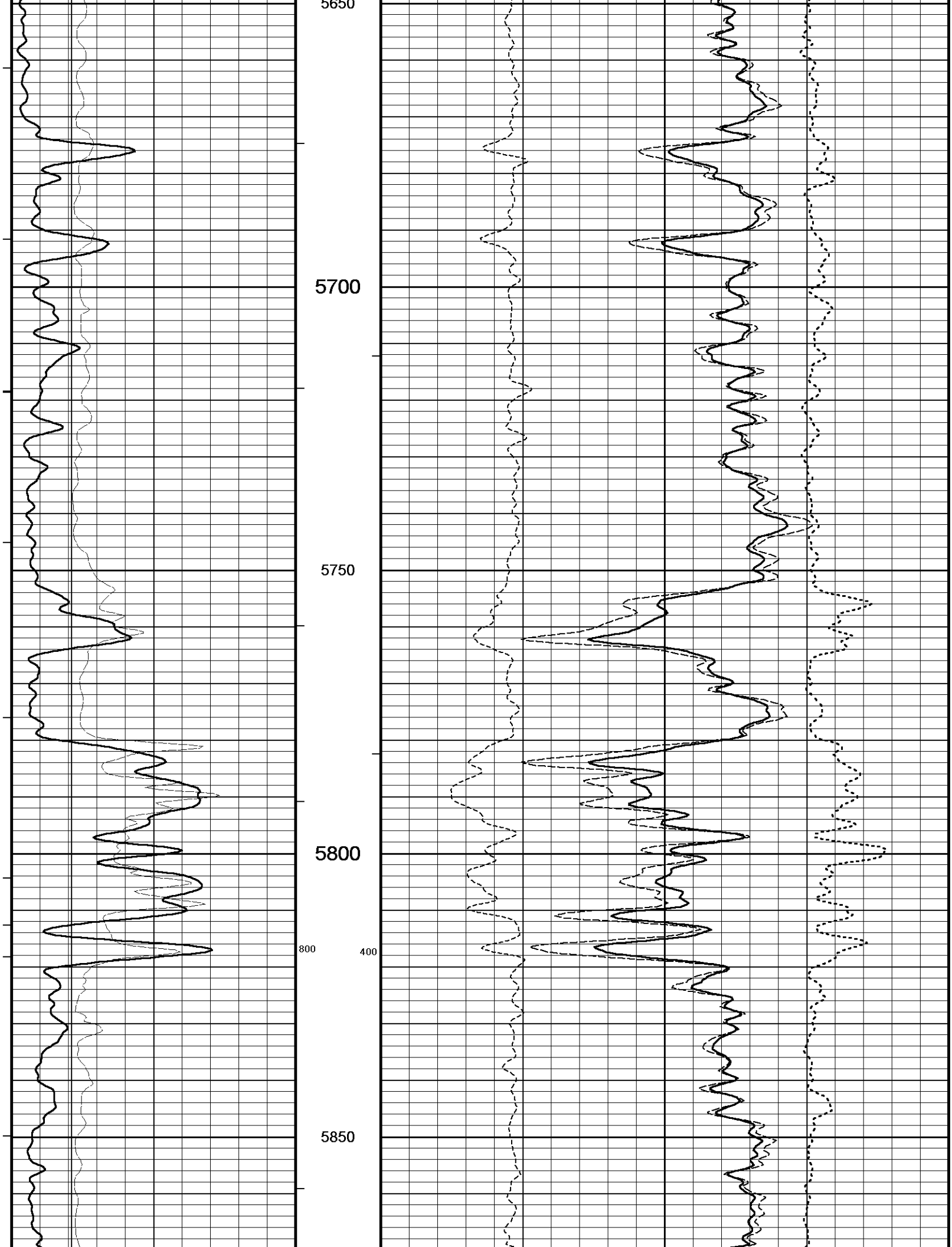
PE
barns/electron
0 5 10

Density Correction
grams/cc
-0.25 0 0.25

Replay
Scale
1:240

5578

5600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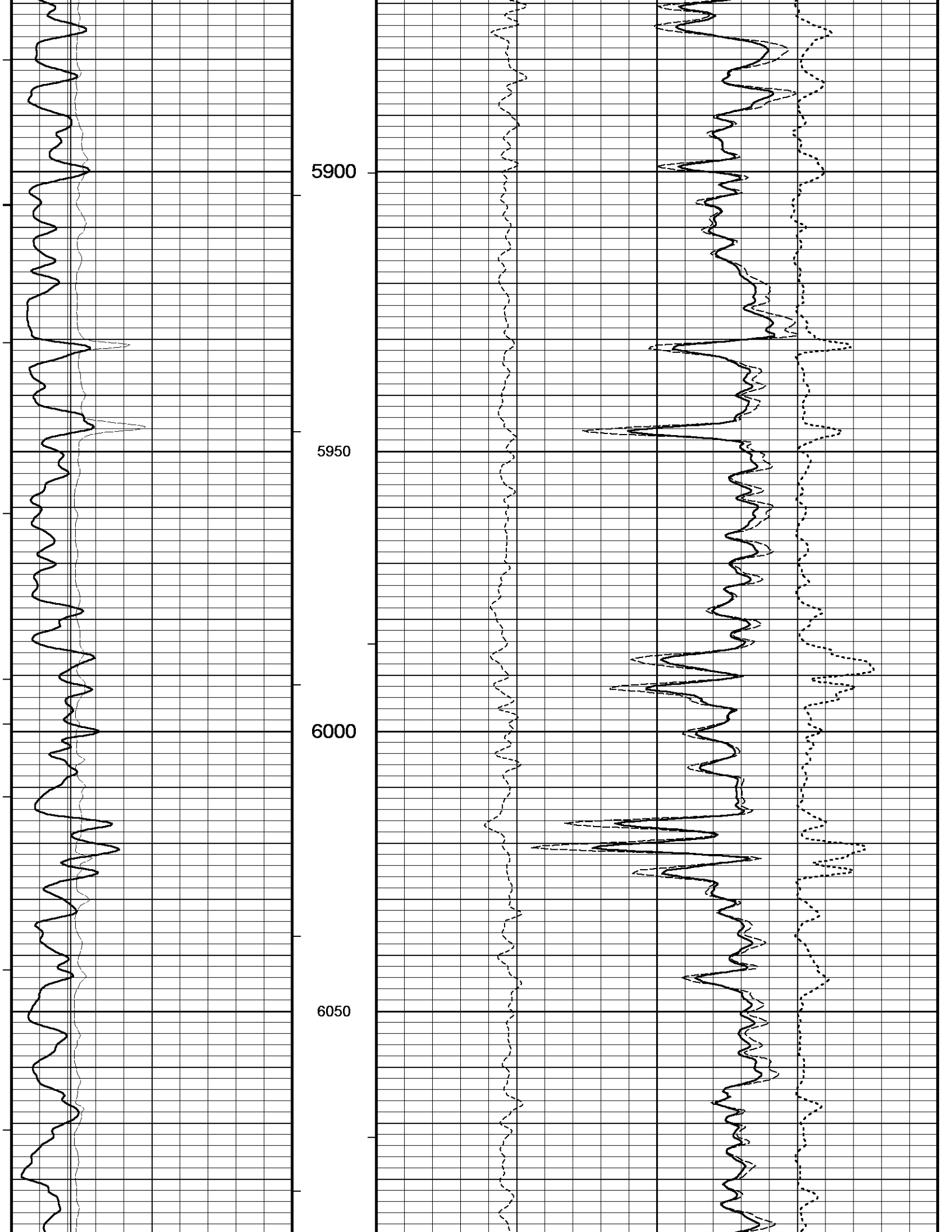
5700
5750
5800
5850
800
400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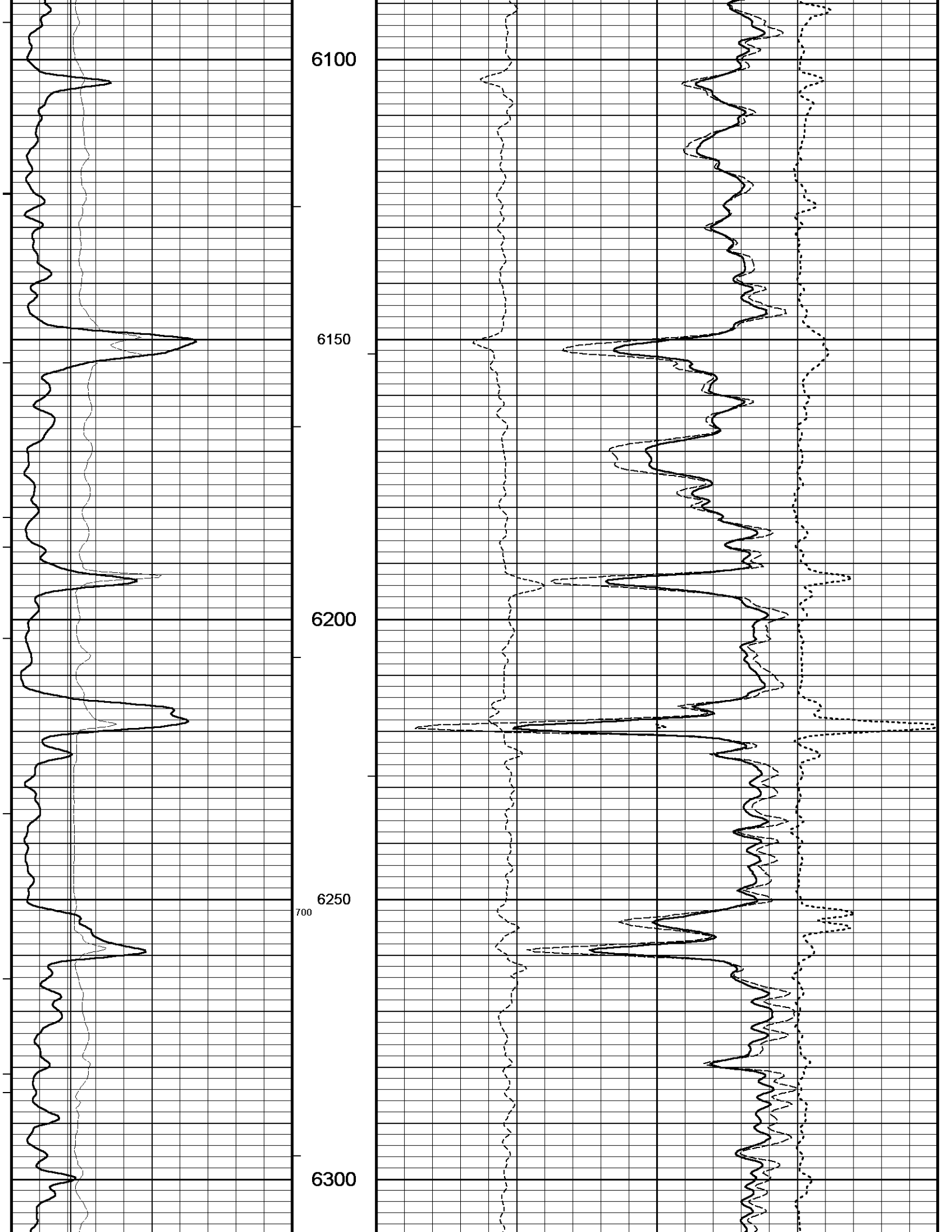
6000
6050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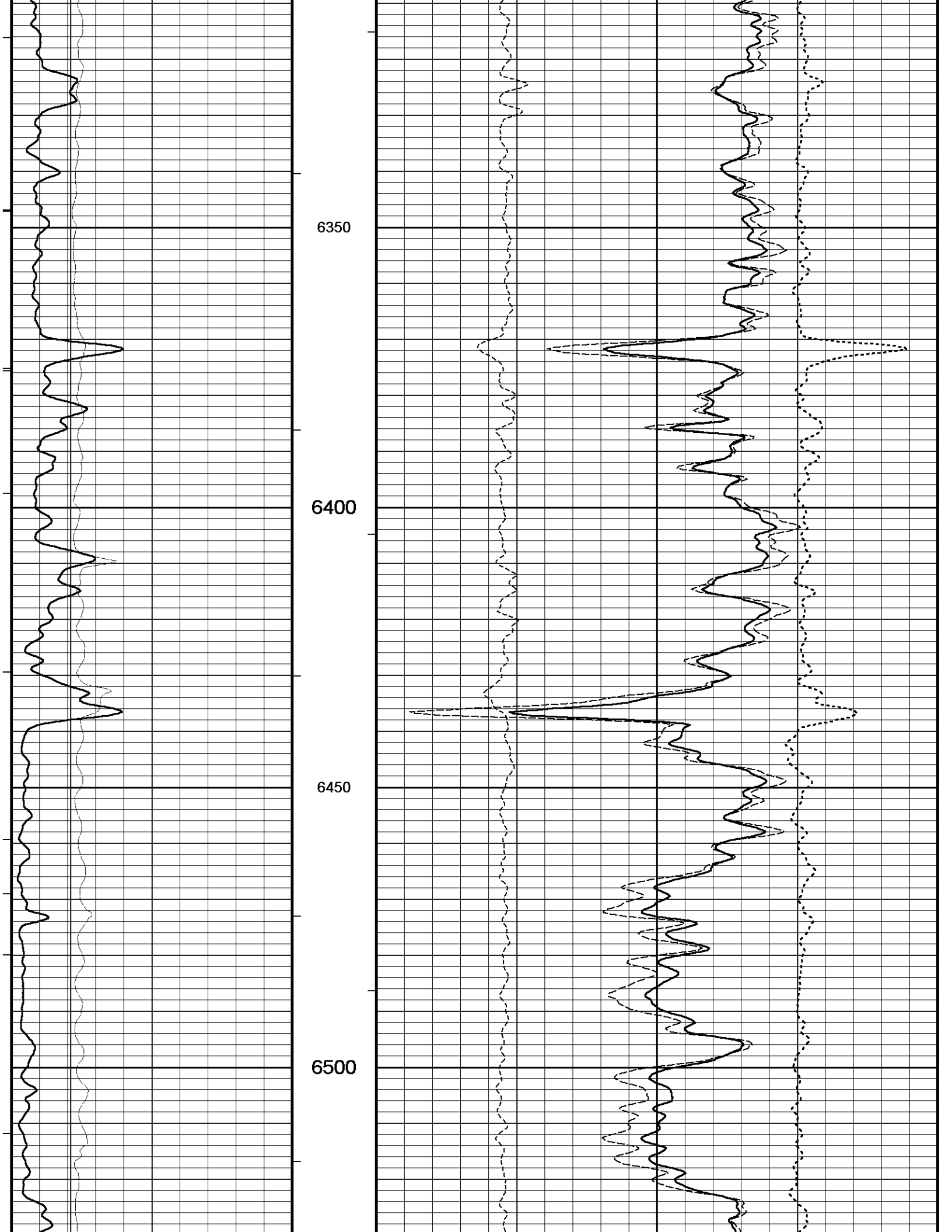
6150
6200
6250
700
6300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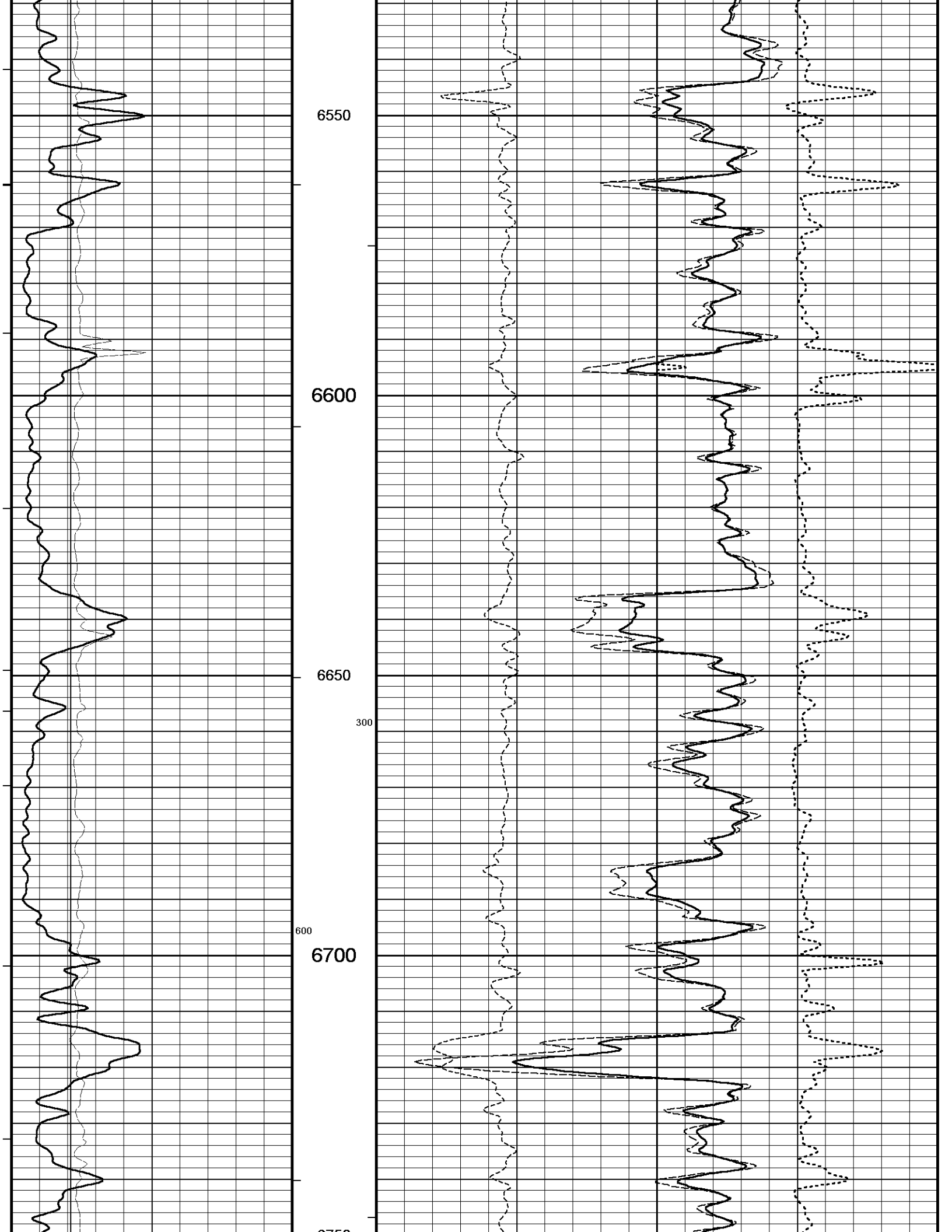
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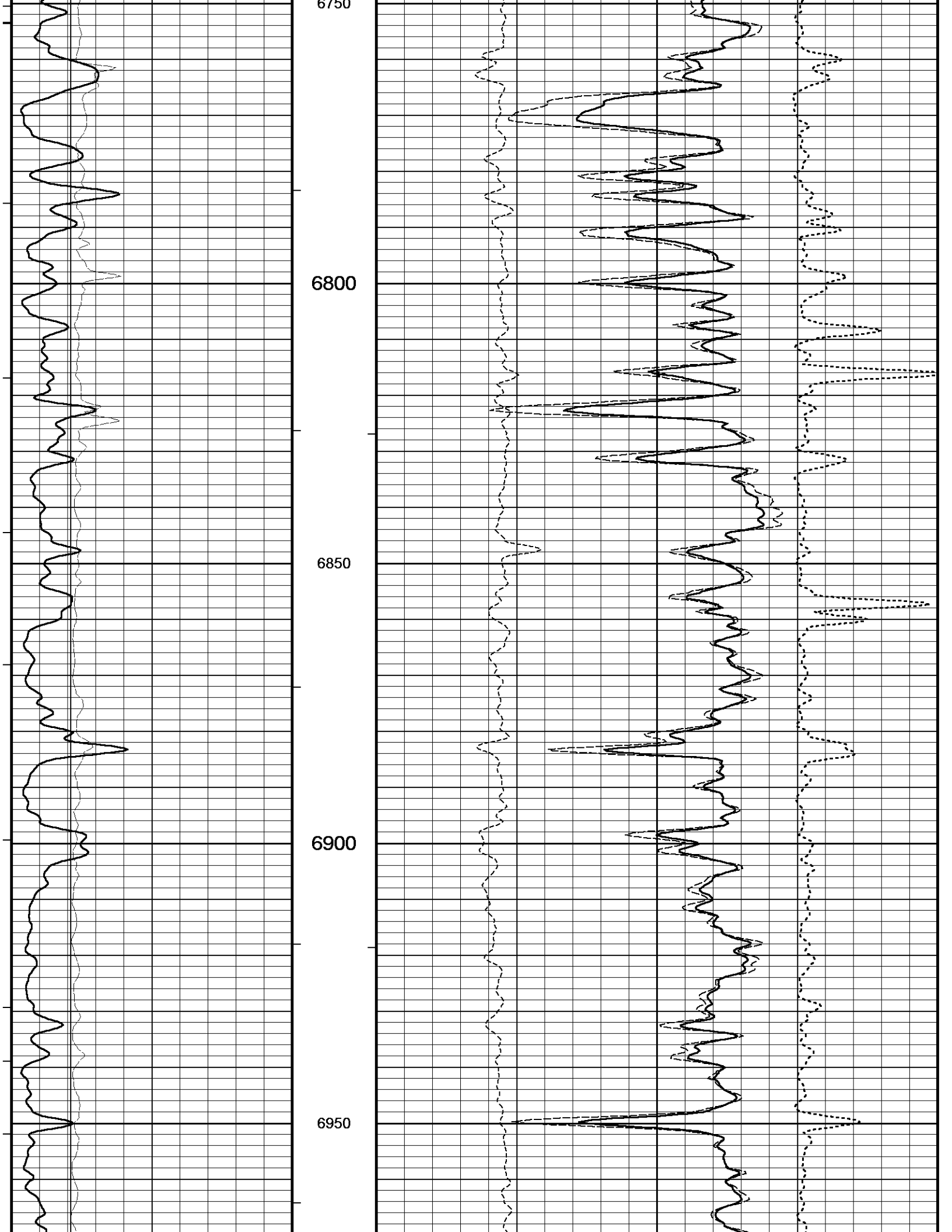
6600
6650
300
600
6700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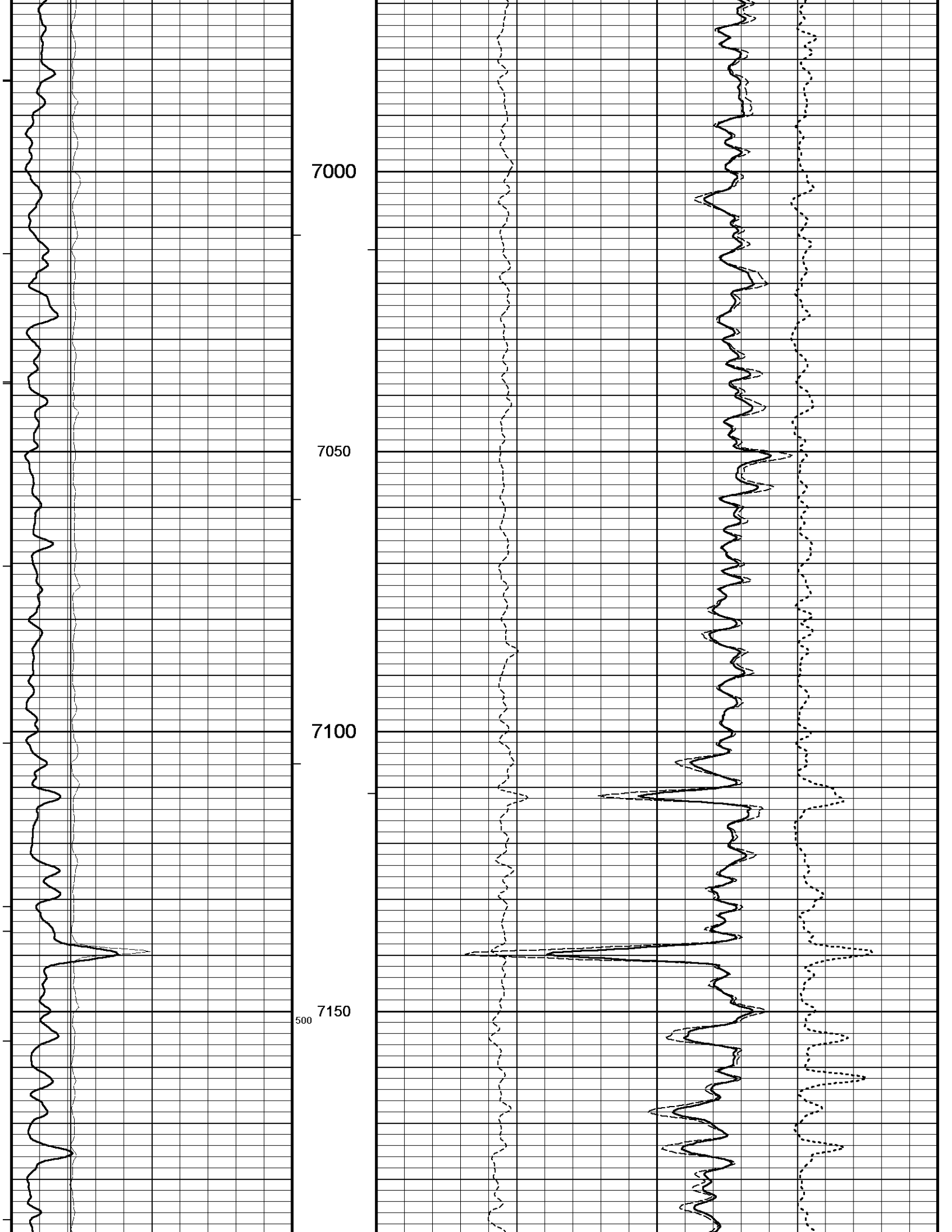
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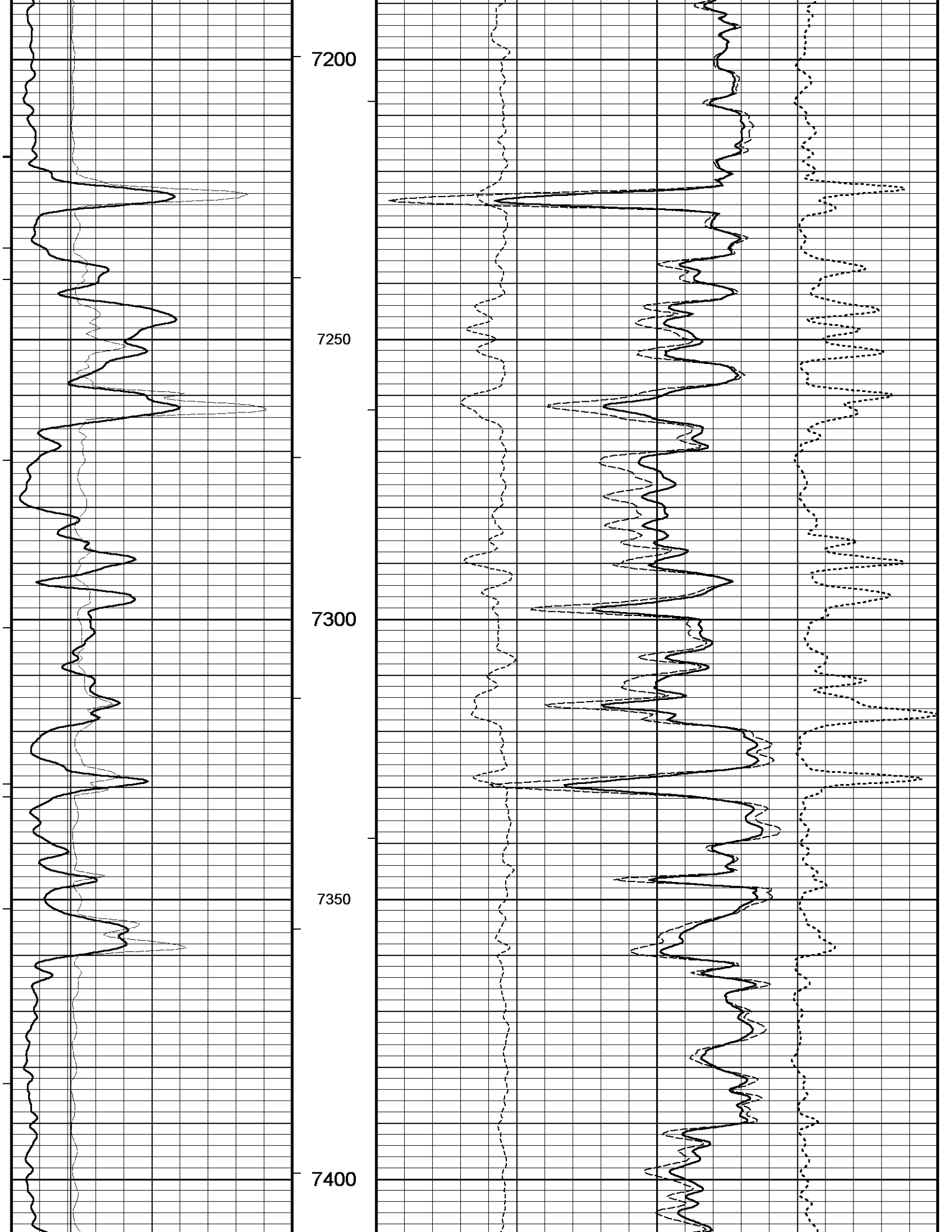
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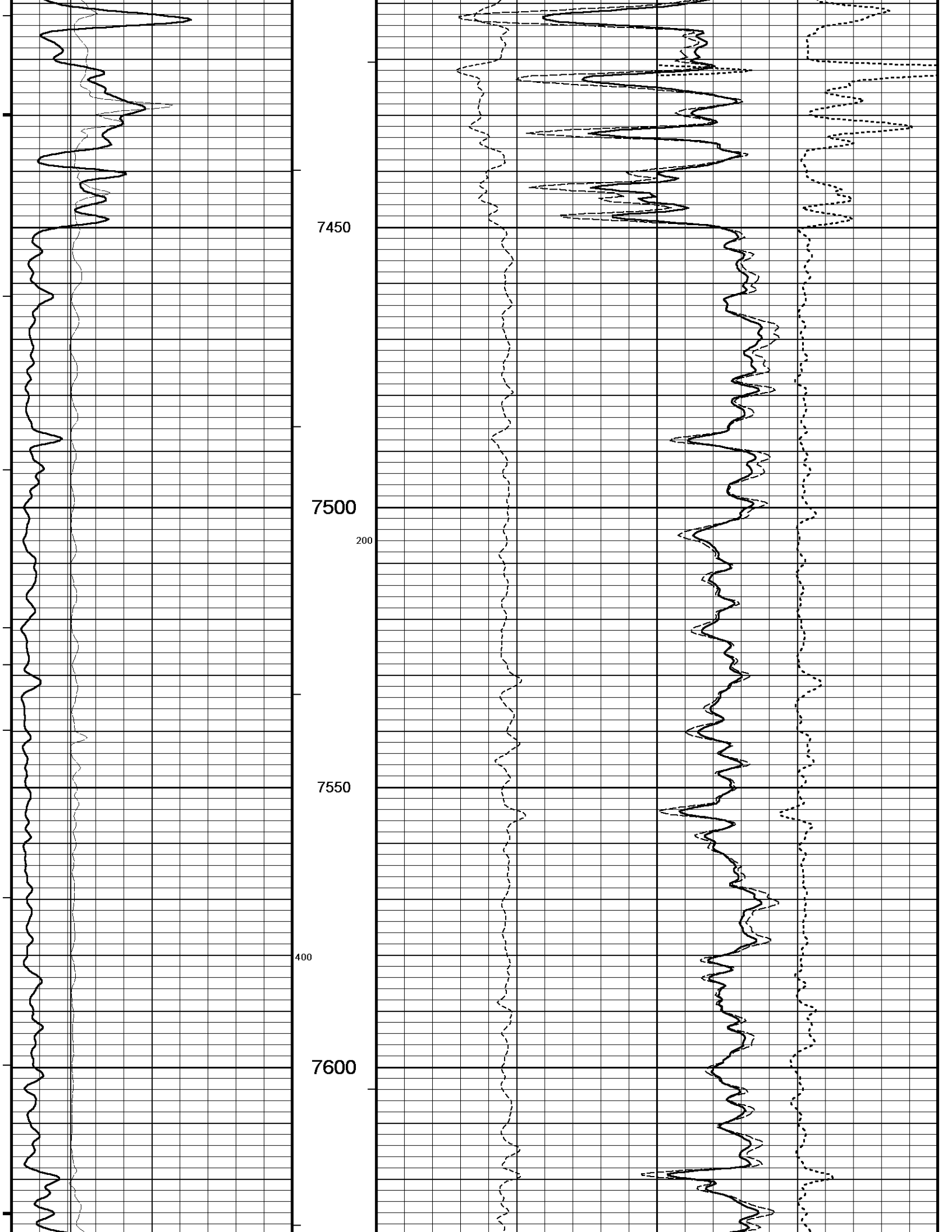
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7500
200
7550
400
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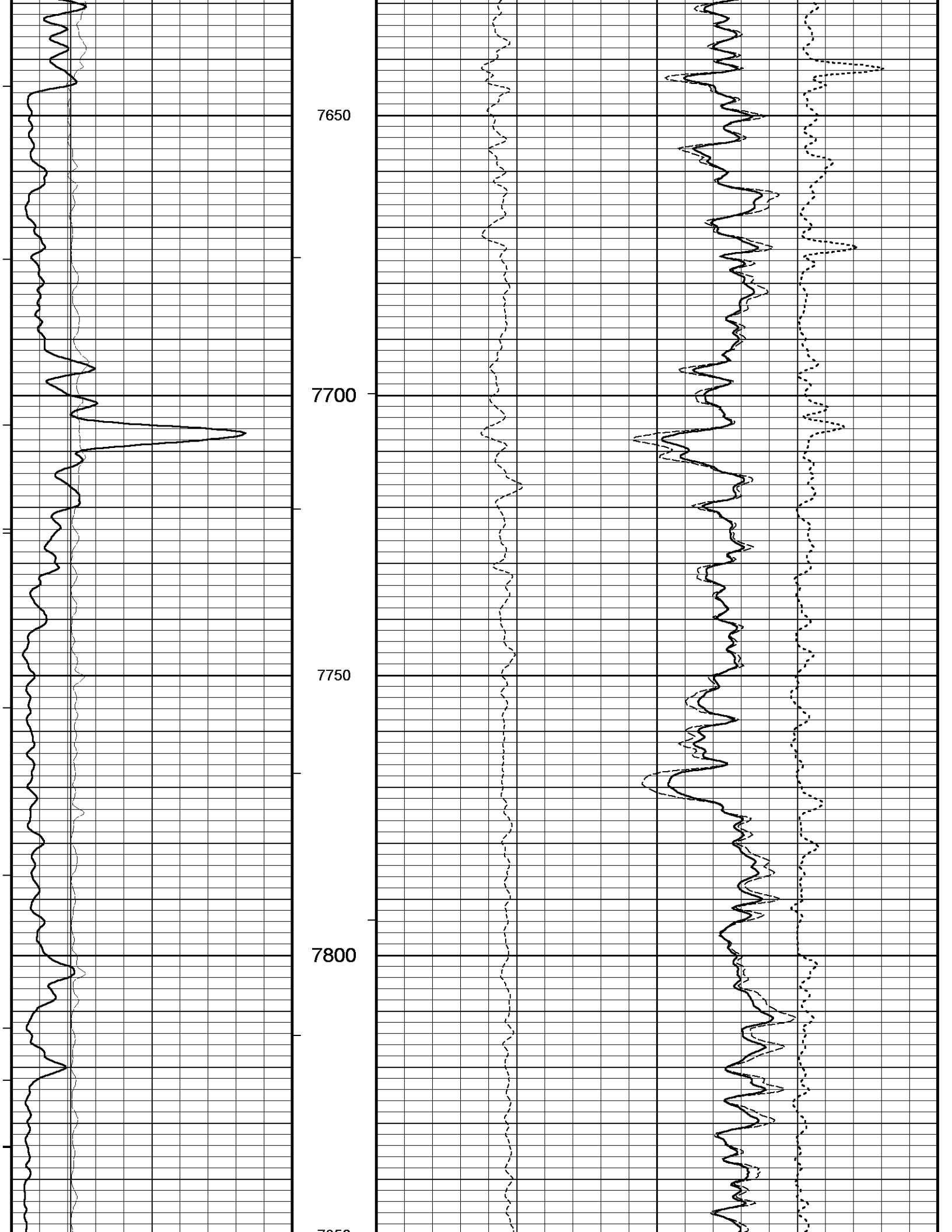
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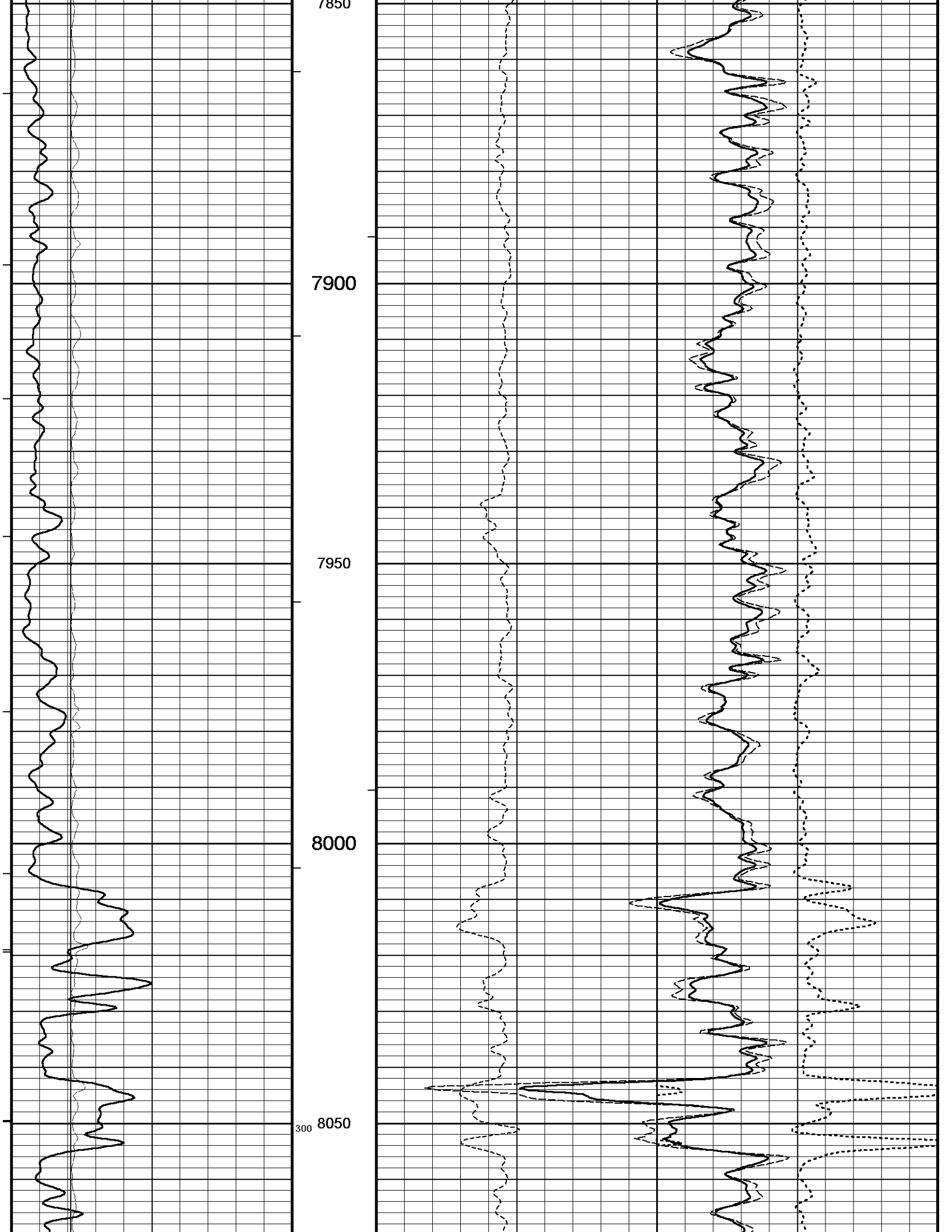
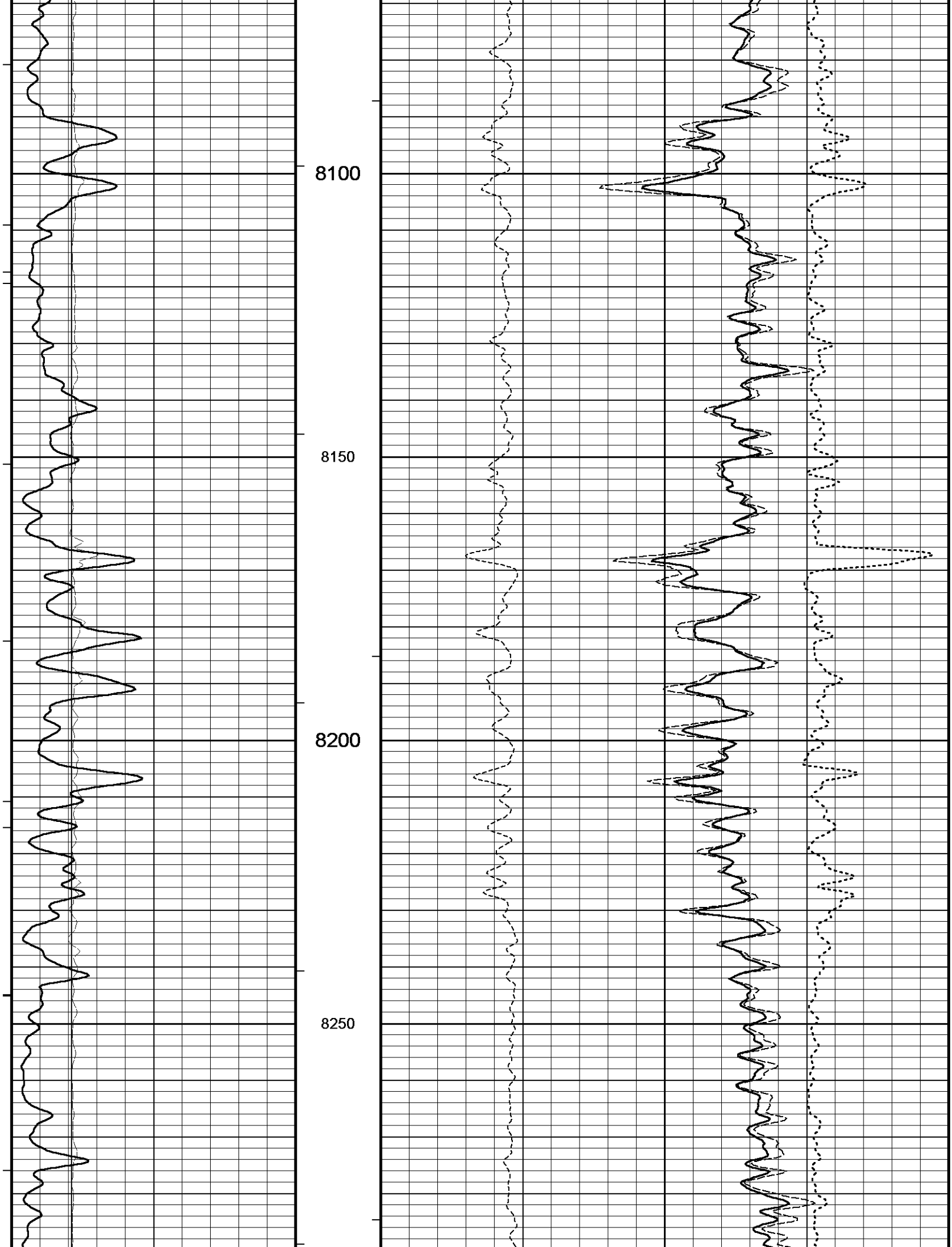

7850
7900
7950
8000
300
8050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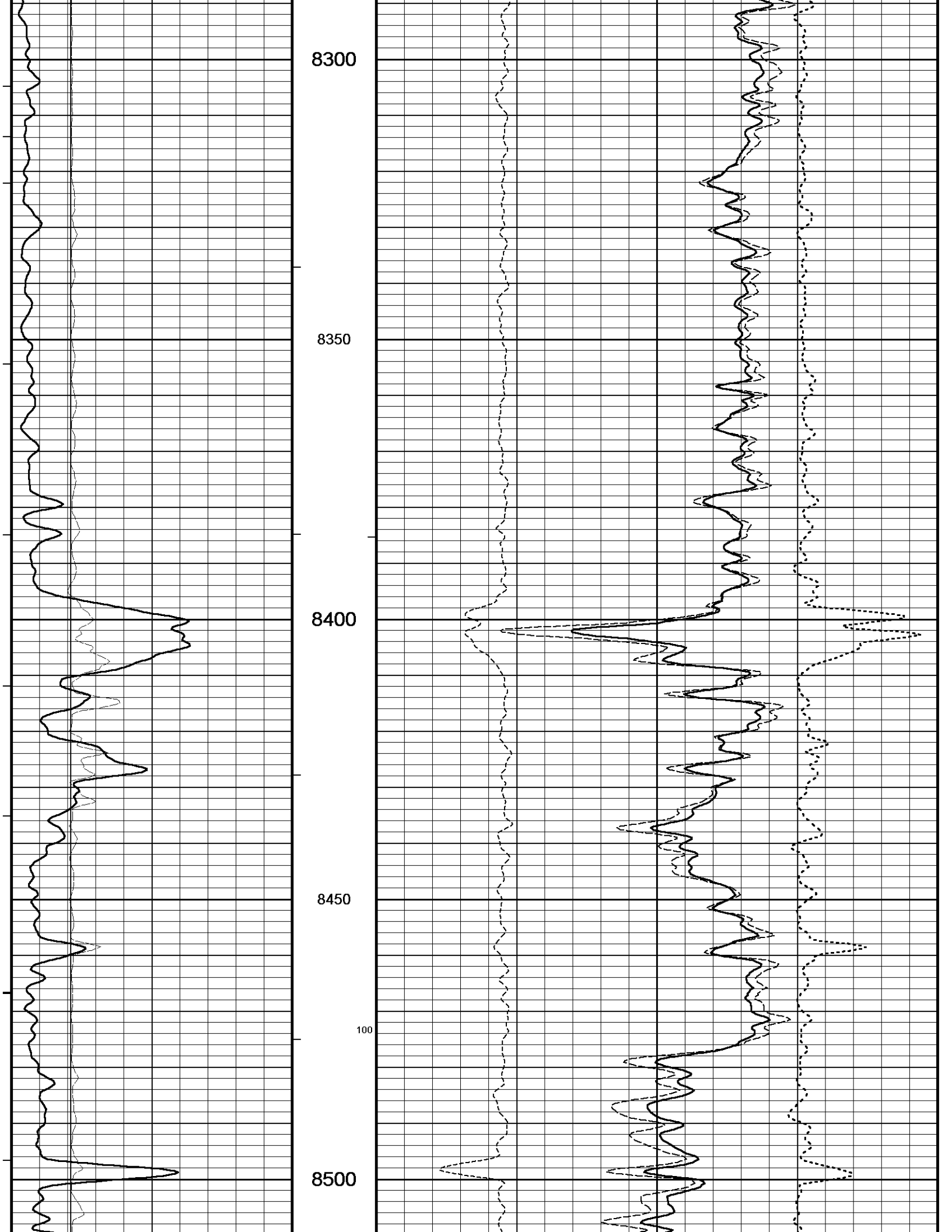
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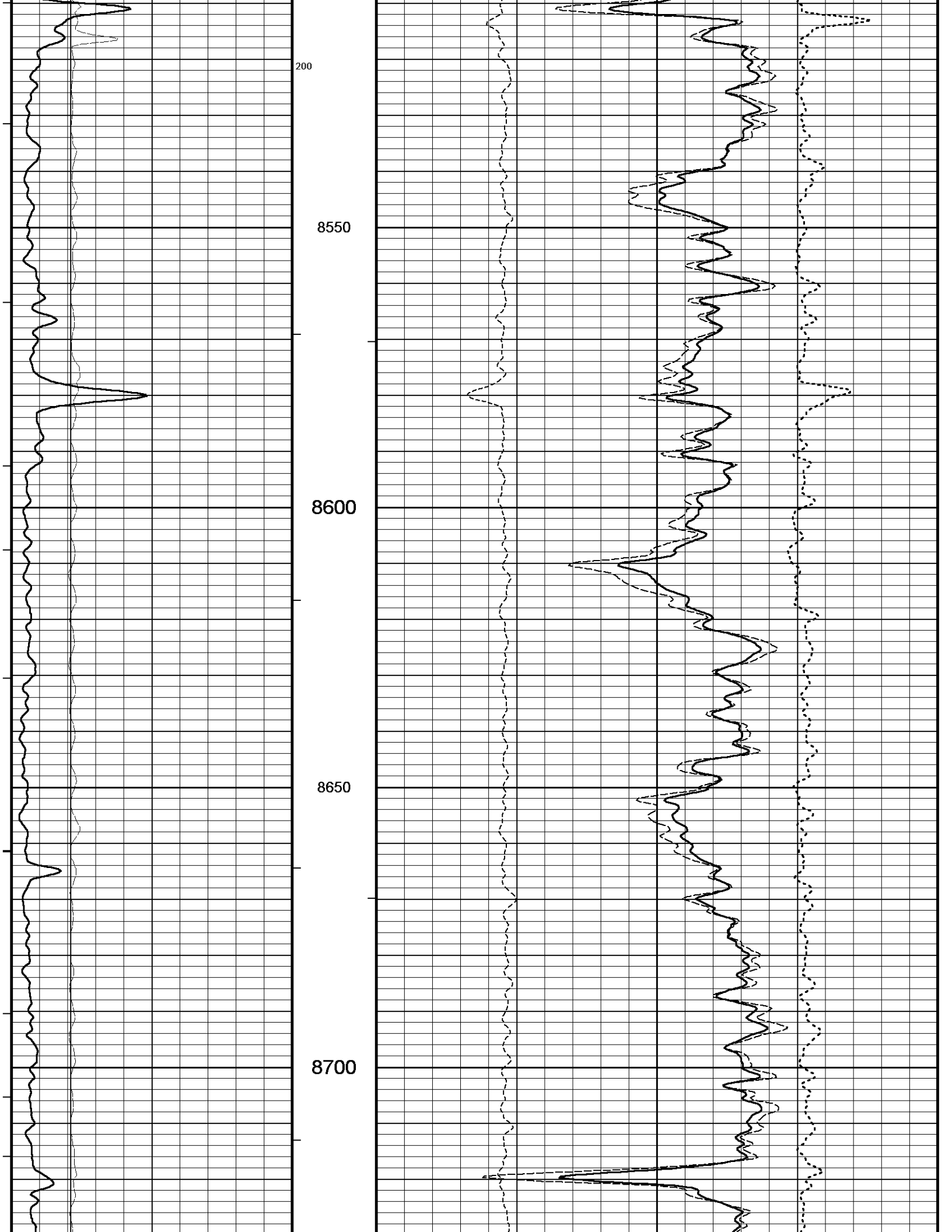
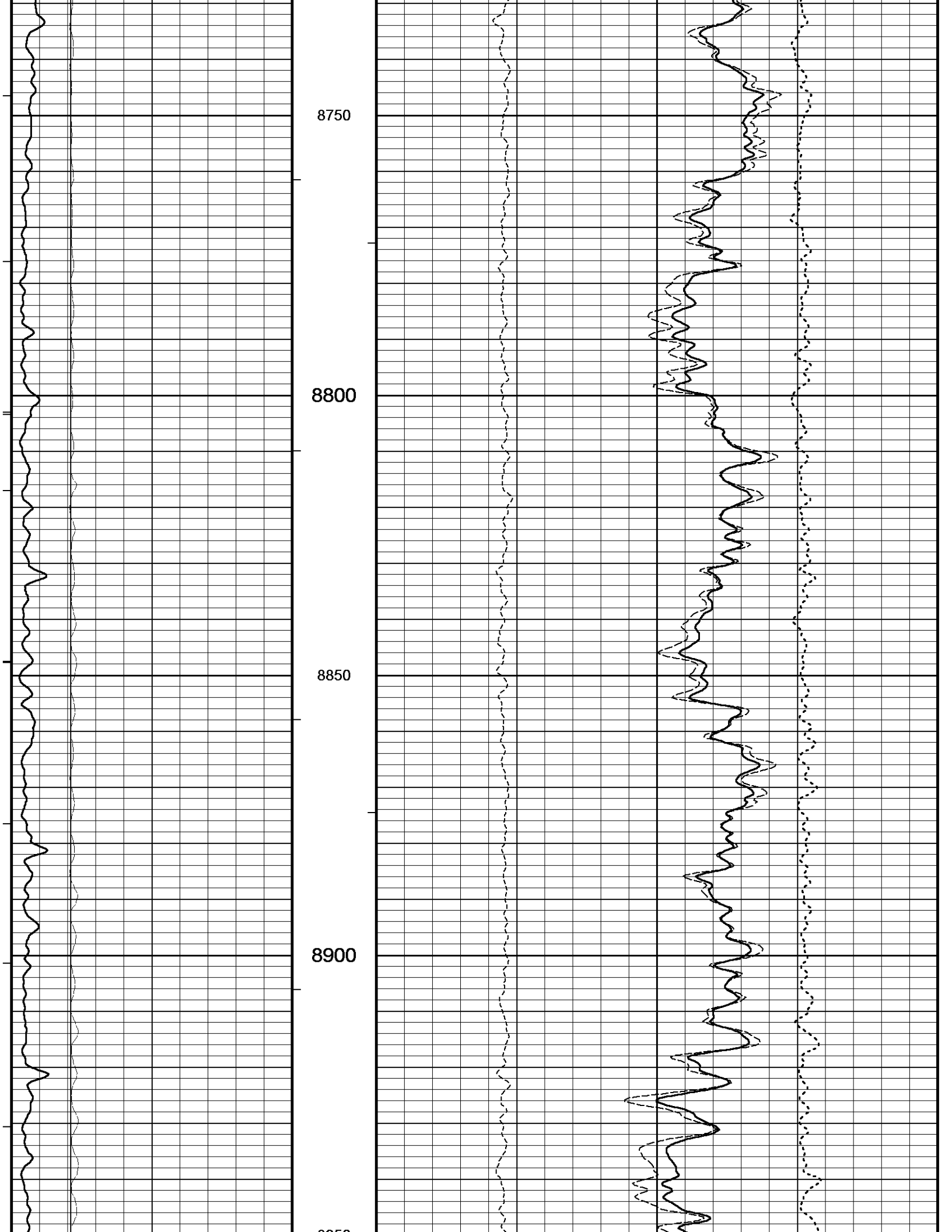
8350
8400
8450
100
8500


200
8550
8600
8650
8700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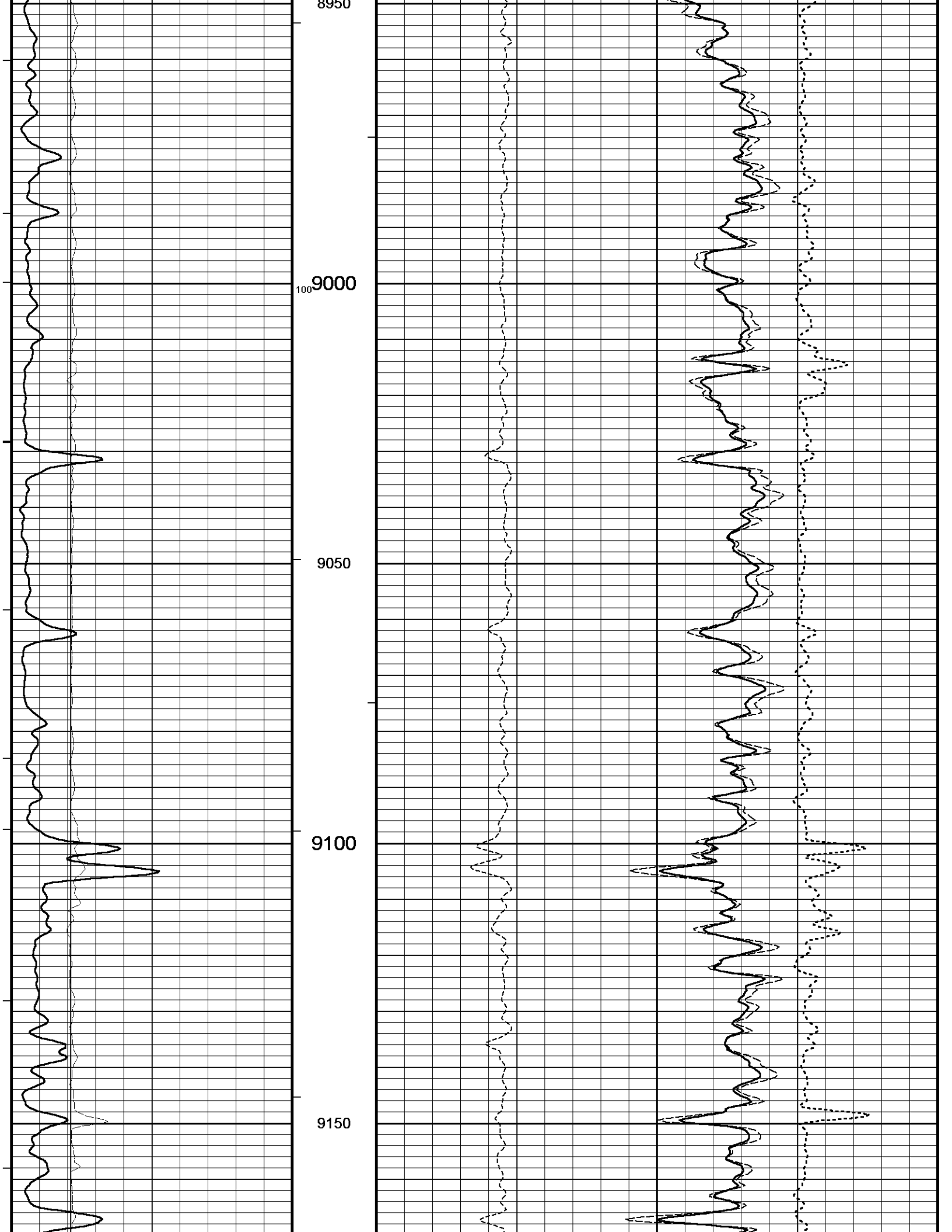
8850
8900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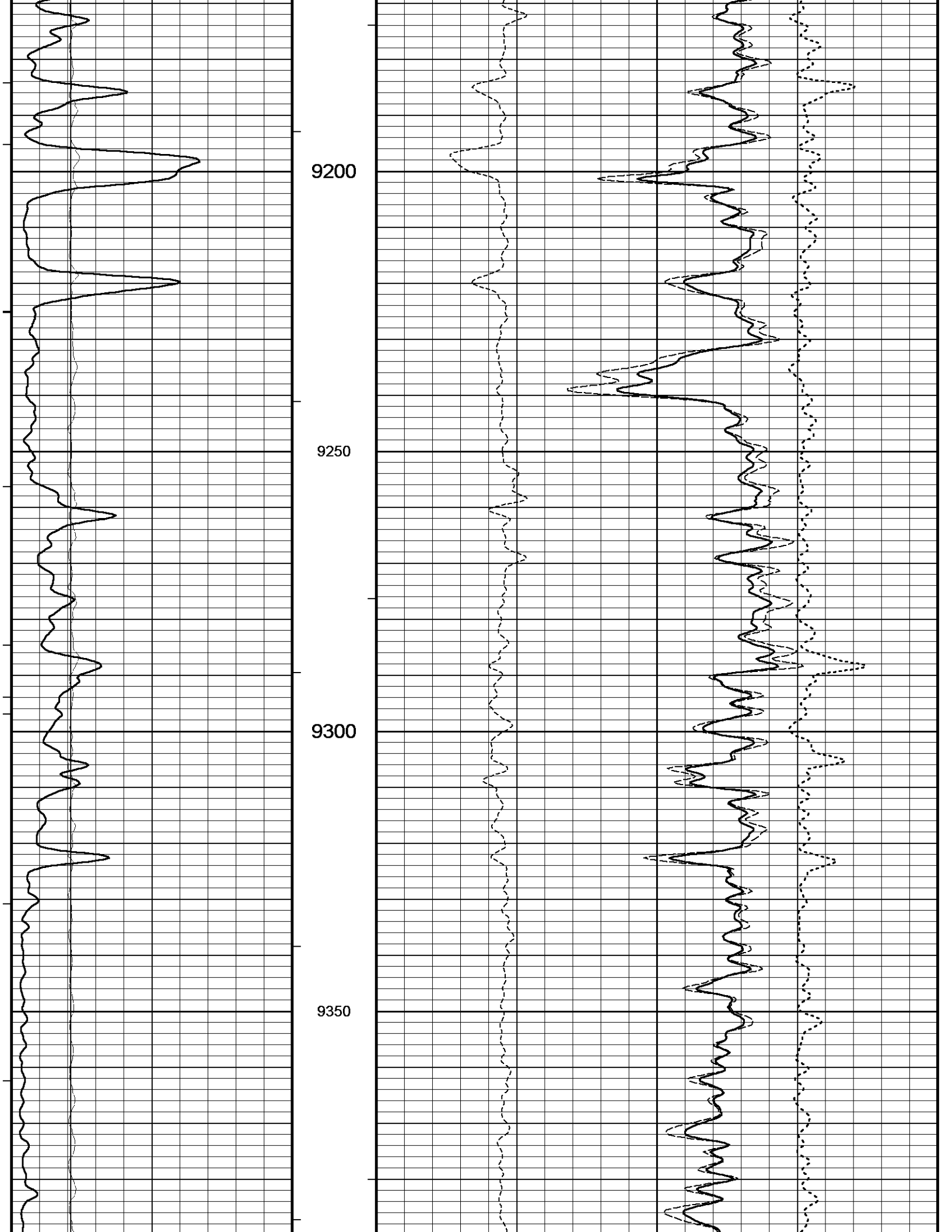
100
9000
9050
9100
9150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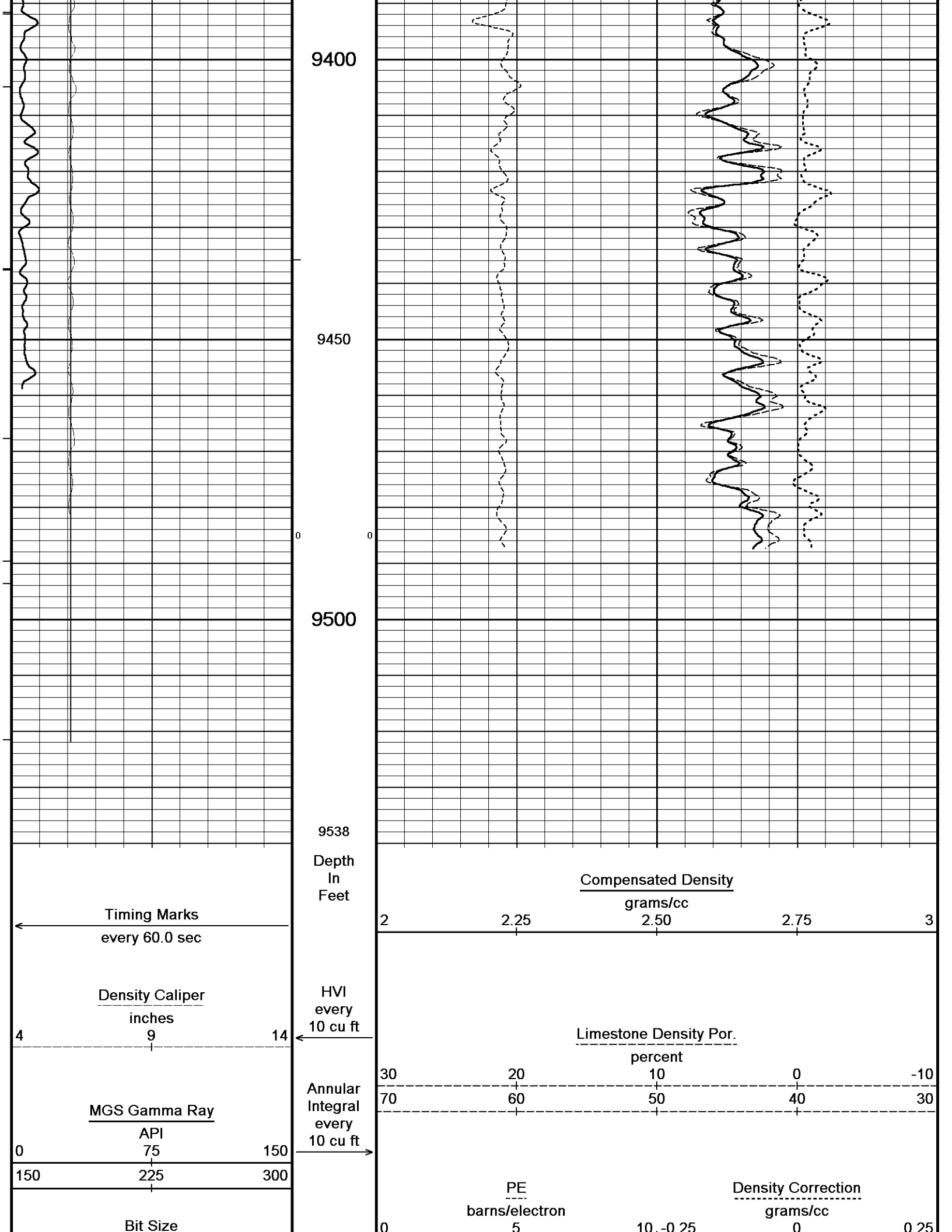
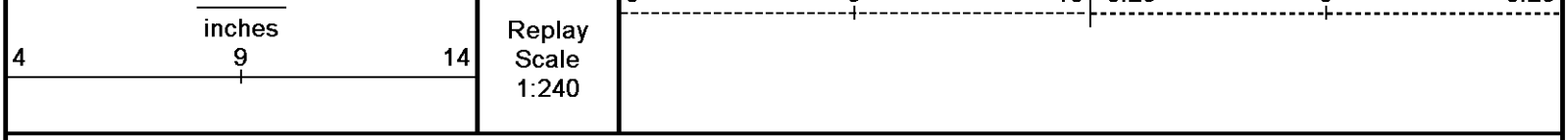
9250
9300
9350


9400
9450
9500
9538
Depth
In
Feet
Timing Marks
every 60.0 sec
Density Caliper
inches
4
9
14
HVI
every
10 cu ft
MGS Gamma Ray
API
0
75
150
150
225
300
Annular
Integral
every
10 cu ft
Bit Size
Compensated Density
grams/cc
2
2.25
2.50
2.75
3
Limestone Density Por.
percent
30
20
10
0
-10
70
60
50
40
30
PE
barns/electron
0
5
Density Correction
grams/cc
10
-0.25
0
0.25



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 30-AUG-2012 03:33
Filename: C:\Data\SANDRIDGE JAMES 3318 1-...\SANDRIDGE JAMES 3318 1-13H RTAP DEPTH.dta — Recorded on 30-AUG-2012 02:49
System Versions: Processed with 13.02.6600 Plotted with 13.02.6600

BEFORE SURVEY CALIBRATION

C:\Data\SANDRIDGE JAMES 3318 1-13H\SANDRIDGE JAMES 3318 1-13H RTAP DEPTH.dta

General Constants All 000

Last Edited on 29-AUG-2012,01:31

General Parameters		
Mud Resistivity	0.800	ohm-metres
Mud Resistivity Temperature	80.000	degrees F
Water Level	0.000	feet
Density/Neutron Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Strain Gauge Constants SER-B.A 166

Last Edited on 19-JUL-2012,23:30

Atmospheric Pressure	14.70	psi
Serial Number	0	
Calibration Date	000000000000	
Base Check Date		
Dead Weight Serial Number	0	
Dead Weight Gravitational Correction	1.0	

Temperature	75.0		150.0		250.0		350.0	degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10000.0	0.000		0.000		0.000		0.000	

Strain Gauge Constants MMS-E.B 157

Last Edited on

Atmospheric Pressure	14.70	psi
Serial Number	0	
Calibration Date	000000000000	
Base Check Date		
Dead Weight Serial Number	0	
Dead Weight Gravitational Correction	1.0	

Temperature	75.0		150.0		250.0		350.0	degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10000.0	0.000		0.000		0.000		0.000	

High Resolution Temperature Calibration MCS-C.H 142

High Resolution Temperature Calibration MGS-C.J 142

Field Calibration on 06-AUG-2012,04:44

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MGS-C.J 142

Last Edited on

Pre-filter Length	11

SP Calibration MGS-C.J 142

Field Calibration on 06-AUG-2012,04:44

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

Gamma Calibration MGS-C.J 142

Field Calibration on 27-AUG-2012,14:07

	Measured	Calibrated (API)
Background	39	27
Calibrator (Gross)	1048	723
Calibrator (Net)	1009	696

Gamma Constants MGS-C.J 142

Last Edited on 23-AUG-2012,05:22

Gamma Calibrator Number	036	
Mud Density	1.04	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Neutron Calibration MDN-B.J 391

Base Calibration on 27-AUG-2012,14:07
Field Check on

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	3186	96	3714	110
Ratio	33.156		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2267	3463
Ratio	0.655	

Field Check

	Calibrated (cps)	
	0	0
Ratio	0.000	

Neutron Constants MDN-B.J 391

Last Edited on 22-AUG-2012,23:24

Neutron Source Id	N1055	
Neutron Jig Number	N639	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	1.80	kpsi
Temperature Source	MGS External Temperature	
Temperature	N/A	degrees F
Mud Salinity	3.67	kppm
Salinity Correction	Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	140.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 363

Base Calibration on 29-JUN-2012 13:12
Field Check on 29-AUG-2012 10:43

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.1	126.8

Base Check	281.8
Field Check	282.0

FE Constants MFE-B.J 363

Last Edited on 07-AUG-2012,15:08

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MGS External Temperature	
Stand-off	0.5	inches

Induction Calibration MAI-B.J 427

Base Calibration on 20-AUG-2012,13:38
Field Check on 29-AUG-2012 10:42

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	14.4	434.9	9.3	966.2
2	5.8	355.4	7.6	821.4
3	2.7	244.4	5.2	566.0
4	1.8	129.3	2.6	279.2

Array Temperature 75.0 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	0.0	0.0	19.8	4140.2
2	0.0	0.0	32.3	3768.4
3	0.0	0.0	31.4	3208.4
4	0.0	0.0	20.1	2122.4
Deep	0.0	0.0	19.7	2018.9
Medium	0.0	0.0	45.5	4287.0
Shallow	0.0	0.0	47.6	5676.0
Array Temperature	0.0		82.8	Deg F

Induction Constants MAI-B.J 427

Last Edited on 30-AUG-2012,03:06

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Constant Value	
Hole Size for Borehole Correction	6.125	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.00	inches
Number of Fins on Stand-off	6.0000	
Stand-off Fin Angle	60.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Constant Value	
Temp. for Rm Corr.	N/A	
Squasher Start	0.0060	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00
Cementation Exponent (M)	2.00

Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-B.J 427

Field Calibration on 20-AUG-2012,14:27

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MAI-B.J 427

Last Edited on 20-AUG-2012,14:27

Pre-filter Length	11

Caliper Calibration MPD-B 166

Base Calibration on 20-JUL-2012,11:40
Field Calibration on 08-AUG-2012,15:14

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	11102	4.02
2	20537	5.96
3	30848	8.03
4	41232	10.02
5	51982	12.01
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.27	6.08

Photo Density Calibration MPD-B 166

Base Calibration on 20-JUL-2012,10:36
Field Check on 27-AUG-2012 14:07

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	49845	22463	59869	31110
Reference 2	20737	2400	24557	2522

Field Check at Base

1190.7	1364.5

Field Check

1179.5	1358.2

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	215	1064		
Reference 1	19934	49660	0.406	0.369
Reference 2	5690	20604	0.280	0.271

Field Check at Base

215.4	1064.3

Field Check

216.1	1056.1

Density Constants MPD-B 166

Last Edited on 23-AUG-2012,05:23

Density Source Id	236	
Nylon Calibrator Number	633	
Aluminium Calibrator Number	633	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.04	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc

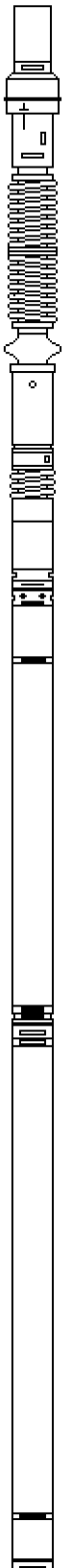
CRCT	0.02	gm/cc
Density Z/A Correction	Hybrid	

Matrix density (gm/cc)	Depth (m)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	

DOWNHOLE EQUIPMENT

C:\Data\SANDRIDGE JAMES 3318 1-13H\SANDRIDGE JAMES 3318 1-13H RTAP DEPTH.dta

Shuttle Mechanical Release (SMR A)
SMR-A 148 LG: 8.53 ft WT: 77.2 lb OD: 2.52 in



Shuttle Electrical Release
SER-B.A 166 LG: 6.90 ft WT: 50.7 lb OD: 2.24 in

MBS-F.A 200v Compact Battery Sub
MBS-F.A 135 LG: 10.61 ft WT: 70.5 lb OD: 2.24 in

Compact Memory Sub E.B
MMS-E.B 157 LG: 5.20 ft WT: 37.5 lb OD: 2.24 in

Compact Tool Isolator sub.
MTI-B.A 68 LG: 1.54 ft WT: 13.2 lb OD: 2.24 in

Compact Short Gamma
MGS-C.J 142 LG: 3.41 ft WT: 24.3 lb OD: 2.24 in

61.76 ft GRGM - MGS Gamma Ray

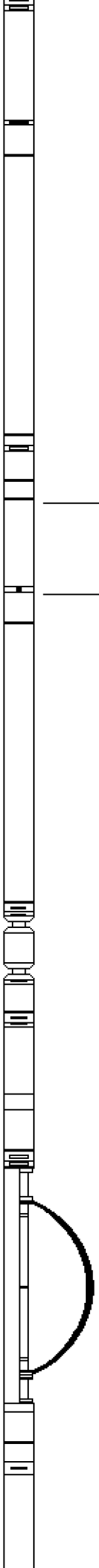
59.77 ft GSXT - MGS External Temperature

Compact Collar Locator
MCL-B.J 63 LG: 3.17 ft WT: 26.5 lb OD: 2.24 in

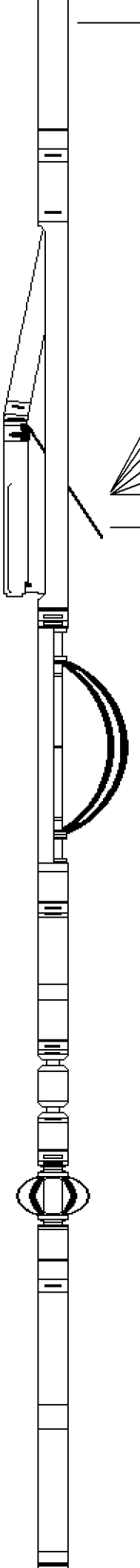
SKJ-E.B Compact Knuckle Joint
SKJ-E.B 474 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 432 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 62 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in



Compact Neutron
MDN-B.J 391 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in



42.89 ft NPRL - Limestone Neutron Por.

Compact Density/Caliper
MPD-B 166 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

35.65 ft CLDC - Density Caliper
35.65 ft HVOL - Hole Volume
35.65 ft AVOL - Annular Volume
33.72 ft DCOR - Density Correction
33.72 ft DEN - Compensated Density
33.72 ft DPRL - Limestone Density Por.
33.65 ft PDPE - PE

MIS-A.A Compact Inline Bowspring sub
MIS-A.A 275 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 434 LG: 2.30 ft WT: 22.0 lb OD: 2.24 in

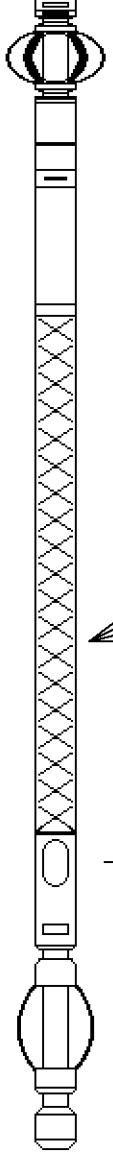
SKJ-E.B Compact Knuckle Joint
SKJ-E.B 479 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 575 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Focussed Electric
MFE-B.J 363 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 597 LG: 2.14 ft WT: 15.4 lb OD: 2.24 in

Compact Induction
MAI-B.J 427 LG: 12.52 ft WT: 48.5 lb OD: 2.24 in



3.34 ft	R40S - Array Ind. Six Res 40
3.34 ft	R60S - Array Ind. Six Res 60
3.34 ft	R85S - Array Ind. Six Res 85
3.34 ft	RTAS - Array Ind. Six Res Rt

Tool Zero (1.84ft from bottom)

Total Length: 97.17 ft Weight: 727.5 lb All measurements relative to tool zero.

COMPANY	SANDRIDGE ENERGY
WELL	JAMES 3318 1-13H
FIELD	COLLIER FLAT
PROVINCE/COUNTY	COMANCHE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	1909.50	feet	First Reading	9485.00	feet
Elevation Drill Floor	1909.50	feet	Depth Driller	9550.00	feet
Elevation Ground Level	1890.00	feet	Depth Logger	9550.00	feet

Weatherford®

CML IMPULSE SHUTTLE
COMPACT PHOTO DENSITY
COMPENSATED NEUTRON