



**SUPERIOR
Hays,
Kansas**

**DUAL
INDUCTION
LOG**

Company TDI, INC.
Well WOLF #1
Field DECHANT SOUTH FIELD
County ELLIS State KANSAS

Company TDI, INC.
Well WOLF #1
Field DECHANT SOUTH FIELD
County ELLIS
State KANSAS

Location: API #: 15-051-26225-0000
950' FNL & 1775' FWL
NE - SW - NE - NW
SEC 13 TWP 15S RGE 19W
Permanent Datum GROUND LEVEL Elevation 2028
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
CDL/CNL
SONIC/MEL
Elevation

Date	12-4-11
Run Number	ONE
Depth Driller	3839
Depth Logger	3840
Bottom Logged Interval	3839
Top Log Interval	0
Casing Driller	224
Casing Logger	223
Bit Size	7.875
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.0 / 55
pH / Fluid Loss	10.0 / 7.8
Source of Sample	FLOWLINE
Rim @ Meas. Temp	0.35 @ 67F
Rmf @ Meas. Temp	0.26 @ 67F
Rmc @ Meas. Temp	0.42 @ 67F
Source of Rmf / Rmc	MEASURED
Rim @ BHT	0.20 @ 115F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	115F
Equipment Number	860
Location	HAYS, KS.
Recorded By	JEFF GRONEWEG
Witnessed By	JEFF LAWLER

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

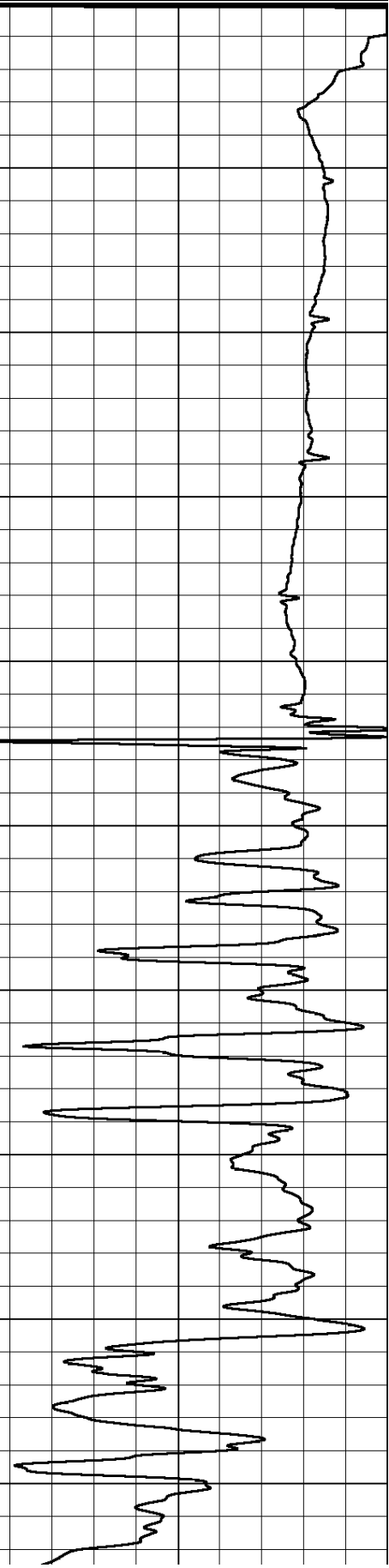
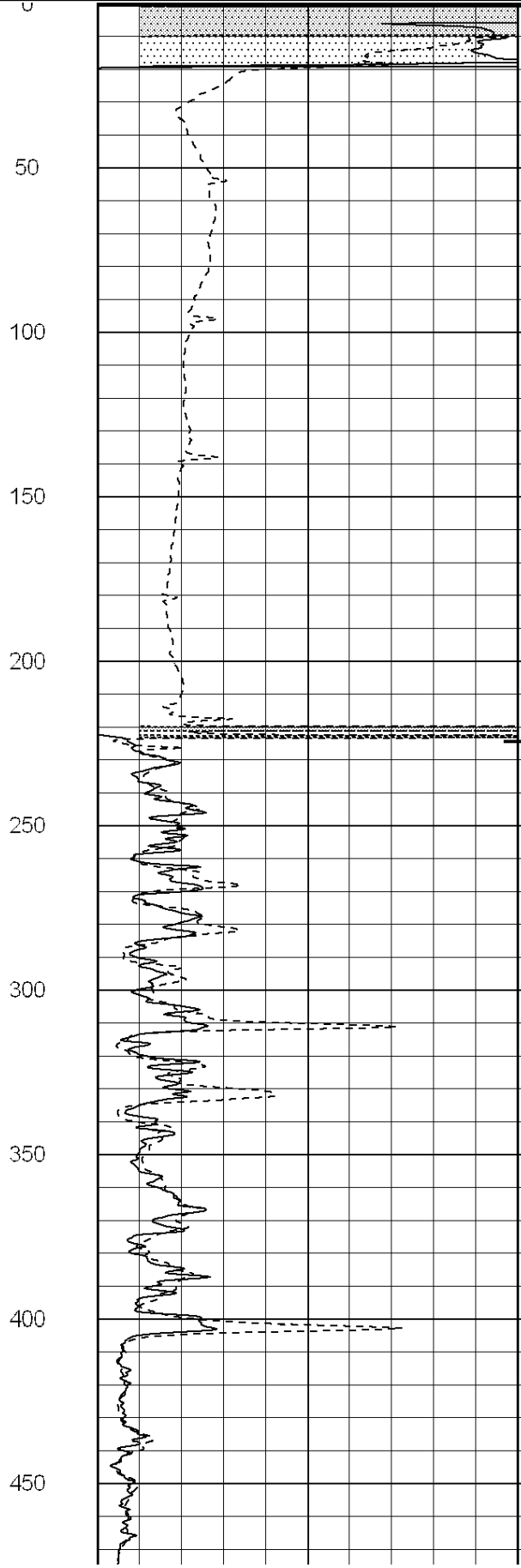
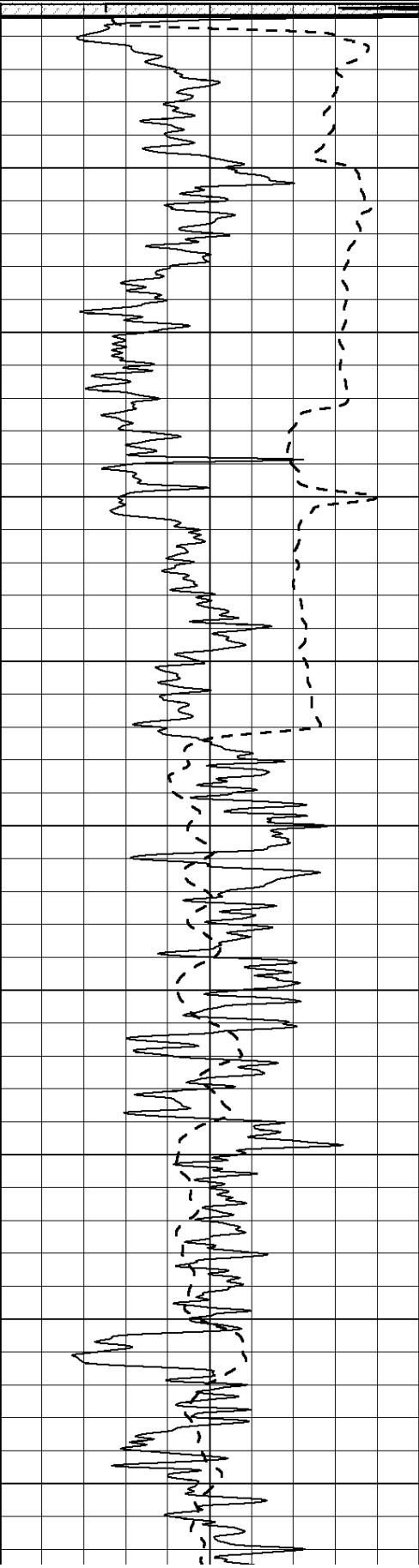
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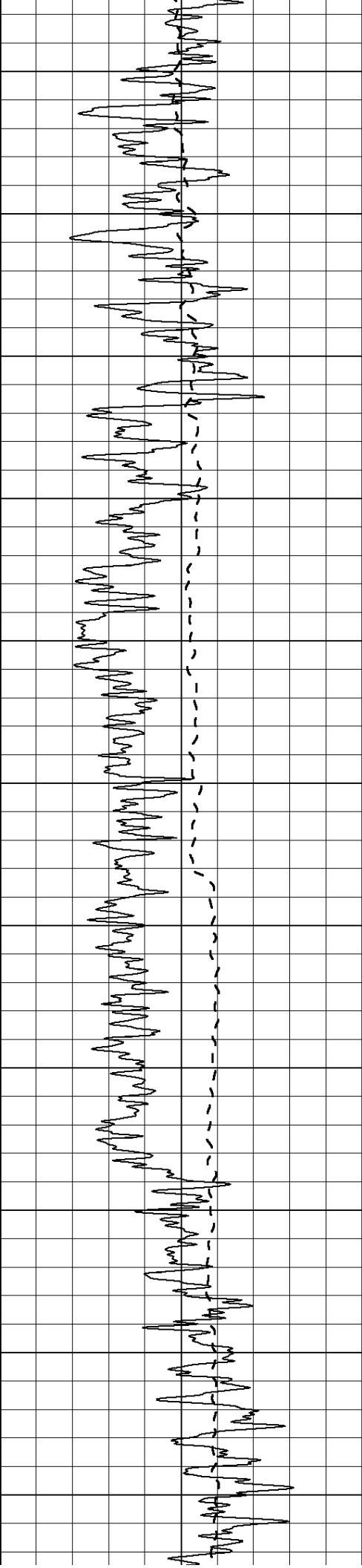
SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: ANTONINO, KS - 2 MILES SOUTH - 1/4 MILE EAST
SOUTH INTO

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

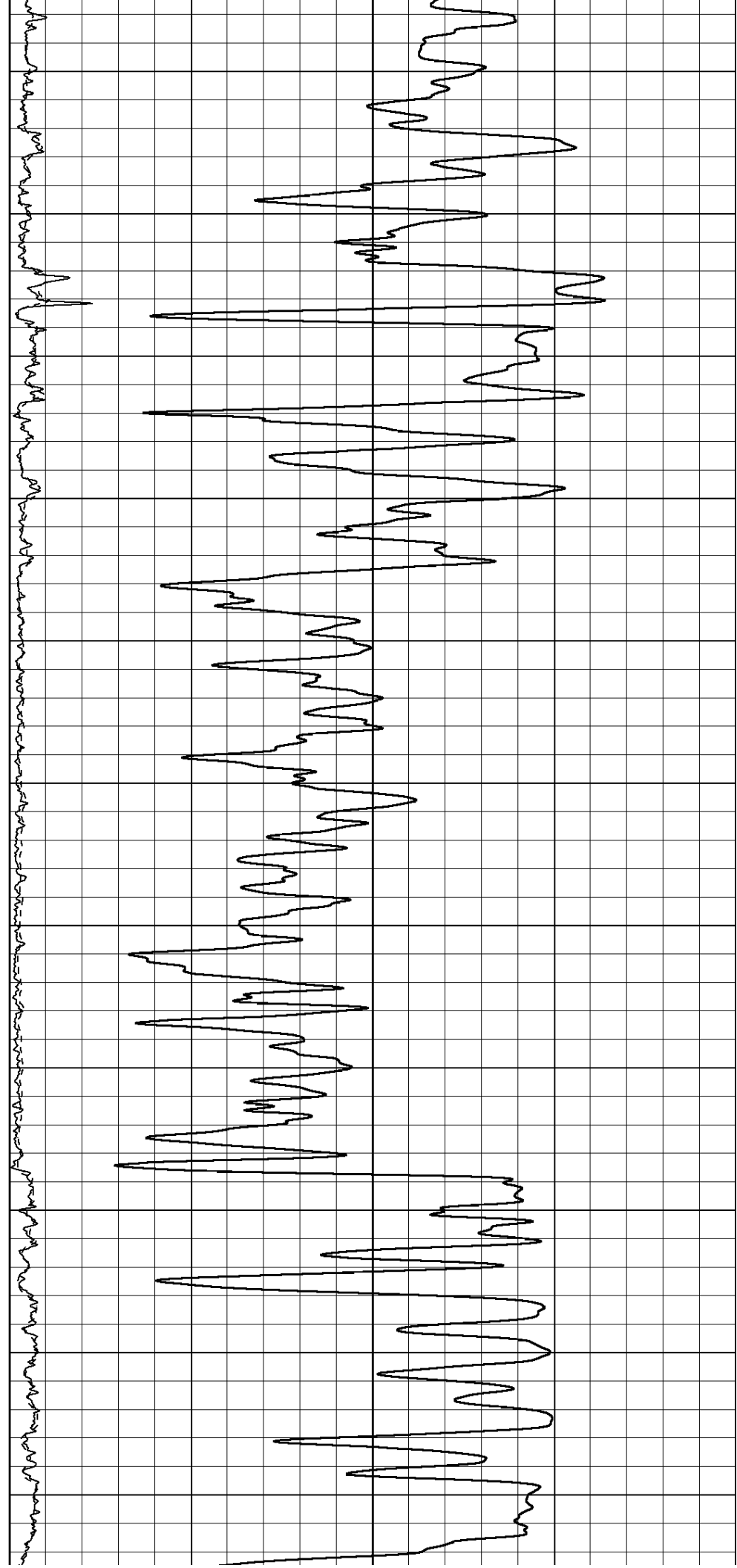
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0	Deep Induction (Ohm-m)	50

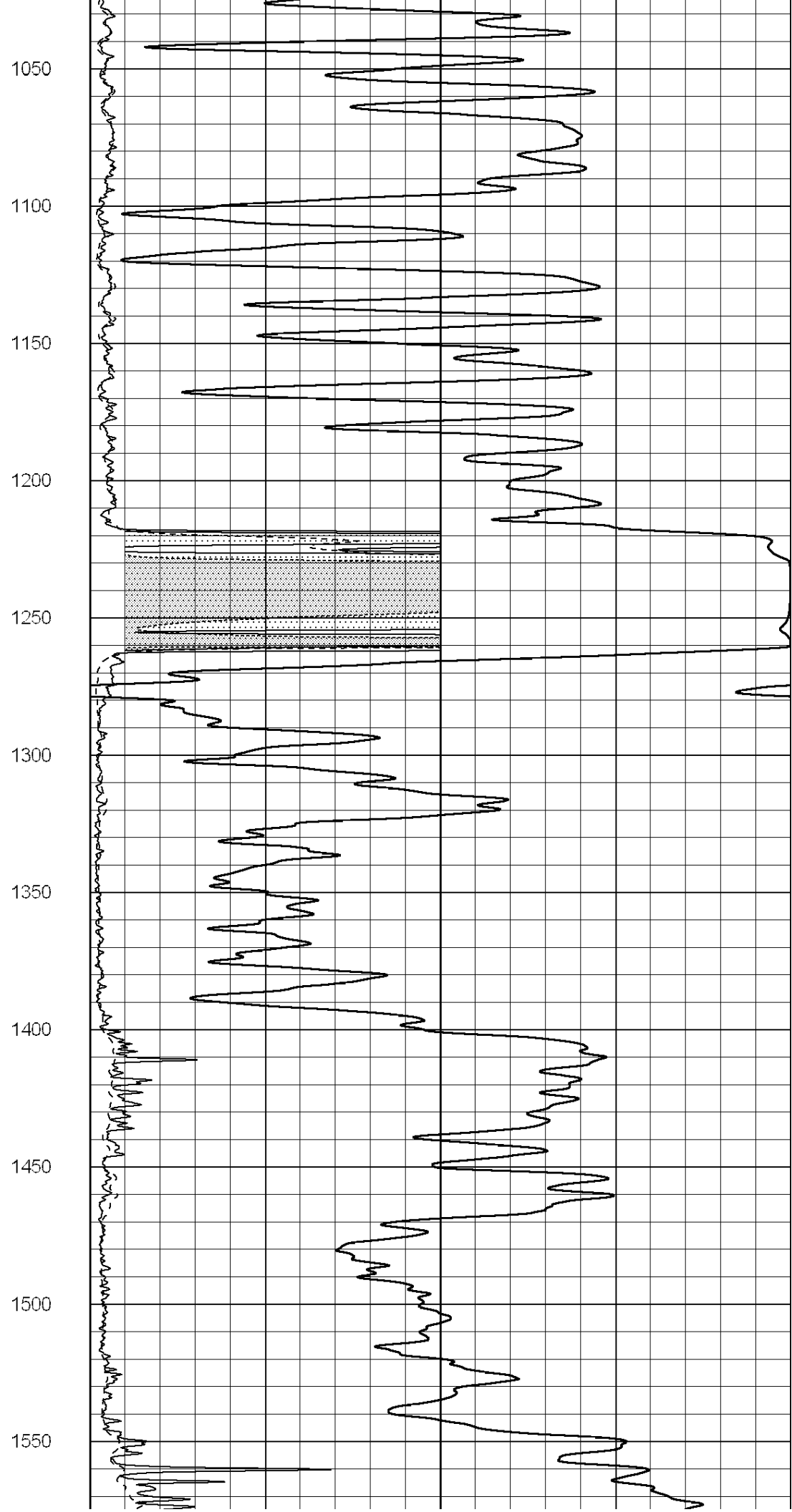
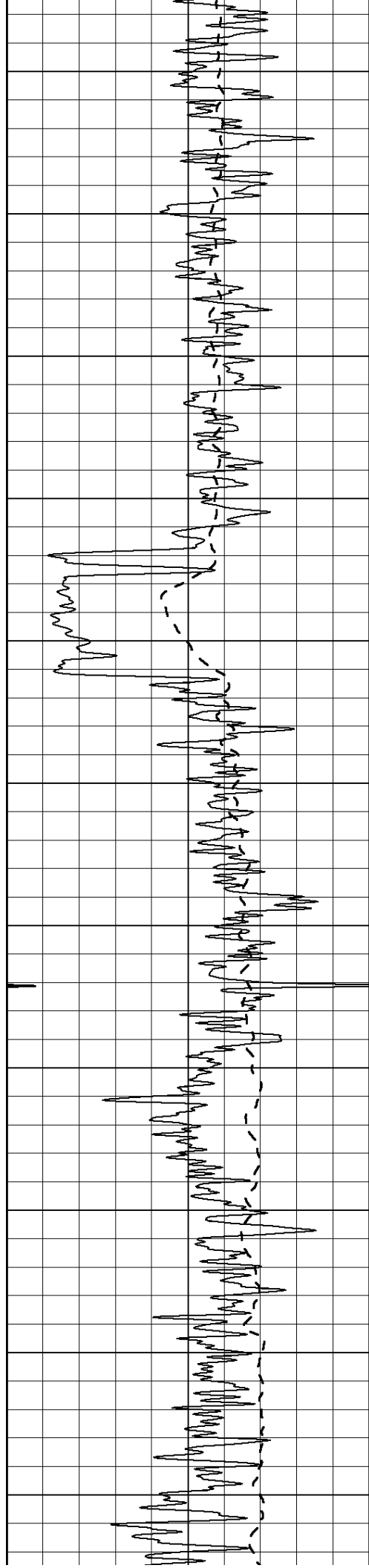
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50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

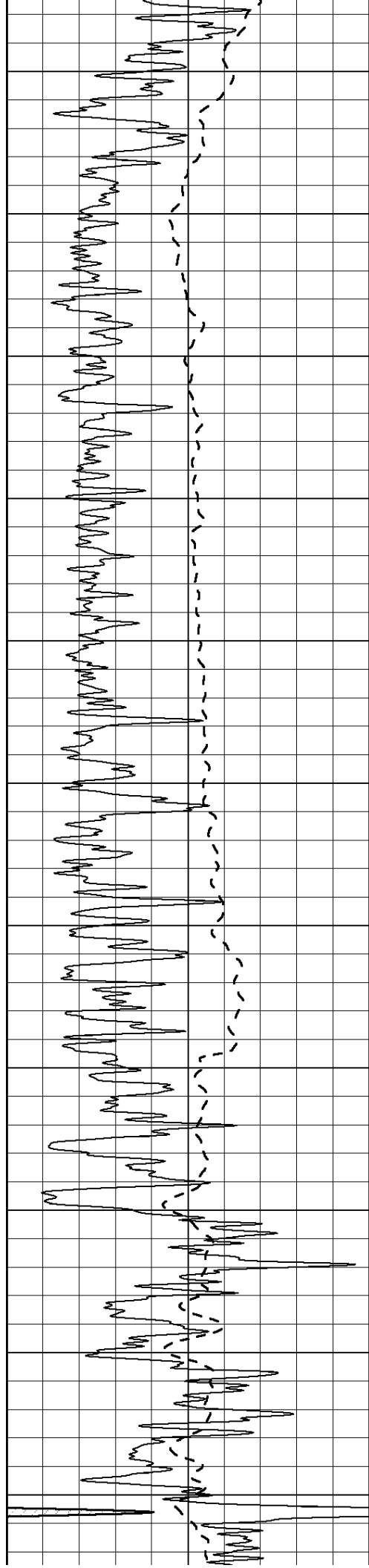




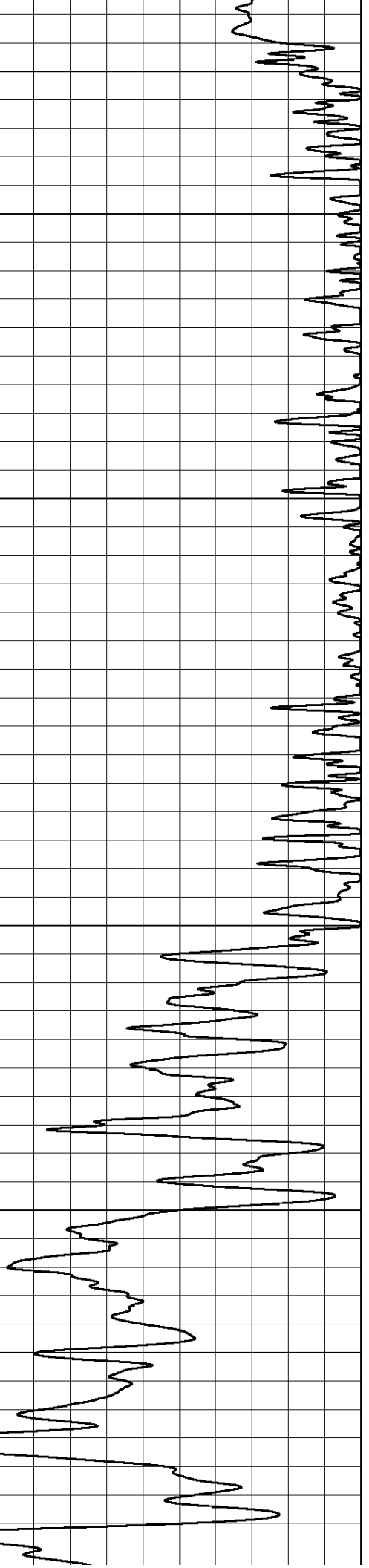
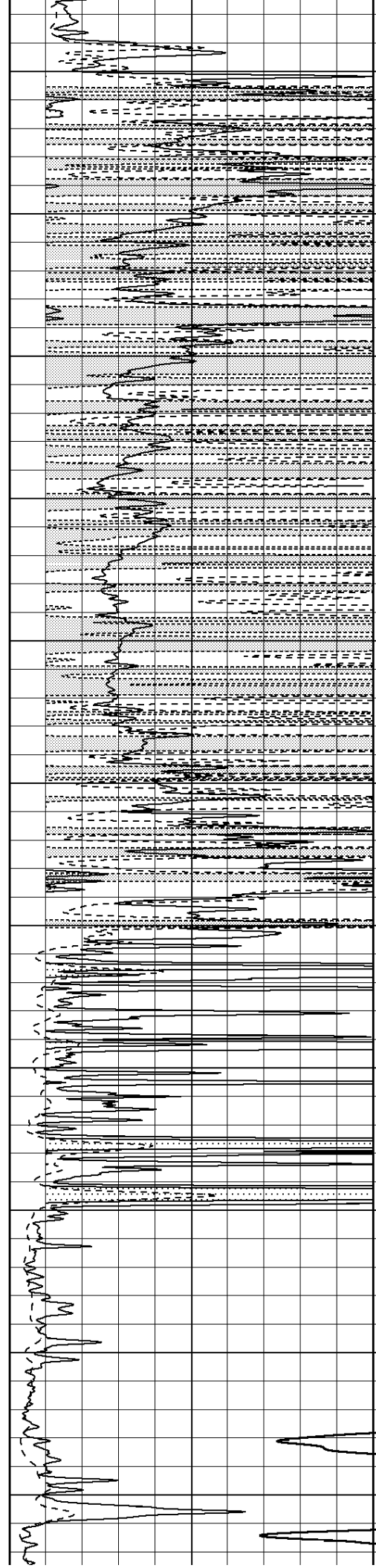
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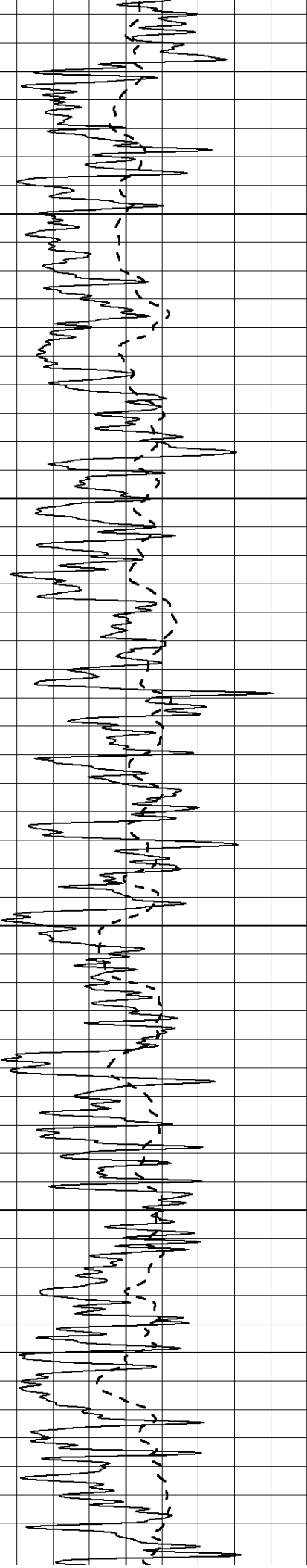
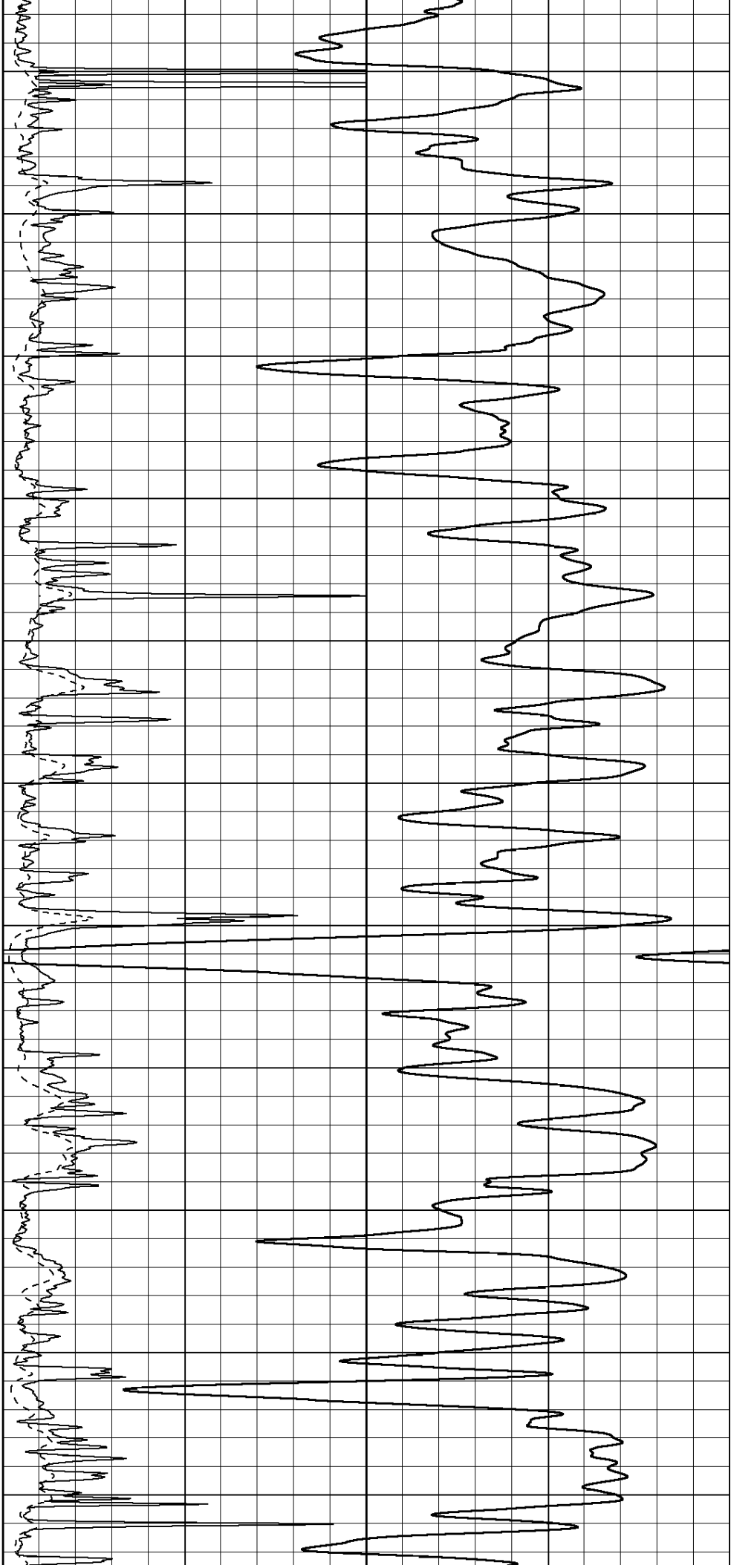


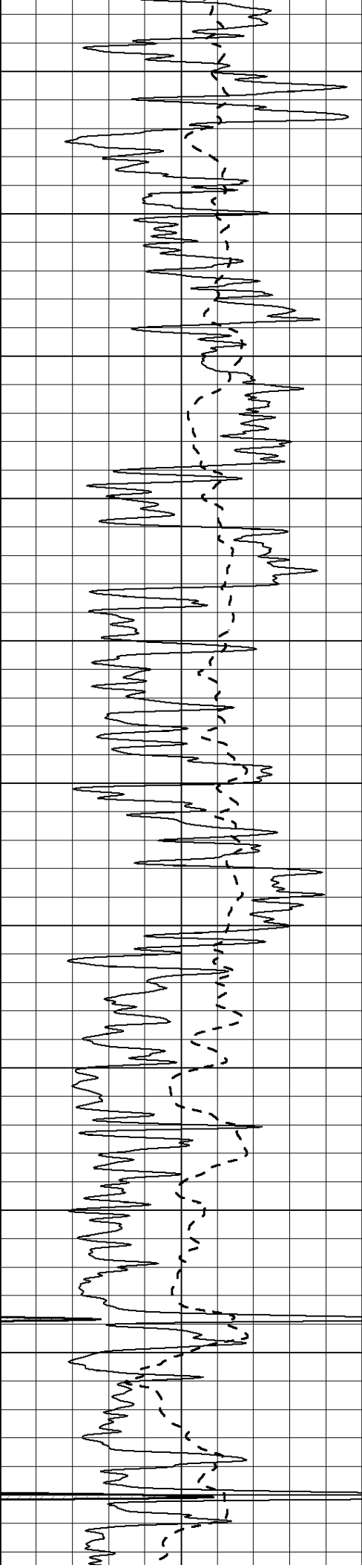


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1650
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1750
1800
1850
1900
1950
2000
2050
2100



2150
2200
2250
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2500
2550
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2650





2700

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2800

2850

2900

2950

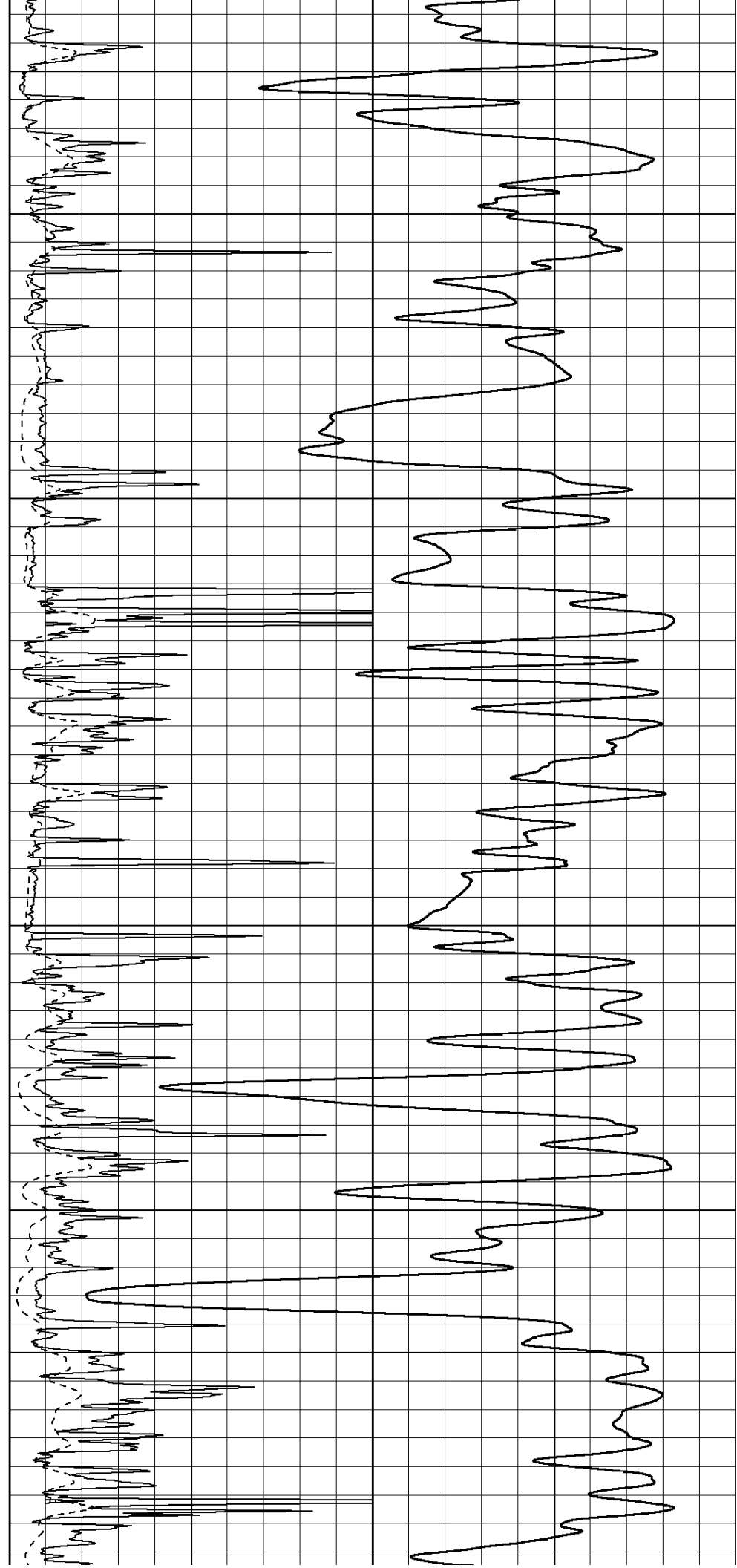
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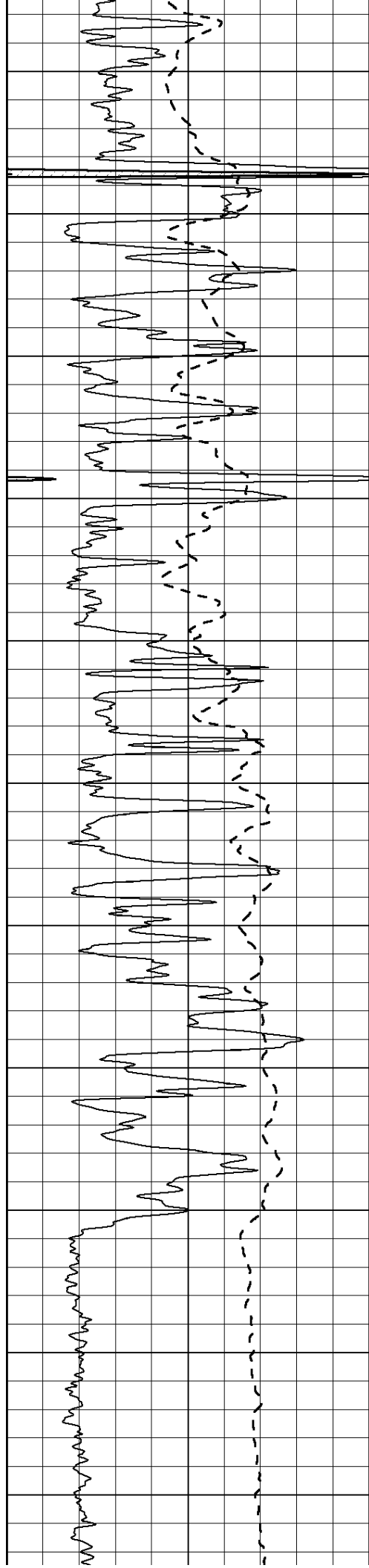
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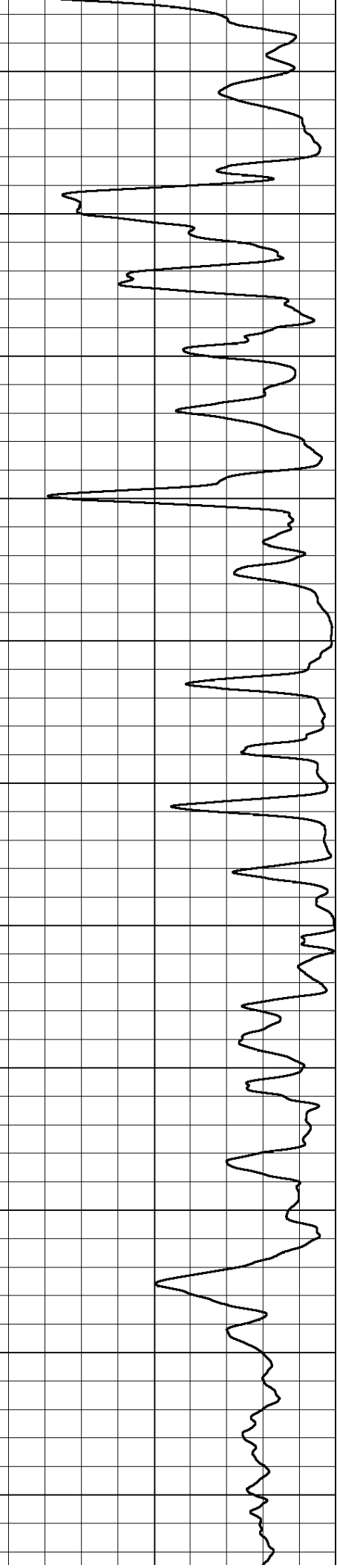
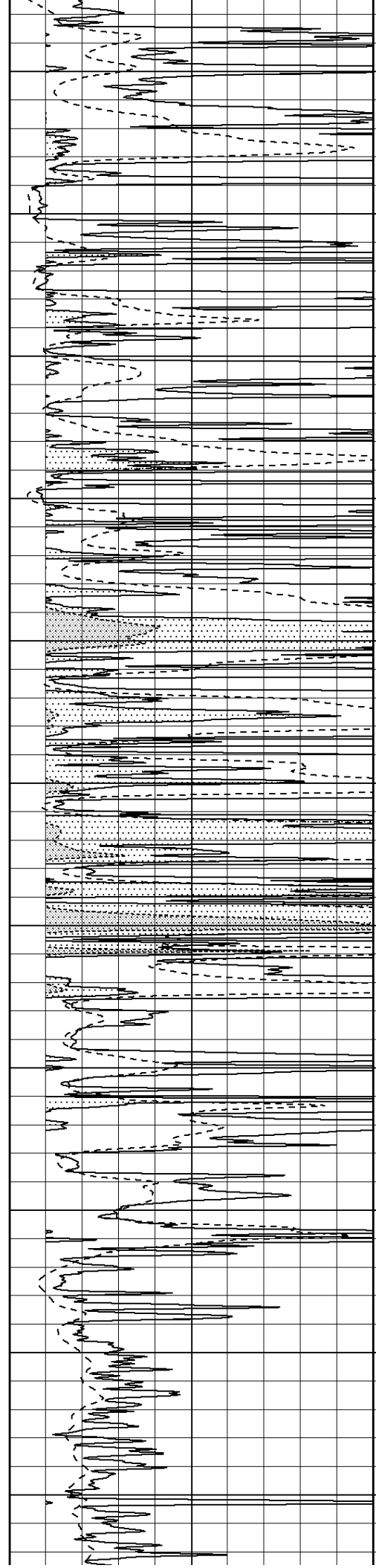
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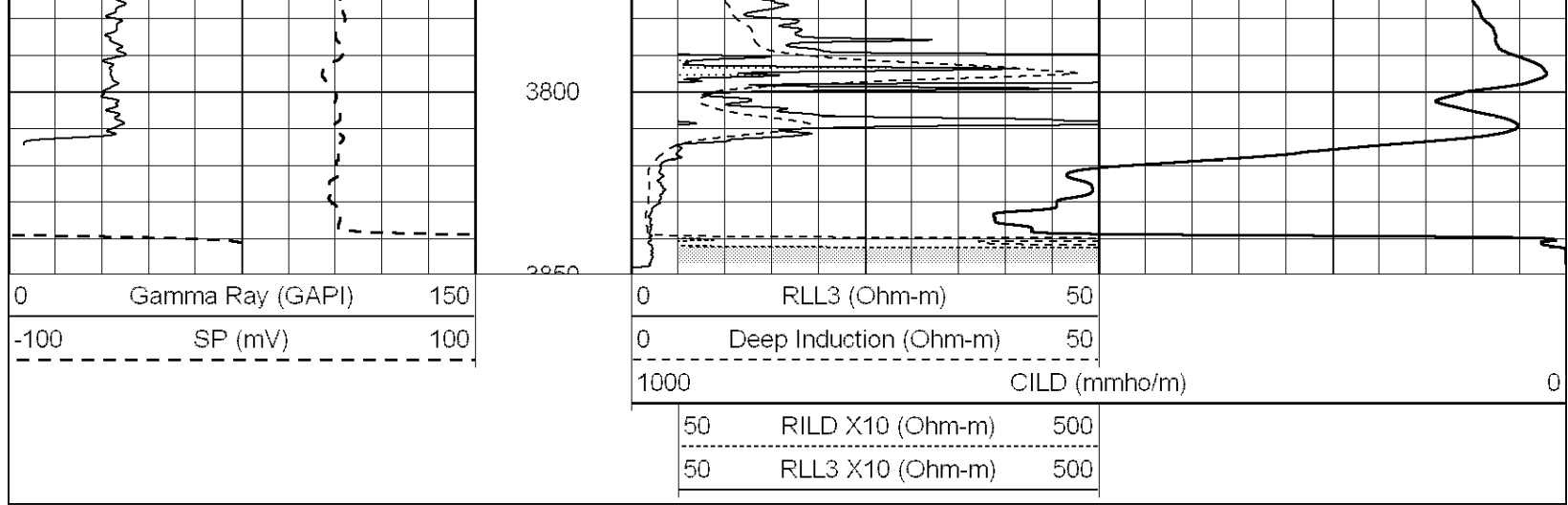
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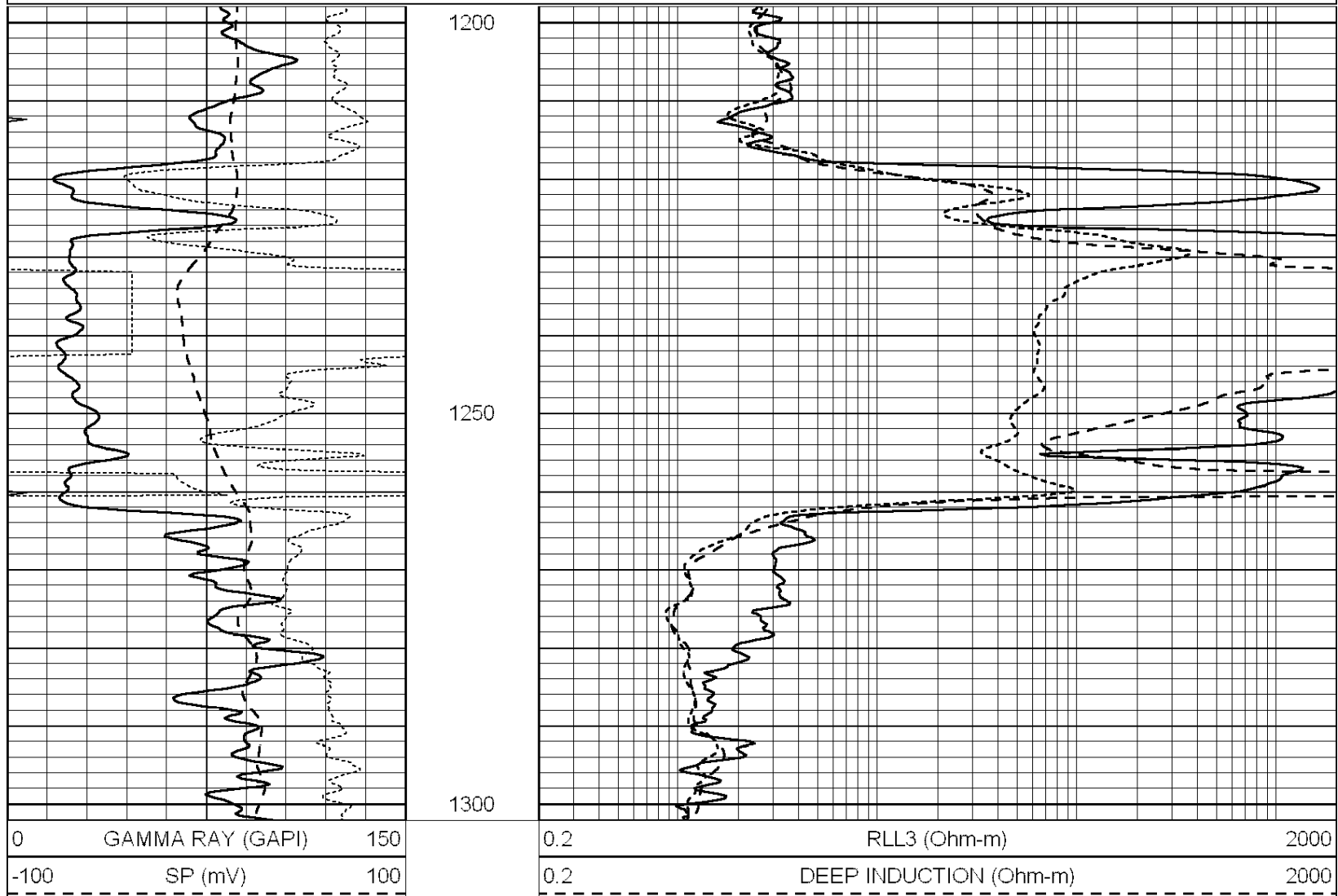
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3750





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Presentation Format:	dil
Dataset Creation:	Sun Dec 04 23:18:33 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	RLL3 (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



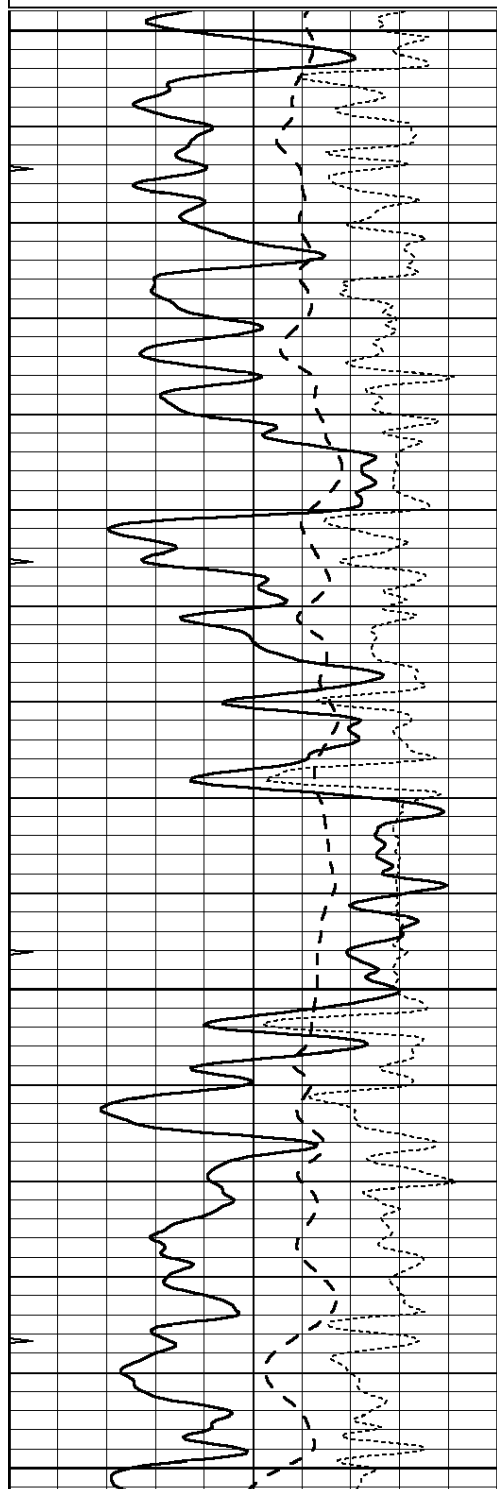
-250	RxoRt	50
0	MINMK	20

0.2 MEDIUM INDUCTION (Ohm-m) 2000

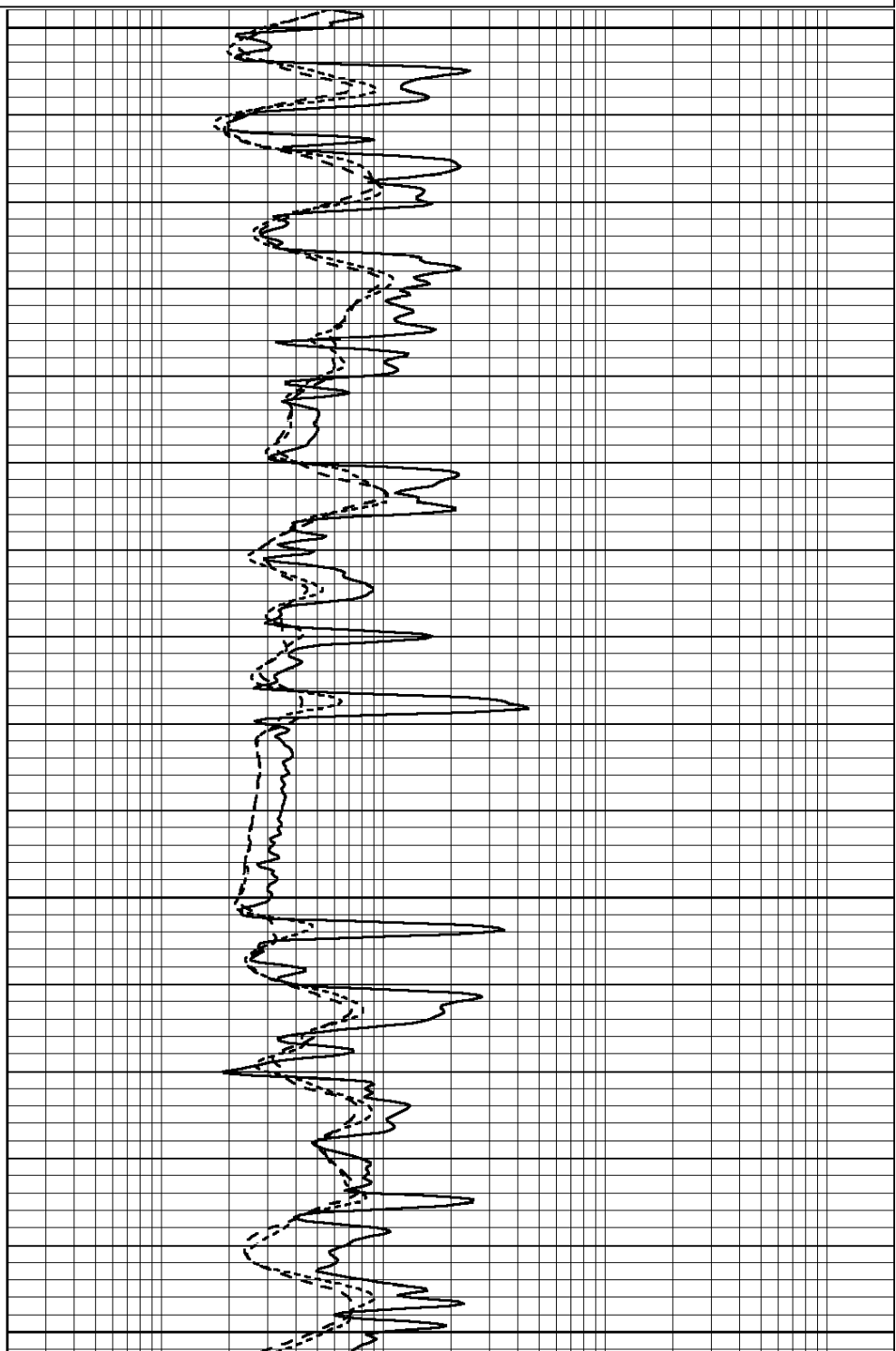
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 Presentation Format: dil
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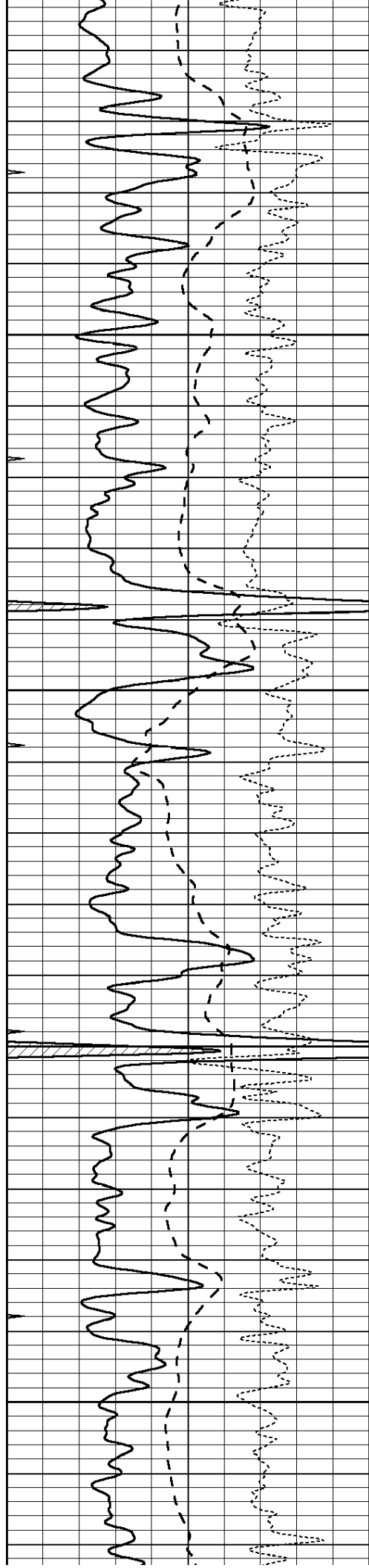
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



2900
2950
3000
3050



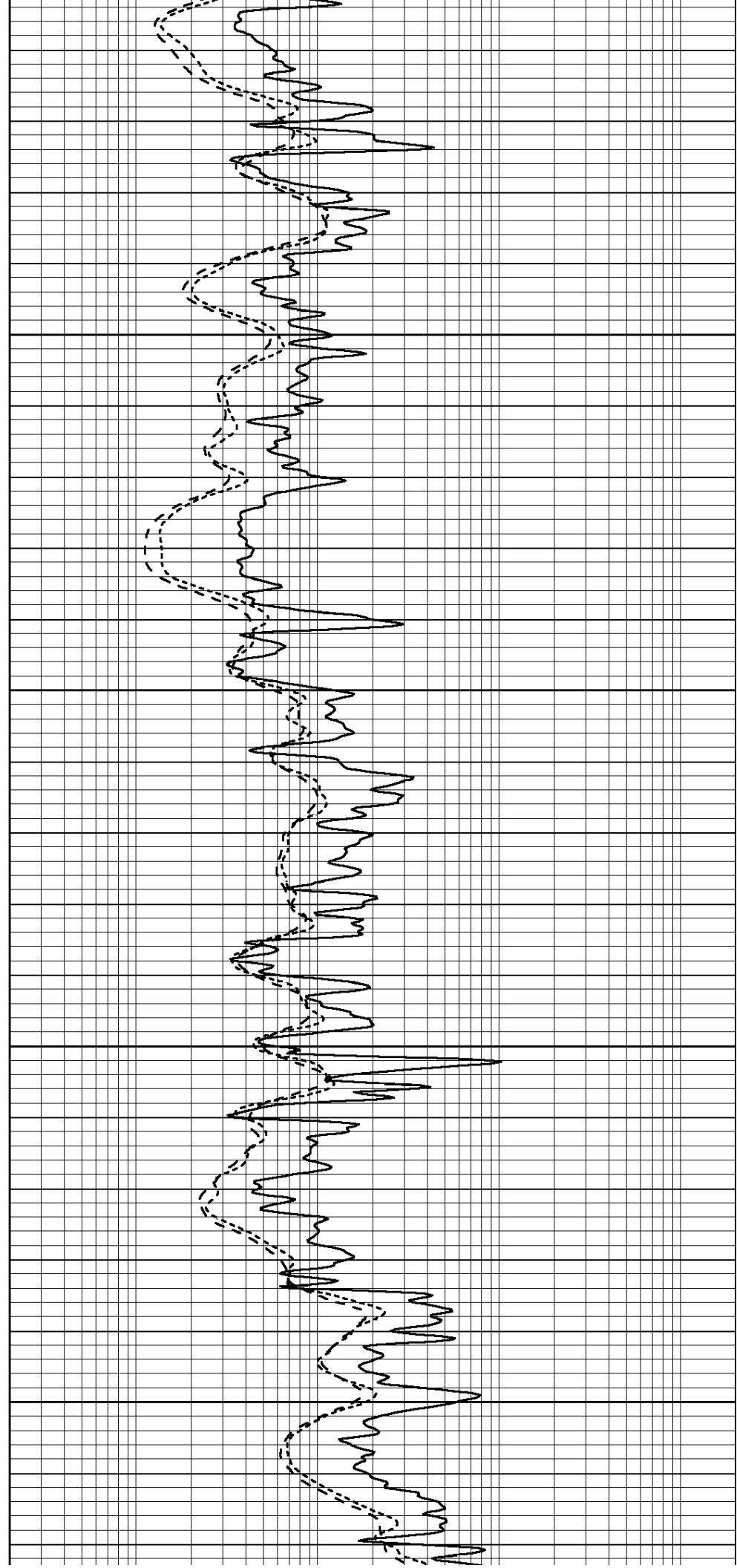


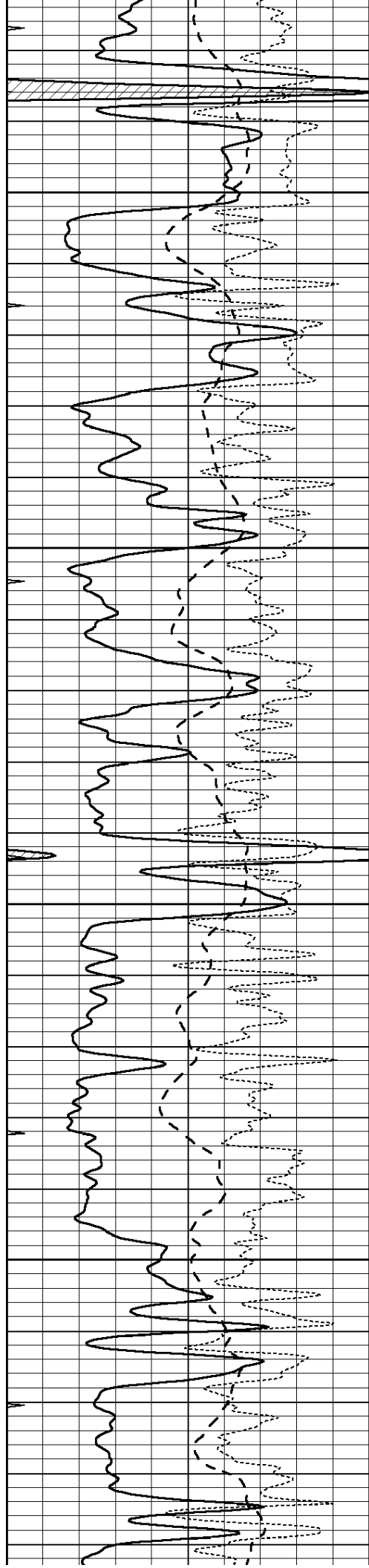
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3150

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3250



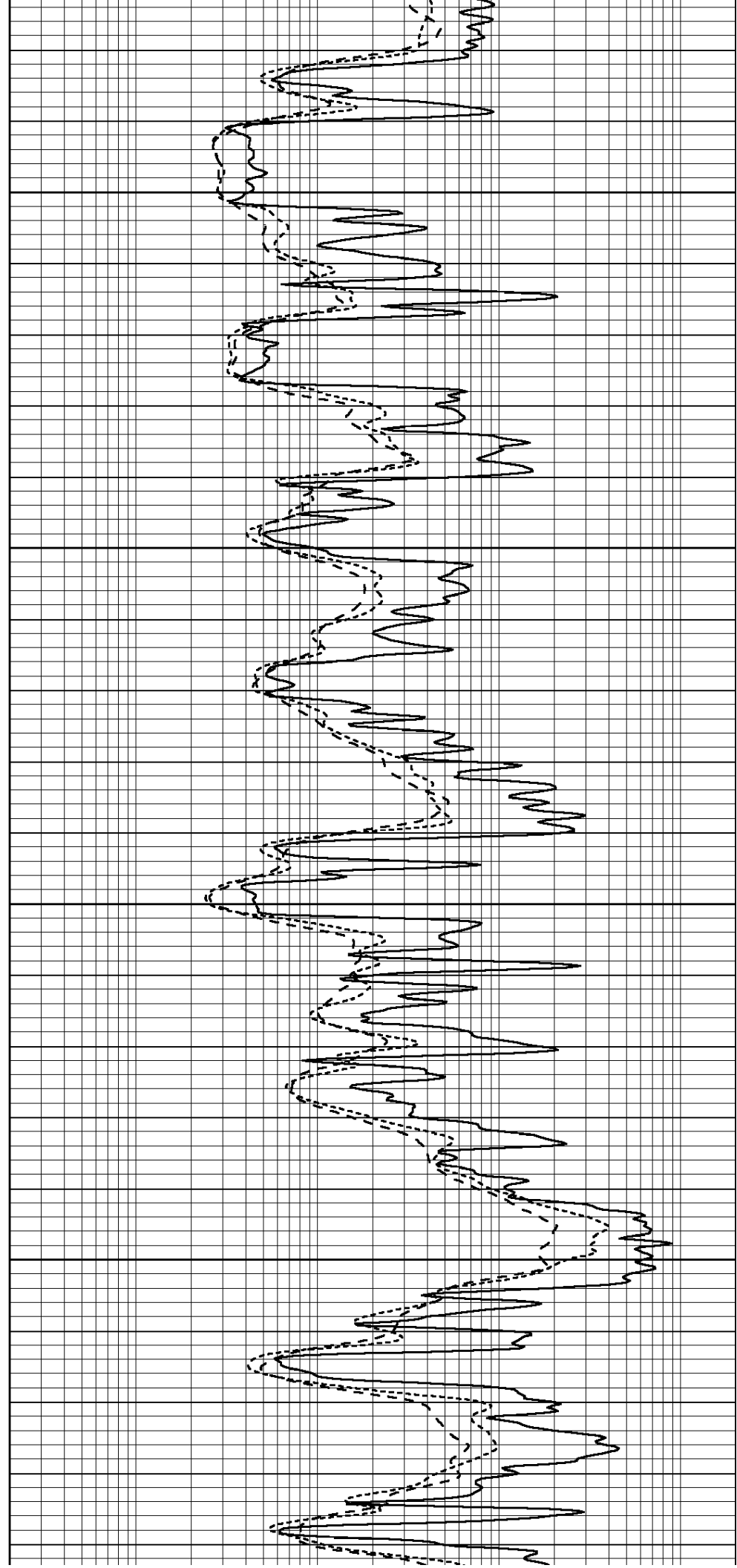


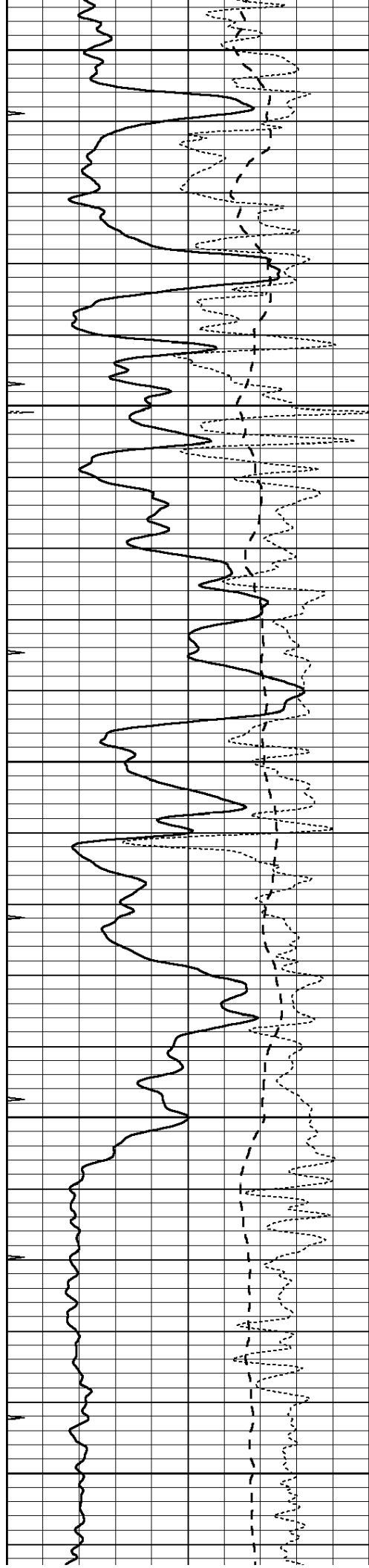
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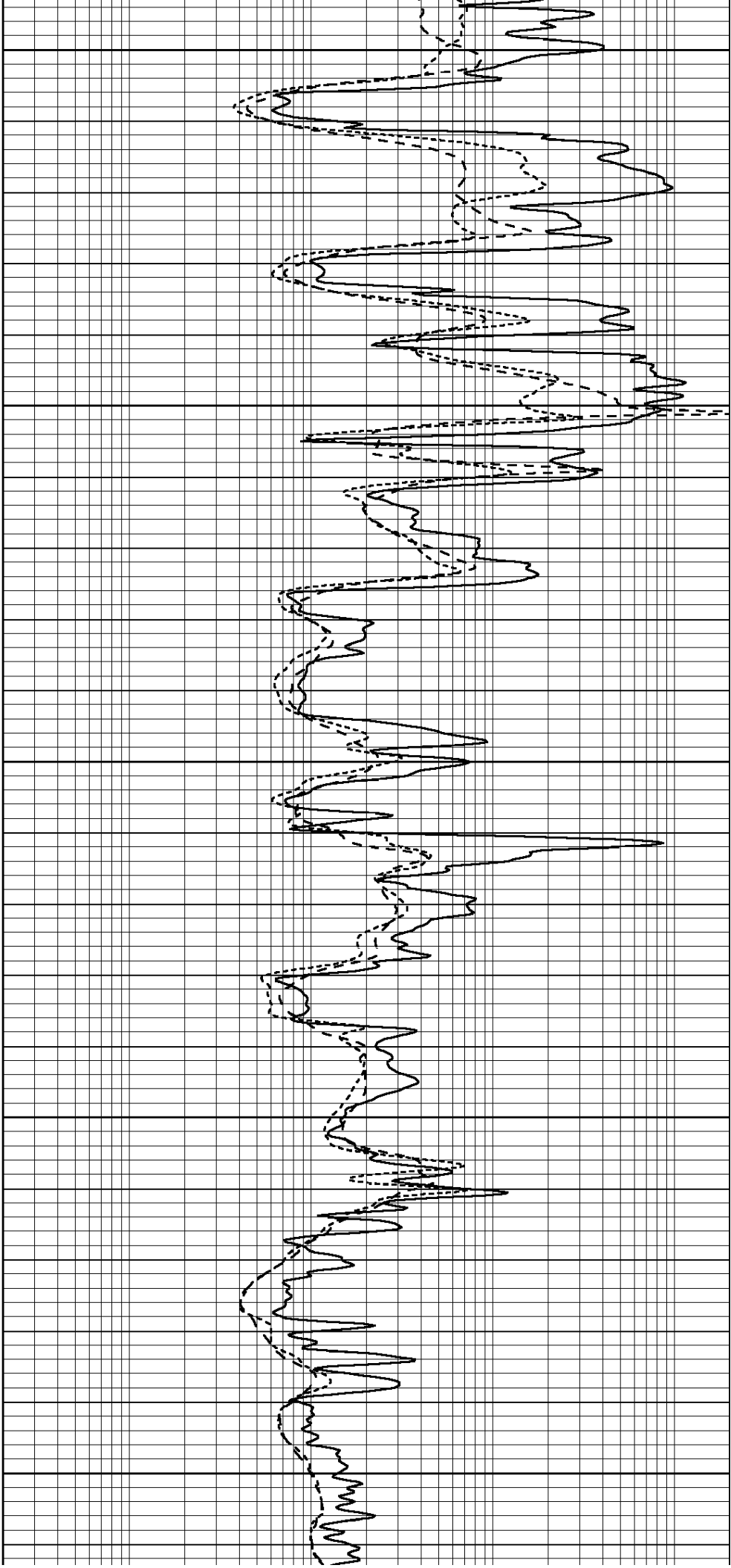
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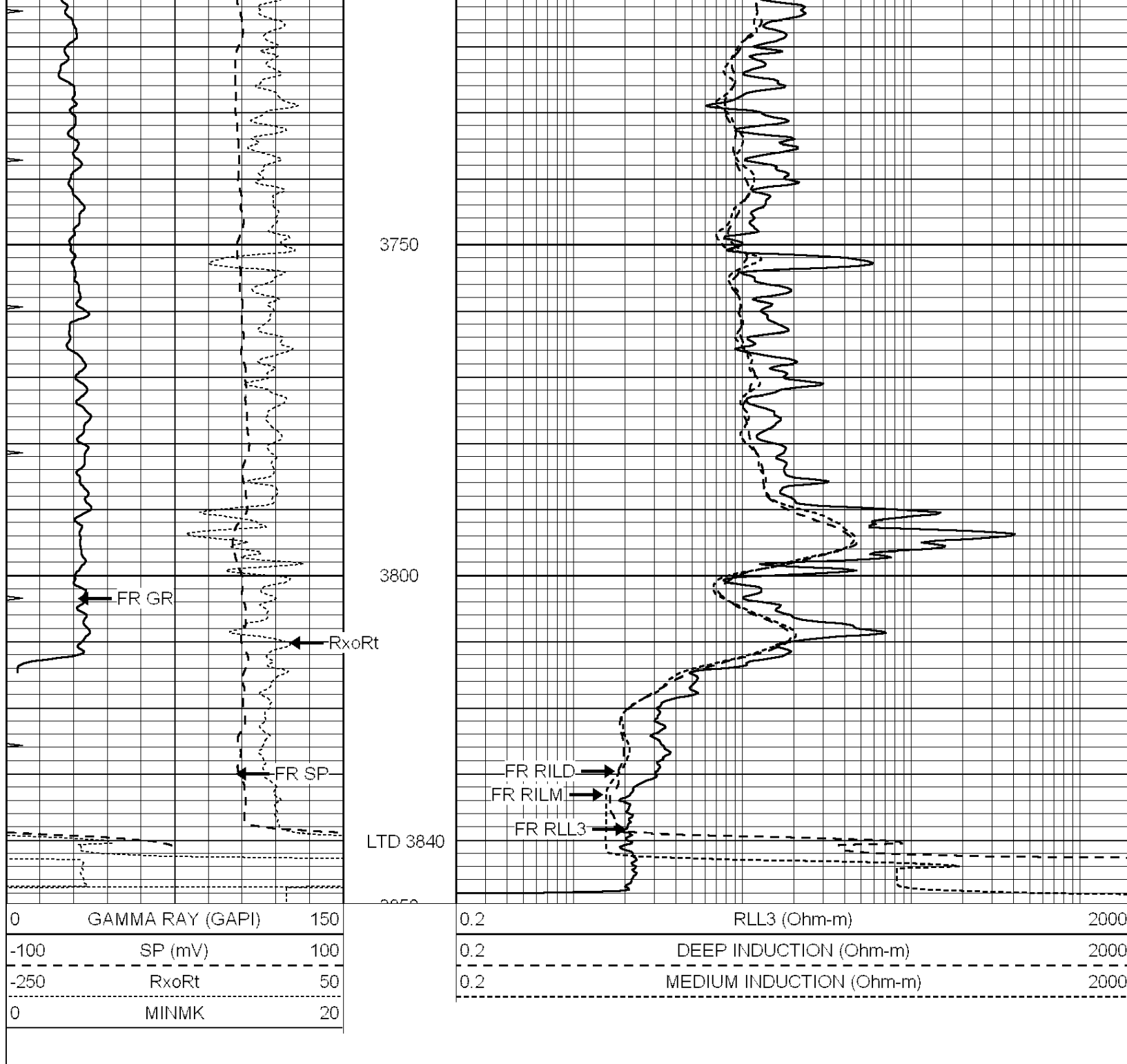
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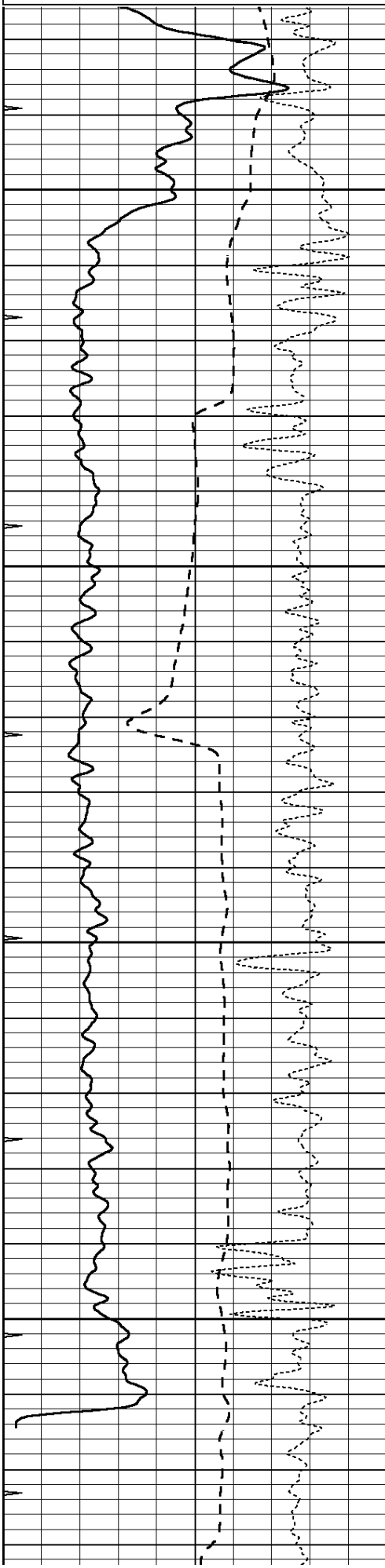

SUPERIOR
WELL SERVICES

SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 008023ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: dil
 Dataset Creation: Sun Dec 04 21:28:37 2011 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	RLL3 (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000

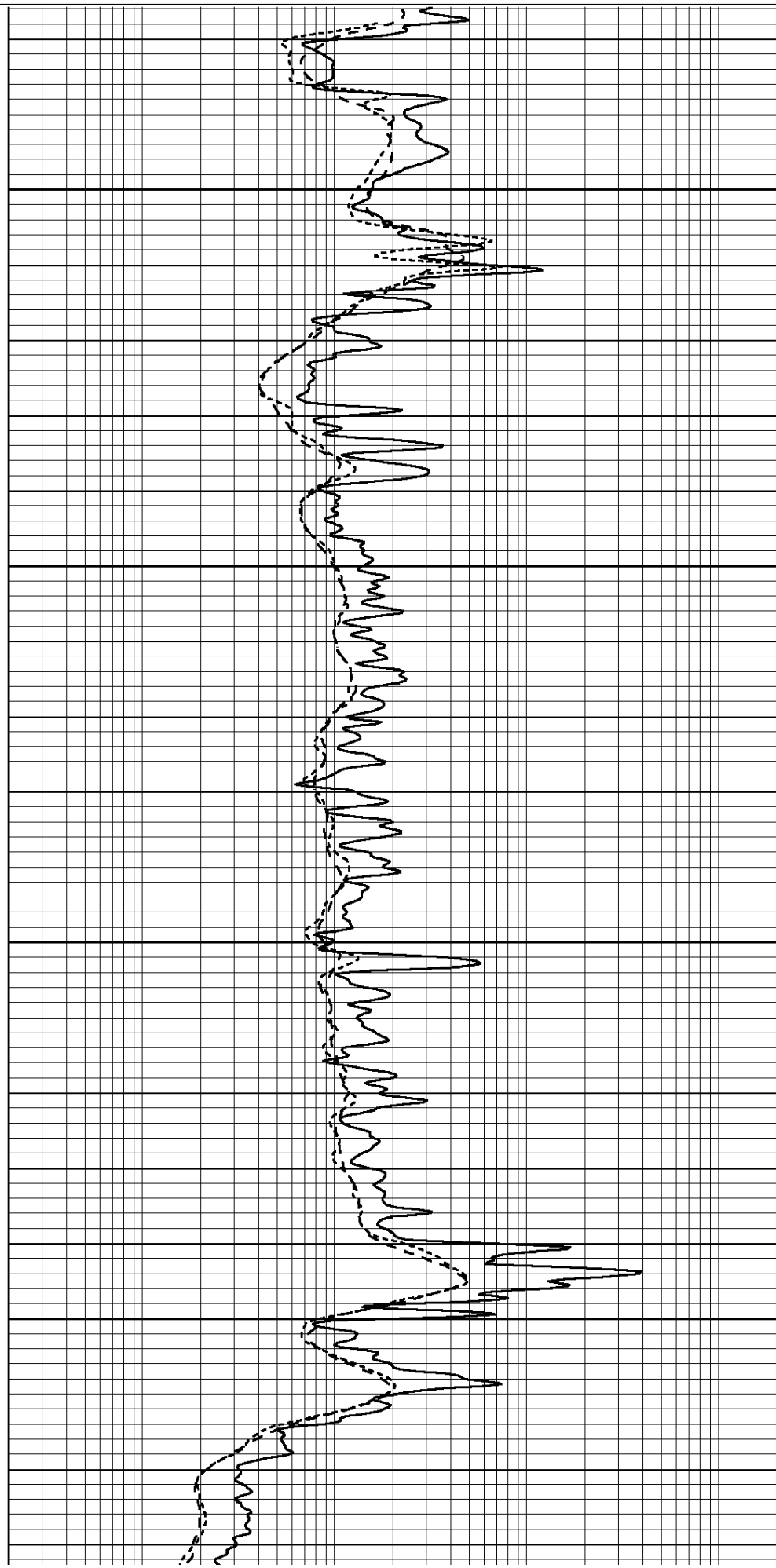


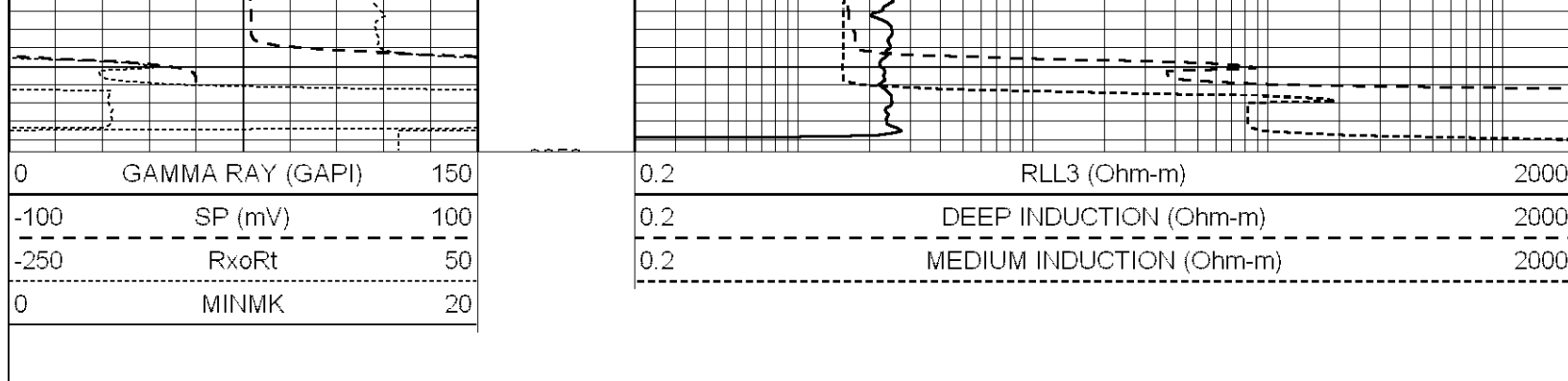
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3750

3800





Calibration Report

Database File: 008023ddn.db
 Dataset Pathname: pass4.4
 Dataset Creation: Sun Dec 04 23:18:33 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
 Performed: Sat Nov 26 00:40:50 2011

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho/m	520.000	-20.000
Medium	-0.005	0.737	V	0.000	462.500	mmho/m	550.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.006	0.655	V	0.000	400.000	mmho/m	615.668	-3.483
Medium	0.010	0.747	V	0.000	462.500	mmho/m	627.607	-6.064

Compensated Density Calibration Report

Serial-Model: GEAR1-GEARHART
 Source / Verifier: 147 / 147
 Master Calibration Performed: Sat Nov 19 06:29:56 2011

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1243.76	629.14	cps
Aluminum	2.590	g/cc	282.16	435.01	cps
Spine Angle = 76.03			Density/Spine Ratio = 0.576		
	Size		Reading		
Small Ring	8.40	in	3.15	V	
Large Ring	13.00	in	4.72	V	

Compensated Neutron Calibration Report

Serial Number: NUE_2I
 Tool Model: G

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.0000
Long Space	1.00	cps	1.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number:	GR5	
Tool Model:	OPEN	
Performed:	Mon Nov 28 02:44:15 2011	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6500	GAPI/cps



SUPERIOR
Hays,
Kansas

MICRO
LOG

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 County ELLIS
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Location: API #: 15-051-26225-0000
 950' FNL & 1775' FWL
 NE - SW - NE - NW
 SEC 13 TWP 15S RGE 19W
 Permanent Datum GROUND LEVEL Elevation 2028
 Log Measured From KELLY BUSHING 10' A.G.L.
 Drilling Measured From KELLY BUSHING

Other Services
 CDL/CNL
 DIL/SON
 Elevation

Date	12-4-11		
Run Number	TWO		
Depth Driller	3839		
Depth Logger	3840		
Bottom Logged Interval	3822		
Top Log Interval	2898		
Casing Driller	224		
Casing Logger	223		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES: 2800 PPM	
Density / Viscosity	9.0 / 55		
pH / Fluid Loss	10.0 / 7.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.35 @ 67F		
Rmf @ Meas. Temp	0.26 @ 67F		
Rmc @ Meas. Temp	0.42 @ 67F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.20 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	115F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	JEFF GRONEWEG		
Witnessed By	JEFF LAWLER		

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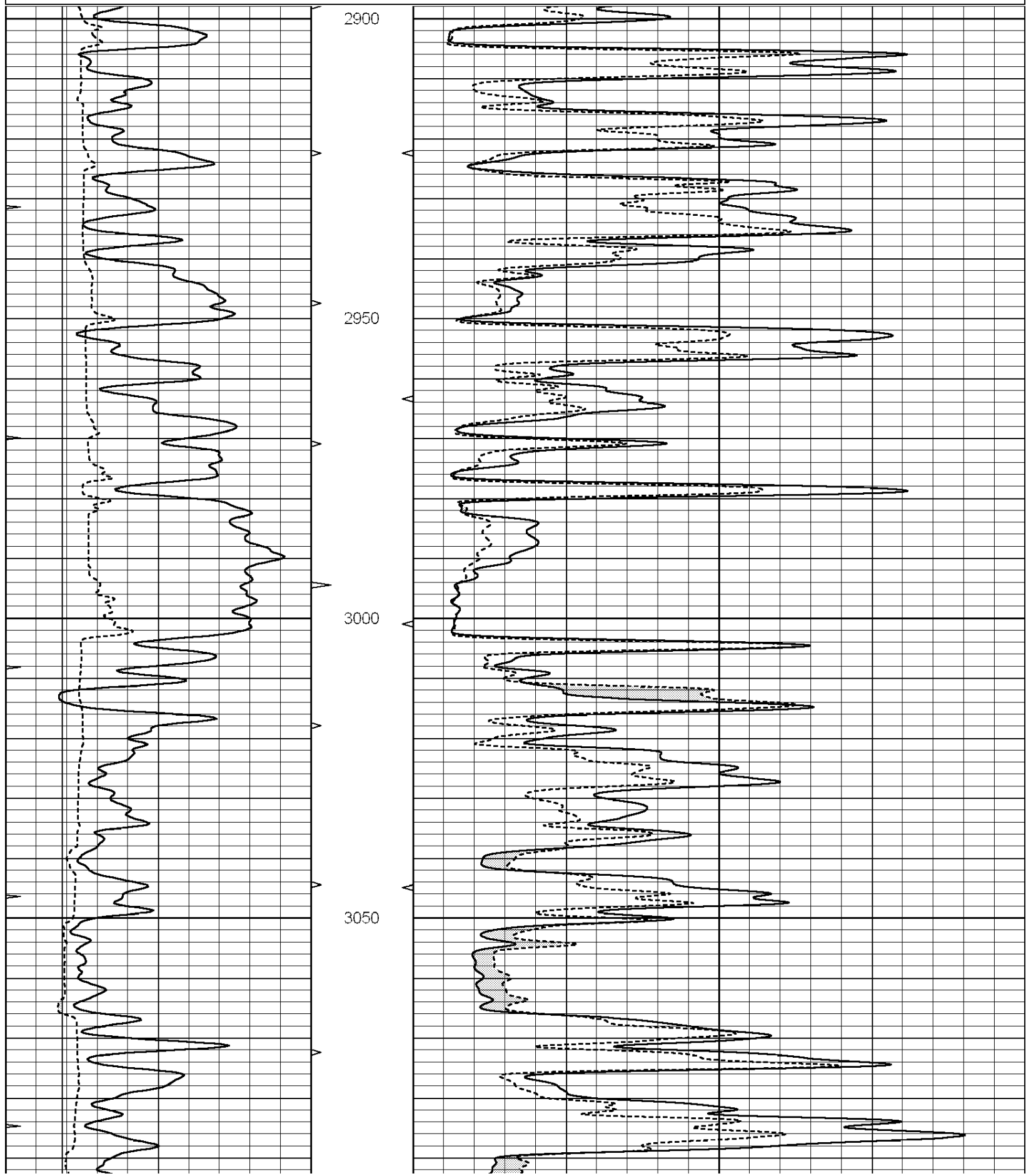
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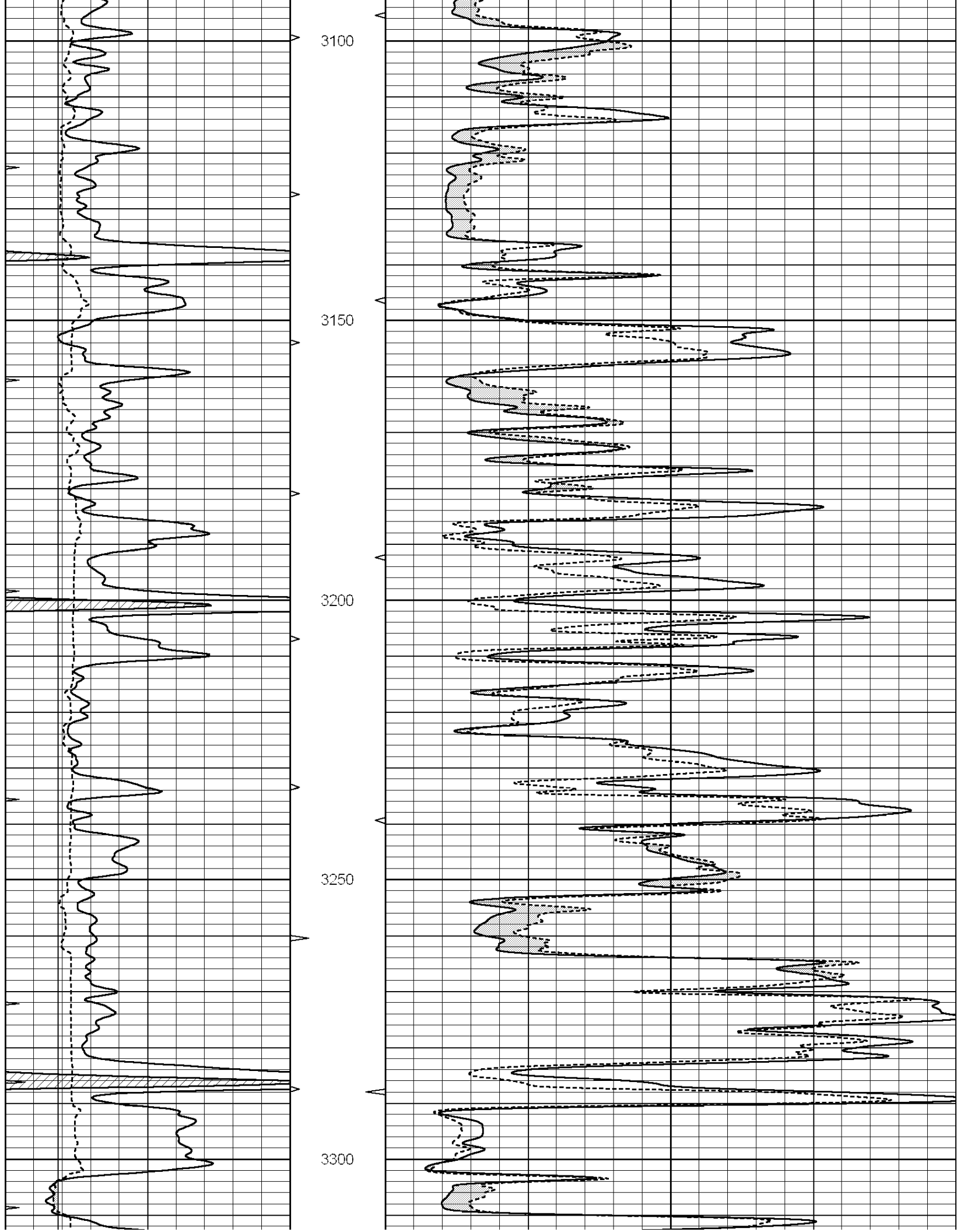
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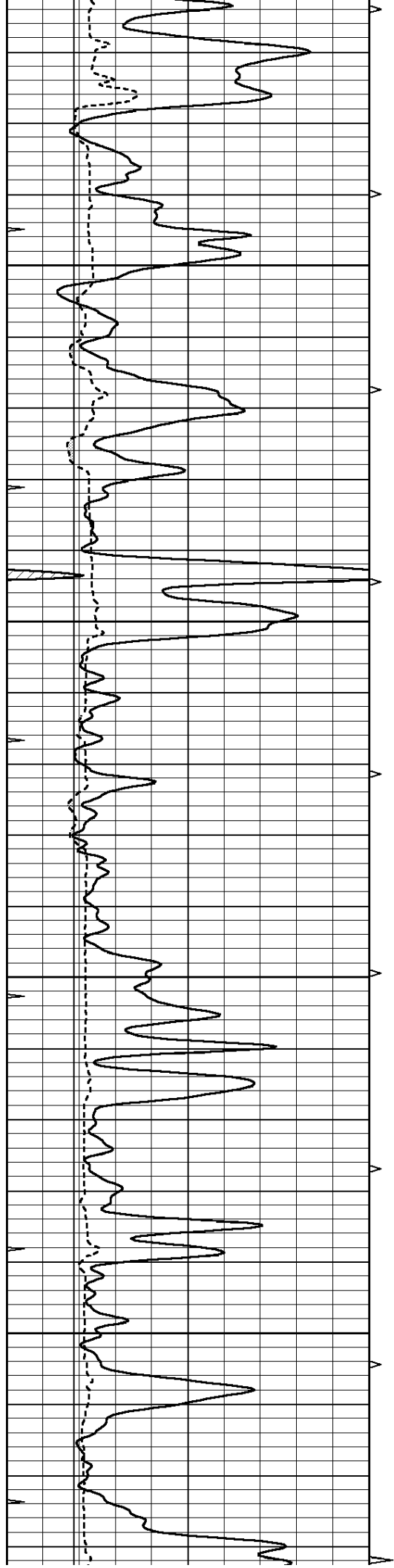
SUPERIOR WELL SERVICES
 785-628-6395
THANK YOU FOR YOUR BUSINESS
 DIRECTIONS: ANTONINO, KS - 2 MILES SOUTH - 1/4 MILE EAST
 SOUTH INTO

0	GAMMA RAY (GAPI)	150
6	MELCAL (in)	16
0	MINMK	20

0	MEL1.5 (Ohm-m)	20
0	MEL2.0 (Ohm-m)	20





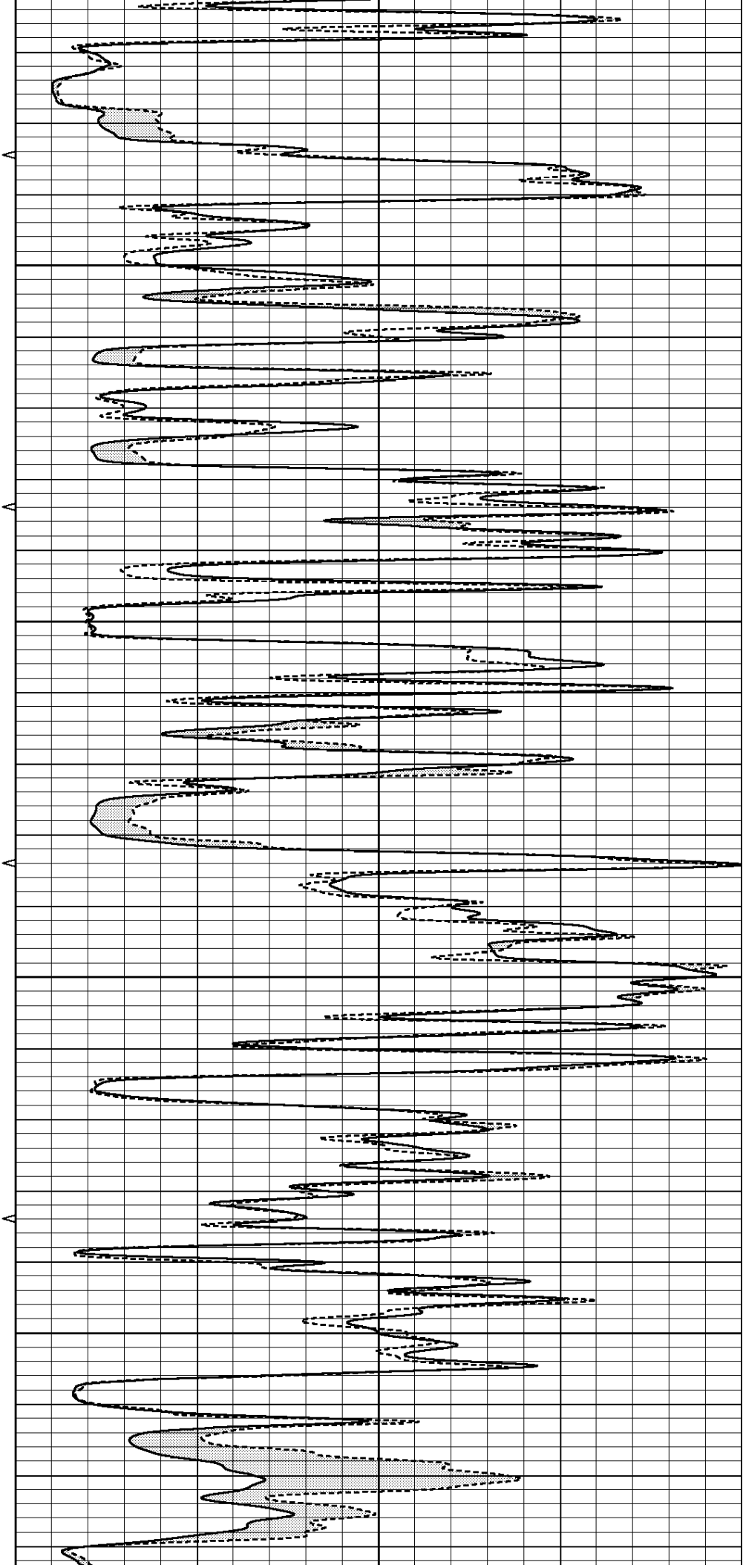


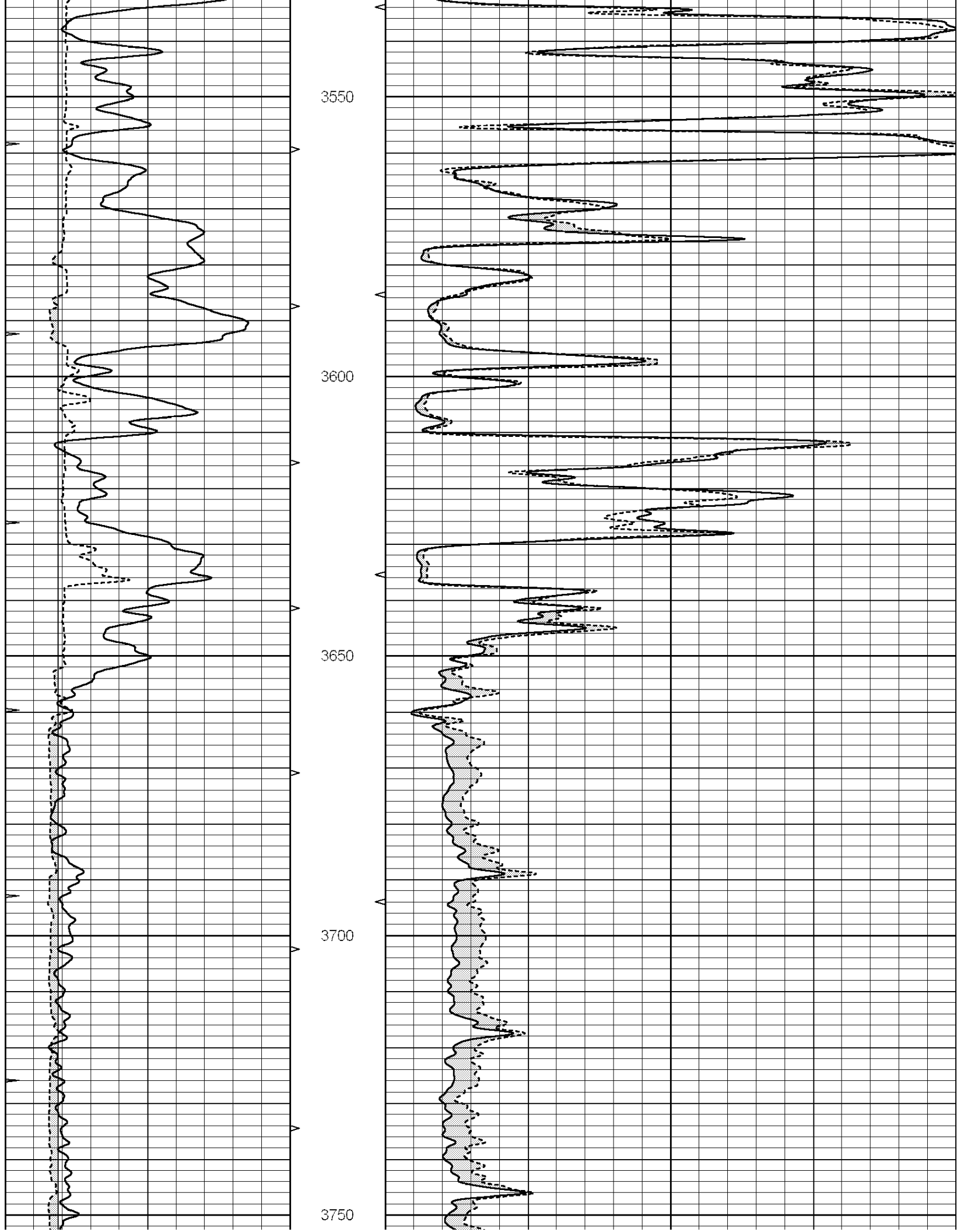
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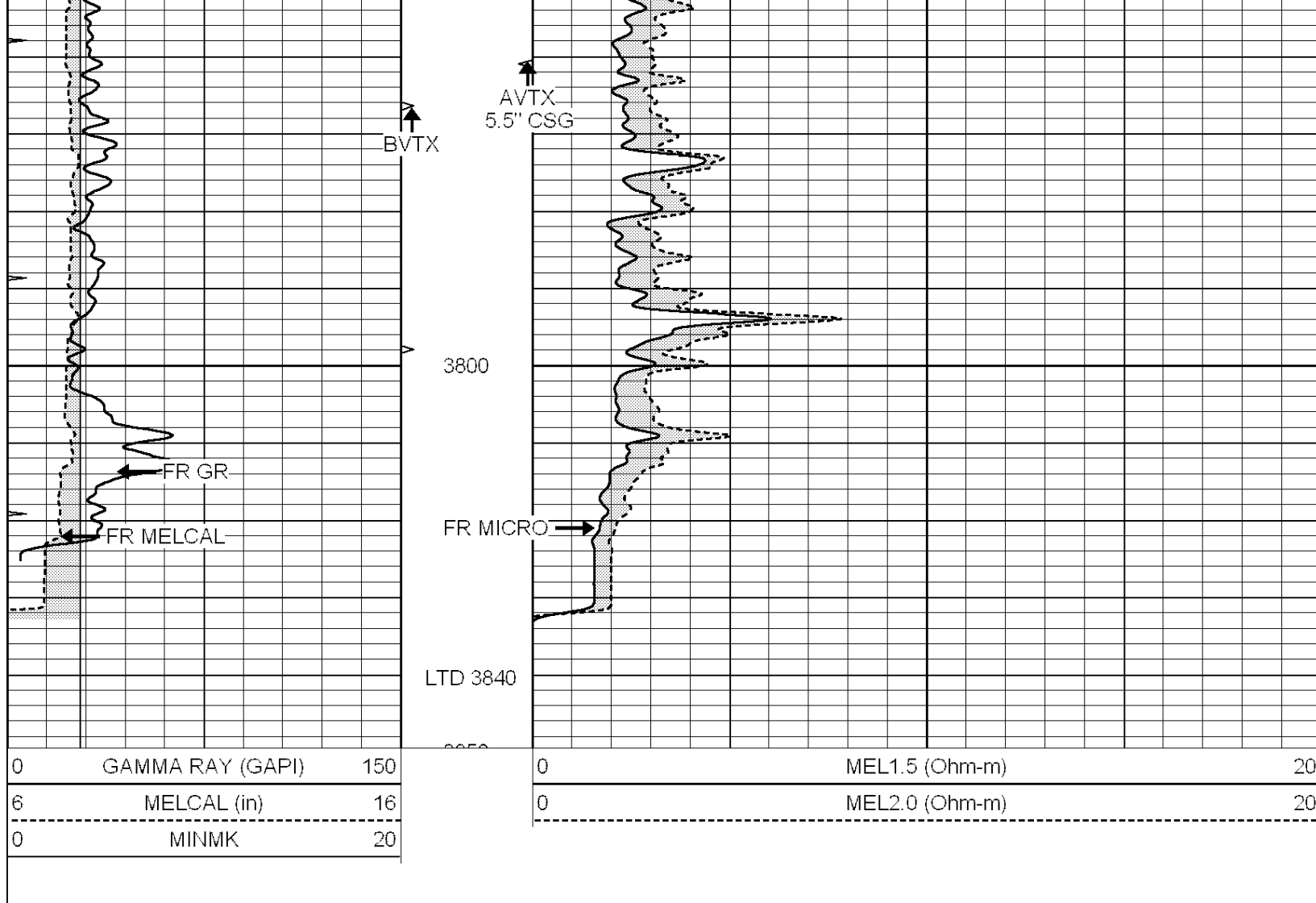
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3500





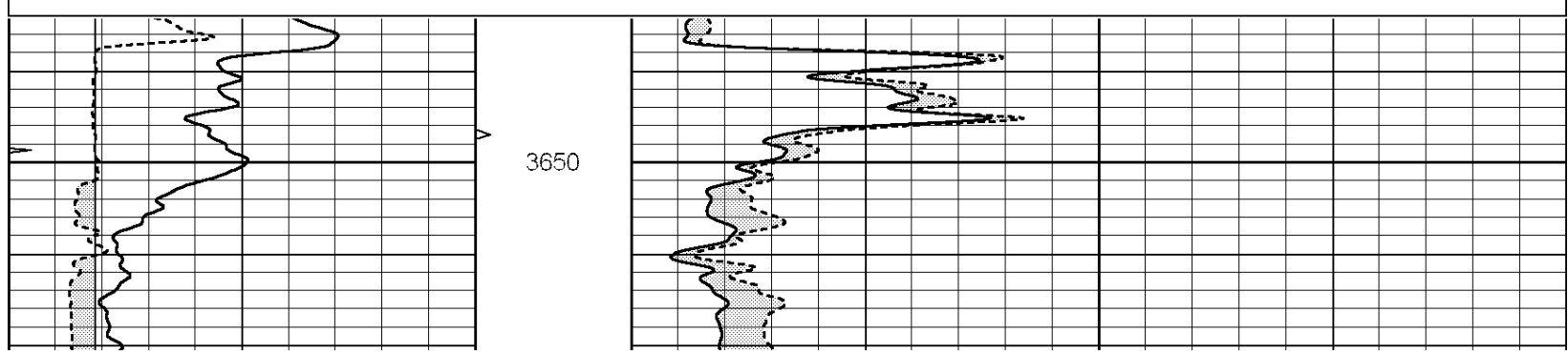


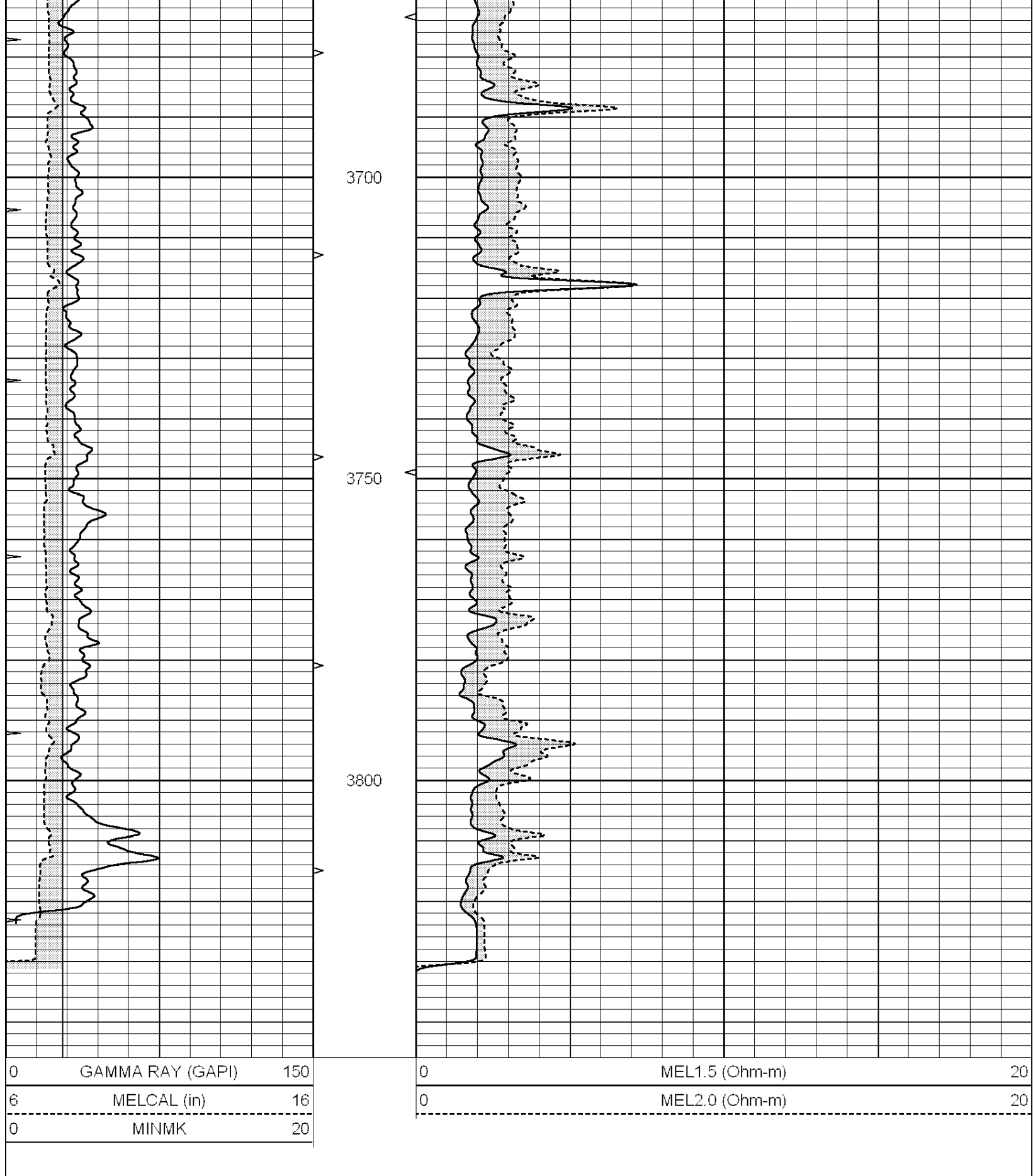
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 008023ddn.db
 Dataset Pathname: pass6
 Presentation Format: micro
 Dataset Creation: Sun Dec 04 22:43:17 2011 by Log Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0	MEL1.5 (Ohm-m)	20
6	MELCAL (in)	16	0	MEL2.0 (Ohm-m)	20
0	MINMK	20			





Calibration Report

Database File: 008023ddn.db
 Dataset Pathname: pass7.1
 Dataset Creation: Sun Dec 04 23:28:18 2011 by Calc Open-Cased 090629

MICRO Calibration Report

Serial Number: Micro1
 Tool Model: ProbeL
 Performed: Mon Nov 28 02:41:11 2011

Caliper Calibration:	Gain=3.090	Offset=-2.029
	Low Cal	High Cal
References	8.000	13.500
Readings	3.245	5.025

1.5" Calibration:	Gain=34.000	Offset=0.000
	Low Cal	High Cal
References	0.000	20.000
Readings	0.003	0.844

2" Calibration:	Gain=30.000	Offset=-0.400
	Low Cal	High Cal
References	0.000	20.000
Readings	0.028	0.817

Gamma Ray Calibration Report

Serial Number: GR5
 Tool Model: OPEN
 Performed: Mon Nov 28 02:44:15 2011

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6500	GAPI/cps



**SUPERIOR
Hays,
Kansas**

**COMPENSATED
DENSITY / NEUTRON
LOG**

Company TDI, INC.
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Drilling Measured From KELLY BUSHING

Other Services
DIL
SONIC/MEL
Elevation
K.B. 2038
D.F. 2036
G.L. 2028

Date	12-4-11		
Run Number	ONE		
Depth Driller	3839		
Depth Logger	3840		
Bottom Logged Interval	3816		
Top Log Interval	2900		
Casing Driller	224		
Casing Logger	223		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES: 2800 PPM	
Density / Viscosity	9.0 / 55		
pH / Fluid Loss	10.0 / 7.8		
Source of Sample	FLOWLINE		
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Rmf @ Meas. Temp	0.26 @ 67F		
Rmc @ Meas. Temp	0.42 @ 67F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	0.20 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	115F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	JEFF GRONEWEG		
Witnessed By	JEFF LAWLER		

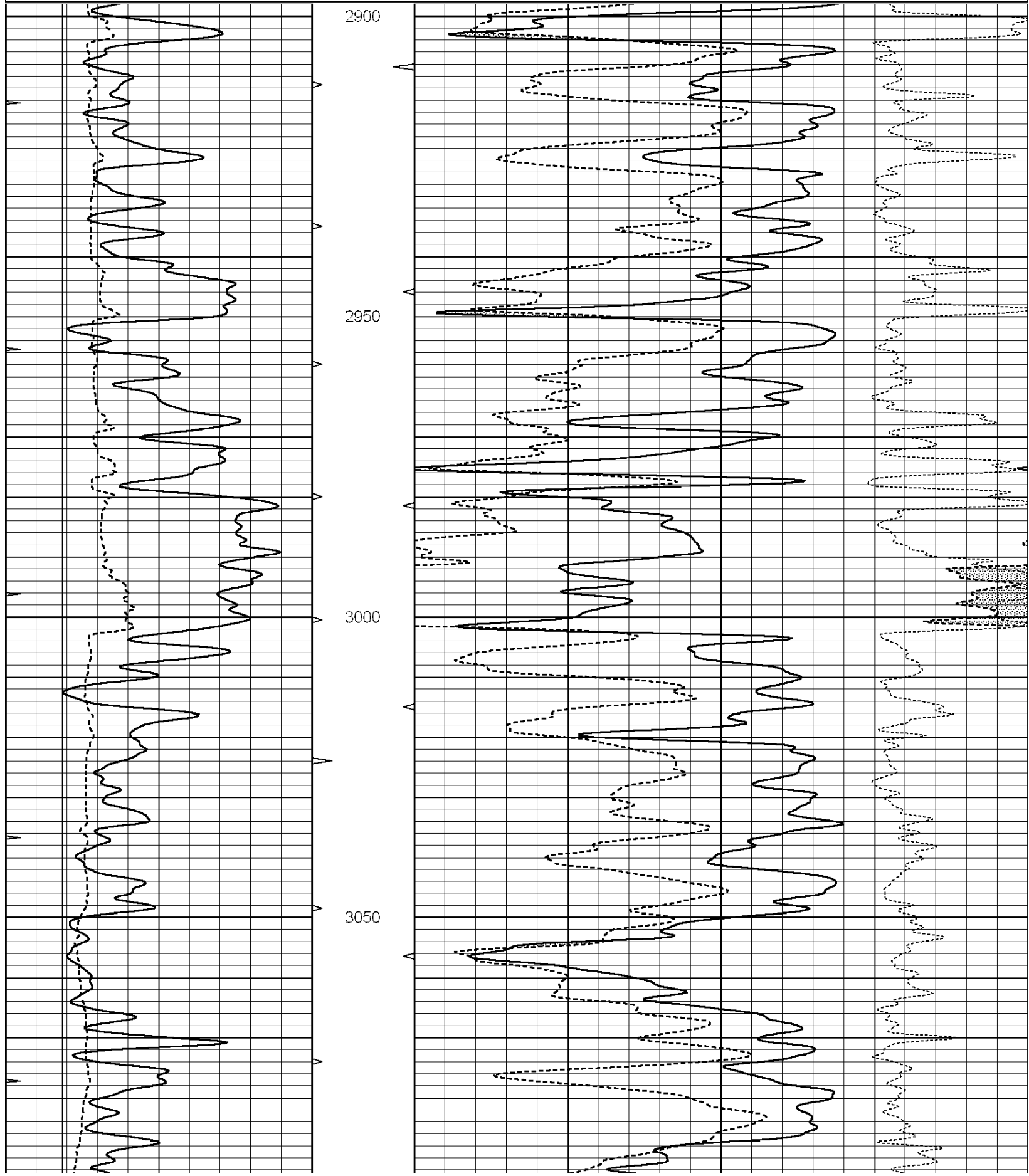
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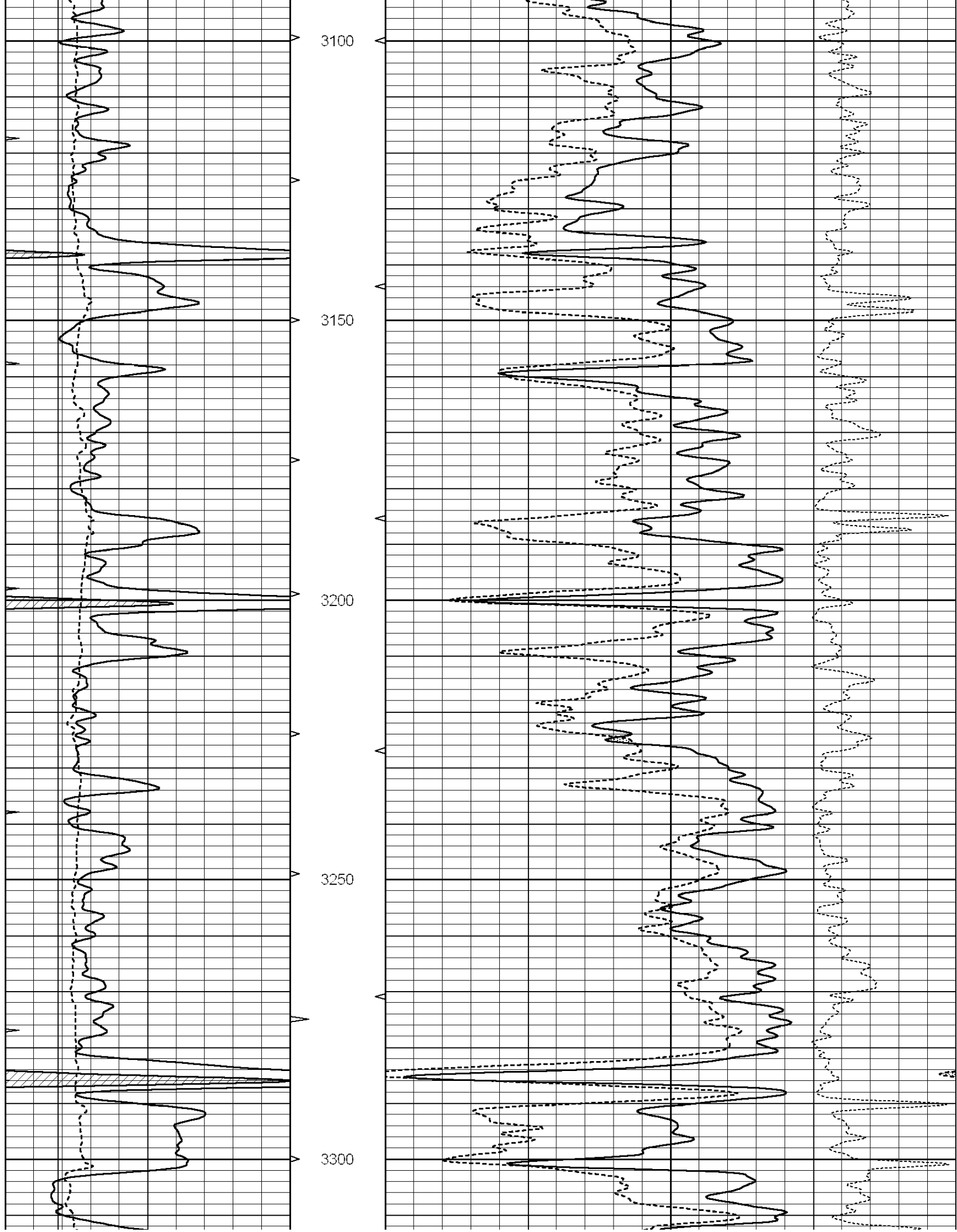
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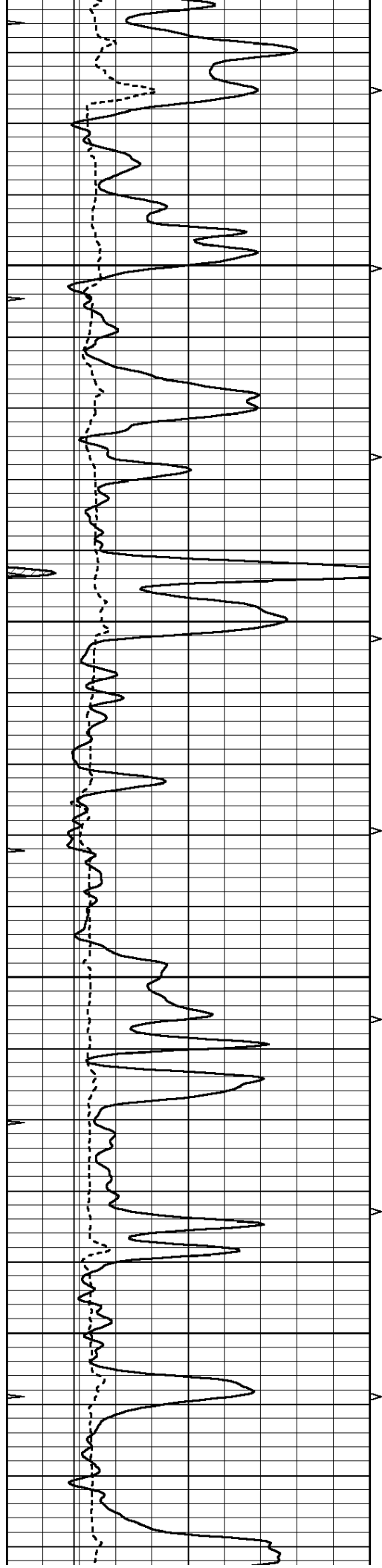
Comments

SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: ANTONINO, KS - 2 MILES SOUTH - 1/4 MILE EAST
SOUTH INTO

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





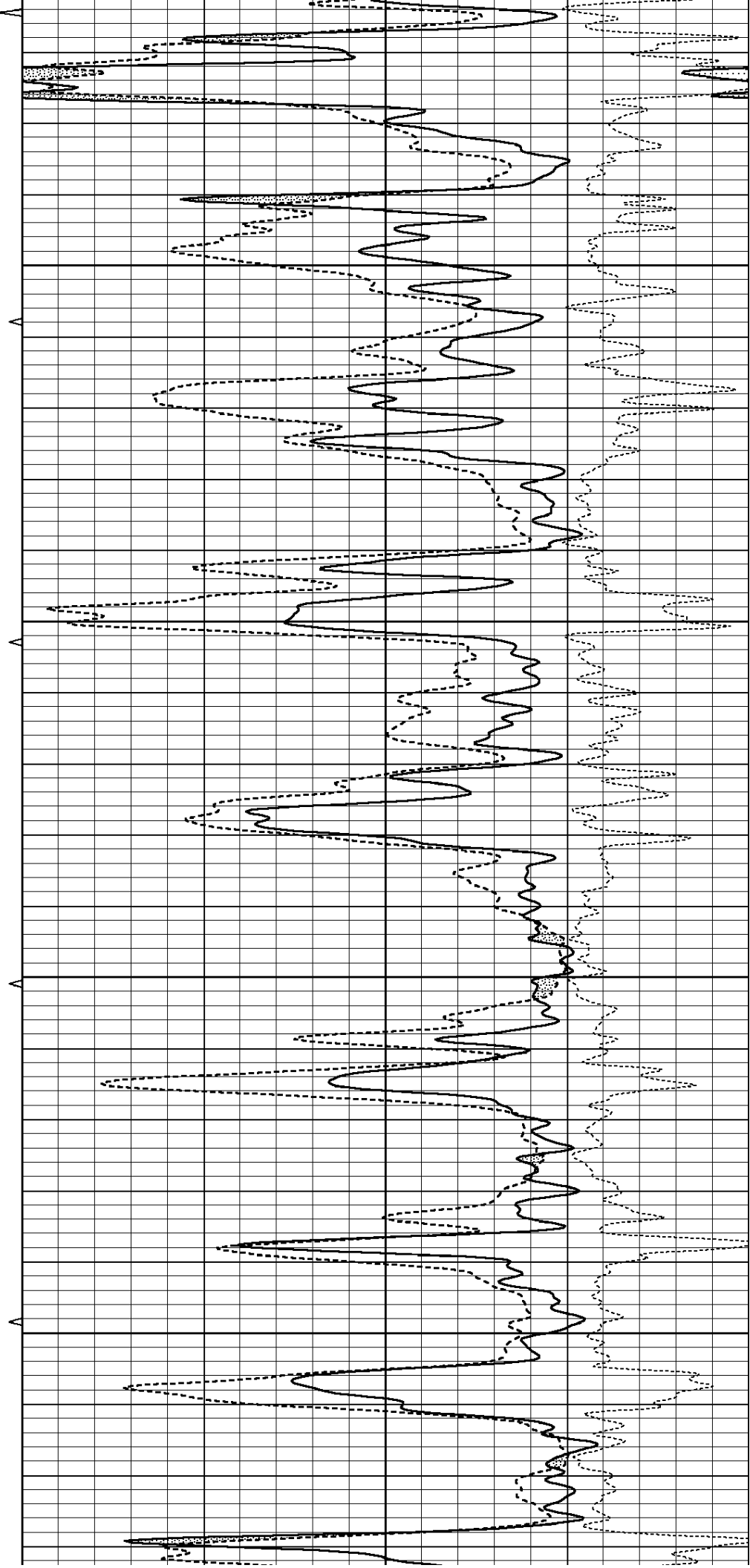


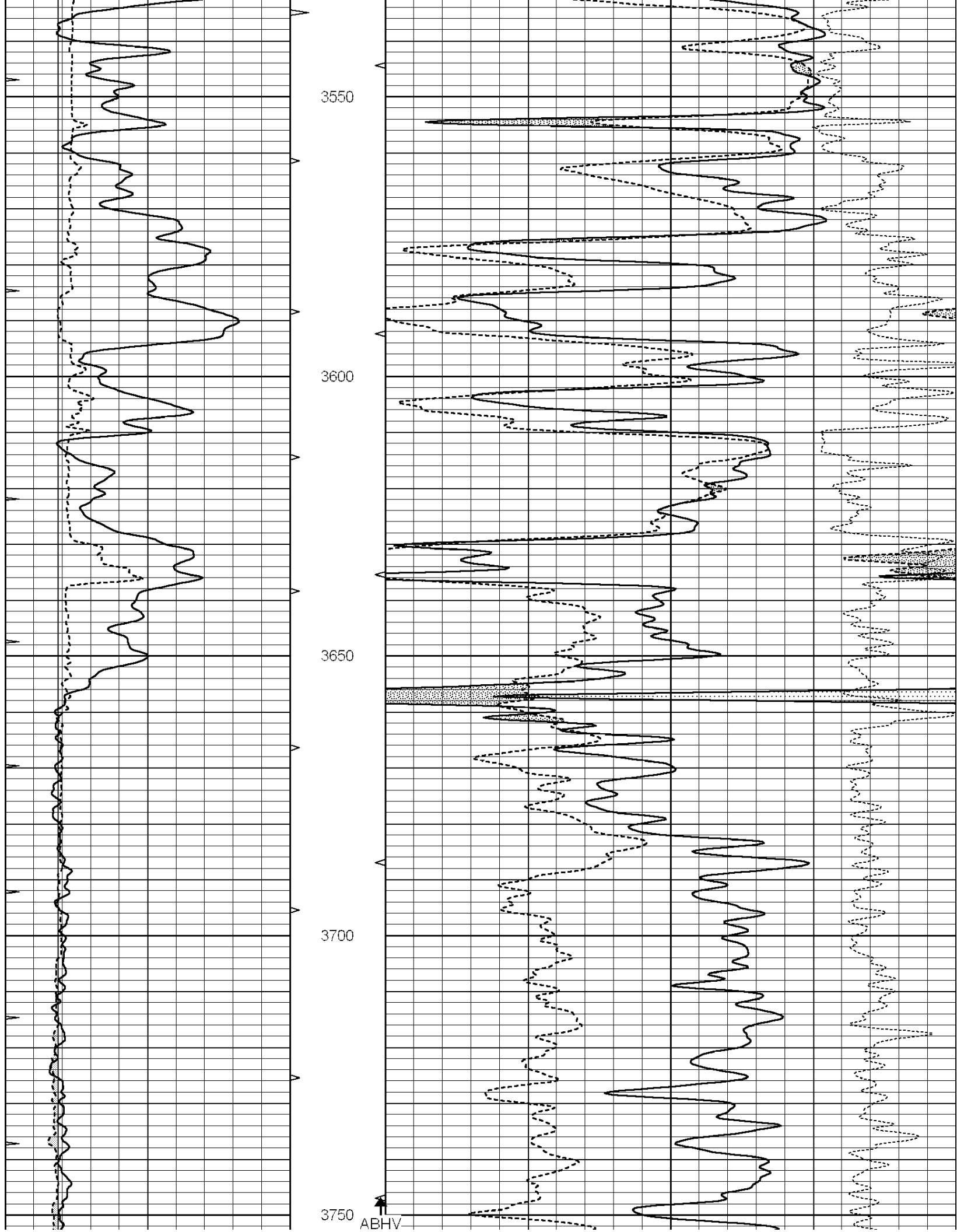
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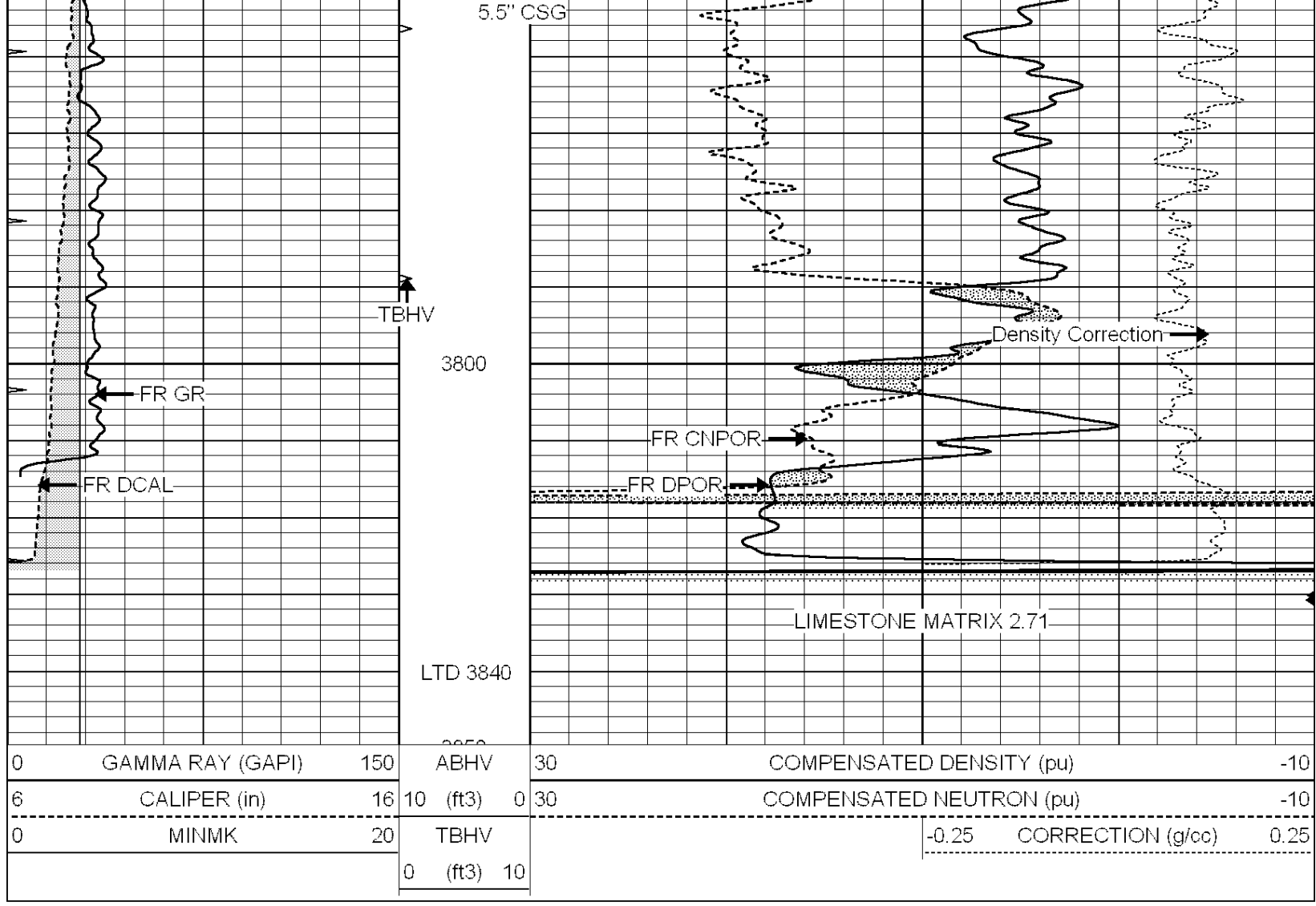
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3500





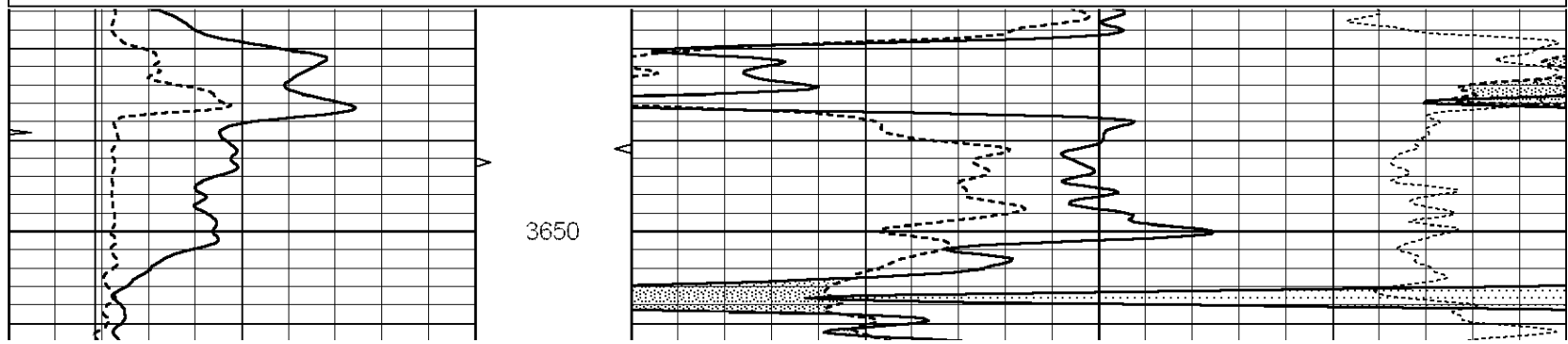


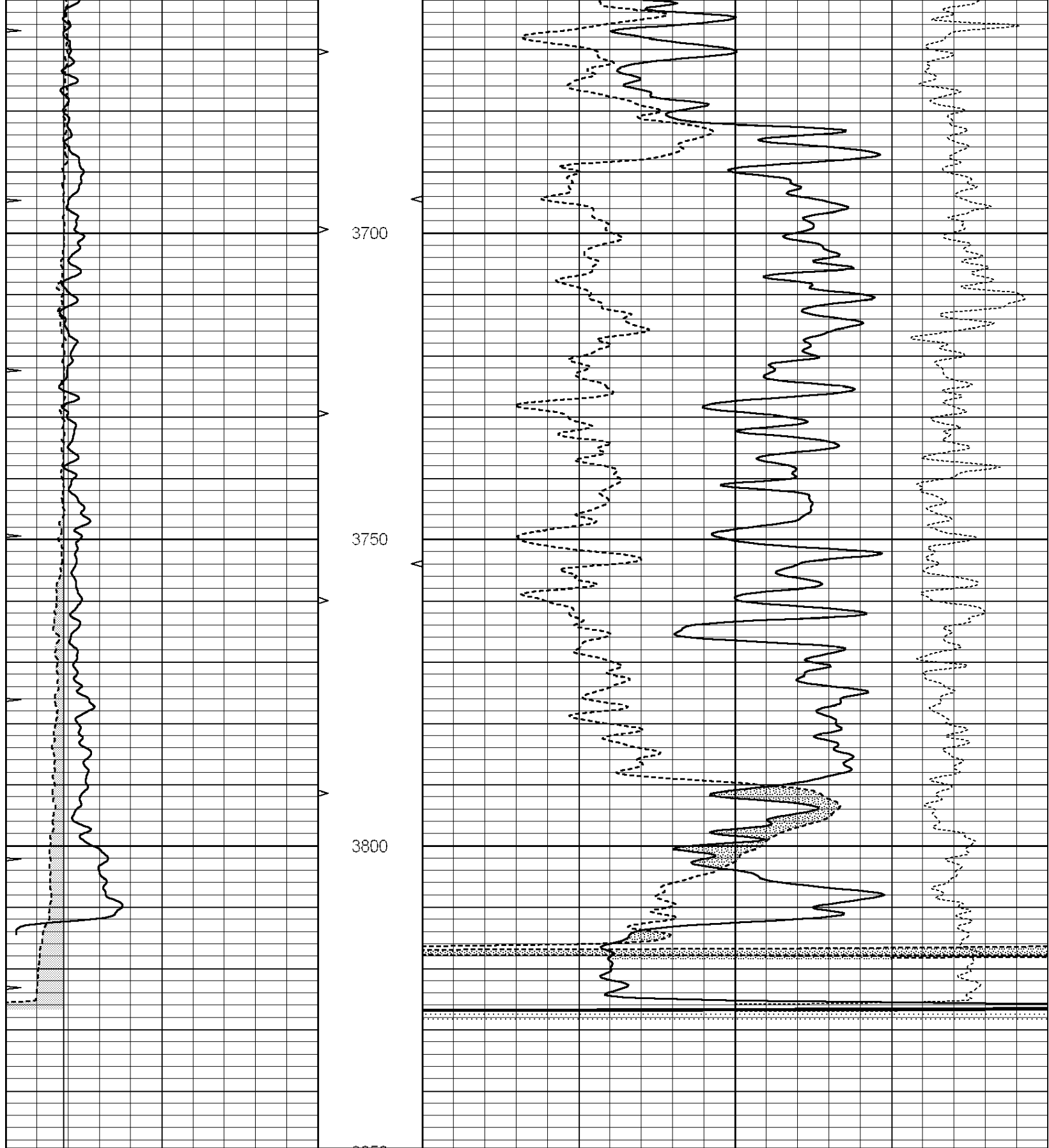
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 008023ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: den_neu
 Dataset Creation: Sun Dec 04 21:28:37 2011 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10	
6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10	
0	MINMK	20	TBHV		-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10			

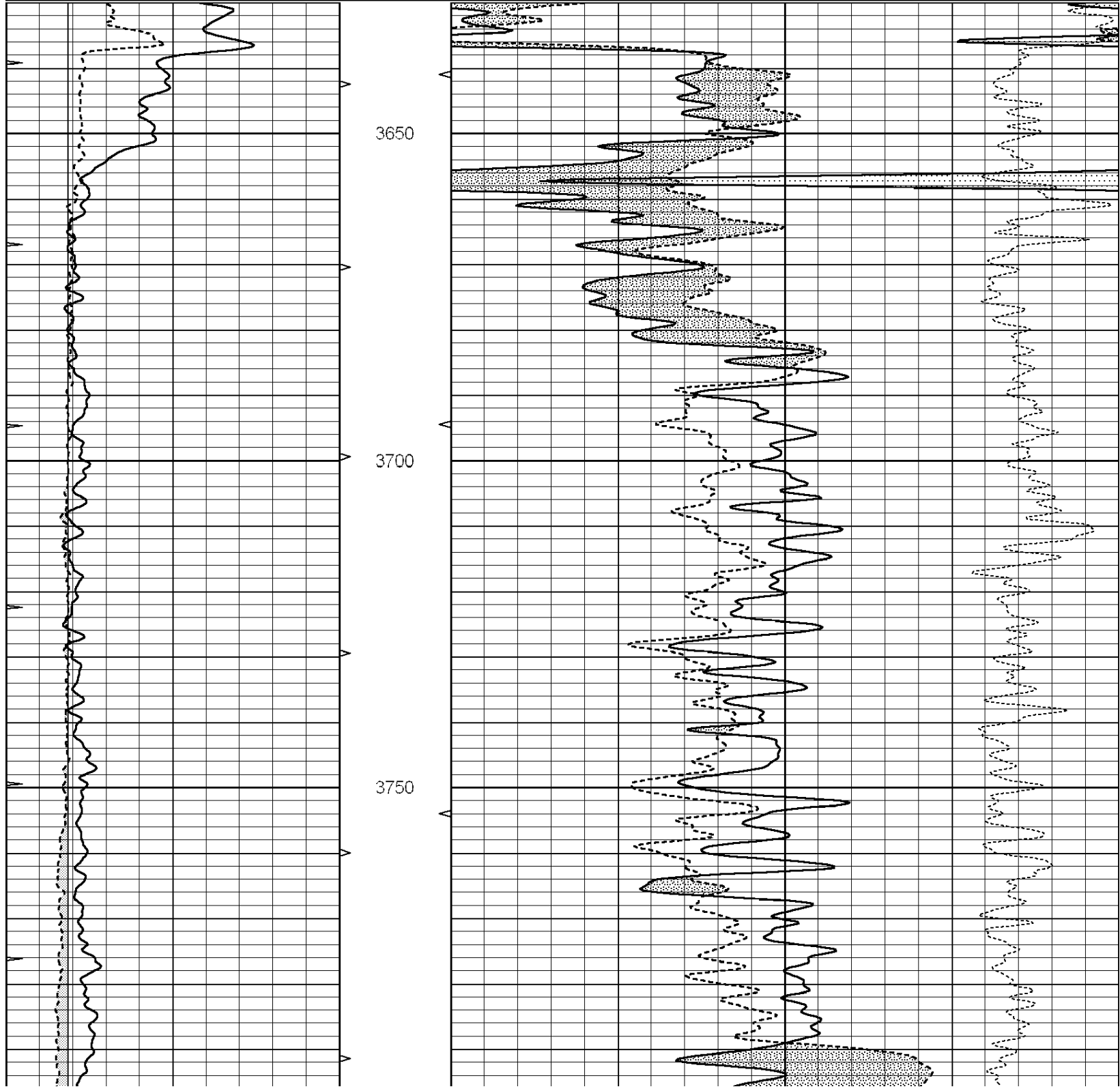


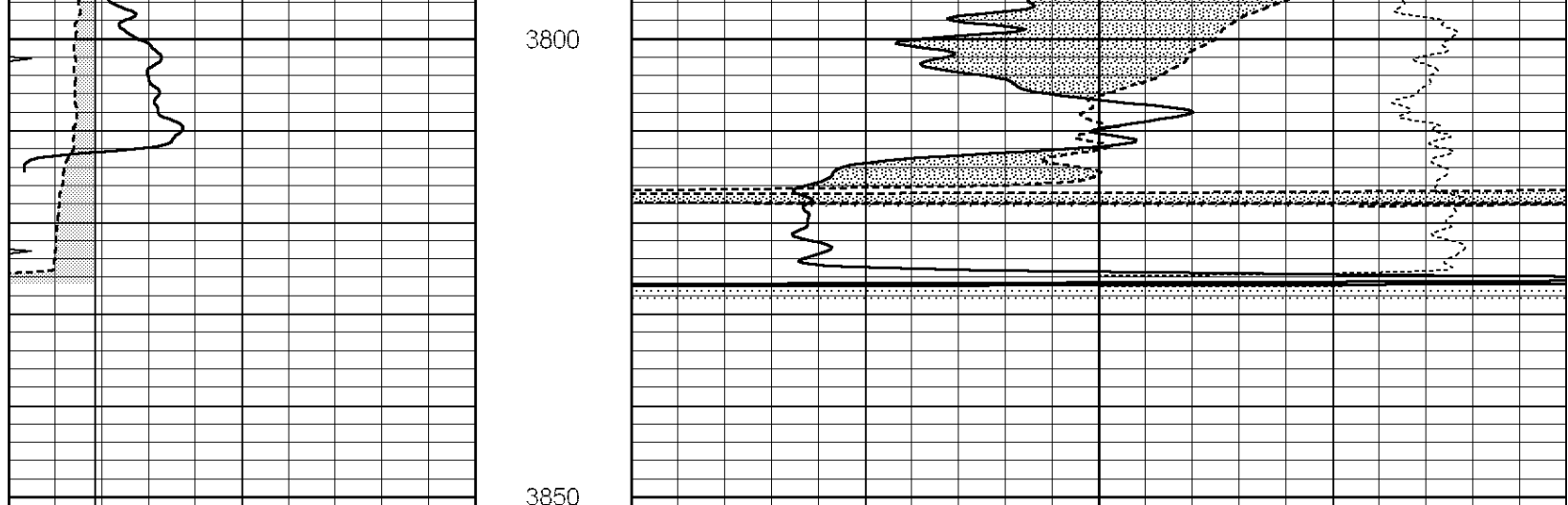
Hays,
Kansas

DOLOMITE MATRIX 2.81

Database File: 008023ddn.db
 Dataset Pathname: pass3.4.D
 Presentation Format: den_neu
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 Charted by: Depth in Feet scaled 1:240

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6	CALIPER (in)	16	10 (ft3)	0 30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3)	10		





0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10			

Calibration Report

Database File: 008023ddn.db
 Dataset Pathname: pass4.3
 Dataset Creation: Sun Dec 04 21:30:53 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
 Performed: Sat Nov 26 00:40:50 2011

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho/m	520.000	-20.000
Medium	-0.005	0.737	V	0.000	462.500	mmho/m	550.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.006	0.655	V	0.000	400.000	mmho/m	615.668	-3.483
Medium	0.010	0.747	V	0.000	462.500	mmho/m	627.607	-6.064

Compensated Density Calibration Report

Serial-Model: GEAR1-GEARHART
 Source / Verifier: 147 / 147
 Master Calibration Performed: Sat Nov 19 06:29:56 2011

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1243.76	629.14	cps
Aluminum	2.590	g/cc	282.16	435.01	cps
Spine Angle = 76.03			Density/Spine Ratio = 0.576		
	Size		Reading		
Small Ring	8.40	in	3.15	V	
Large Ring	13.00	in	4.72	V	

Compensated Neutron Calibration Report

Serial Number: NUC_2I
Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	1.00 cps	1.00 cps	1.0000
Long Space	1.00 cps	1.00 cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR5
Tool Model: OPEN
Performed: Mon Nov 28 02:44:15 2011

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6500 GAPI/cps



SUPERIOR
Hays,
Kansas

SONIC
LOG

Company TDI, INC.
 Well WOLF #1
 Field DECHANT SOUTH FIELD
 County ELLIS State KANSAS

Company TDI, INC.
 Well WOLF #1
 Field DECHANT SOUTH FIELD
 County ELLIS
 State KANSAS

Location: API #: 15-051-26225-0000
 950' FNL & 1775' FWL
 NE - SW - NE - NW
 SEC 13 TWP 15S RGE 19W
 Permanent Datum GROUND LEVEL Elevation 2028
 Log Measured From KELLY BUSHING 10' A.G.L.
 Drilling Measured From KELLY BUSHING

Other Services
 CDL/CNL
 DIL/MEL
 Elevation

Date	12-4-11		
Run Number	TWO		
Depth Driller	3839		
Depth Logger	3840		
Bottom Logged Interval	3830		
Top Log Interval	200		
Casing Driller	224		
Casing Logger	223		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES: 2800 PPM	
Density / Viscosity	9.0 / 55		
pH / Fluid Loss	10.0 / 7.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.35 @ 67F		
Rmf @ Meas. Temp	0.26 @ 67F		
Rmc @ Meas. Temp	0.42 @ 67F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.20 @ 115F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	115F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	JEFF GRONEWEG		
Witnessed By	JEFF LAWLER		

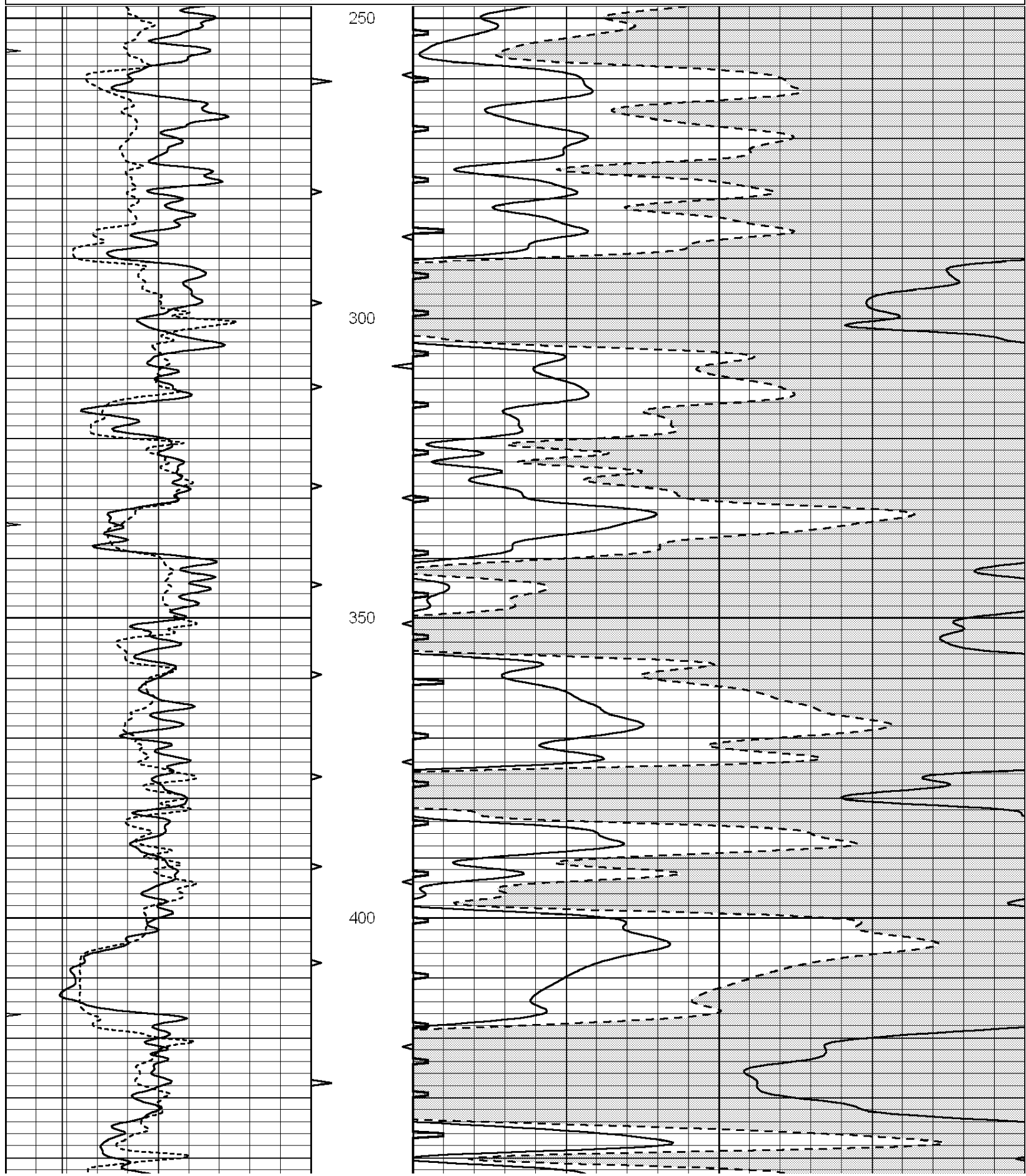
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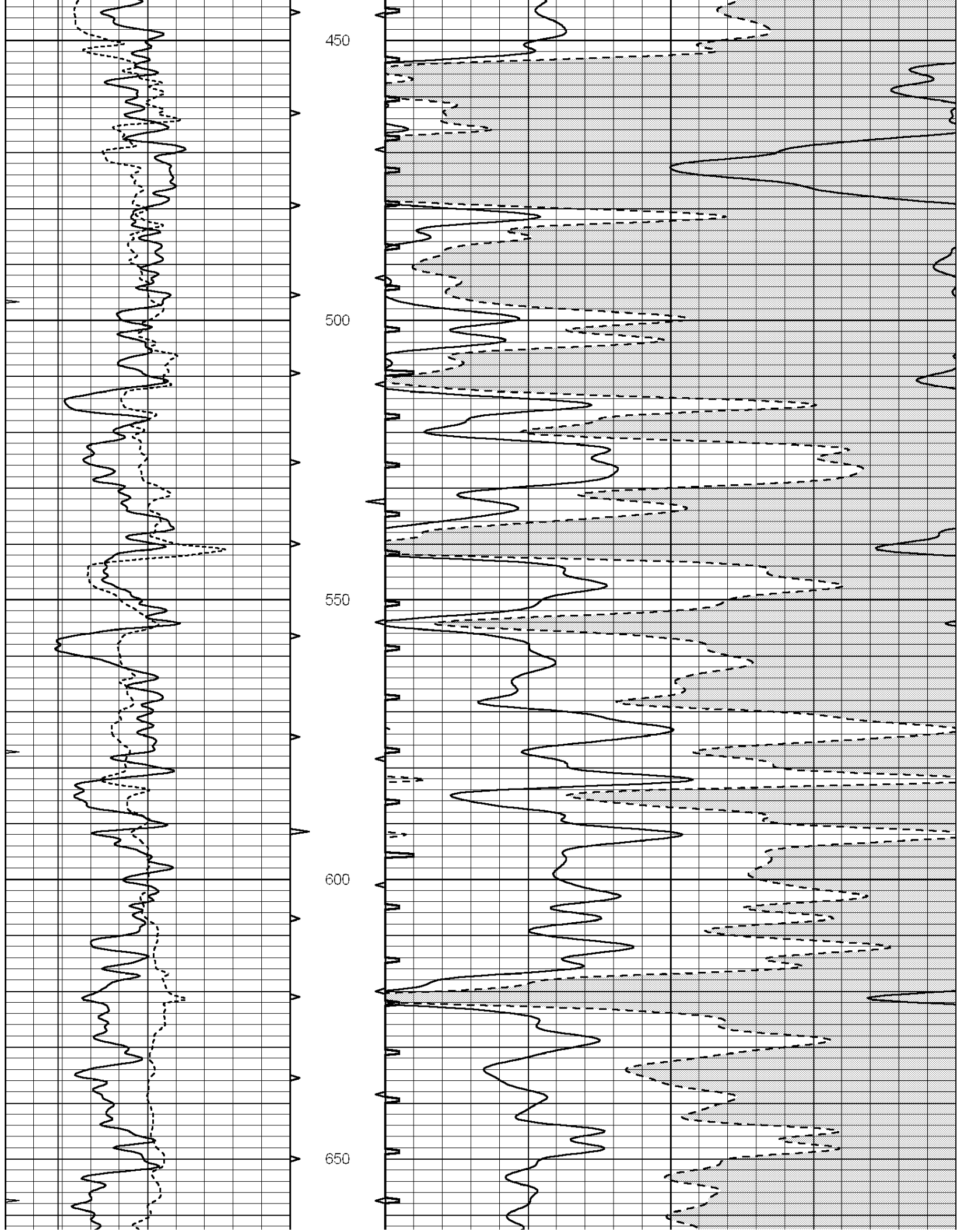
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

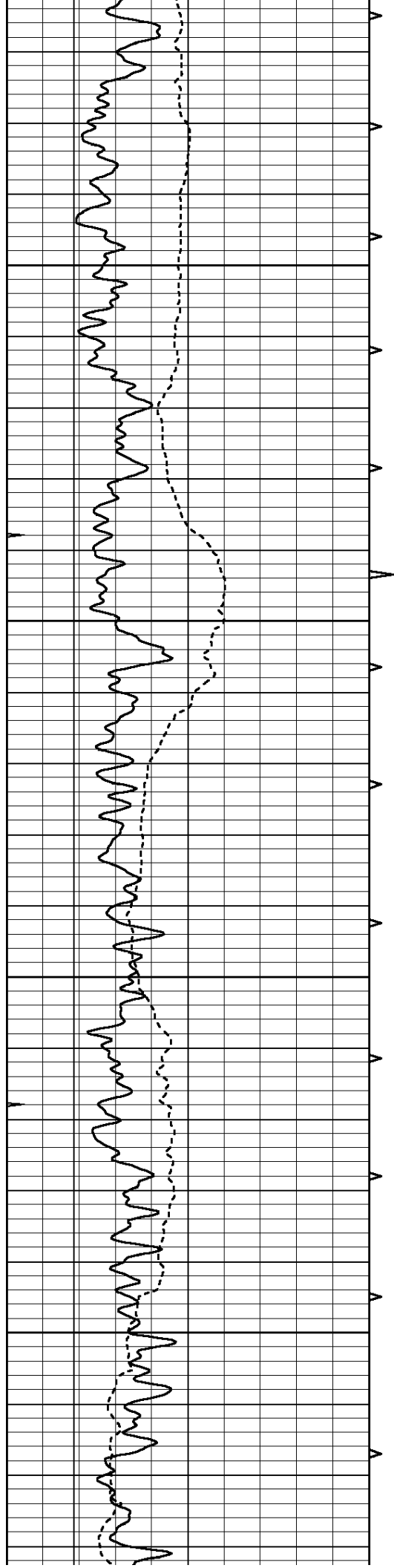
Comments

SUPERIOR WELL SERVICES
 785-628-6395
THANK YOU FOR YOUR BUSINESS
 DIRECTIONS: ANTONINO, KS - 2 MILES SOUTH - 1/4 MILE EAST
 SOUTH INTO

0	GAMMA RAY (GAPI)	150	ABHV	140	DELTA TIME (usec/ft)	40
6	MELCAL (in)	16	10 (ft3)	0 30	SONIC POROSITY (pu)	-10
0	MINMK	20	TBHV	0	ITT (msec)	20
			0 (ft3)	10		





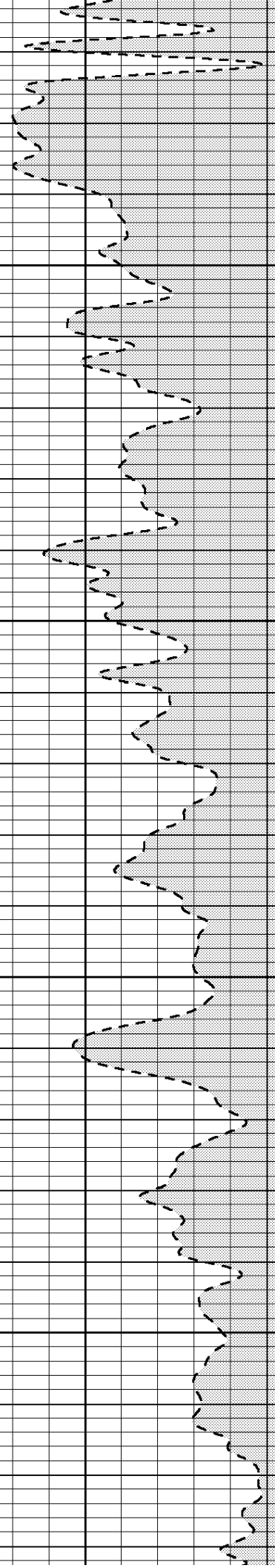
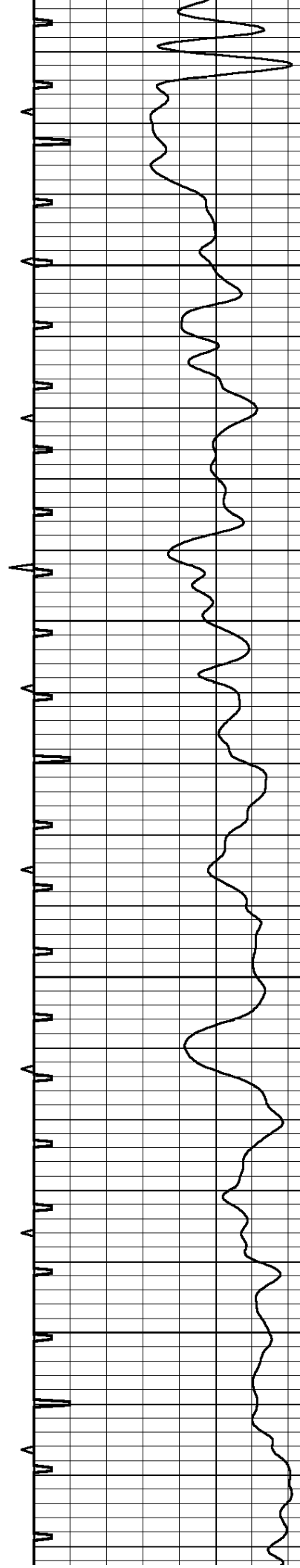


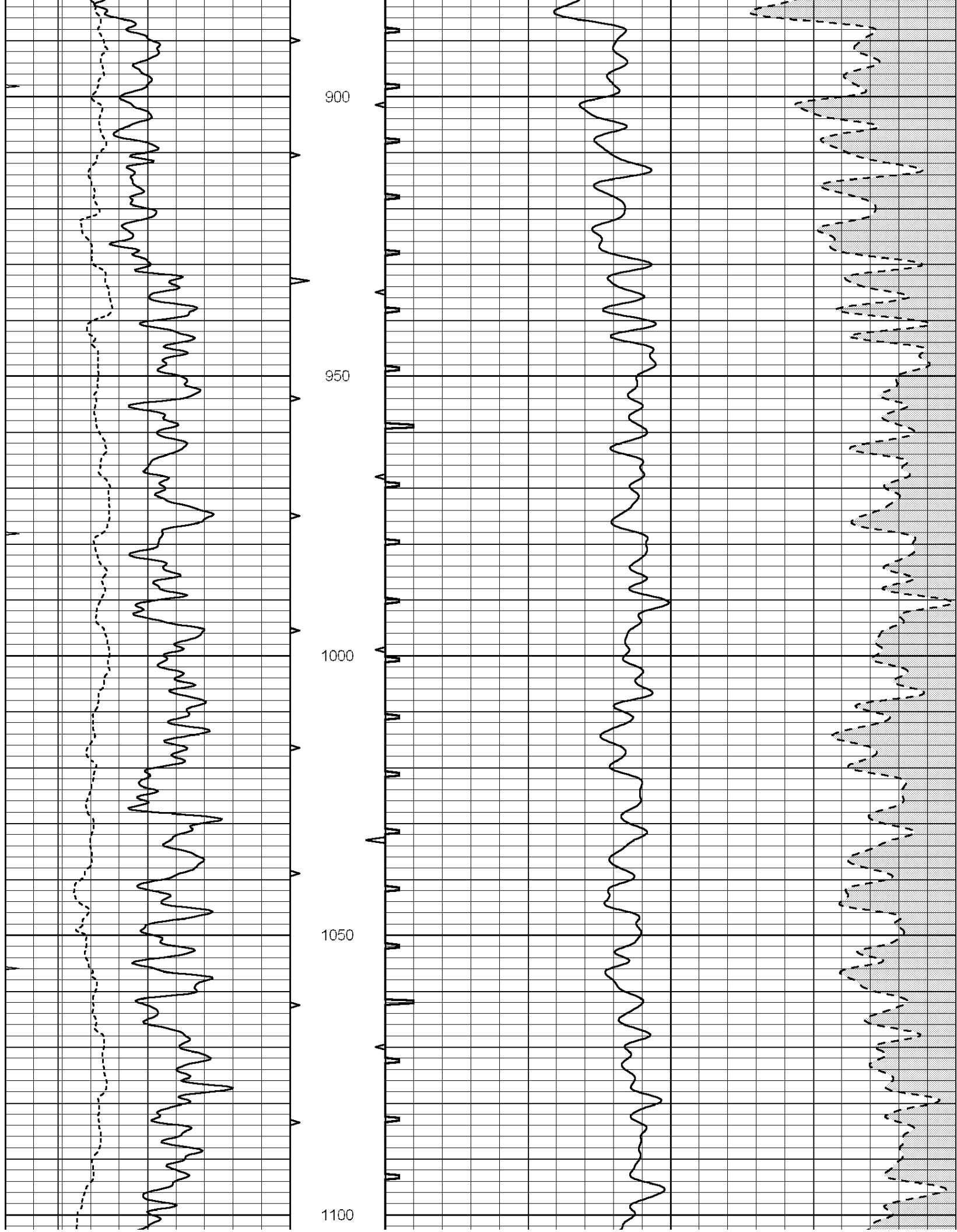
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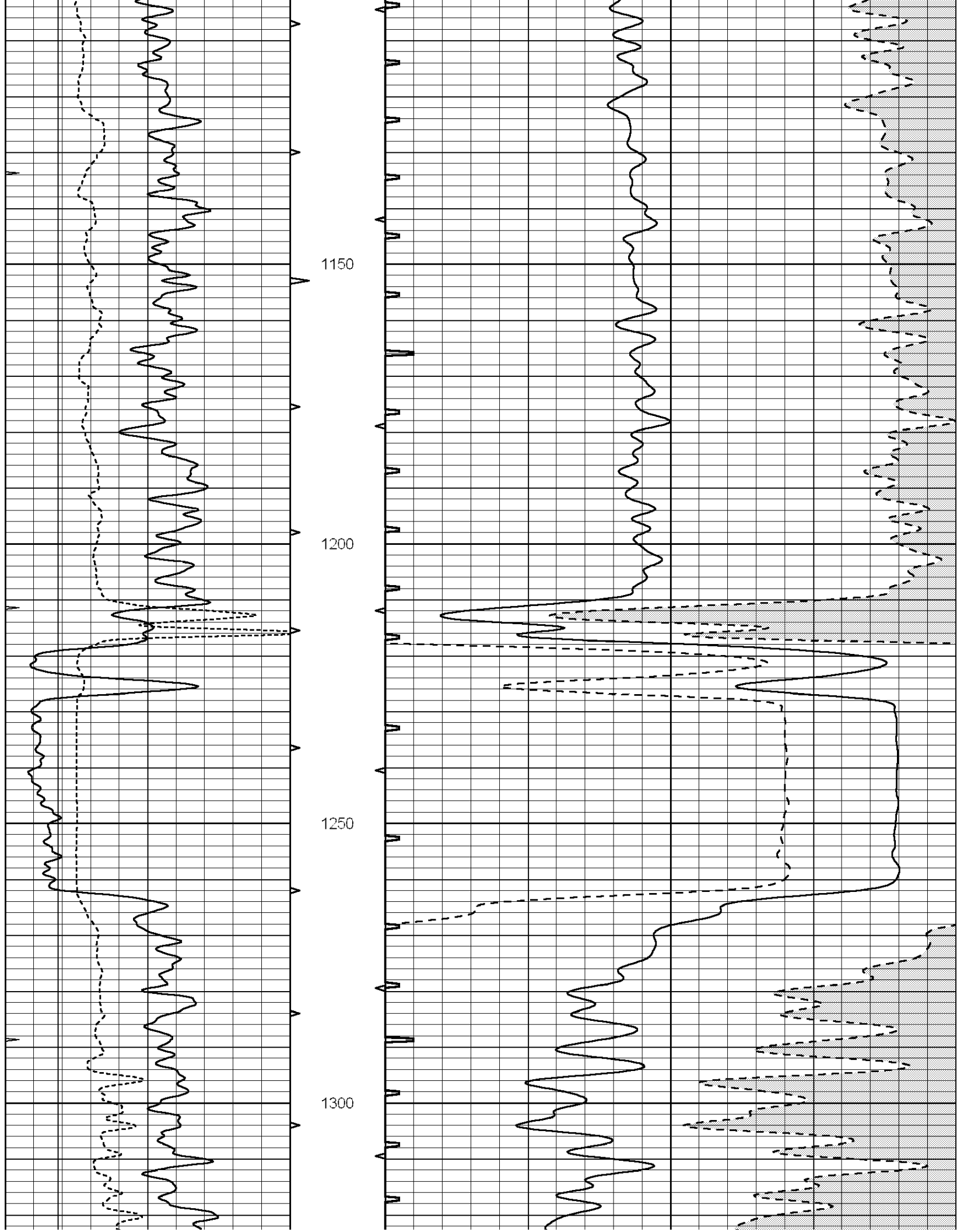
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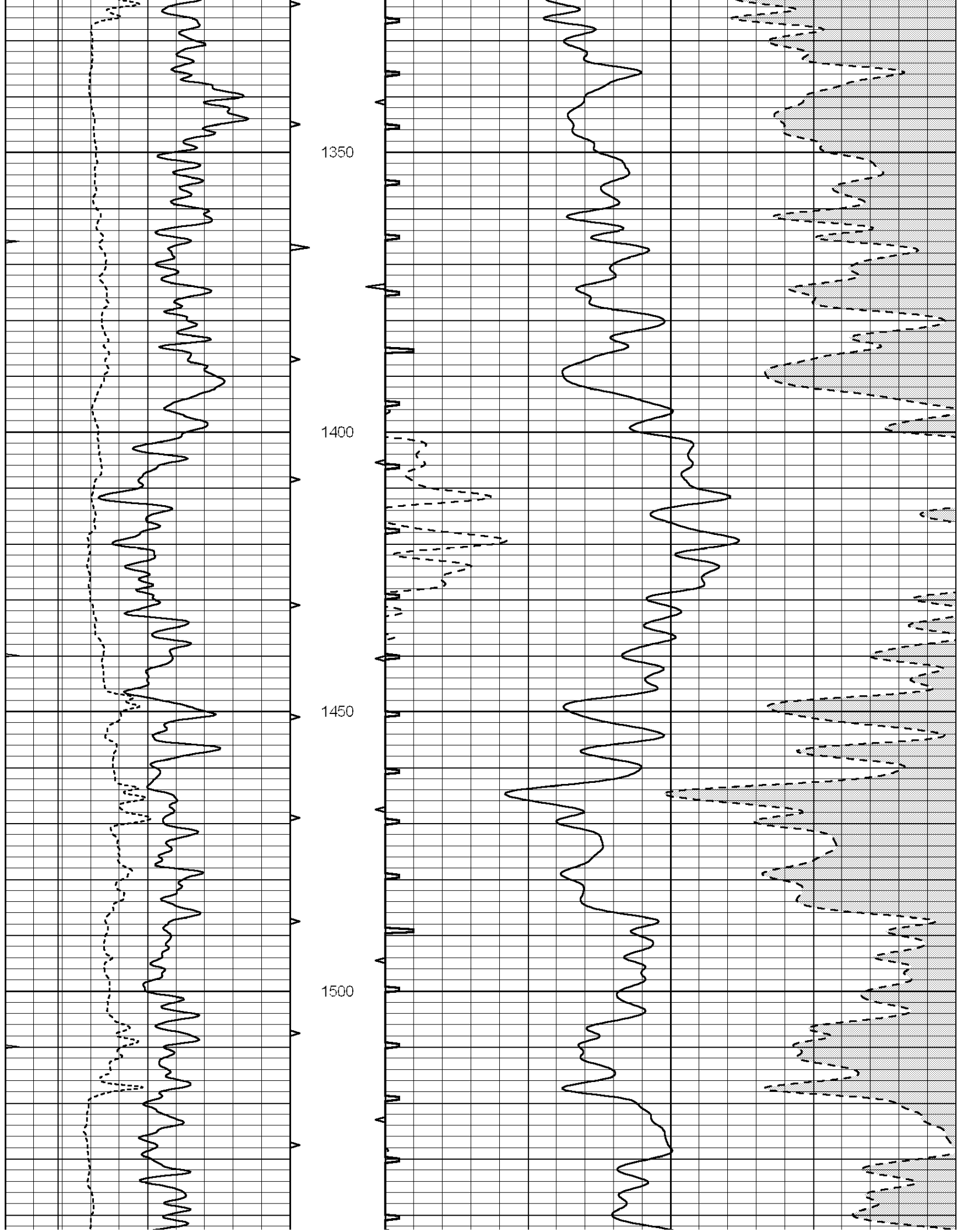
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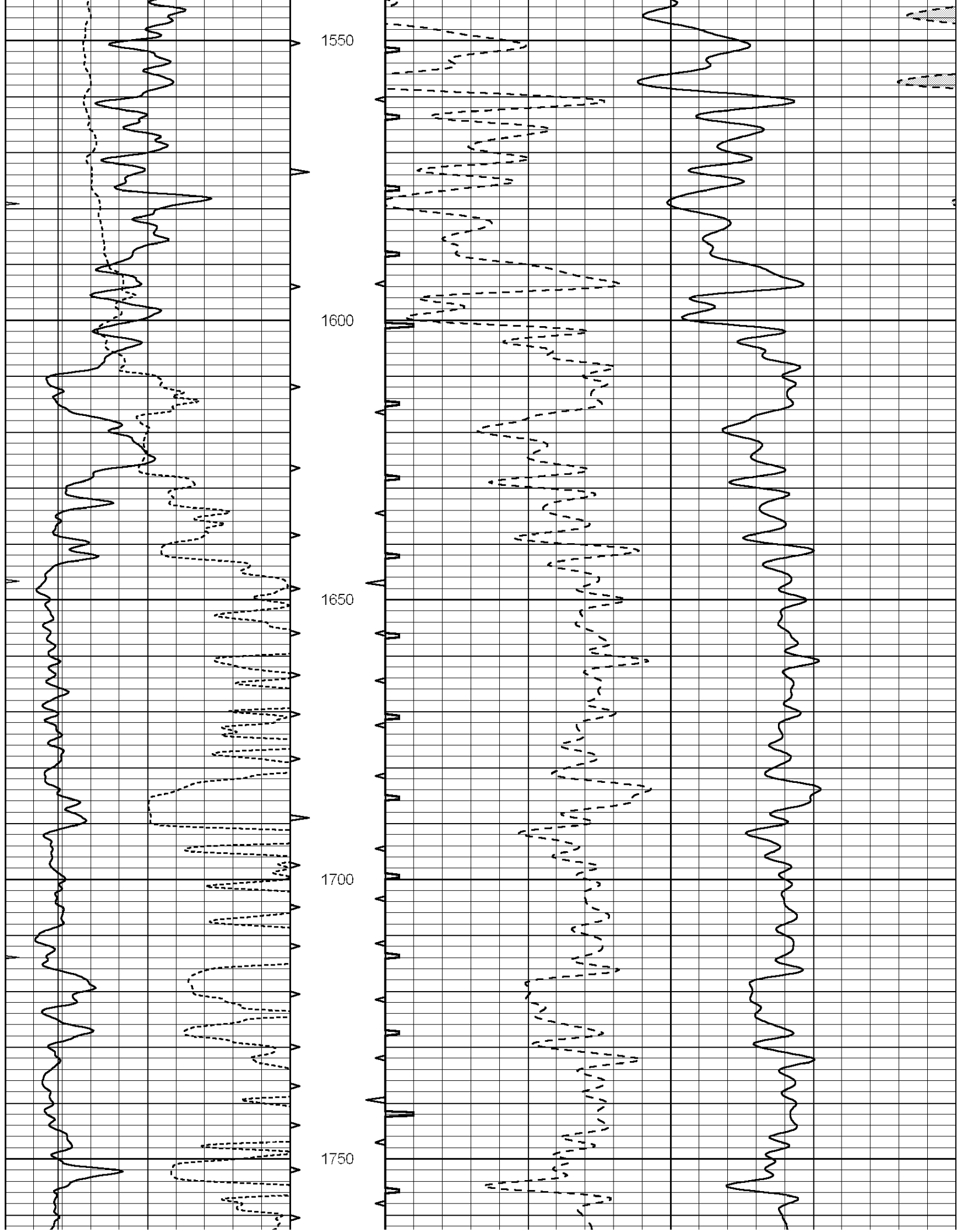
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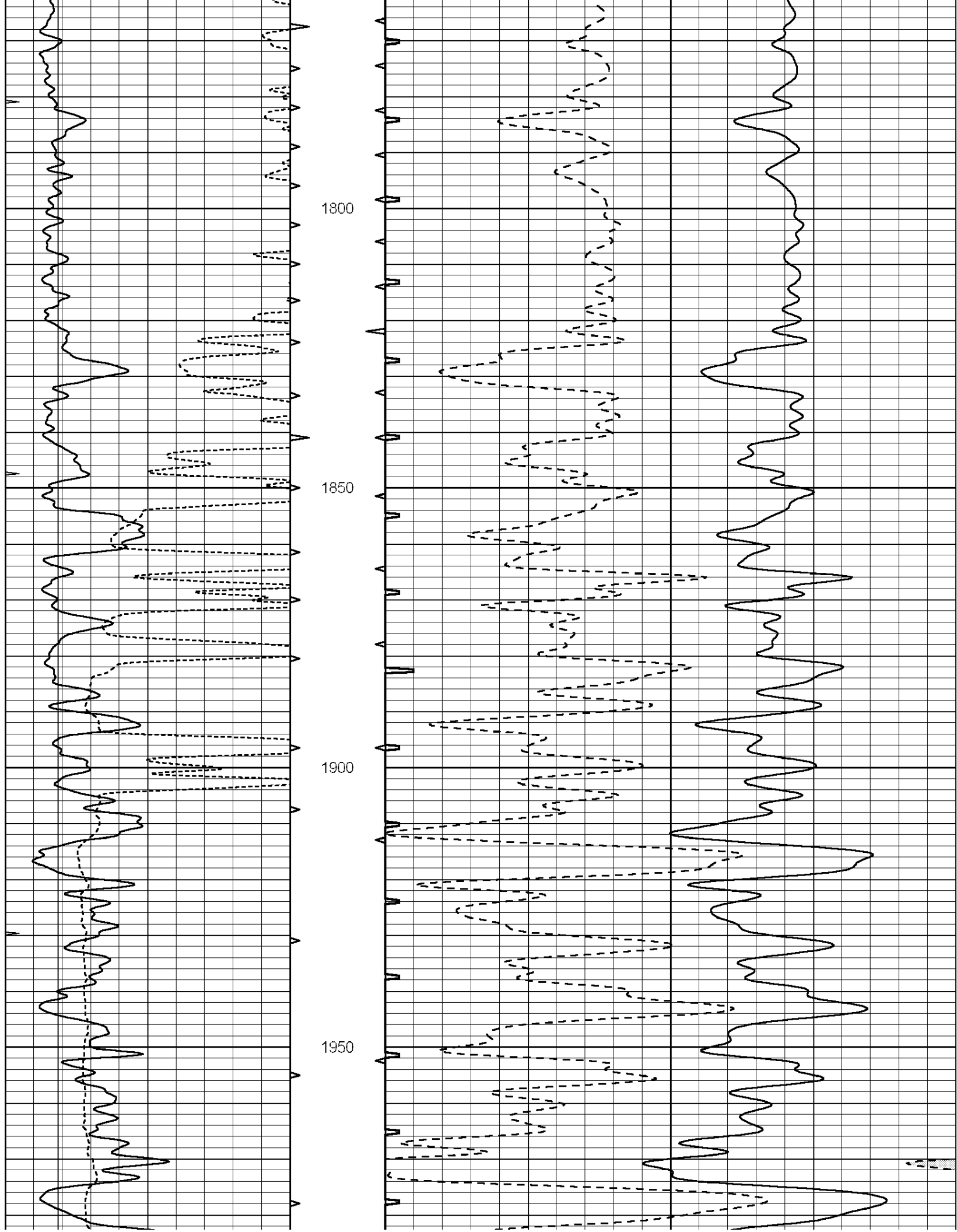


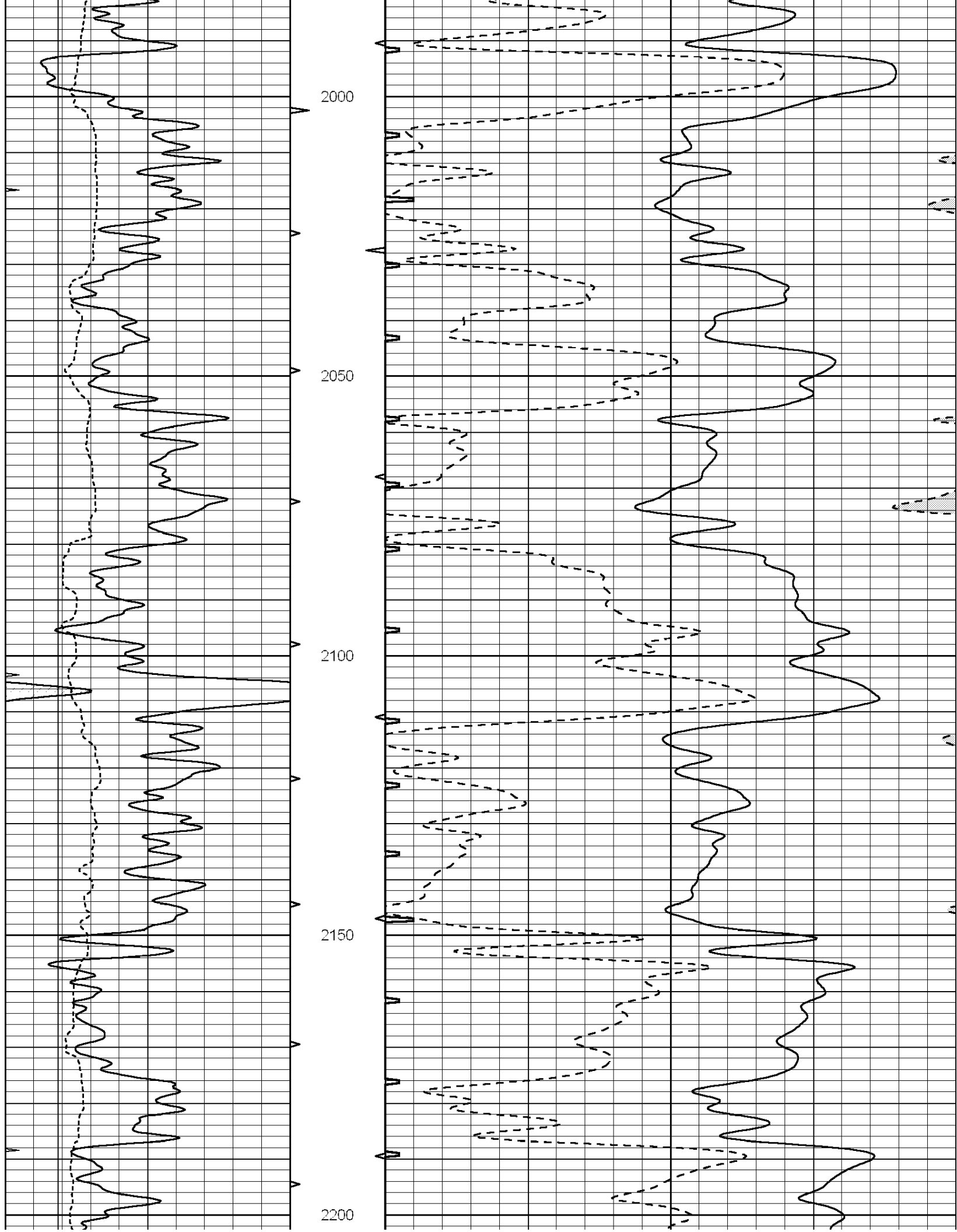


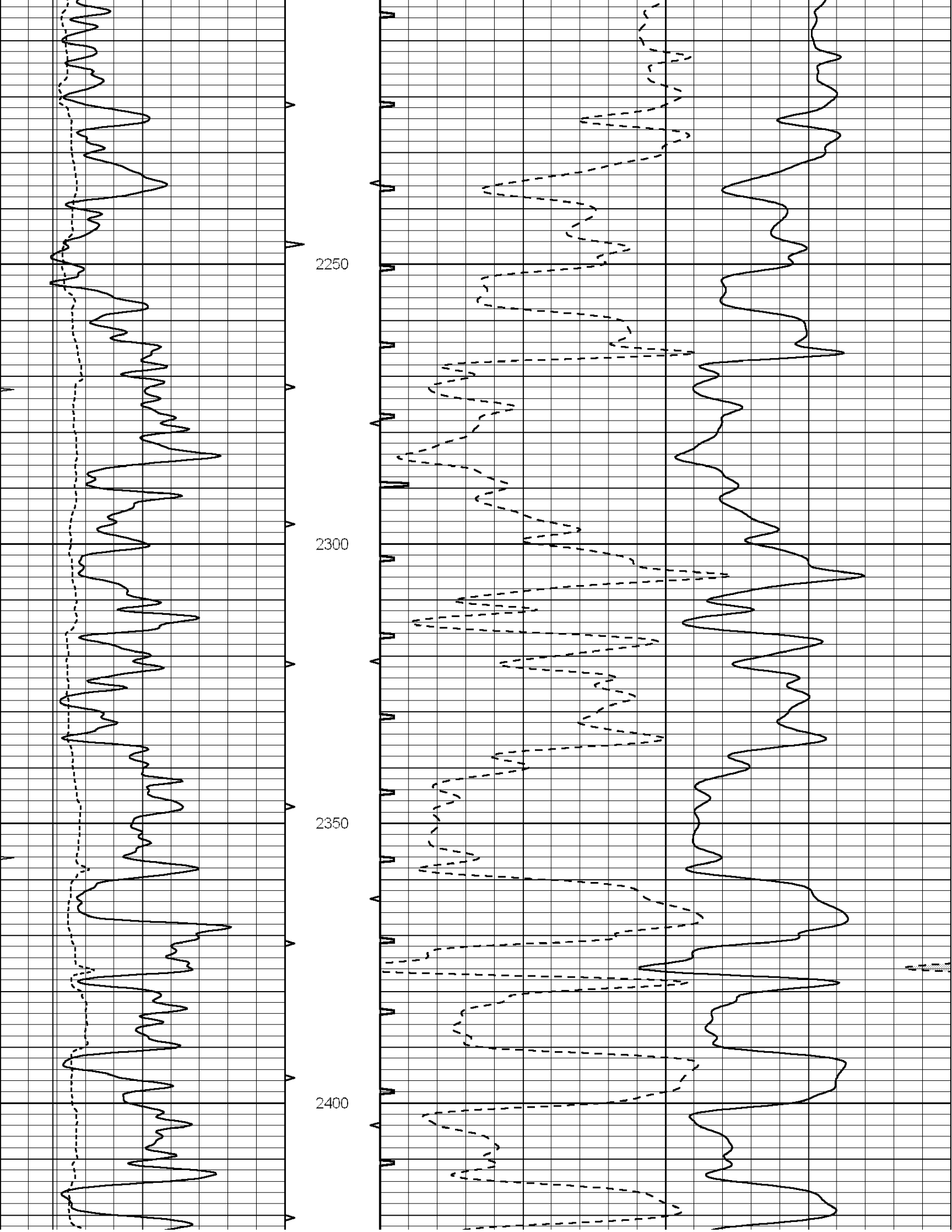


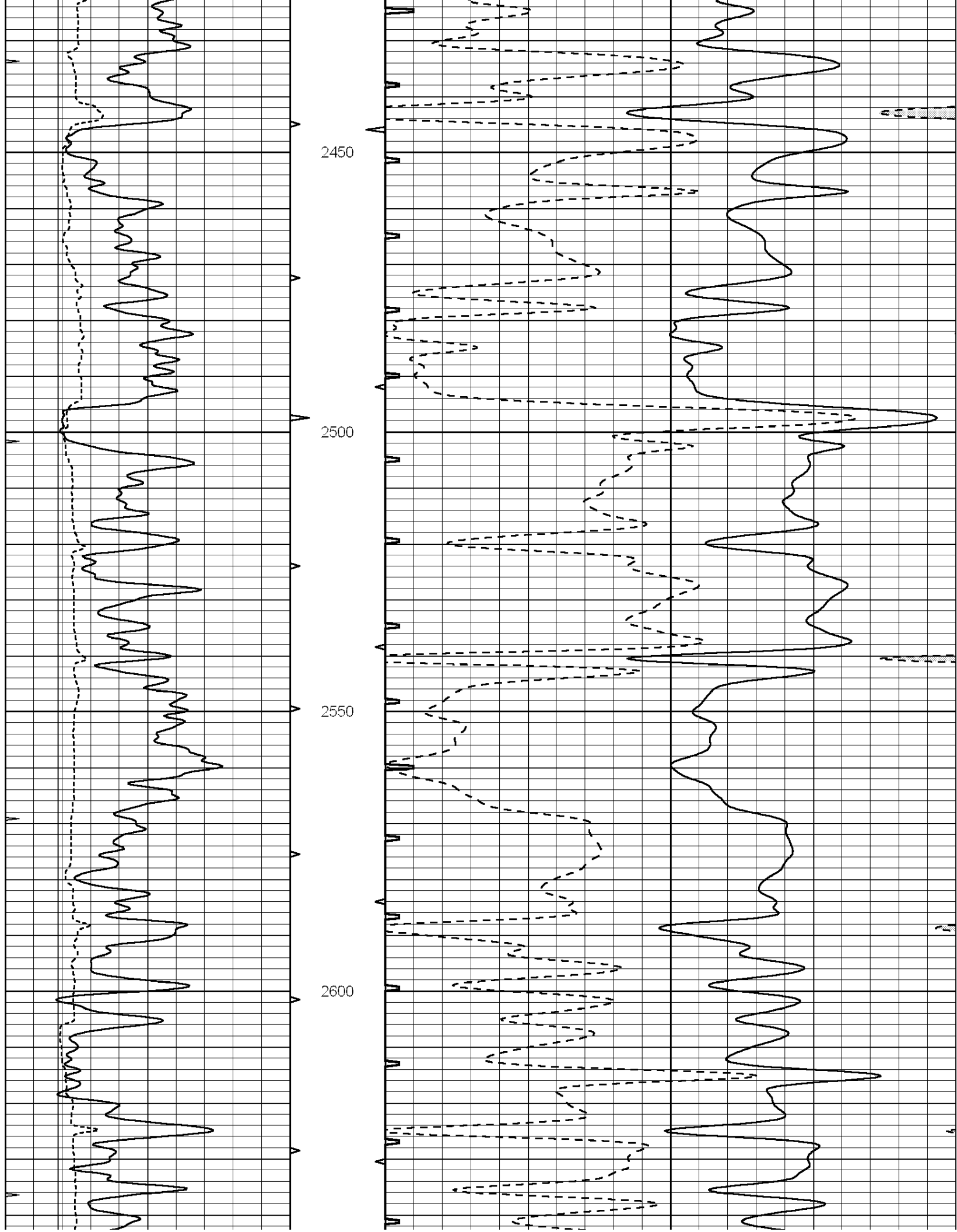


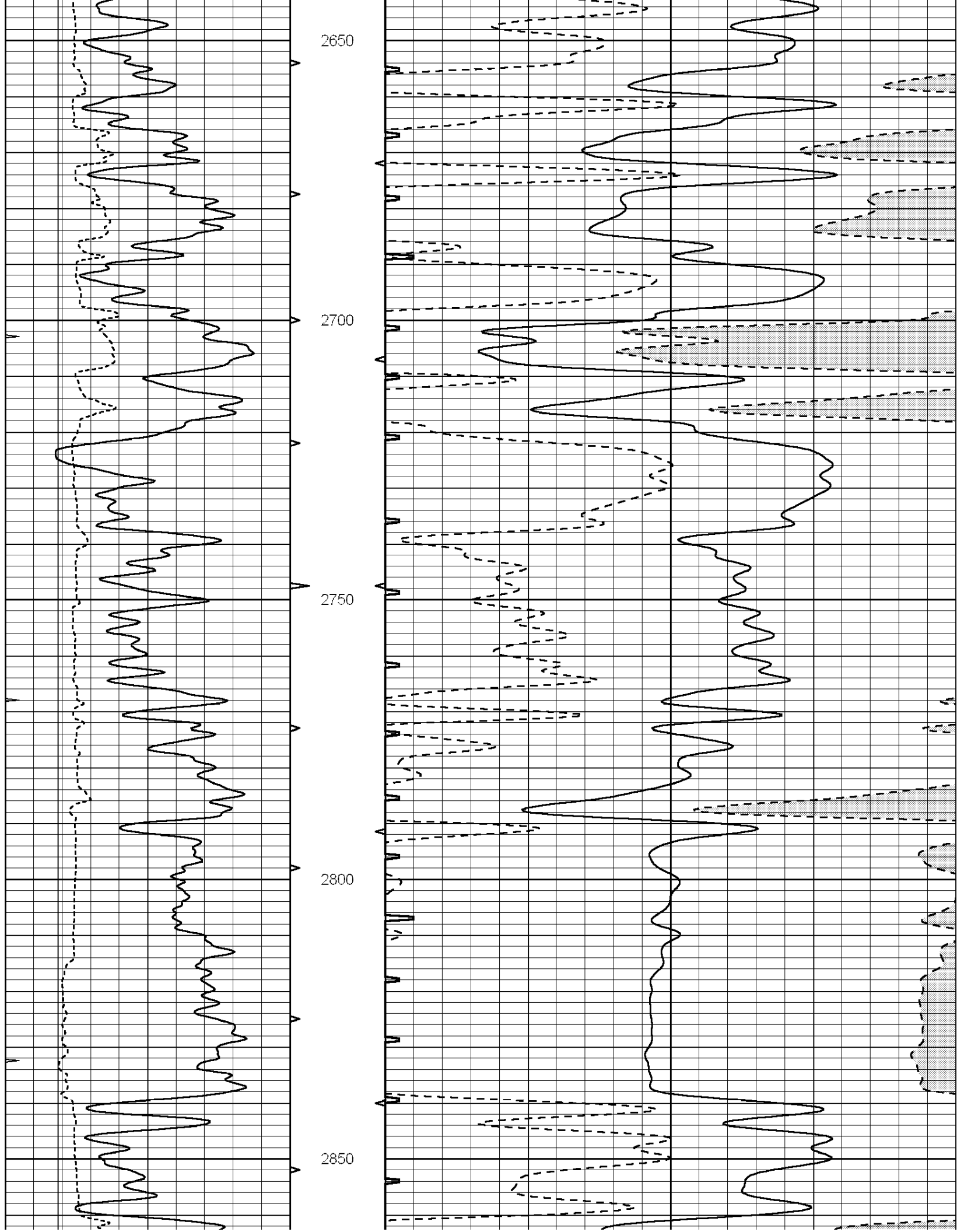


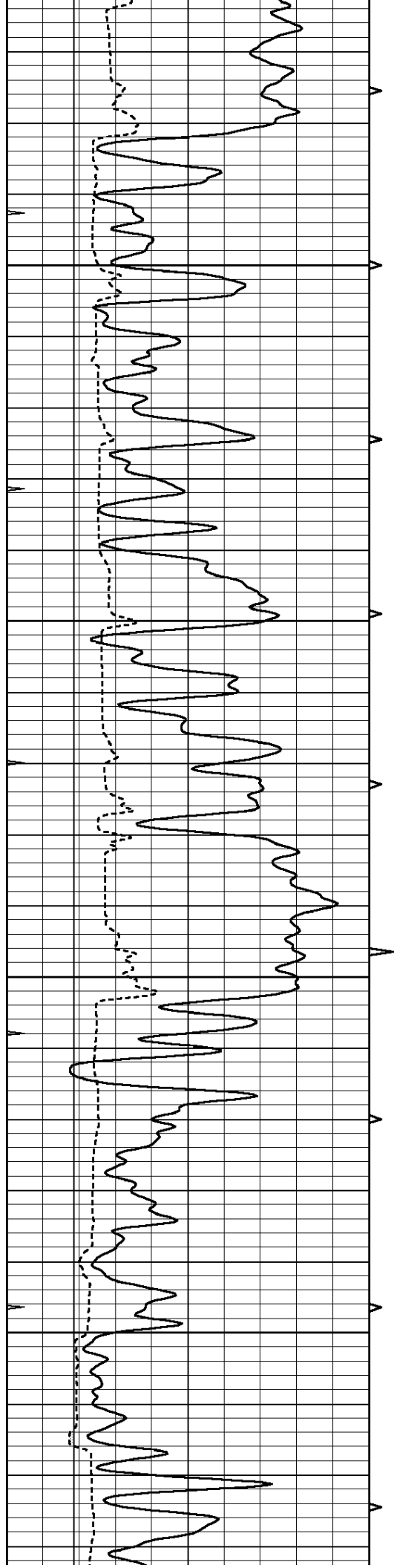










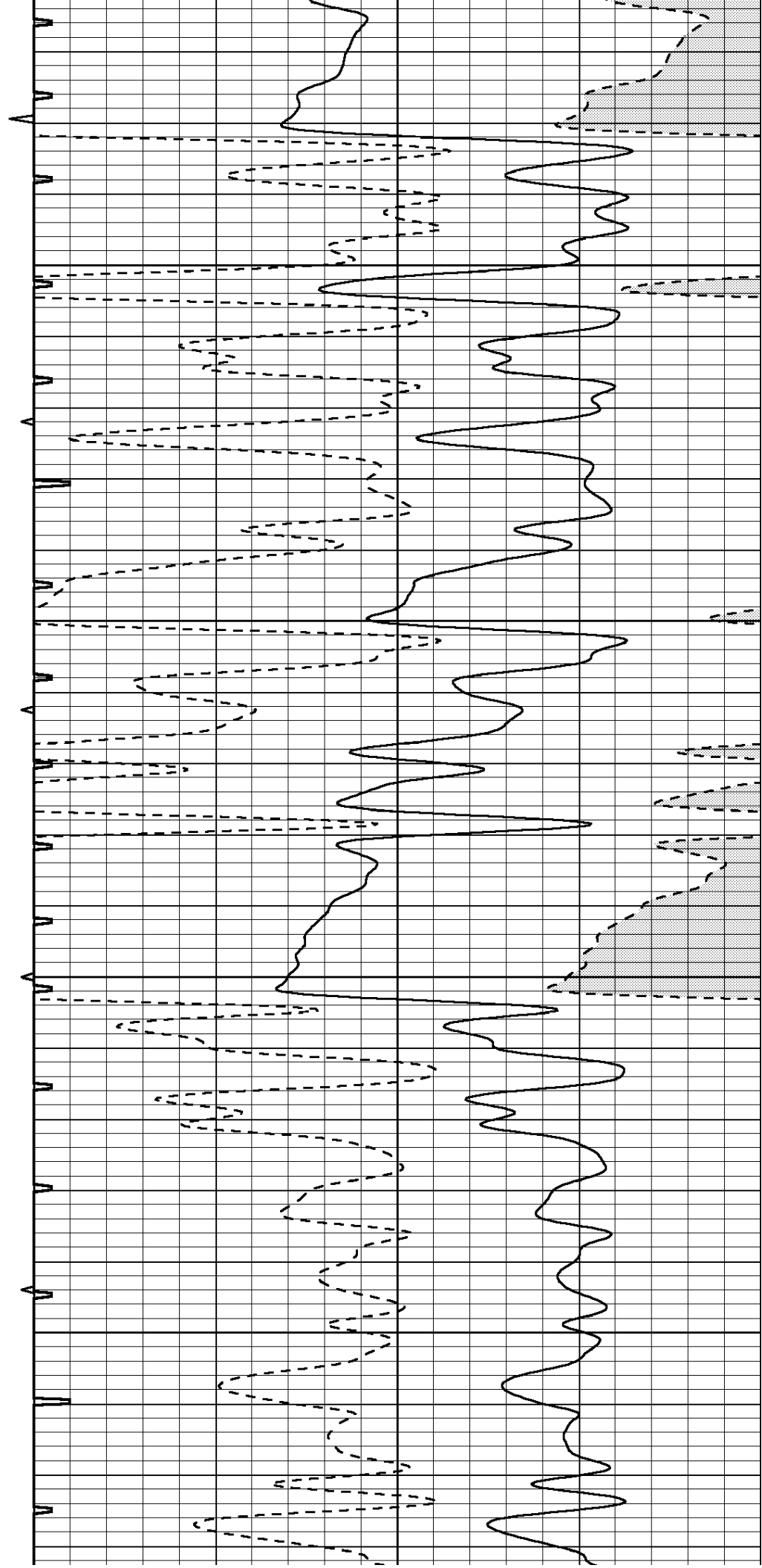


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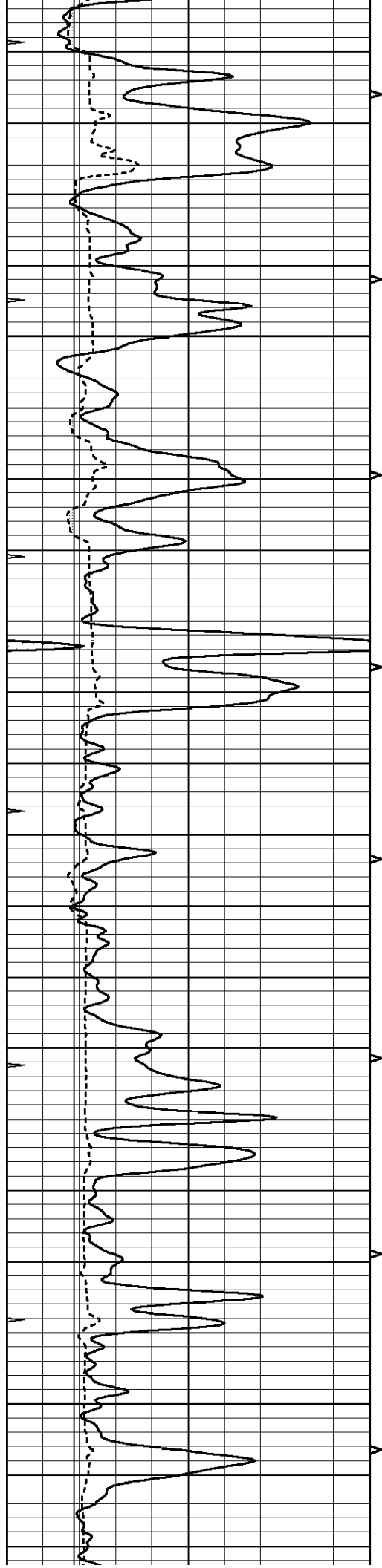
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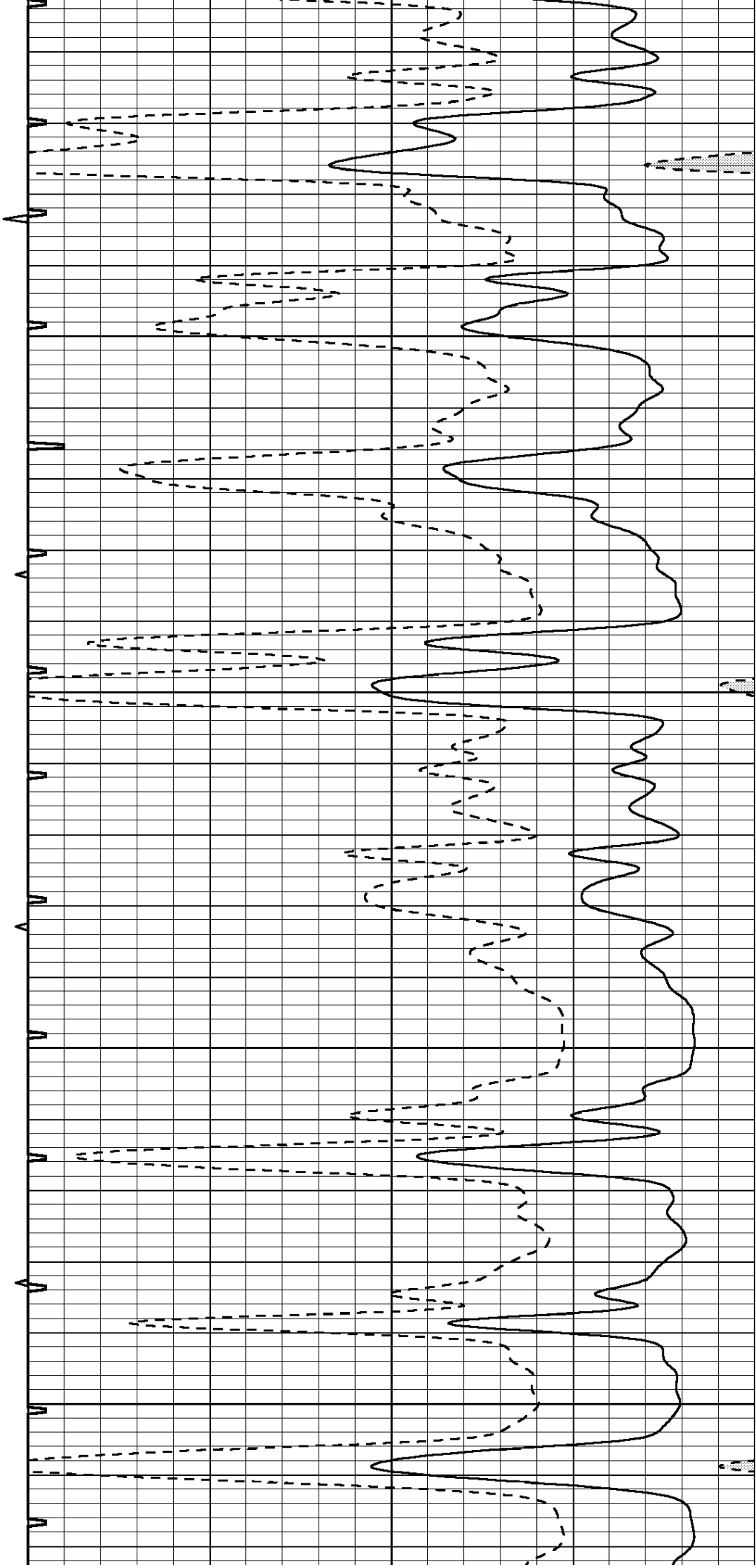


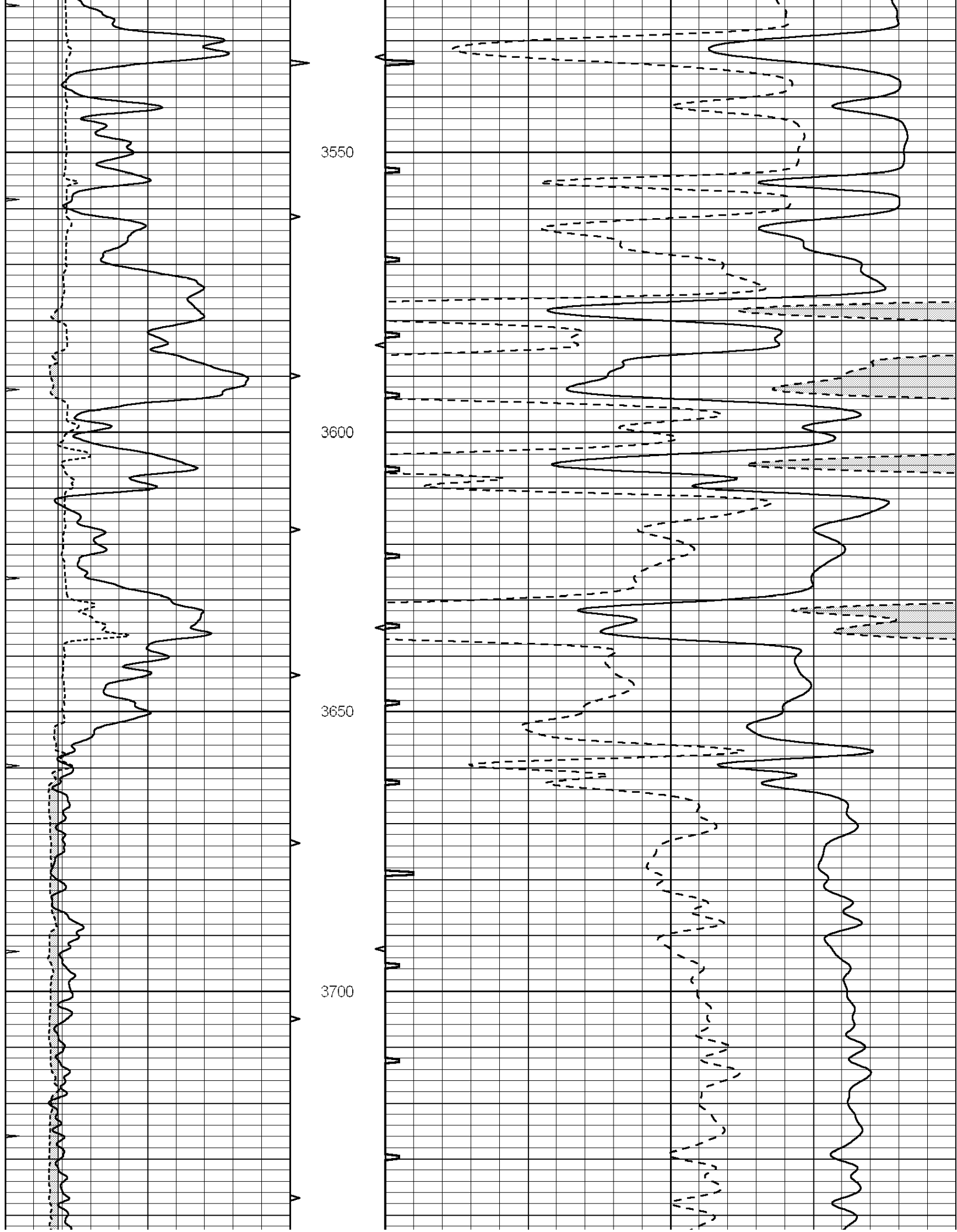
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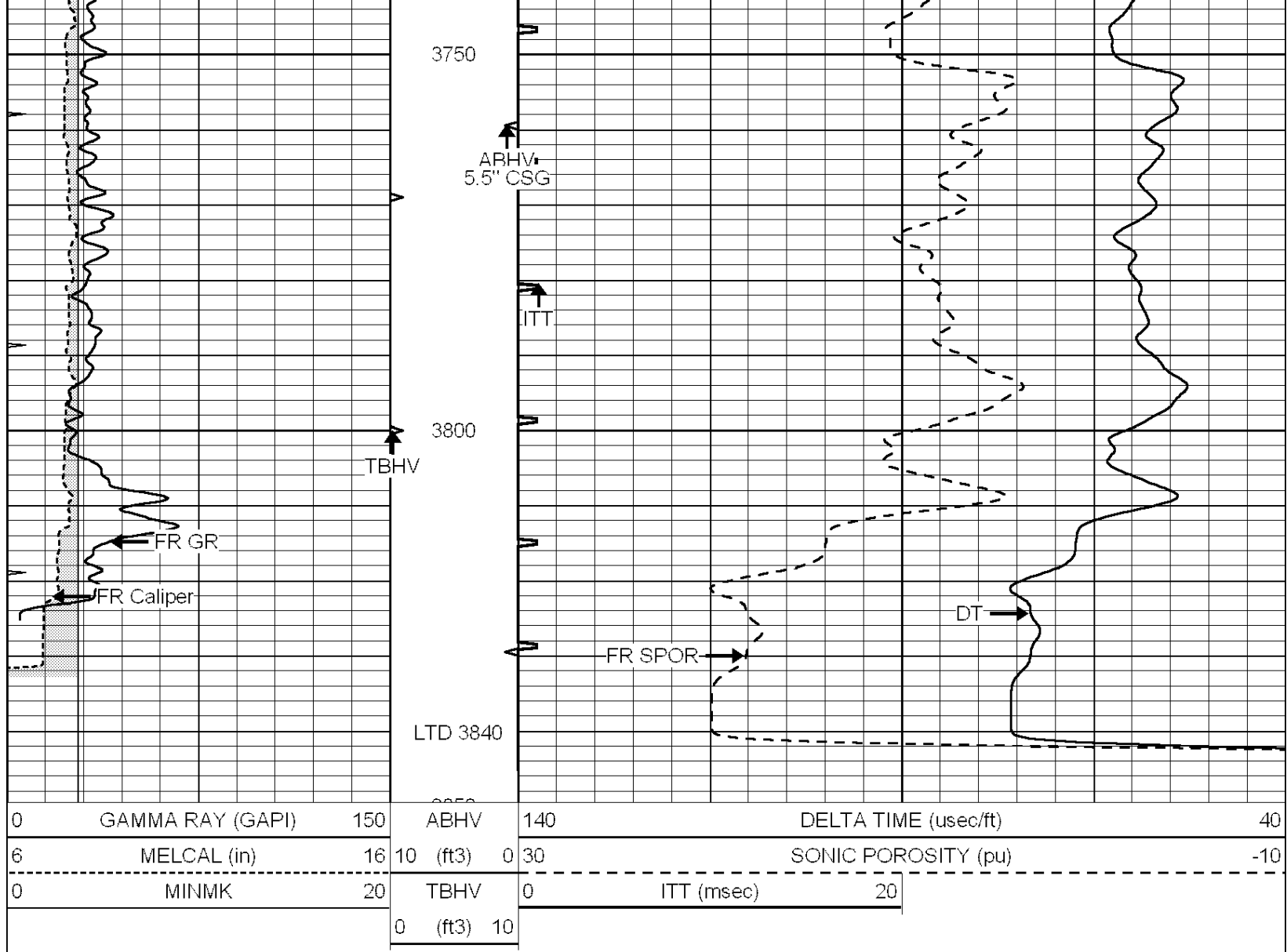
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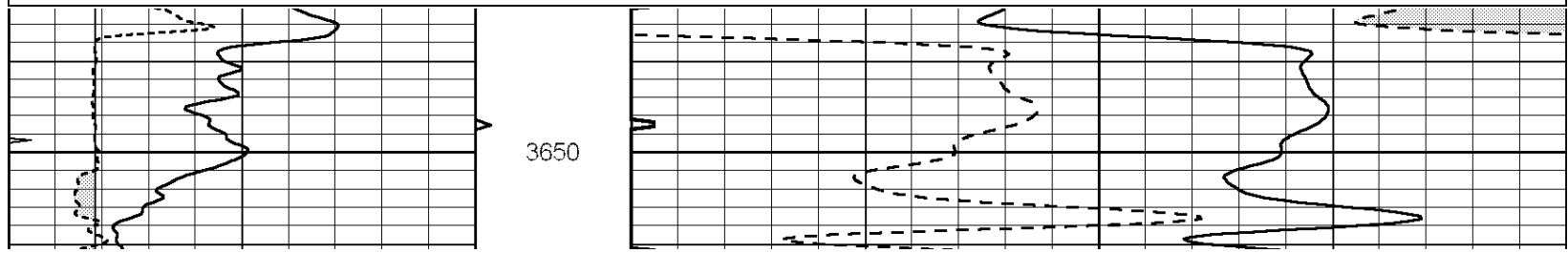


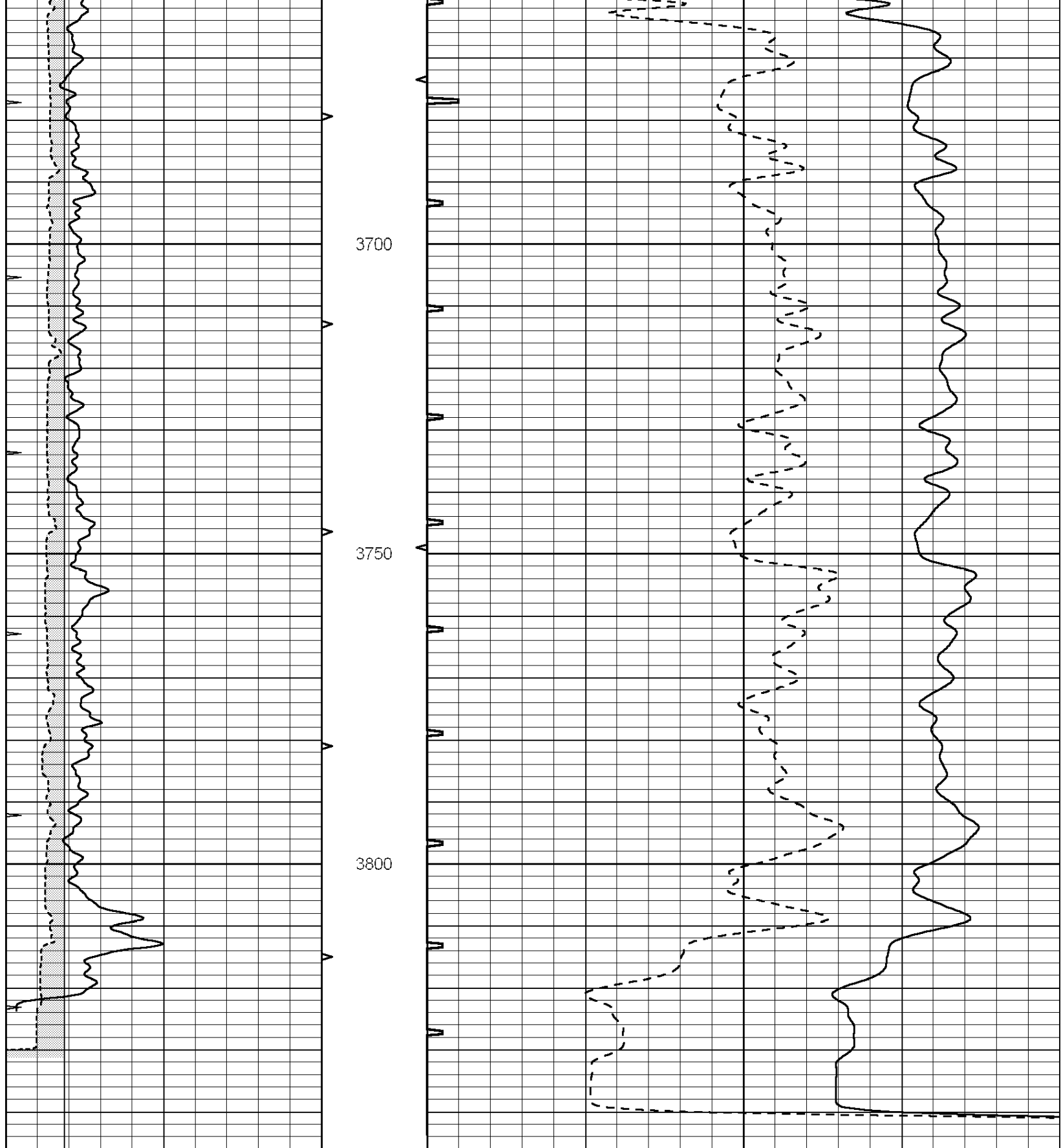
SUPERIOR
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REPEAT SECTION

Database File: 008023ddn.db
 Dataset Pathname: pass6
 Presentation Format: slt
 Dataset Creation: Sun Dec 04 22:43:17 2011 by Log Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	140	DELTA TIME (usec/ft)	40
6	MELCAL (in)	16	10 (ft3) 0	30	SONIC POROSITY (pu)	-10
0	MINMK	20	TBHV	0	ITT (msec)	20
			0 (ft3) 10			





0	GAMMA RAY (GAPI)	150	ABHV	140	DELTA TIME (usec/ft)	40
6	MELCAL (in)	16	10 (ft3)	0 30	SONIC POROSITY (pu)	-10
0	MINMK	20	TBHV	0	ITT (msec)	20
			0 (ft3)	10		