



**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company MAI OIL OPERATIONS, INC.
Well HAMMEKE "M" #9
Field SYMS SOUTHEAST
County STAFFORD
State KANSAS

Company MAI OIL OPERATIONS, INC.
Well HAMMEKE "M" #9
Field SYMS SOUTHEAST
County STAFFORD State KANSAS

Location: API # : 15-185-23931-0000
1500' FSL & 1750' FWL
Permanent Datum GROUND LEVEL Elevation 1840
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING
SEC 22 TWP 21S RGE 12W
Other Services
CDL/CNL
MEL
Elevation
K.B. 1848
D.F. 1846
G.L. 1840

Date	4/2/15
Run Number	ONE
Depth Driller	3700
Depth Logger	3700
Bottom Logged Interval	3698
Top Log Interval	0
Casing Driller	8 5/8" @ 635'
Casing Logger	634
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.2/58
pH / Fluid Loss	9.5/8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.2 @ 56F
Rmt @ Meas. Temp	.90 @ 56F
Rmc @ Meas. Temp	1.44 @ 56F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.59 @ 113F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	113F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	JASON CAPPELLUCCI
Witnessed By	WYATT URBAN
	BLAKE WAGGONER

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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.

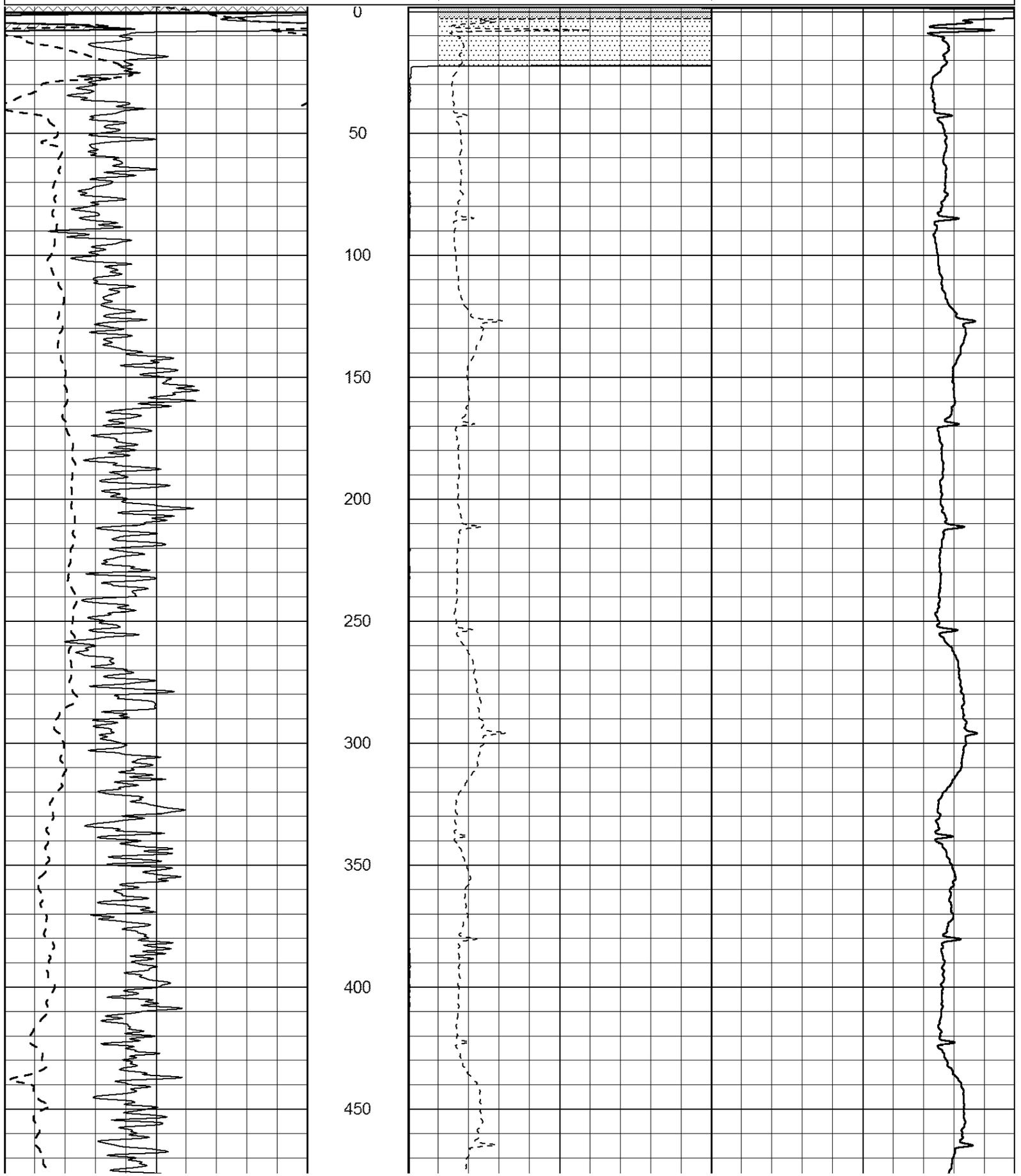
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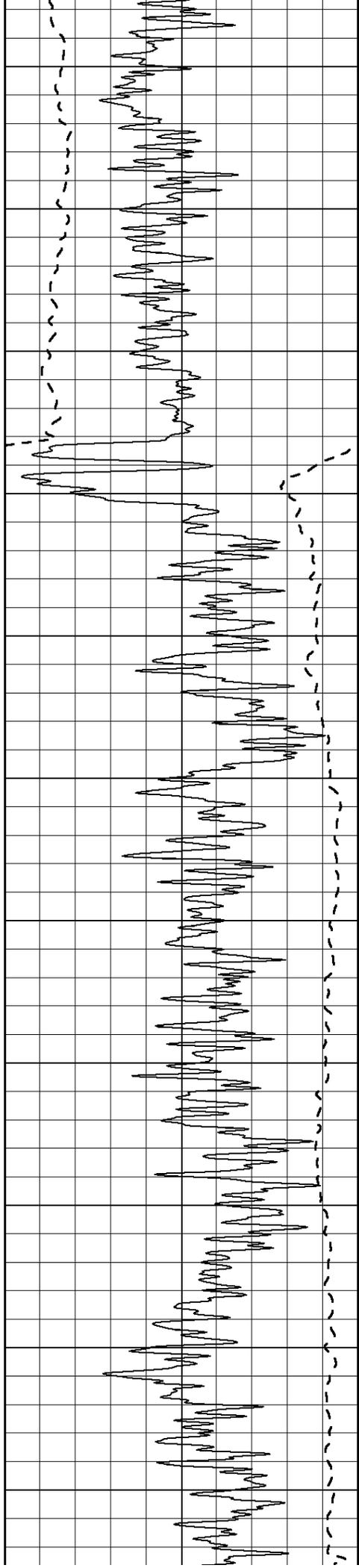
THANK YOU FOR USING NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:
GREAT BEND, KS. - SOUTH ACROSS COUNTY LINE TO 180TH RD.
6 EAST TO 60TH RD. - 1 SOUTH - 1/2 EAST - NORTH INTO

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

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

0





500

550

600

650

700

750

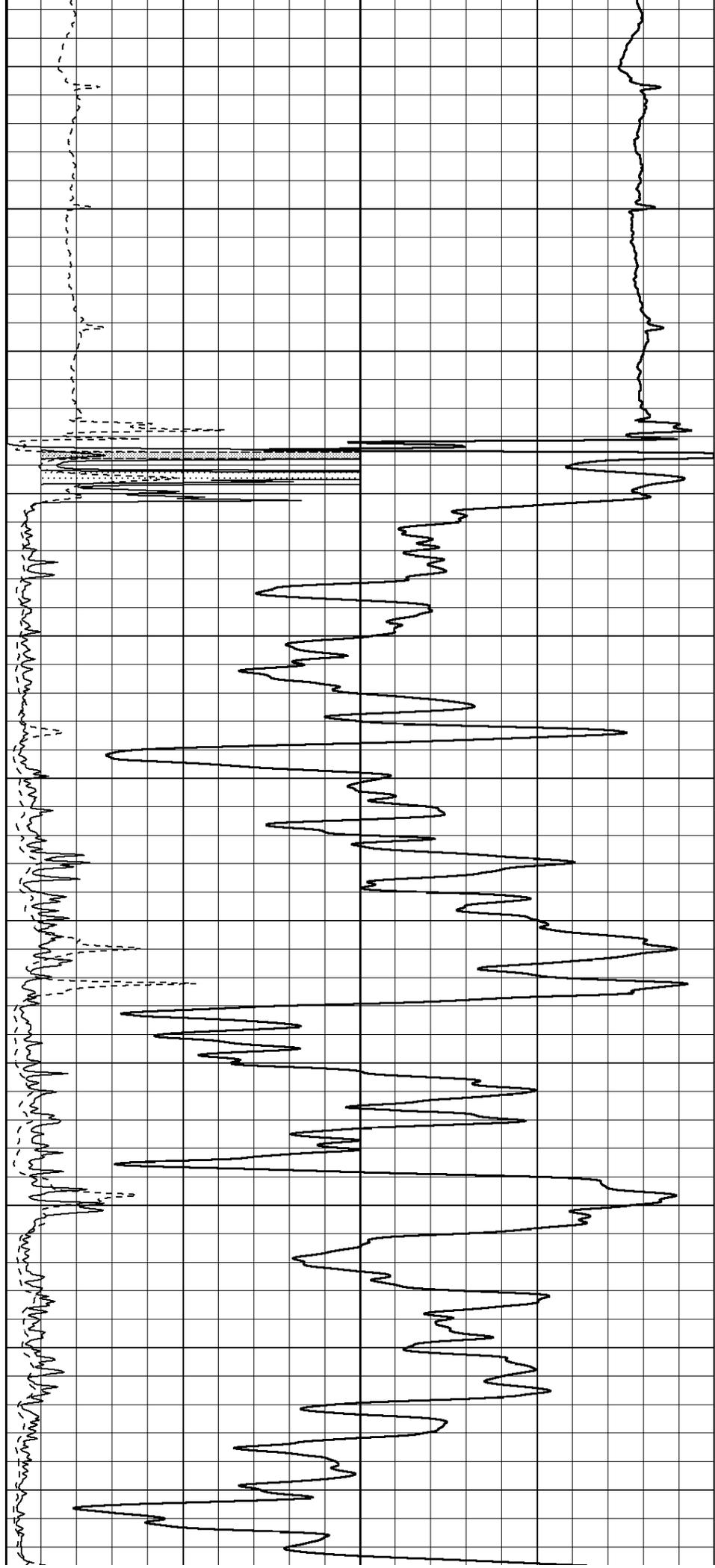
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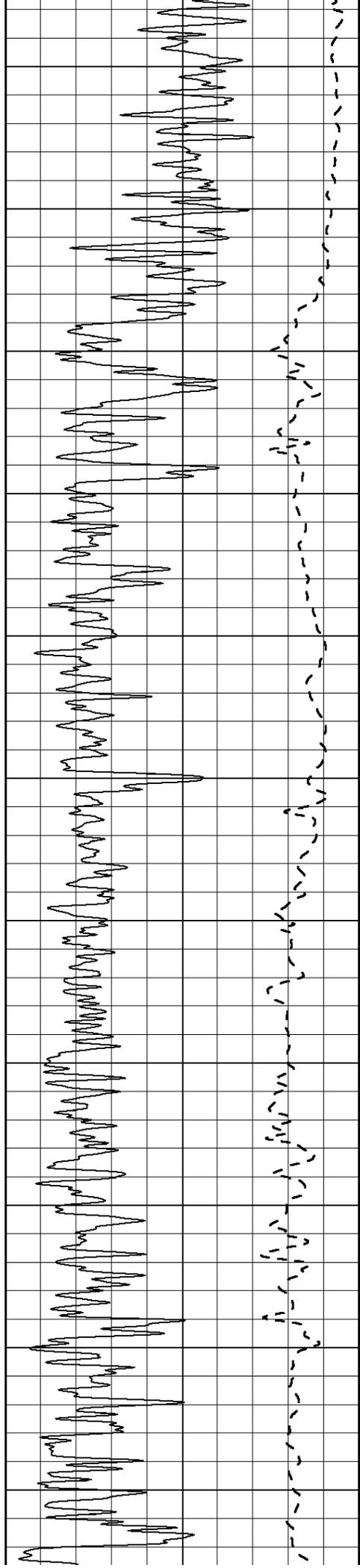
850

900

950

1000





1050

1100

1150

1200

1250

1300

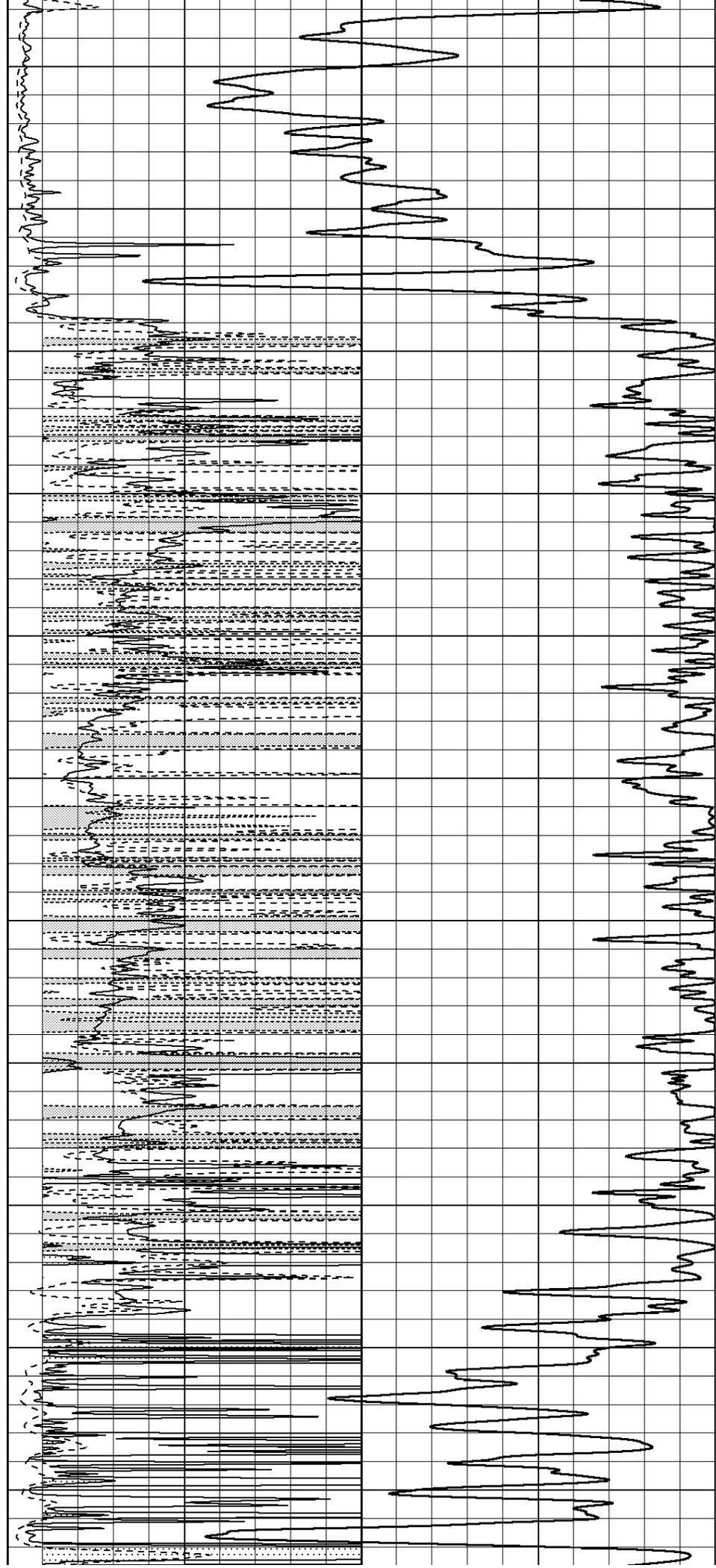
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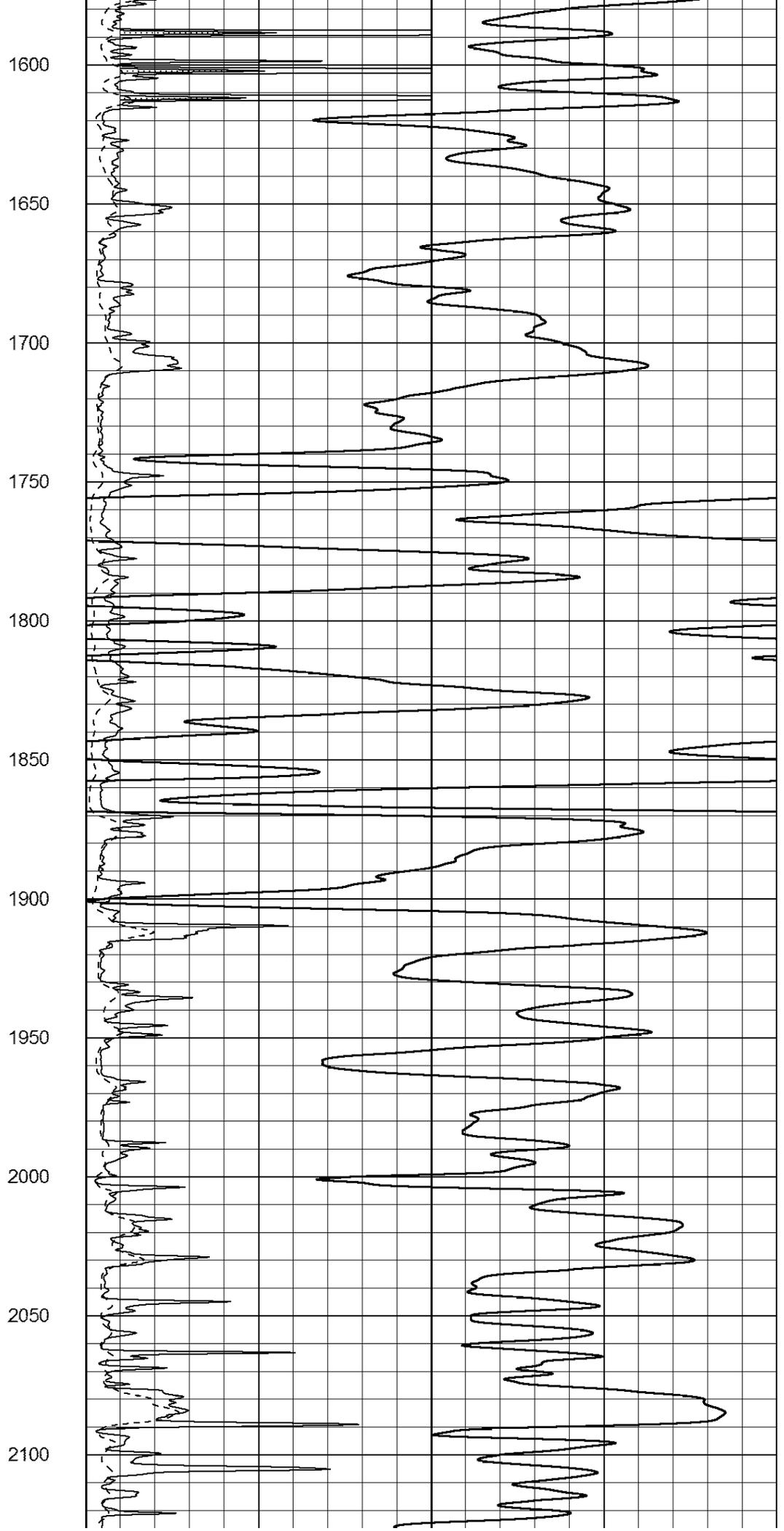
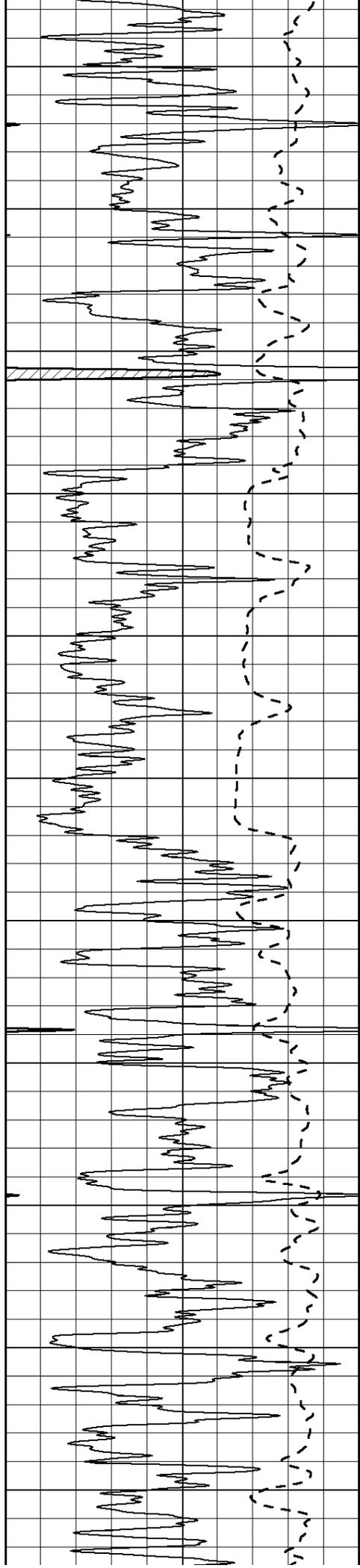
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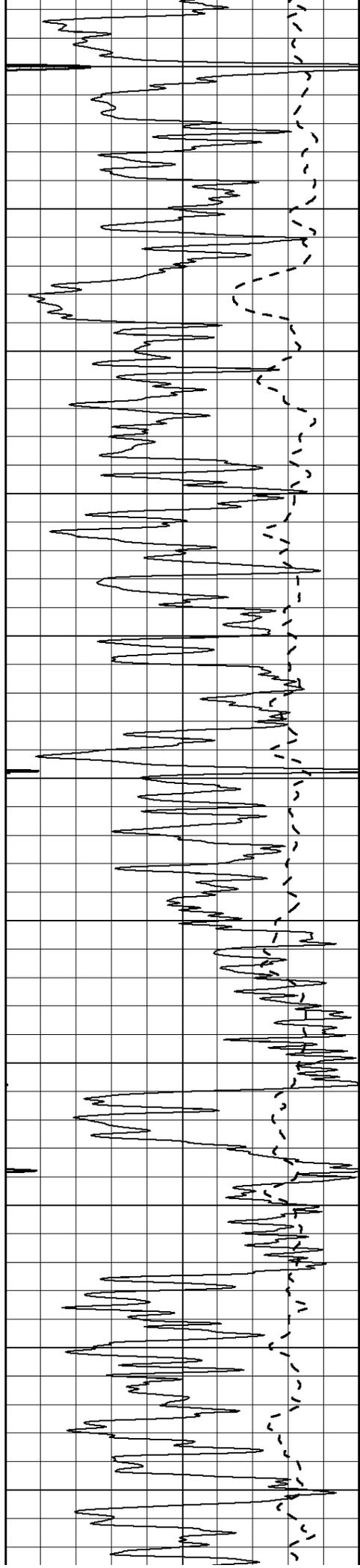
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1500

1550







2150

2200

2250

2300

2350

2400

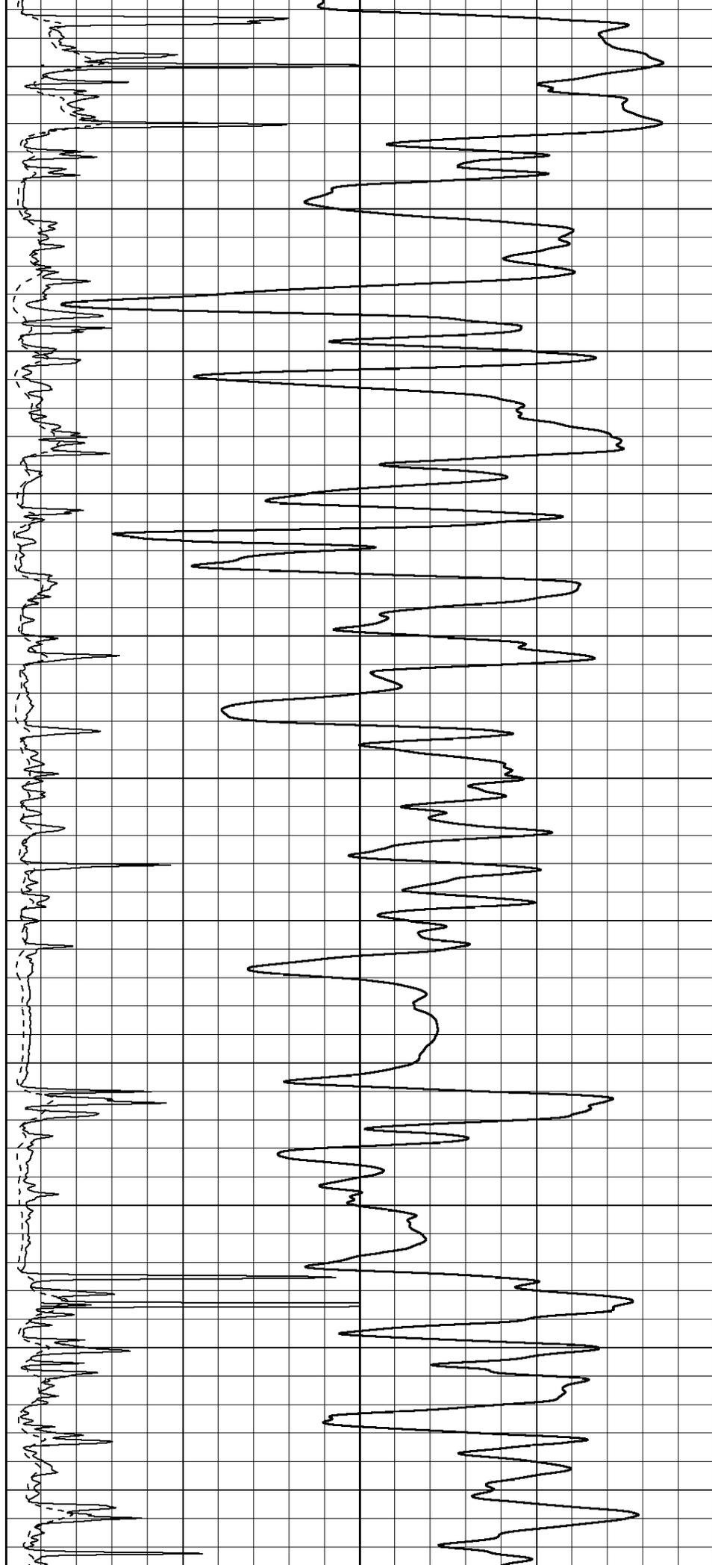
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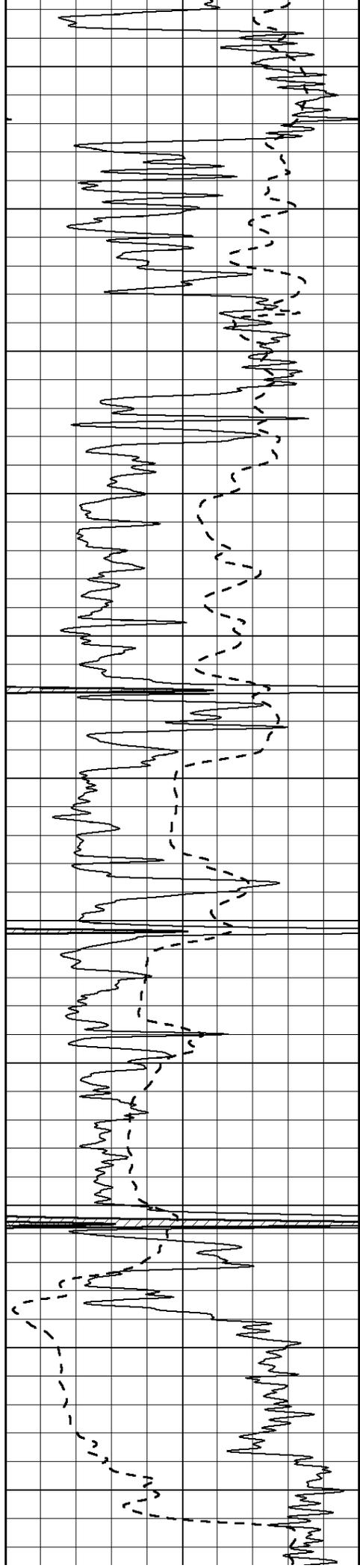
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2550

2600

2650





2700

2750

2800

2850

2900

2950

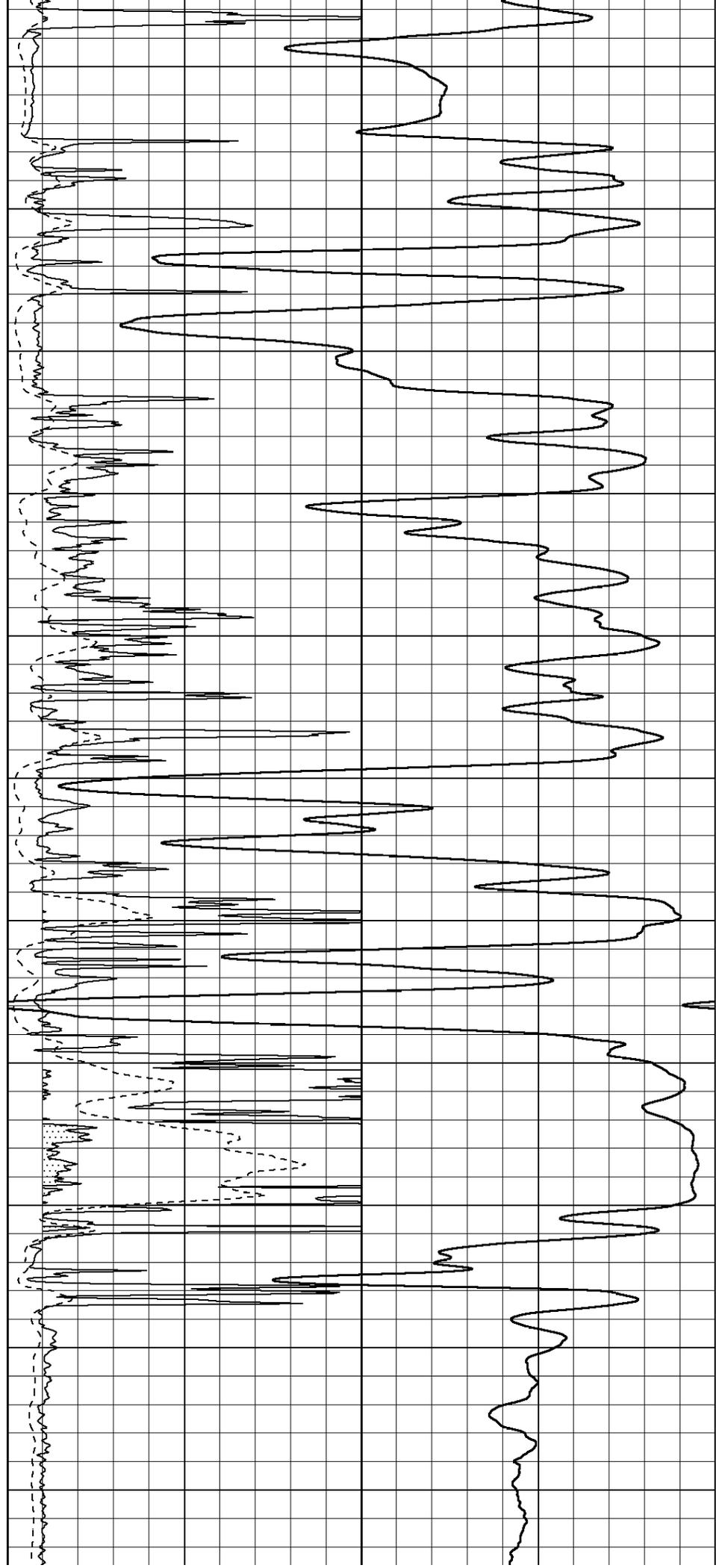
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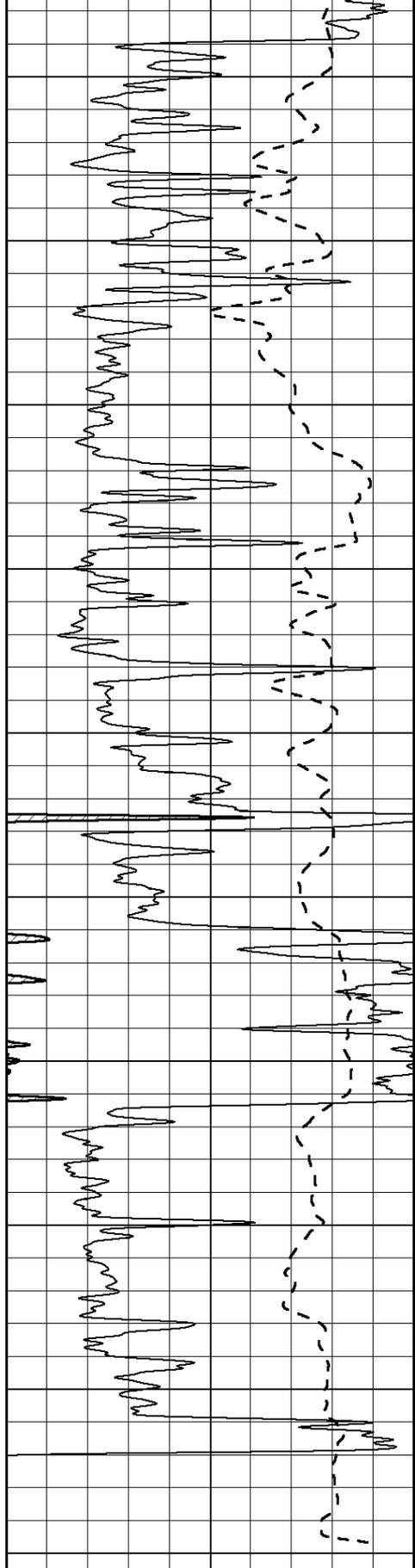
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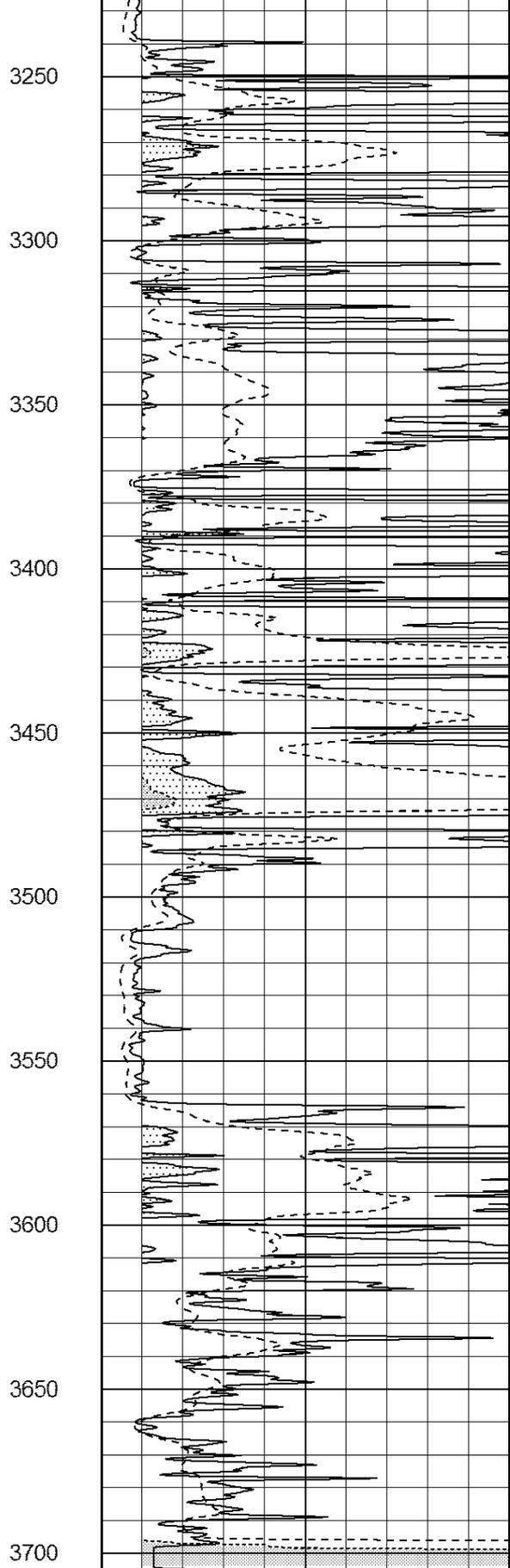
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3200

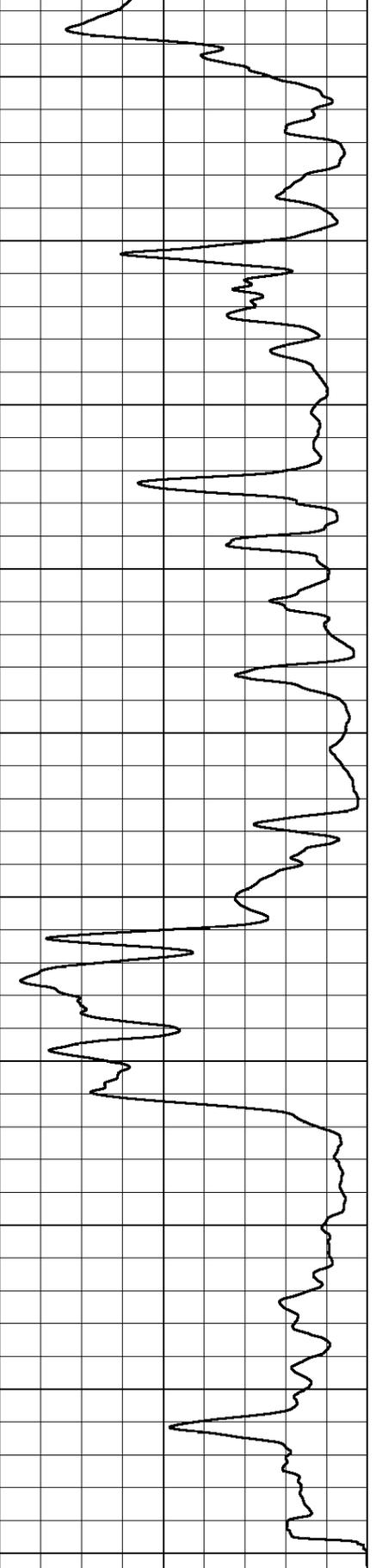




0	Gamma Ray (GAPI)	150
-100	SP (mV)	100



0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50



1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500



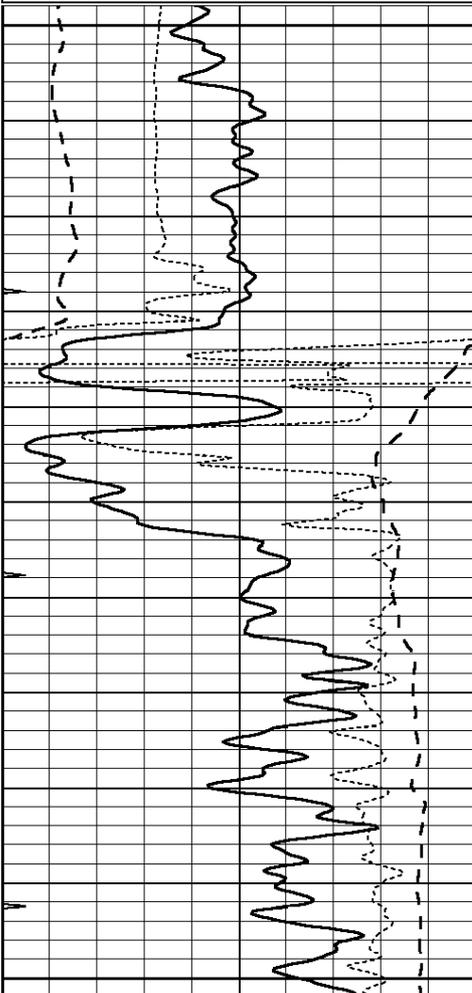
**COMPLETION
& PRODUCTION
SERVICES CO.**

ANHYDRITE

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 Presentation Format: _dil
 Dataset Creation: Thu Apr 02 17:21:11 2015 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

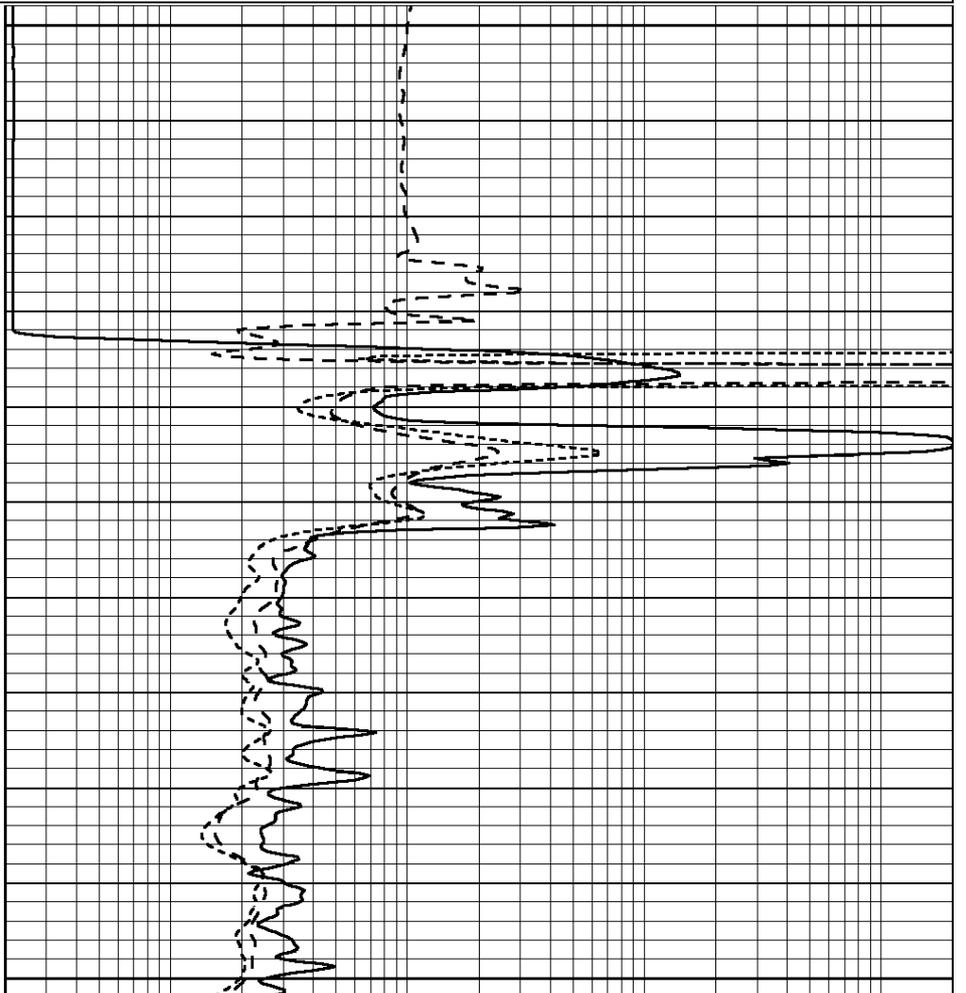
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



600

650

700



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



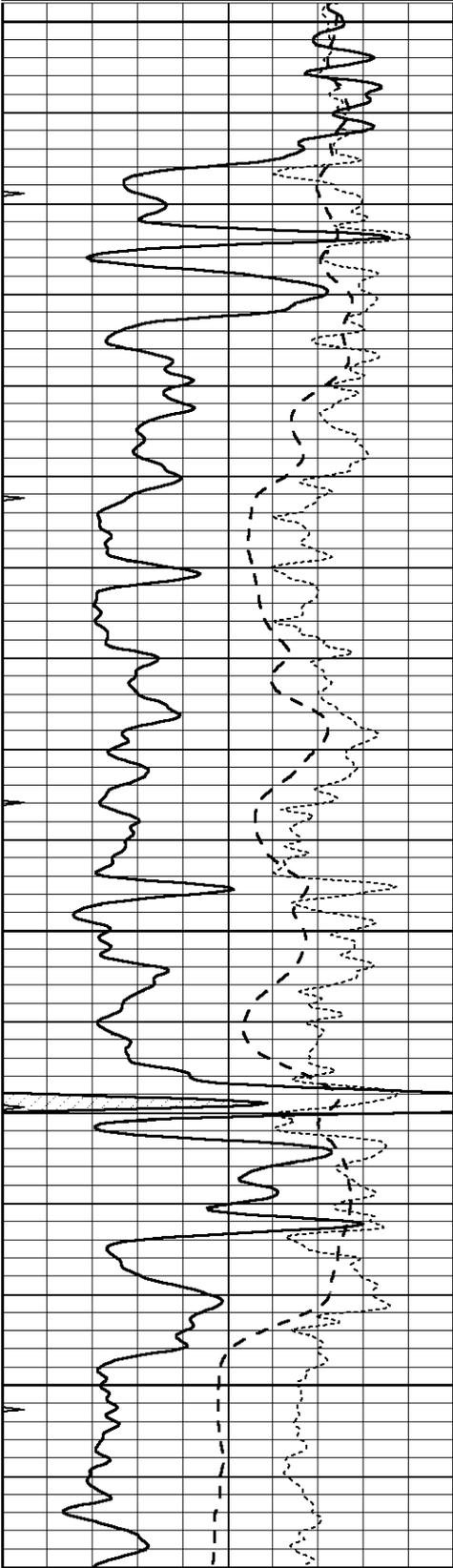
**COMPLETION
& PRODUCTION
SERVICES CO.**

MAIN SECTION

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 Charted by: Depth in Feet scaled 1:240

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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

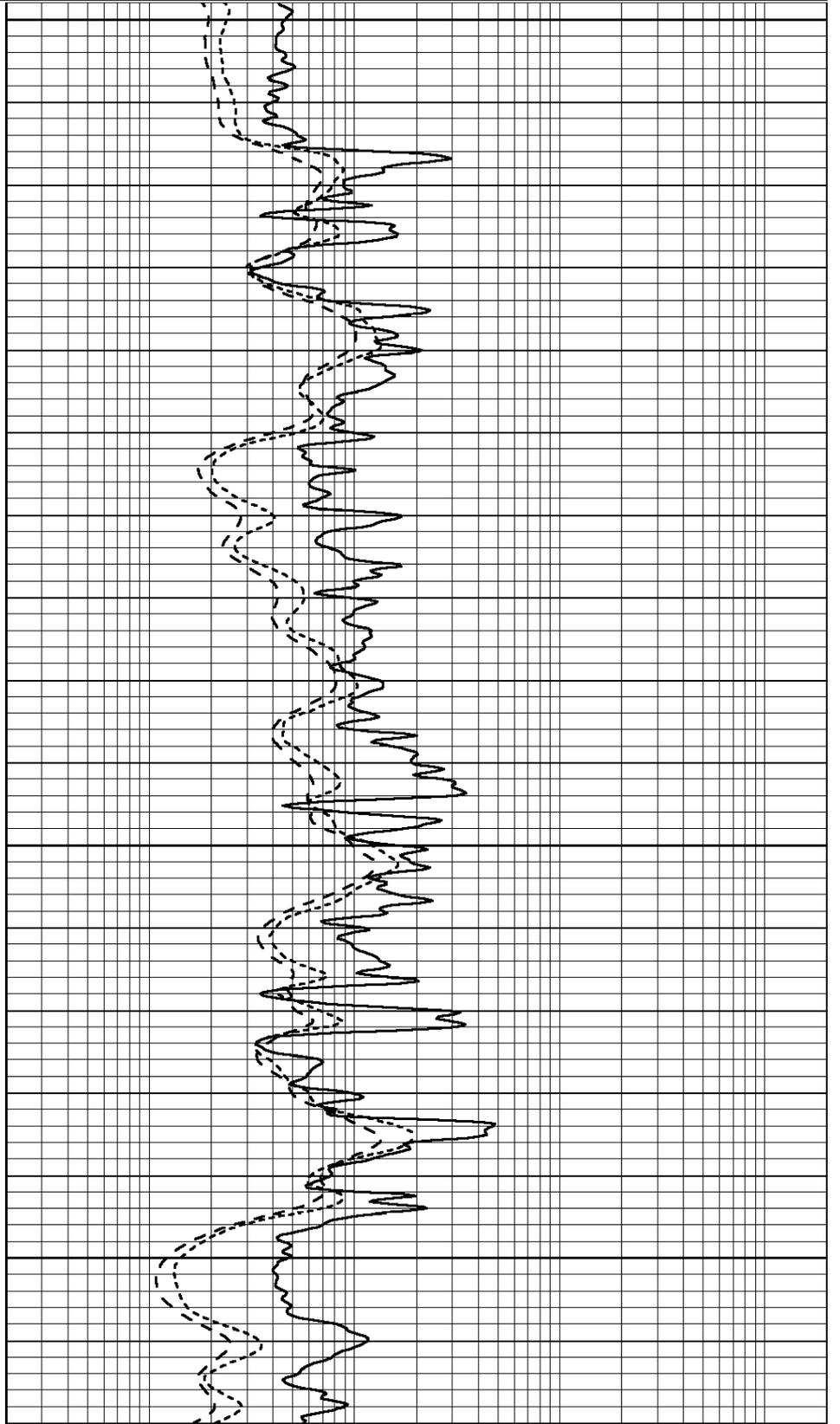


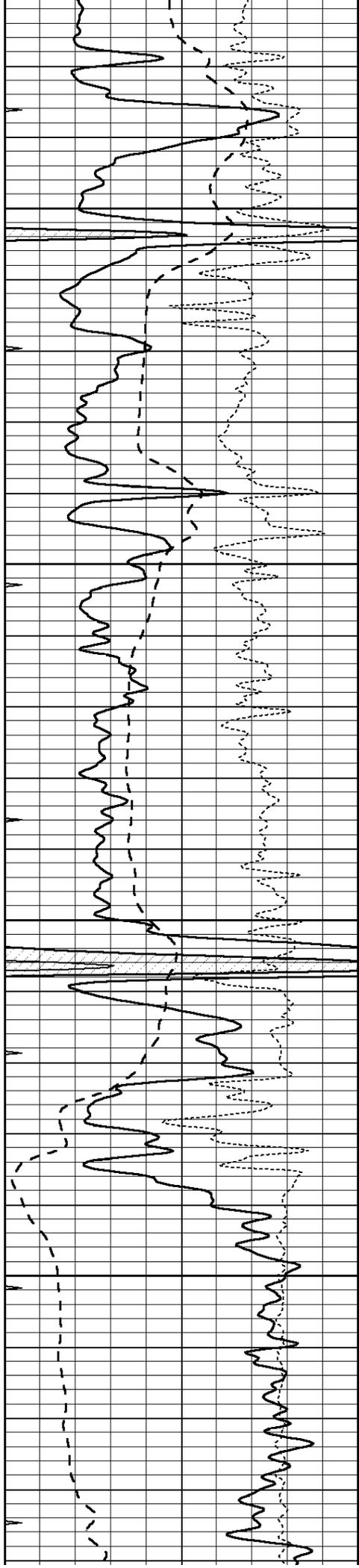
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2850

2900

2950



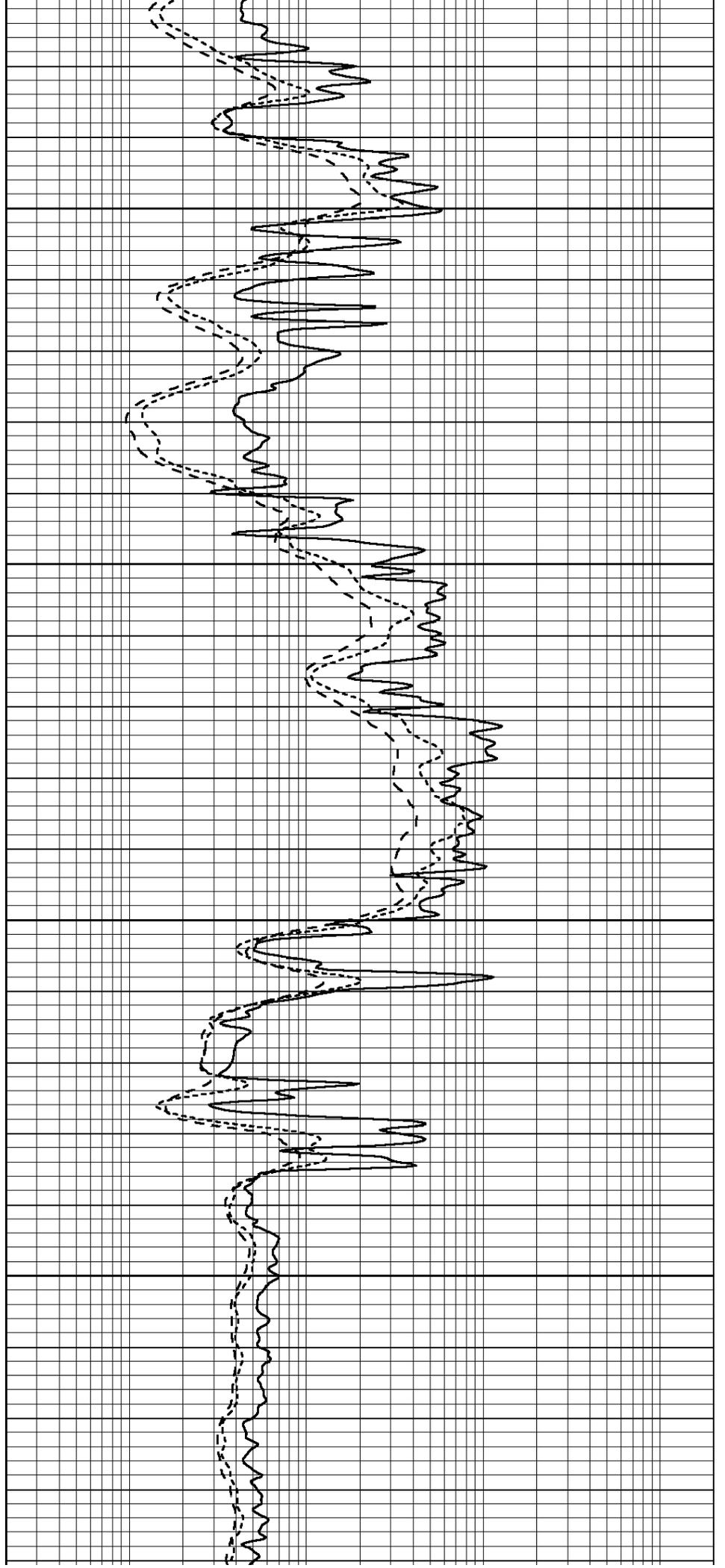


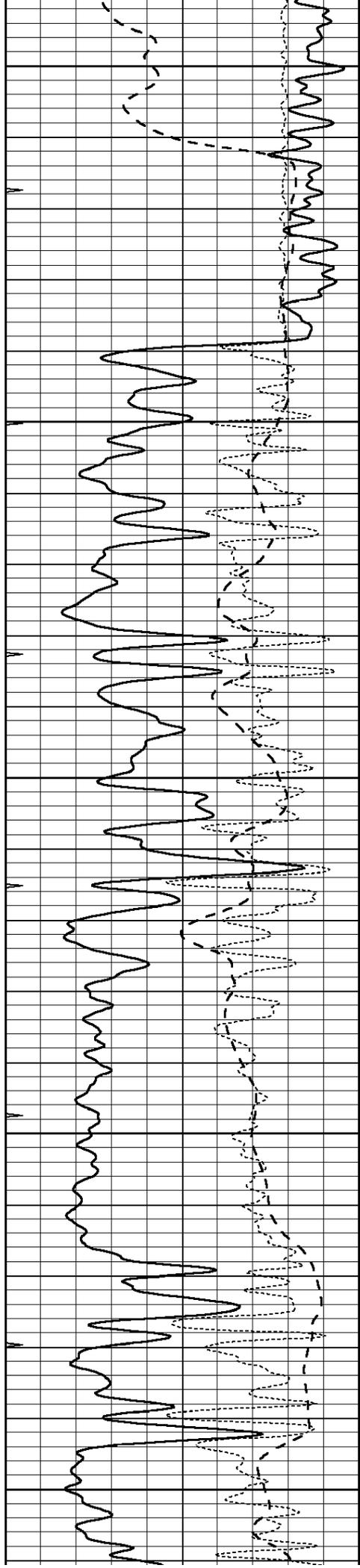
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3050

3100

3150





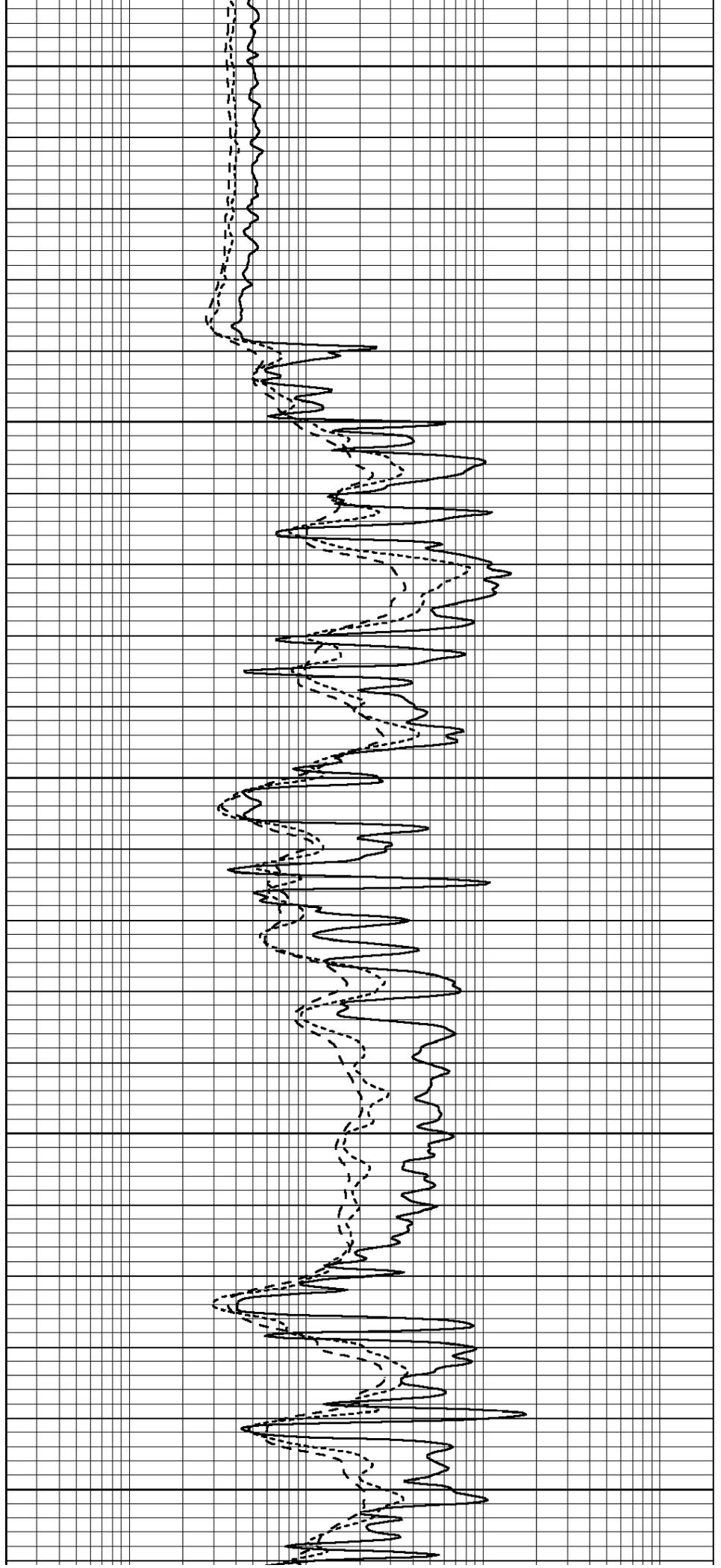
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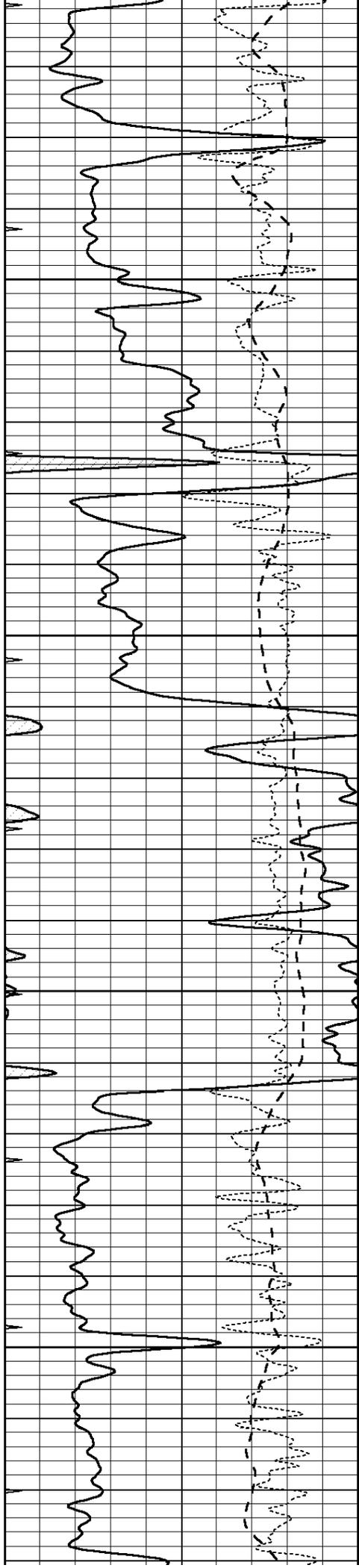
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3300

3350

3400



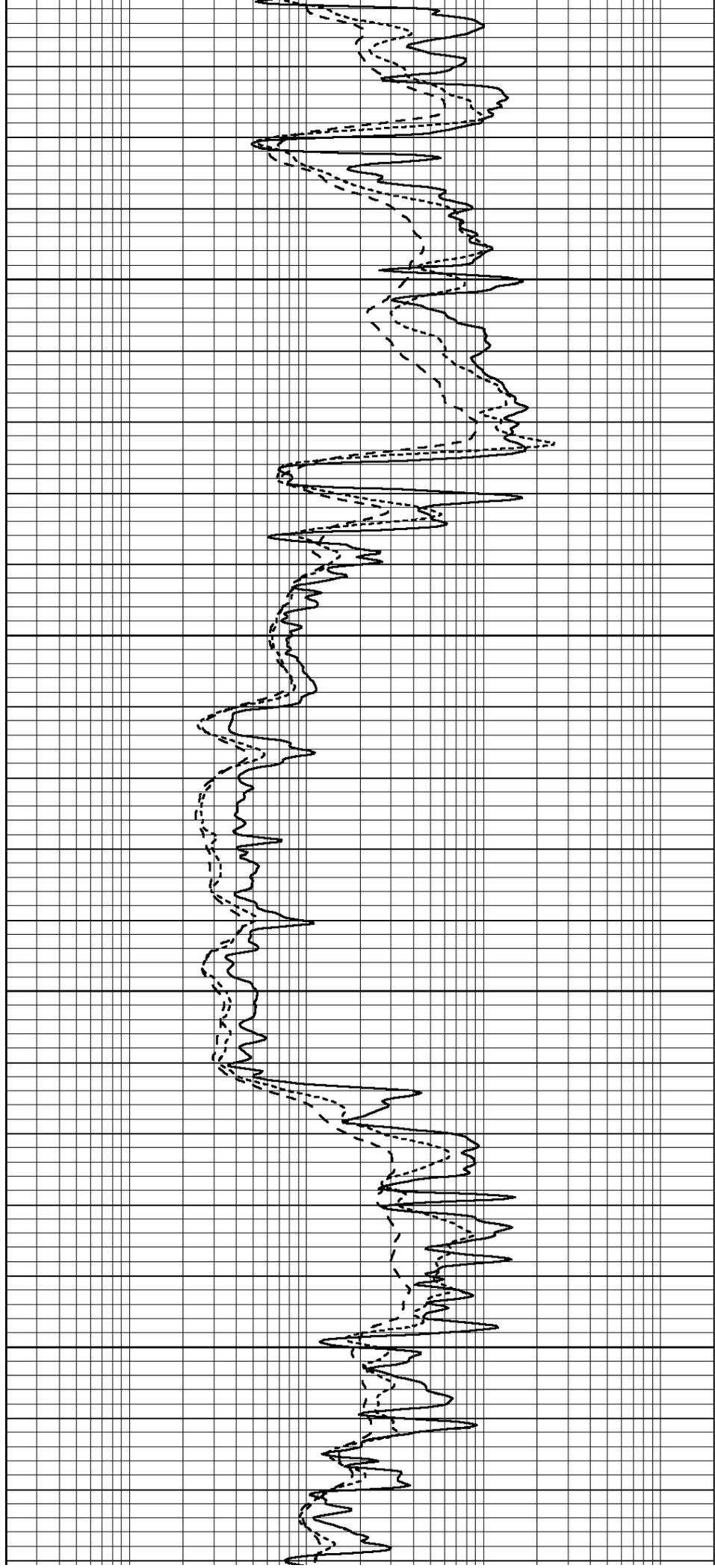


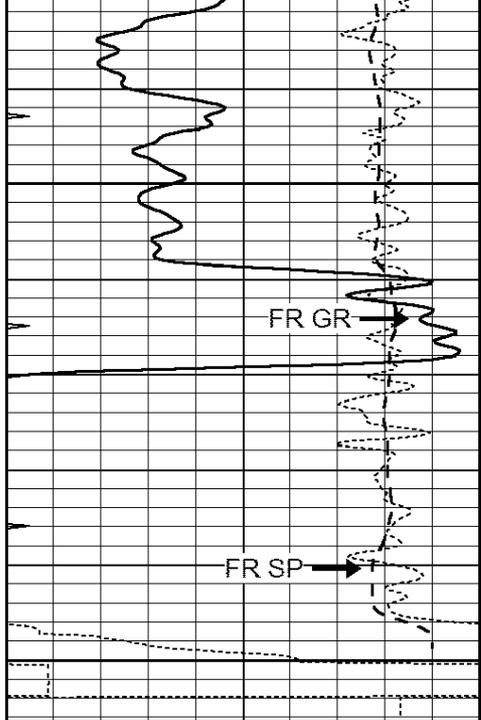
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3500

3550

3600

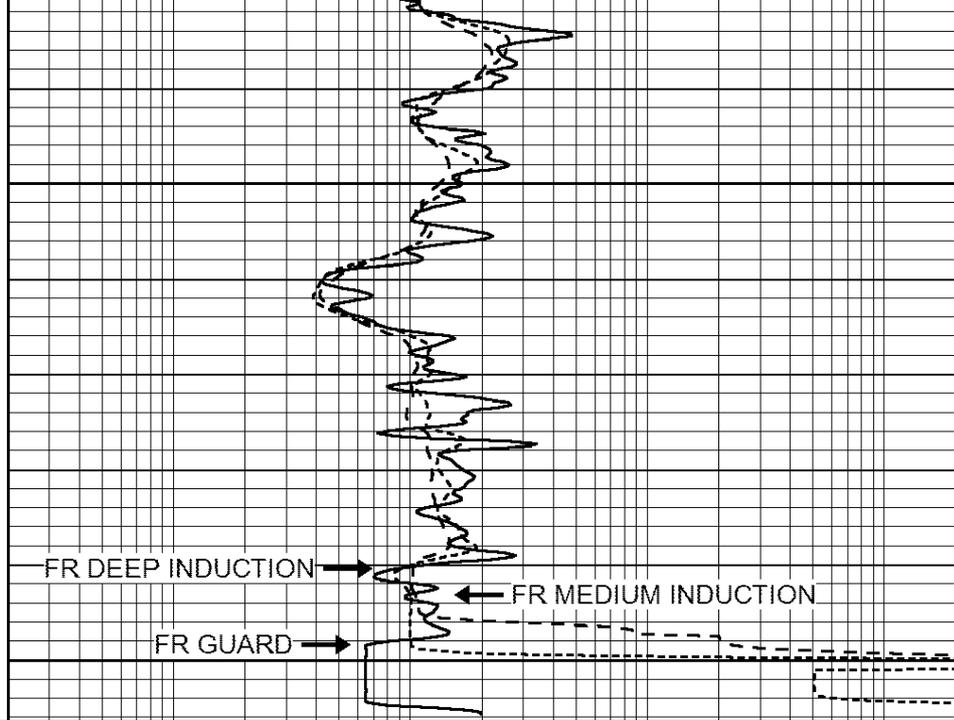




3650

LTD 3700

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

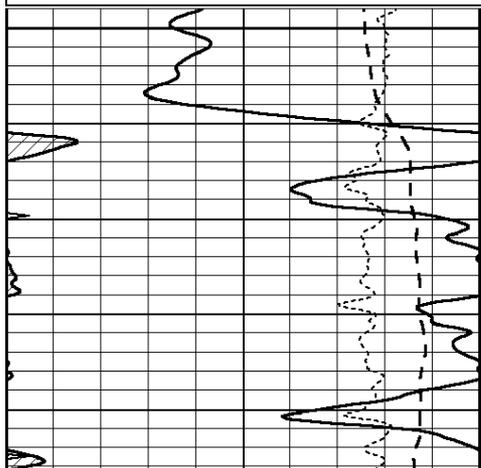


REPEAT SECTION

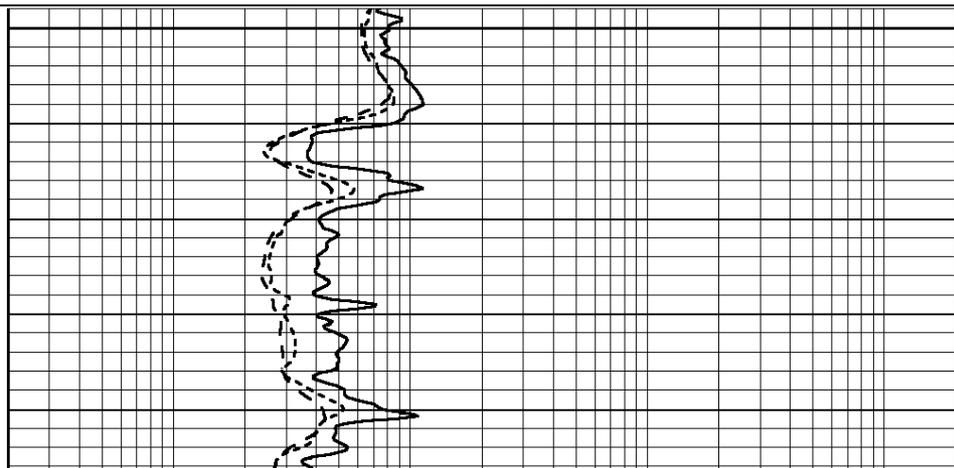
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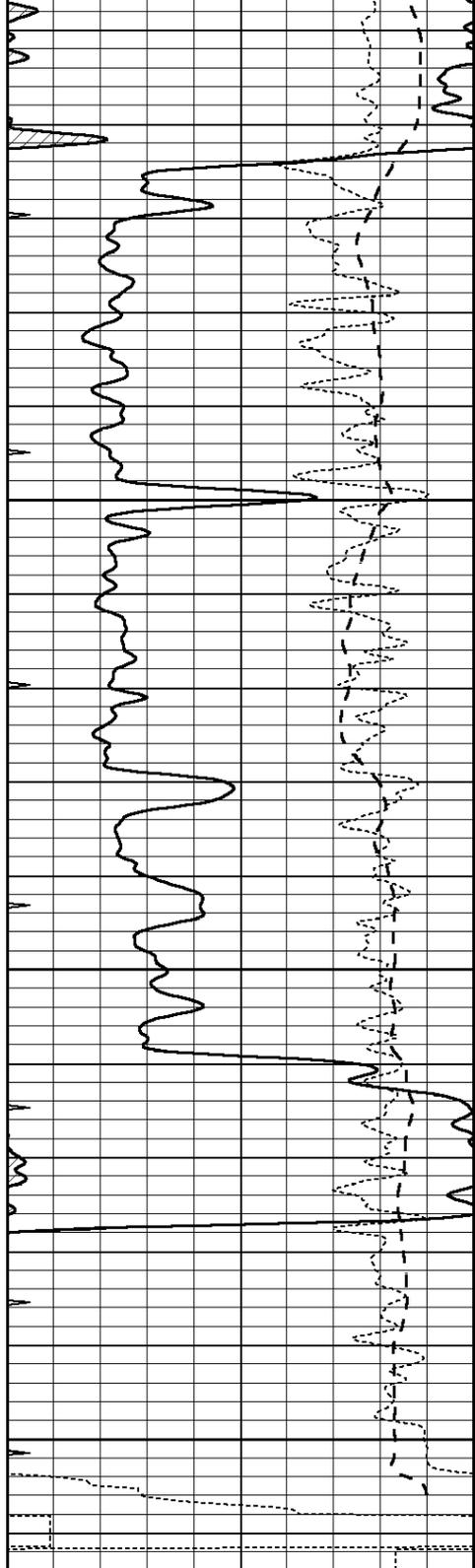
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

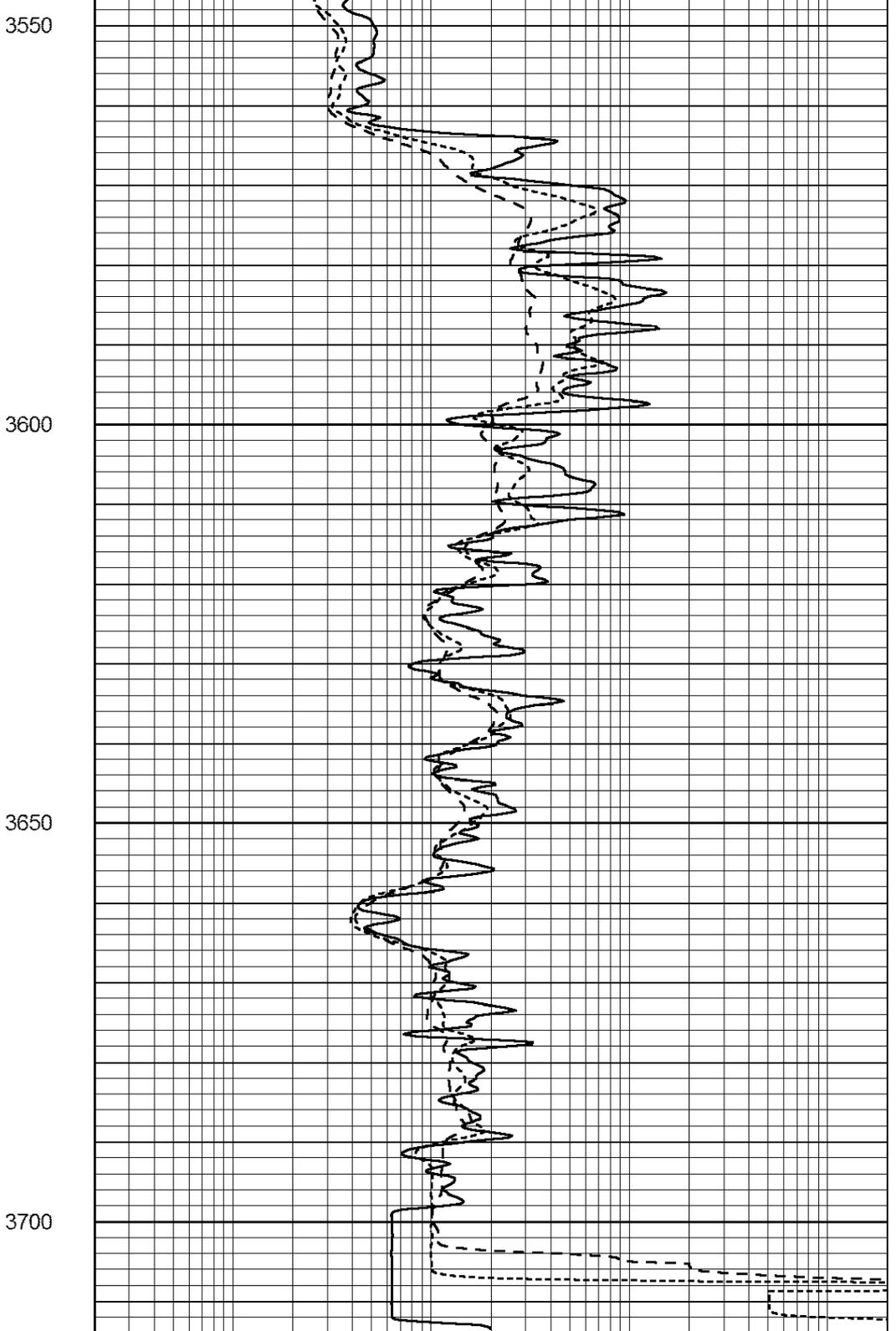


3500





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 26548ddn.db
 Dataset Pathname: pass6.2
 Dataset Creation: Thu Apr 02 17:00:23 2015 by Calc Open-Cased 090629

Serial-Model:
 Surface Cal Performed:
 Downhole Cal Performed:
 After Survey Verification Performed:

PROBE8-DILG
 Sun Aug 17 08:09:53 2014
 Mon Jul 28 11:08:27 2008
 Mon Jul 28 11:08:27 2008

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	-2.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-16.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Compensated Density Calibration Report

Serial-Model:
 Source / Verifier:
 Master Calibration Performed:
 Before Survey Verification Performed:
 After Survey Verification Performed:

GEAR4-GEARHART
 143 / 143
 Wed Sep 18 03:03:09 2013

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1075.98	532.39	cps
Aluminum	2.560	g/cc	286.51	422.88	cps
Spine Angle = 80.13			Density/Spine Ratio = 0.633		
	Size		Reading		
Small Ring	8.00	in	3.21	V	
Large Ring	14.00	in	5.46	V	

Before Survey Verification

Target	Measured
g/cc	g/cc
g/cc	g/cc
g/cc	g/cc

Target

Measured

g/cc
g/cc
g/cc

g/cc
g/cc
g/cc

Compensated Neutron Calibration Report

Serial Number: 6I
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

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
1) Short Space	cps		
Long Space	cps	pu	pu
2) Short Space	cps		
Long Space	cps	pu	
3) Short Space	cps		
Long Space	cps	pu	

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
1) Short Space	cps		
Long Space	cps	pu	pu
2) Short Space	cps		
Long Space	cps	pu	pu
3) Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: GR6
Tool Model: OPEN
Performed: Sun Mar 08 22:55:40 2015

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.8000 GAPI/cps