

HALIBURTON

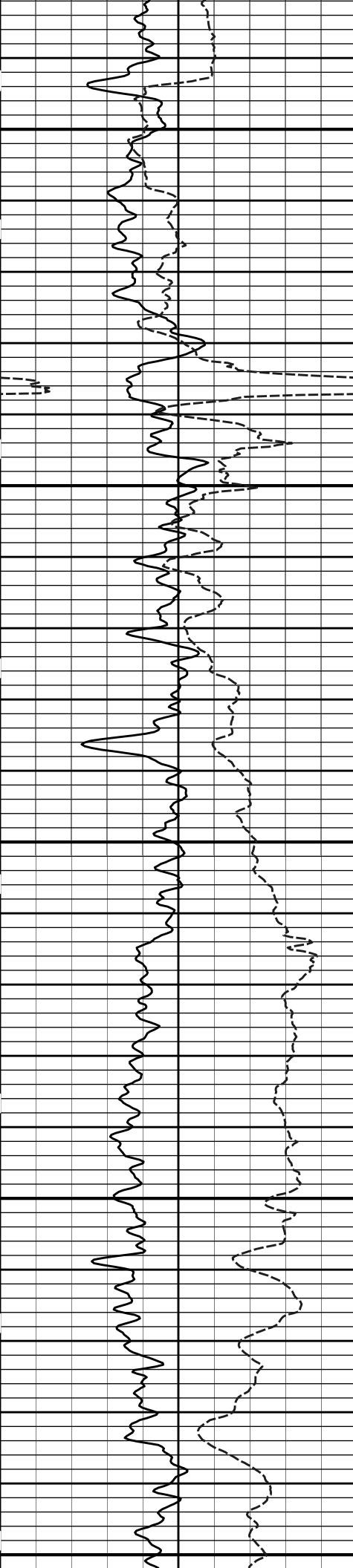
BOREHOLE COMPENSATED
SONIC ARRAY
LOG

HALLIBURTON										BOREHOLE COMPENSATED SONIC ARRAY LOG						
COMPANY					TGT PETROLEUM CORPORATION											
WELL					END WRENCH #5											
FIELD					EINSEL											
COUNTY					KIOWA											
STATE					KANSAS											
API No.					15-097-21737					Other Services: DSN/SDL MICROLOG ACRT BSAT XRMI						
Location					(SHL) 978' FSL & 1316' FEL SW NW SE SE											
Sect.					25		Twp.		27S		Rge.		19W			
Permanent Datum					GL						Elev.: K.B.		2216.0 ft			
Log measured from					KB						D.F.		2215.0 ft			
Drilling measured from					KB						G.L.		2206.0 ft			
Date					27-Nov-12											
Run No.					ONE											
Depth - Driller					4940.00 ft											
Depth - Logger					4930.0 ft											
Bottom - Logged Interval					4878											
Top - Logged Interval					479											
Casing - Driller					8.625 in @ 477.0 ft											
Casing - Logger					479.0 ft											
Bit Size					7.875 in											
Type Fluid in Hole					WATER BASED MUD											
Density					Viscosity		9.5 ppg		75.00 s/qt							
PH					Fluid Loss		10.50 pH		12.8 cpm							
Source of Sample					MUD PIT											
Rm @ Meas. Temperature					0.400 ohmm @ 82.00 degF											
Rmf @ Meas. Temperature					0.34 ohmm @ 82.00 degF											
Rmc @ Meas. Temperature					0.460 ohmm @ 82.00 degF											
Source Rmf					Rmc		CALCULATED		CALCULATED							
Rm @ BHT					0.28 ohmm @ 120.0 degF											
Time Since Circulation					5.5 hr											
Time on Bottom					27-Nov-12 17:52											
Max. Rec. Temperature					120.0 degF @ 4930.0 ft											
Equipment					Location		10800785		LIBERAL							
Recorded By					S. INGERSOLL											
Witnessed By					J. CHRISTIAN											

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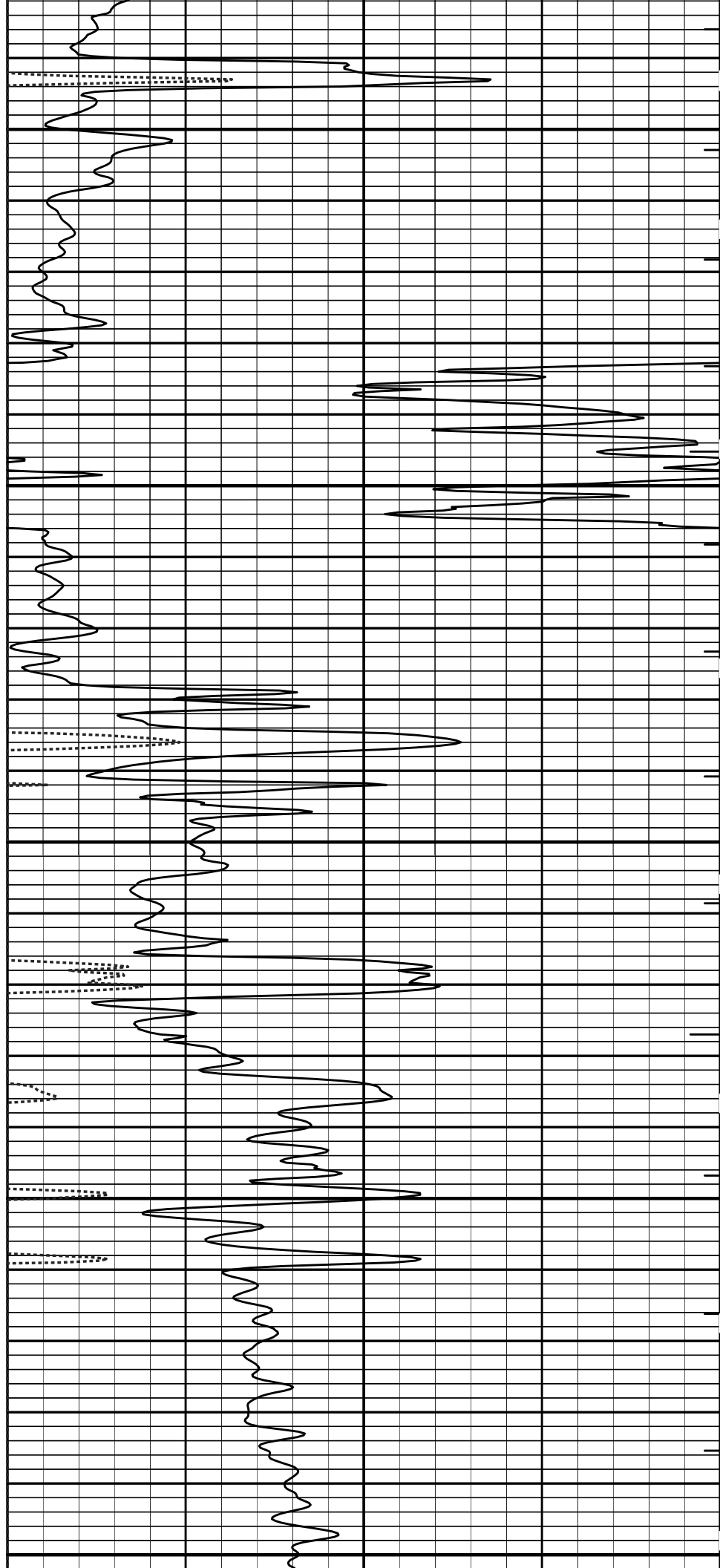
Service Ticket No.: 900033352						API Serial No.: 15-097-21737						PGM Version: WL INSITE R3.6.0 (Build 3)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole									
Depth-Driller																													
Type Fluid in Hole																													
Density		Viscosity																											
Ph		Fluid Loss																											
Source of Sample												RESISTIVITY EQUIPMENT DATA																	
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.				Pad Type				Tool Pos.				Other			
Rmf @ Meas. Temp.				@				@				ONE		ACRT				N/A				CENT.							
Rmc @ Meas. Temp.				@				@						10929775															
Source Rmf		Rmc																											
Rm @ BHT				@				@																					
Rmf @ BHT				@				@																					
Rmc @ BHT				@				@																					
EQUIPMENT DATA																													
GAMMA						ACOUSTIC						DENSITY						NEUTRON											
Run No.		ONE				Run No.		ONE				Run No.		ONE				Run No.		ONE									
Serial No.		10811258				Serial No.		10747683				Serial No.		10950489				Serial No.		10755066									
Model No.		GTET				Model No.		BSAT				Model No.		SDLT				Model No.		DSNT									
Diameter		3.625"				No. of Cent.		2				Diameter		4.5"				Diameter		3.625"									
Detector Model No.		GTET				Spacing		.5'				Log Type		GAM-GAM				Log Type		NEU-NEU									
Type		SCINT										Source Type		CS-137				Source Type		AM-241BE									
Length		8"				LSA [Y/N]						Serial No.						Serial No.											
Distance to Source						FWDA [Y/N]						Strength		1.5 CI				Strength		15 CI									

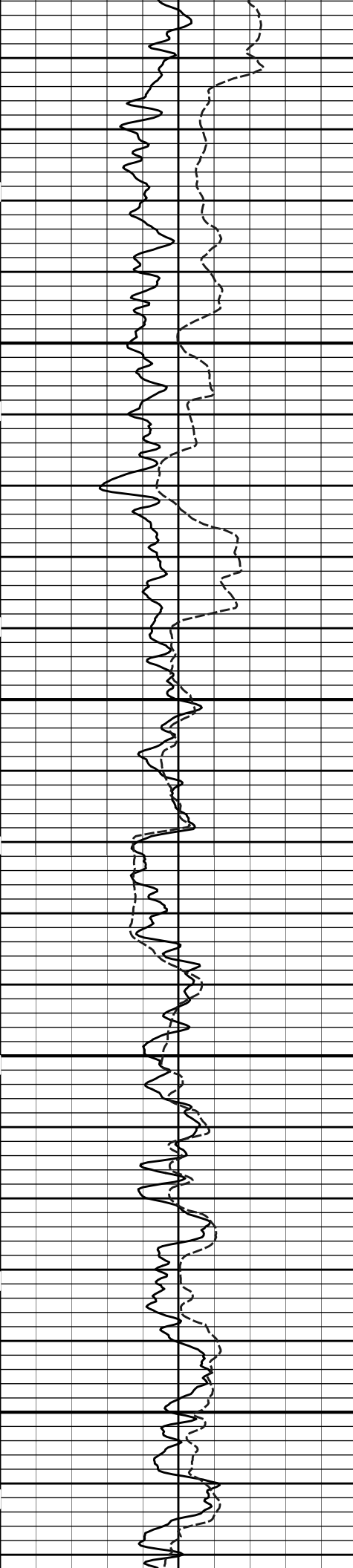
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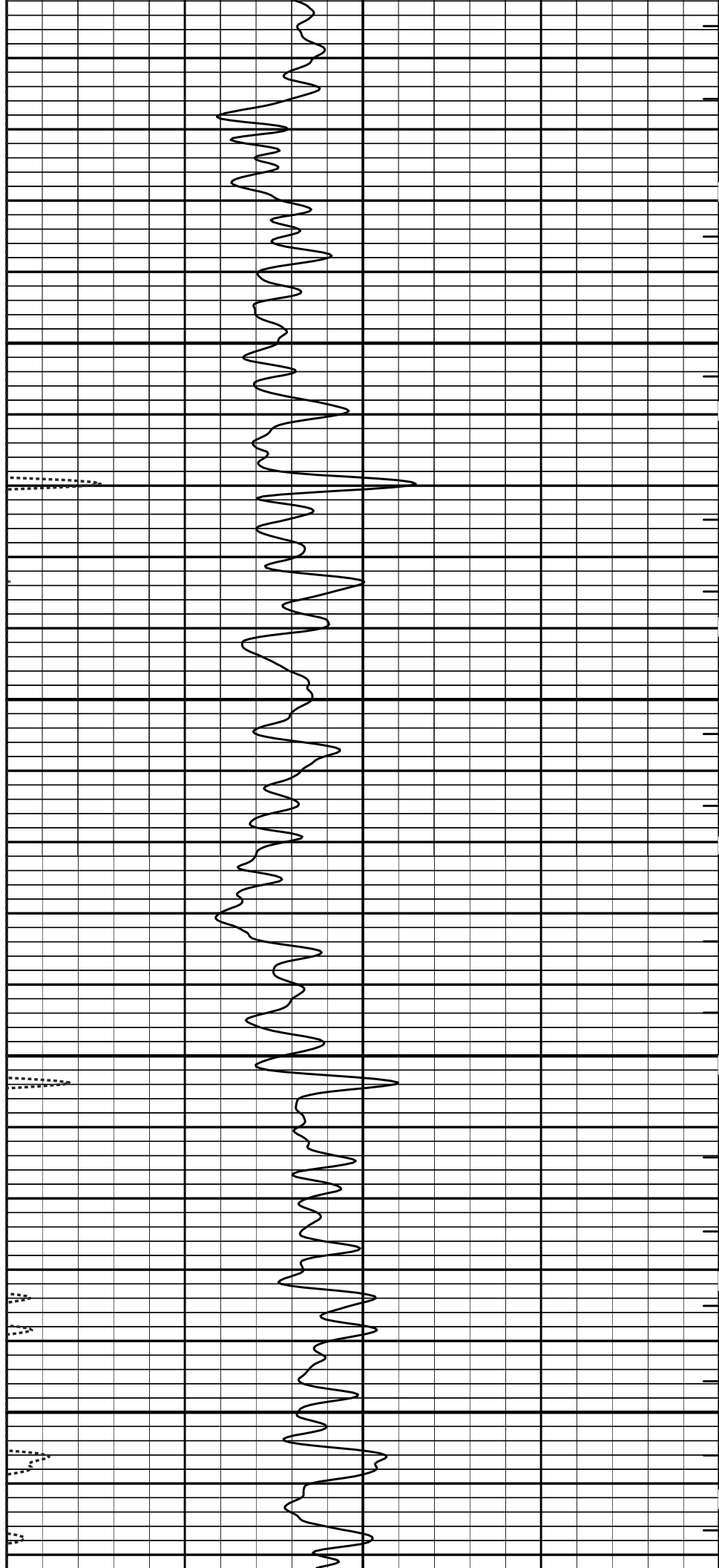
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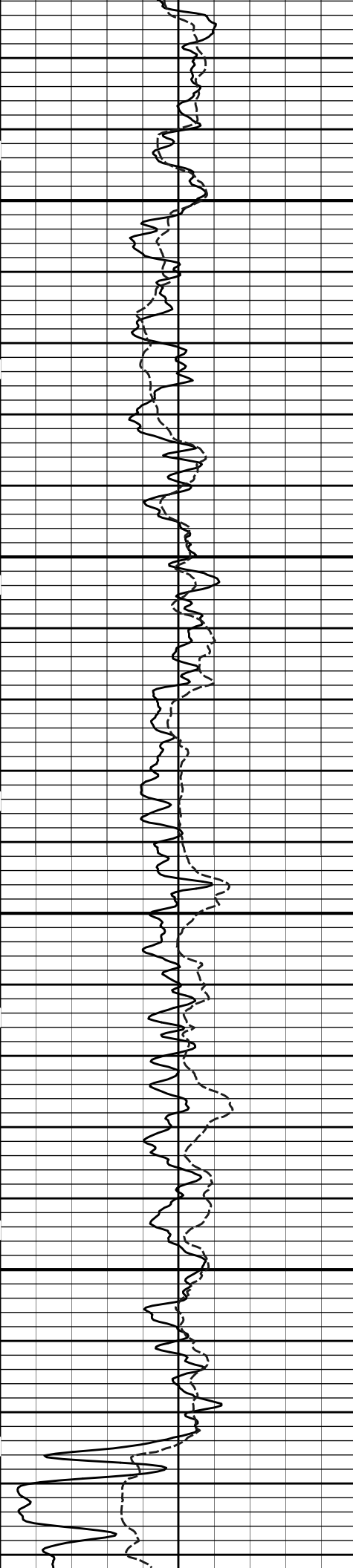




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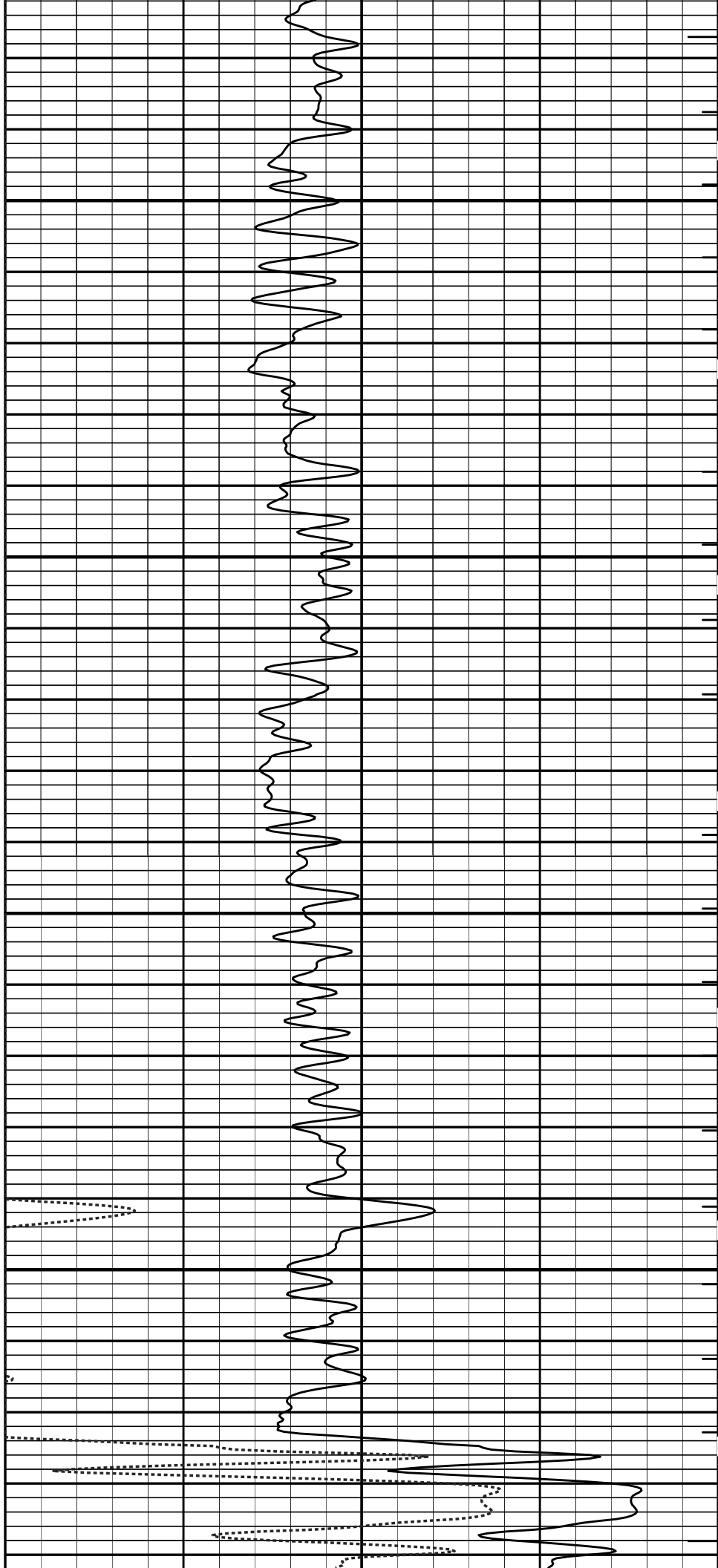
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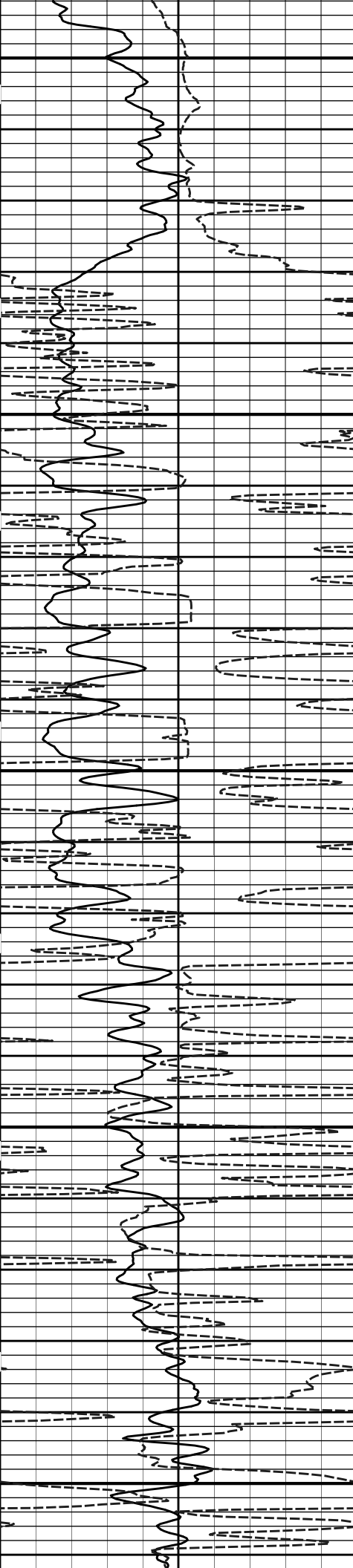




1000

1100

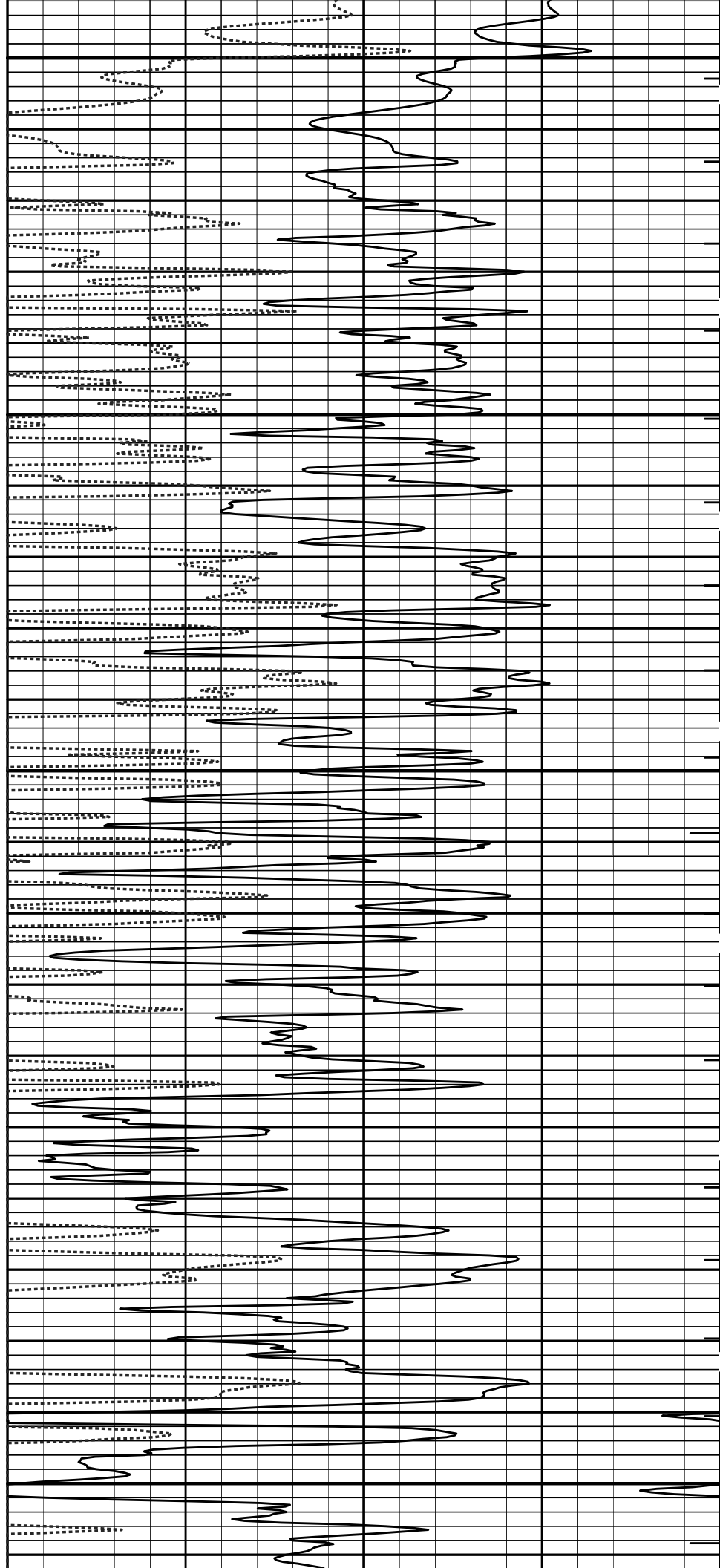


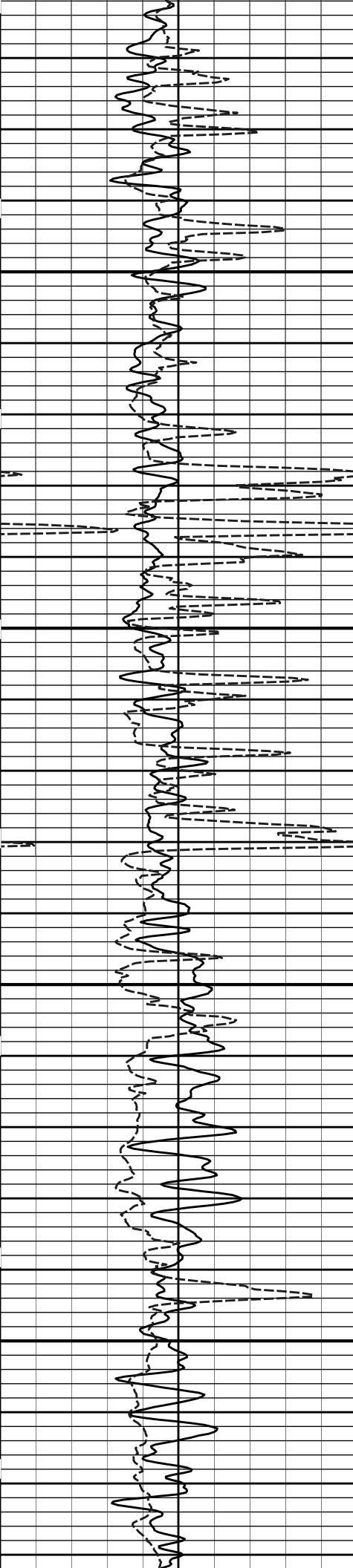


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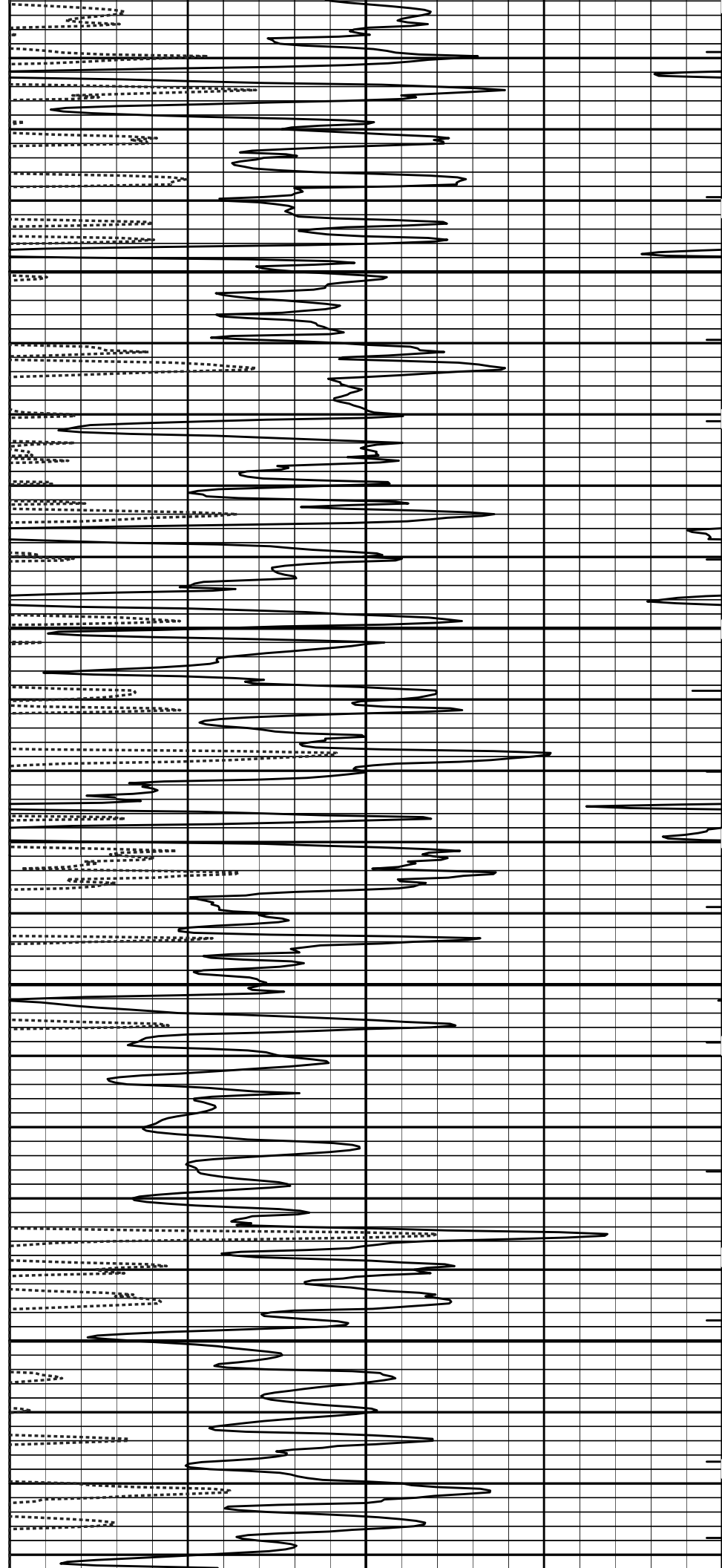
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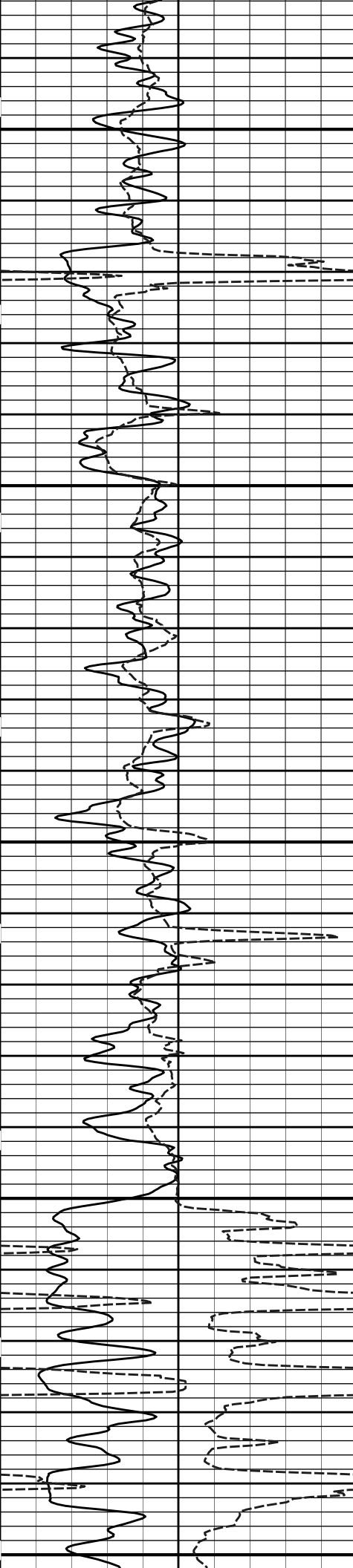




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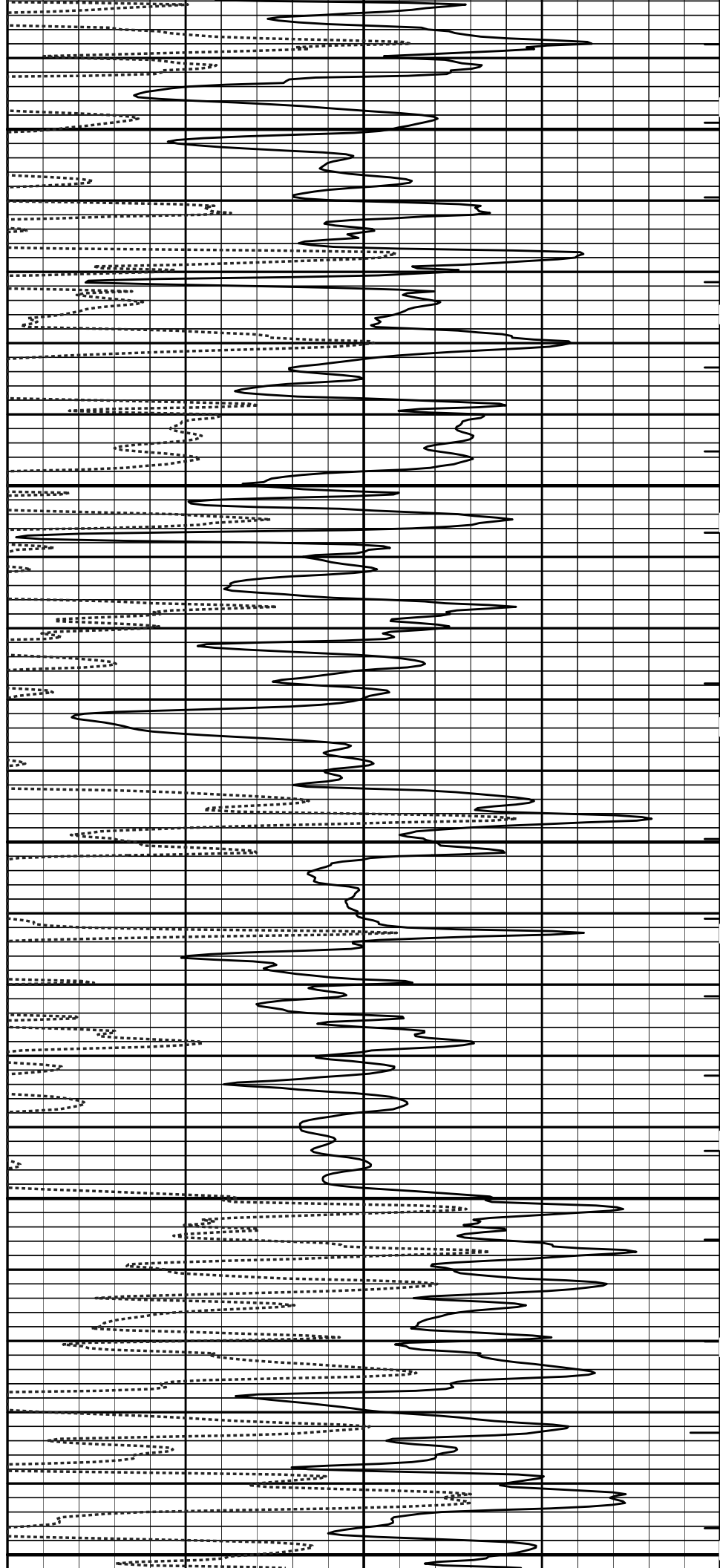
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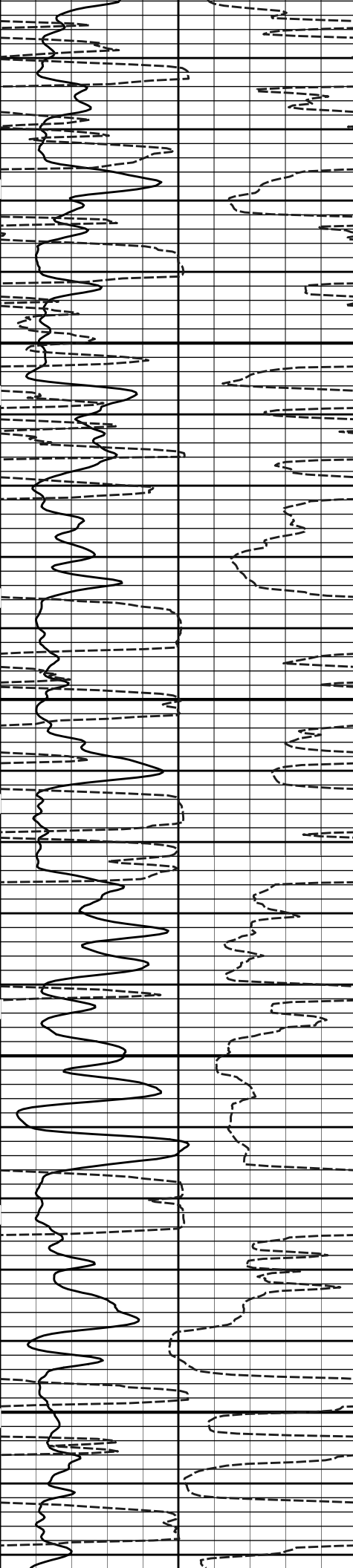




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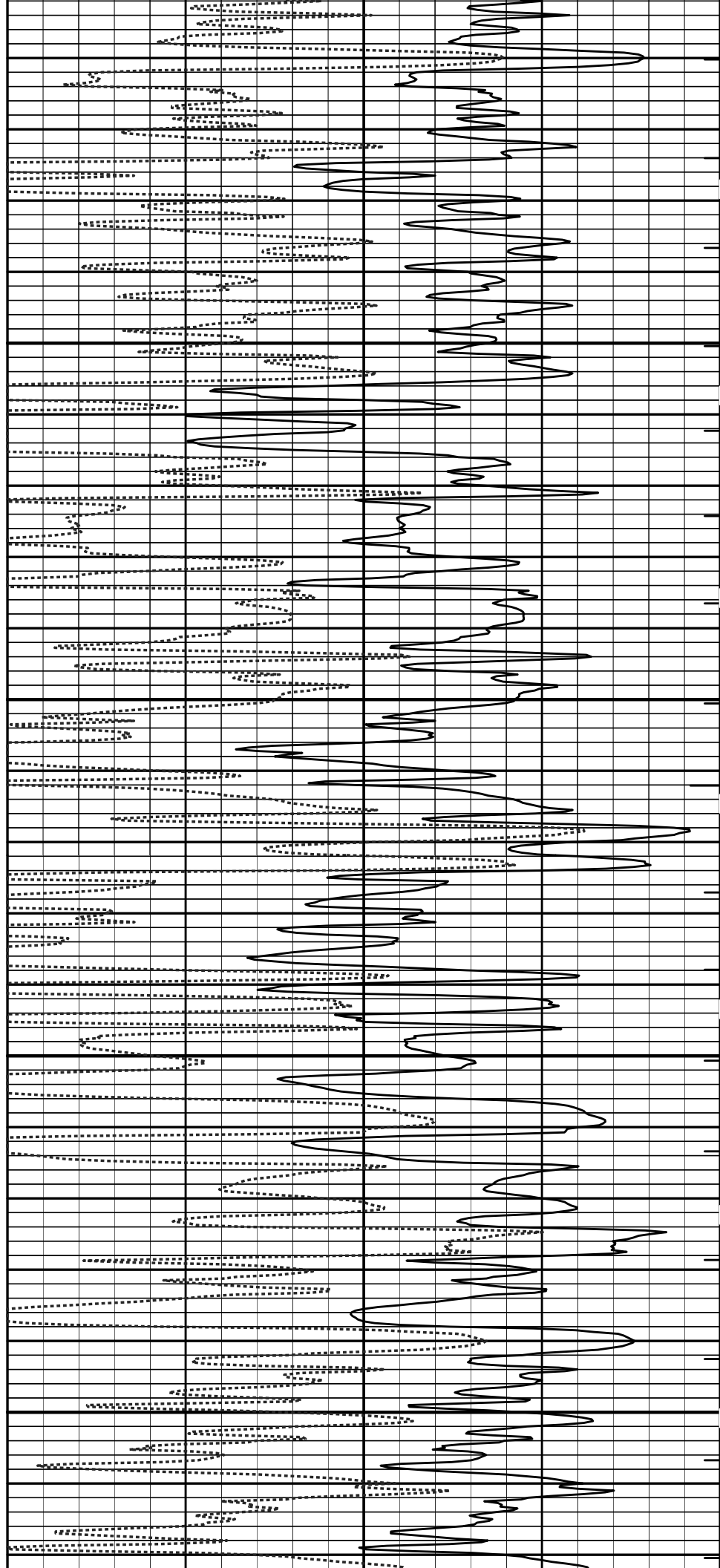
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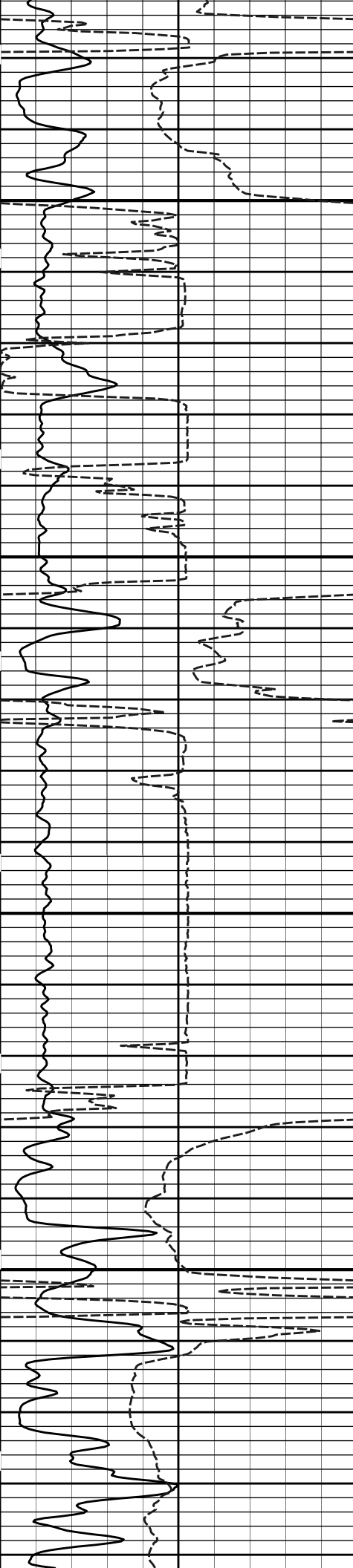




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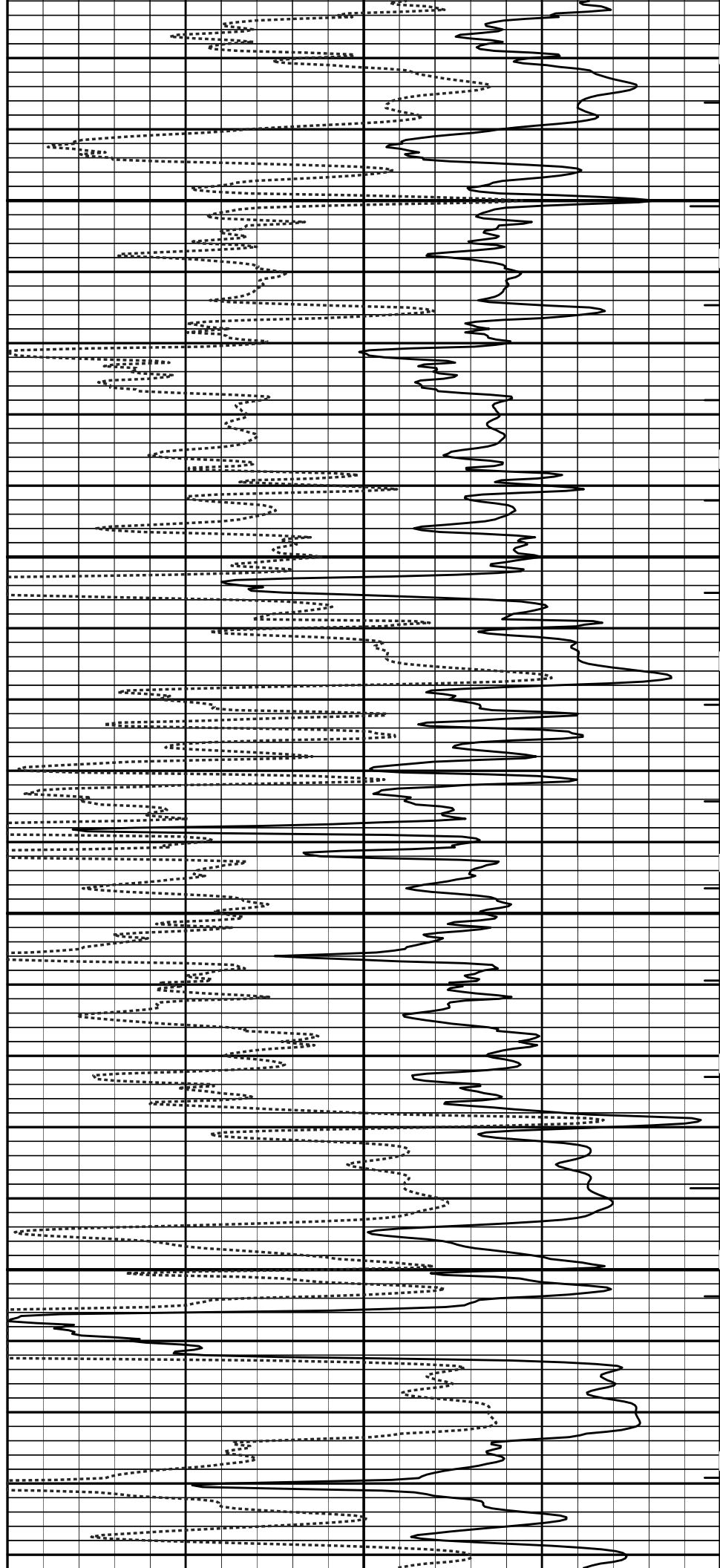
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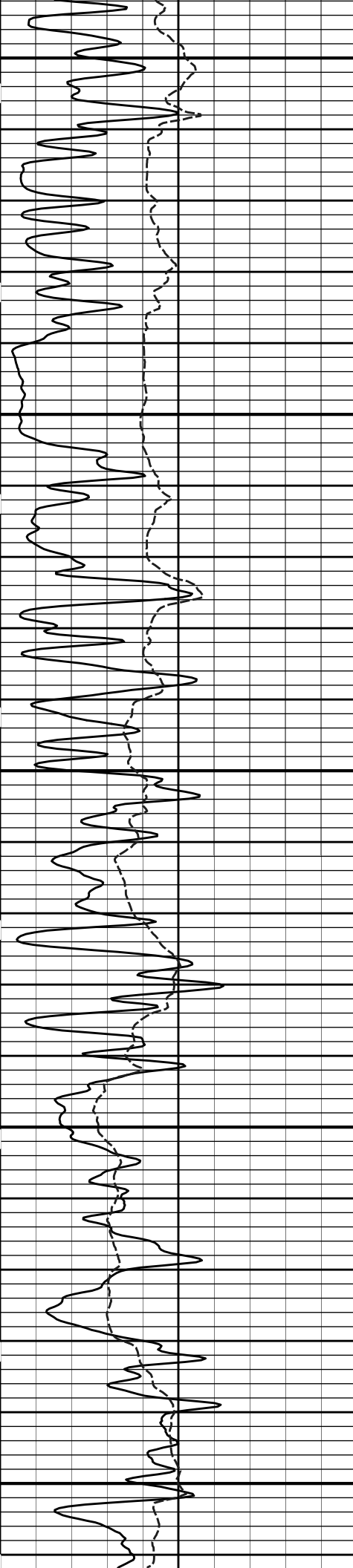




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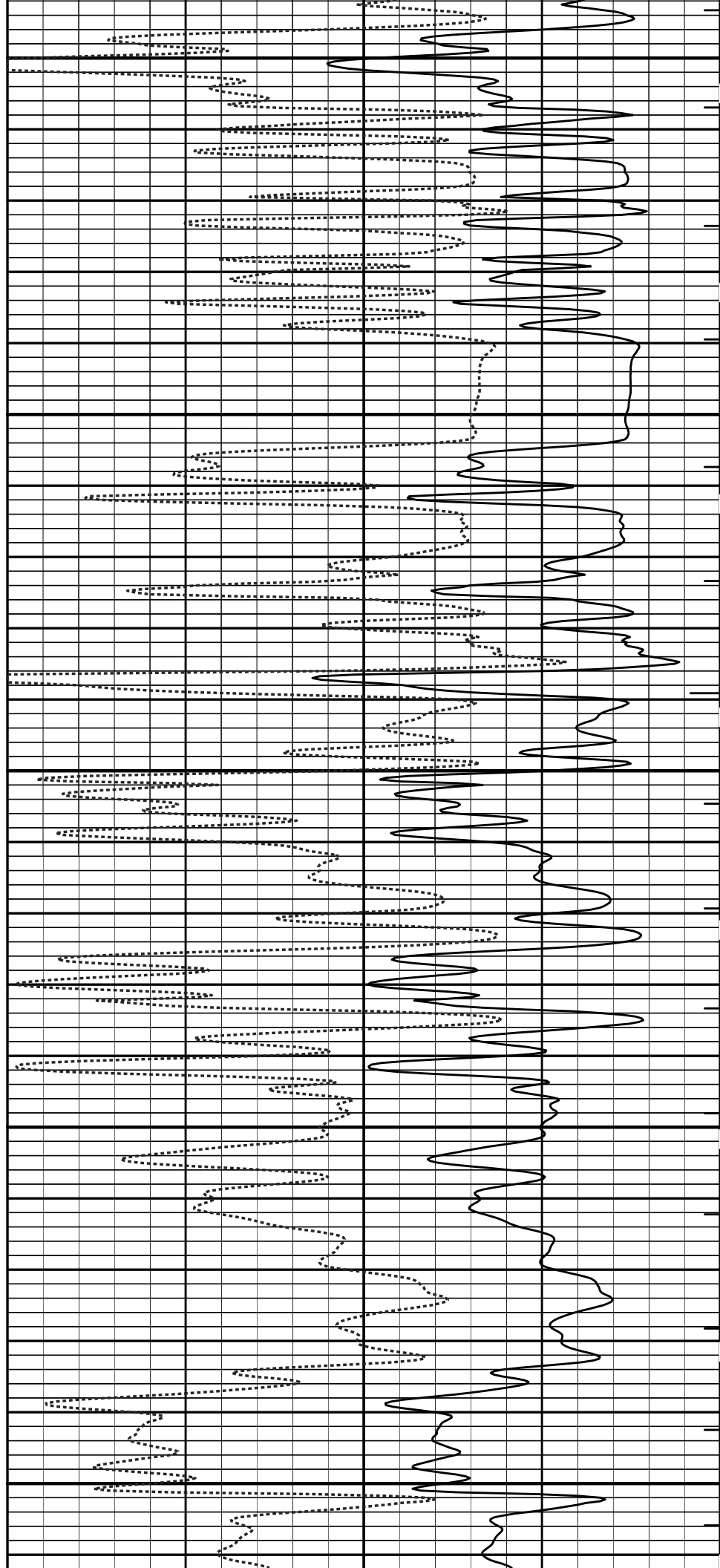


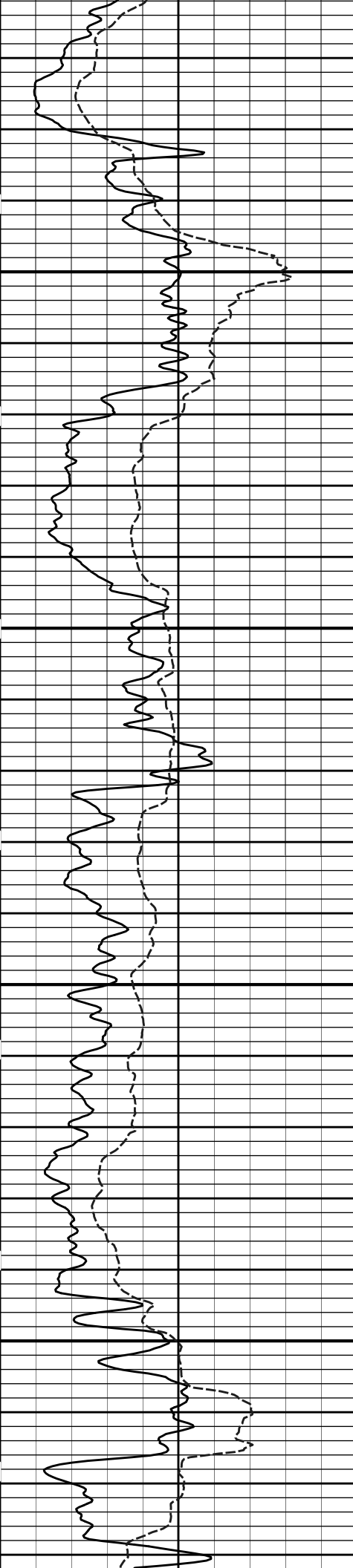


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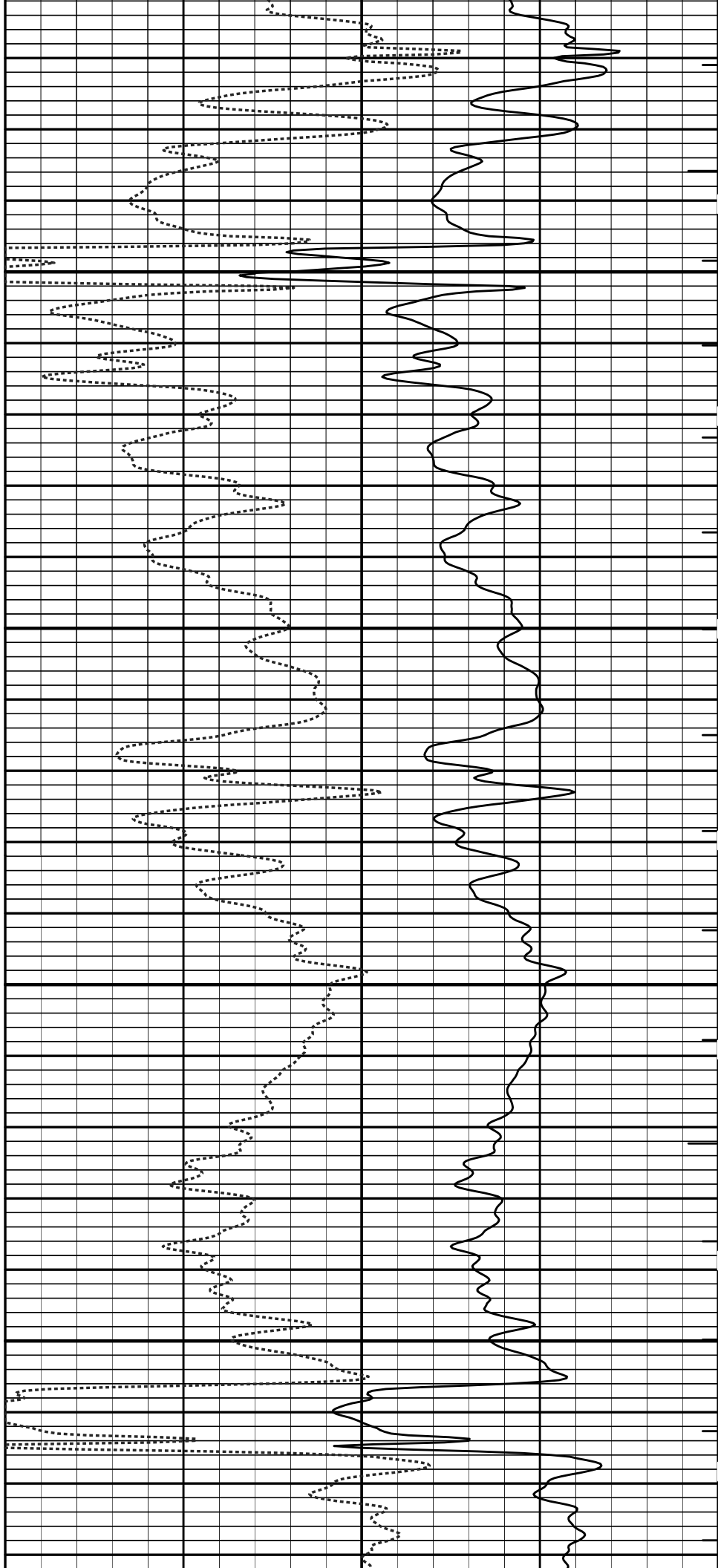
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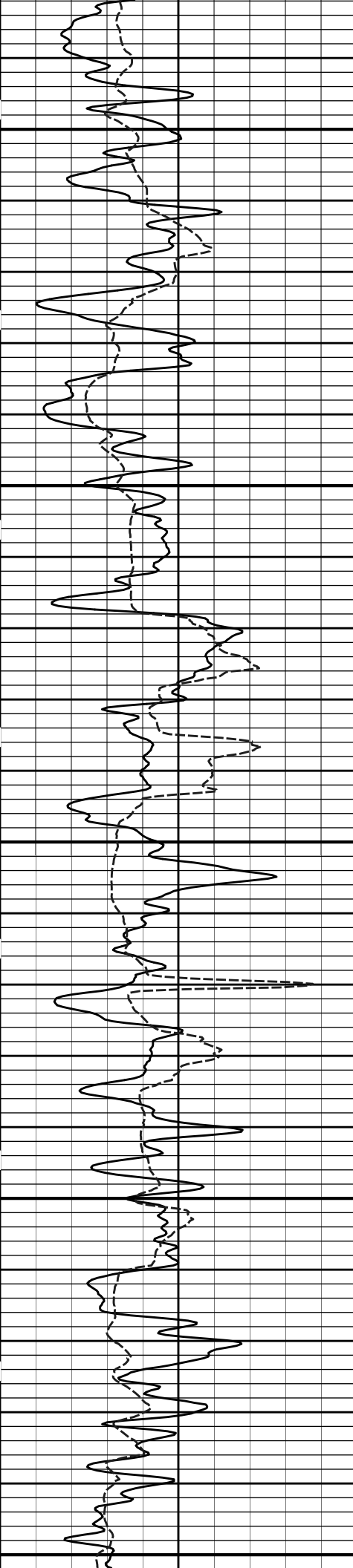




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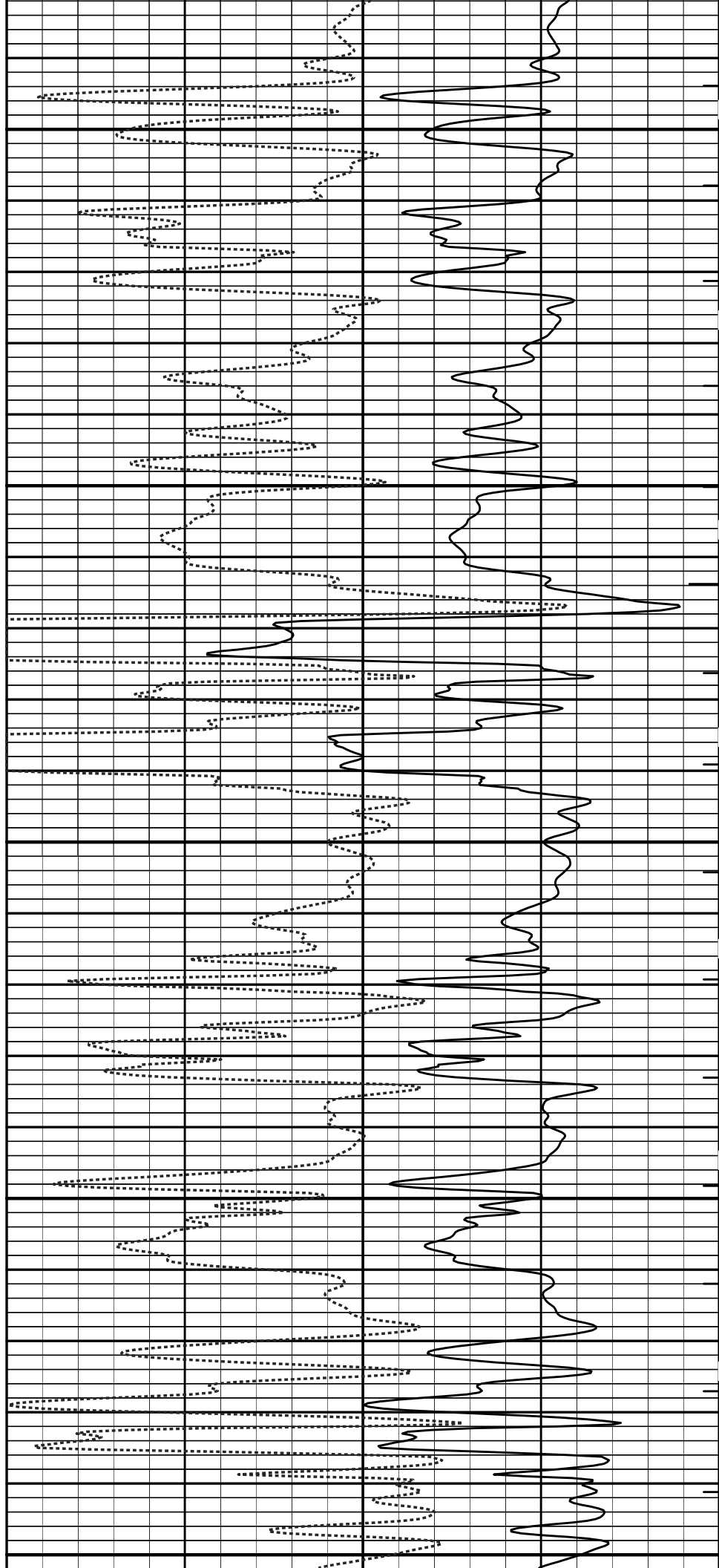
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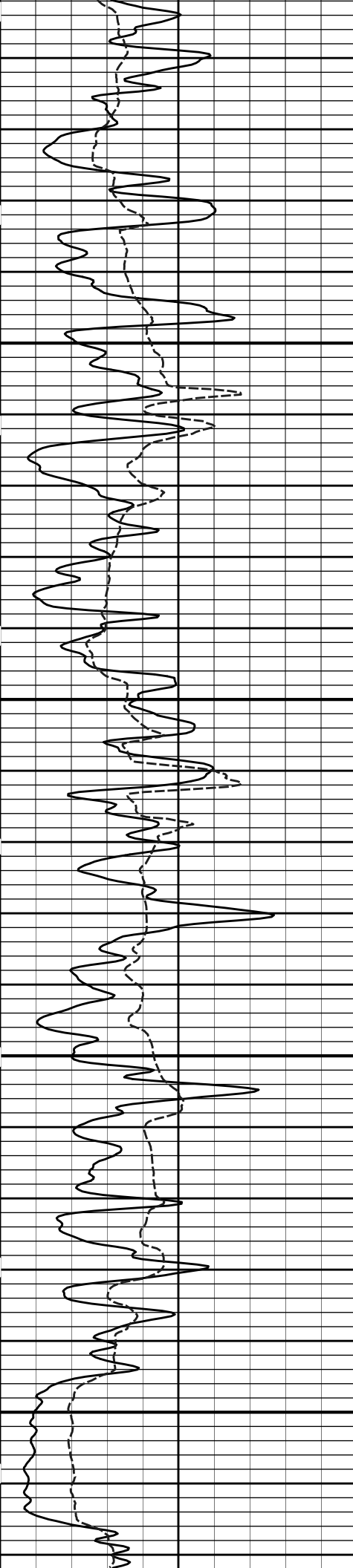




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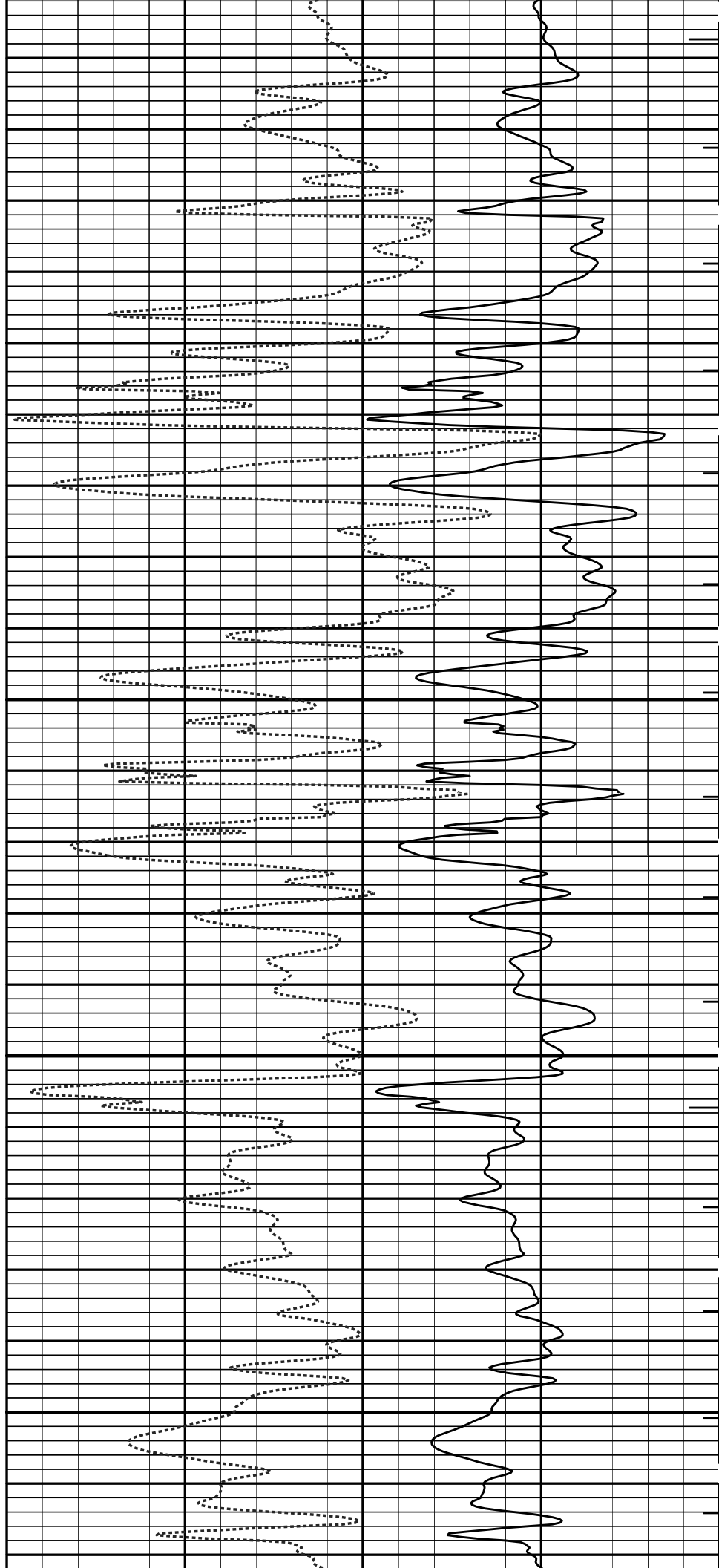
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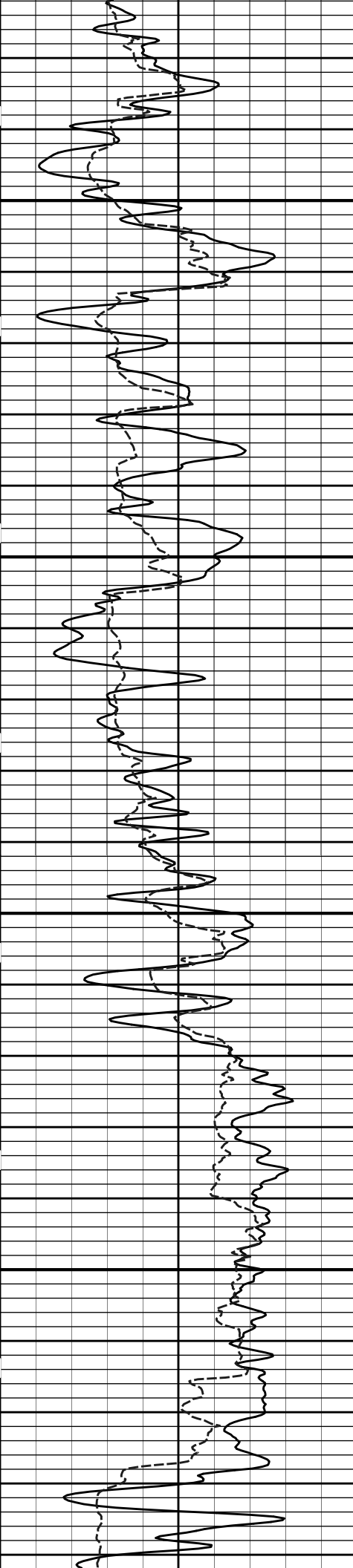




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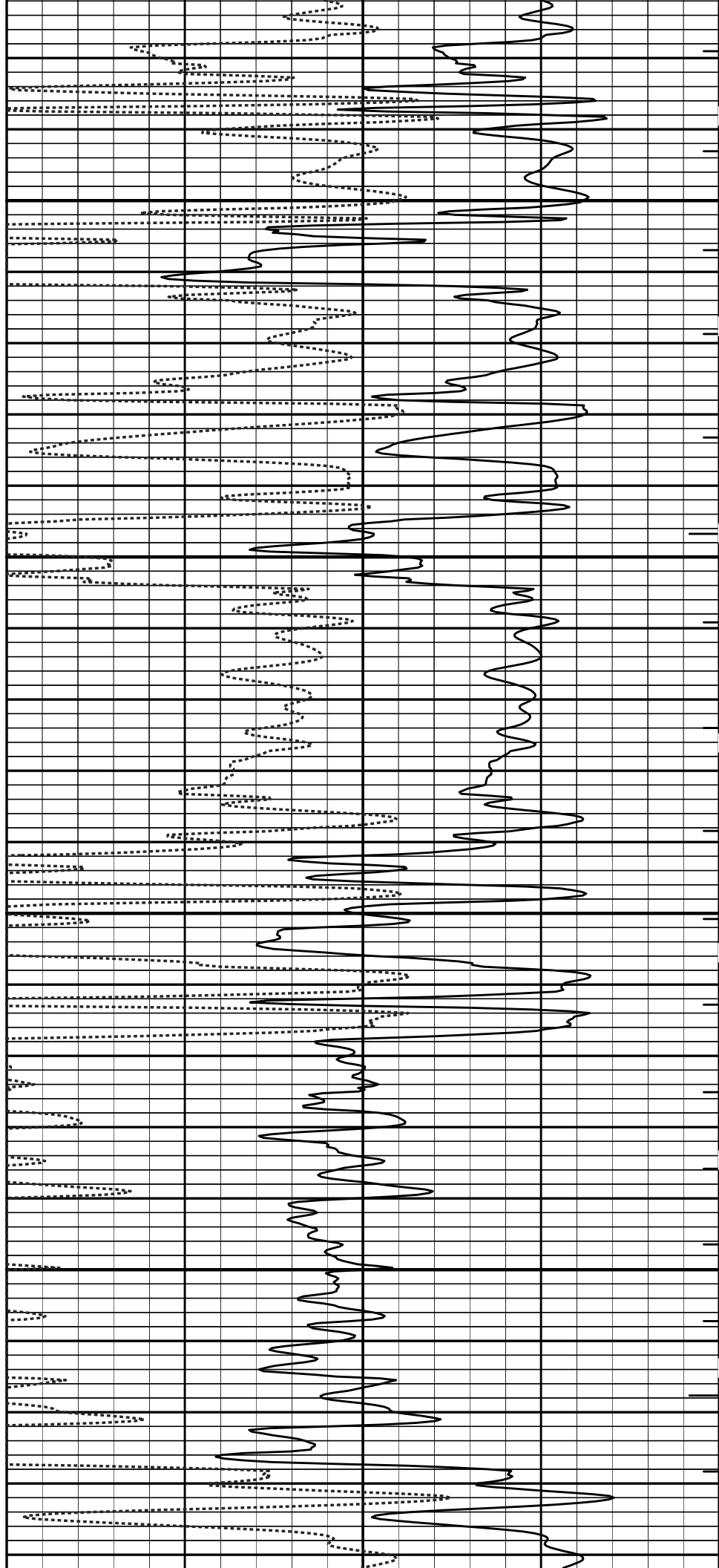
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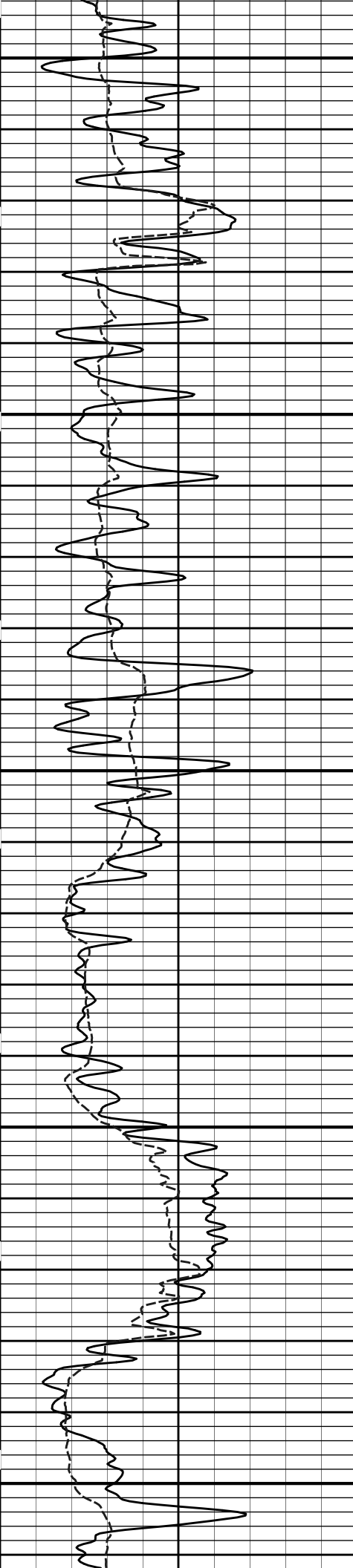




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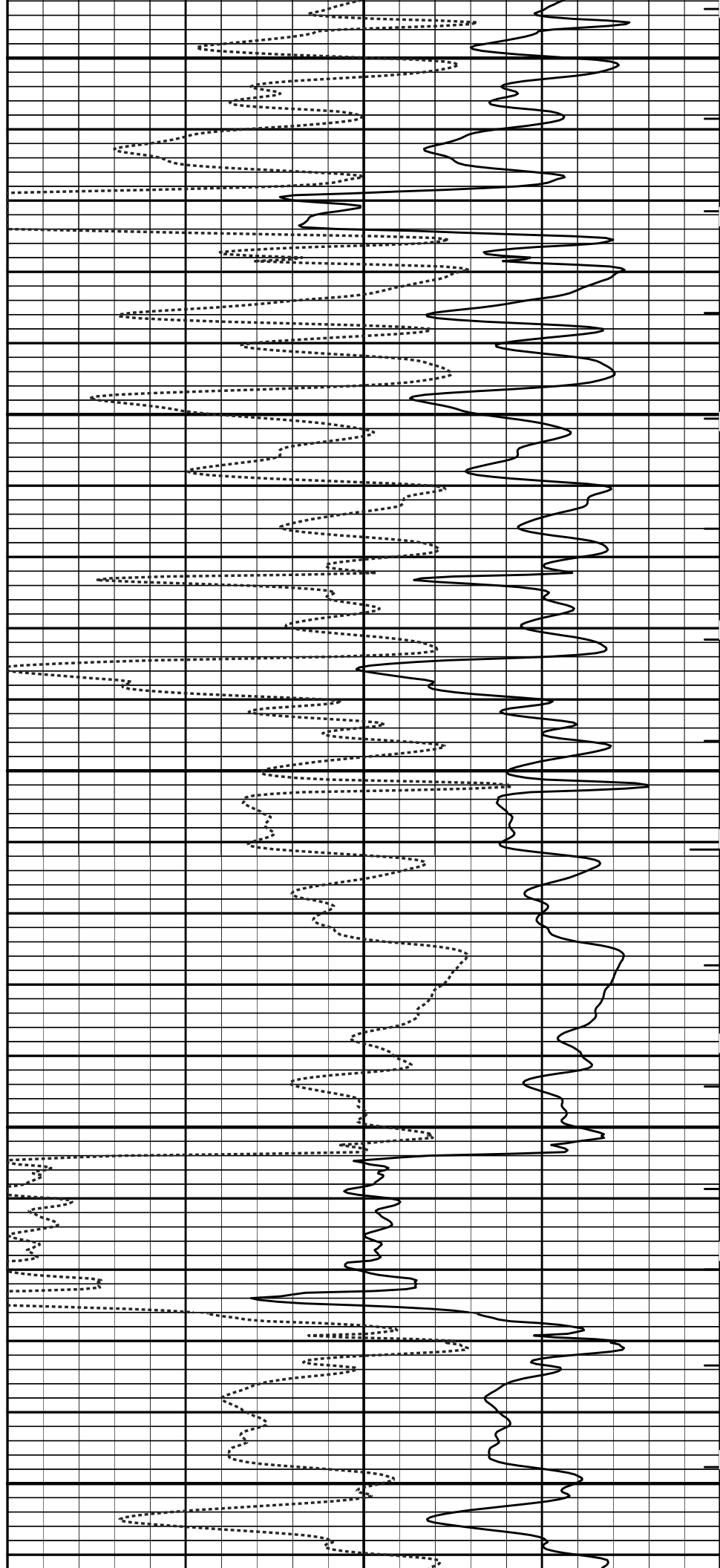


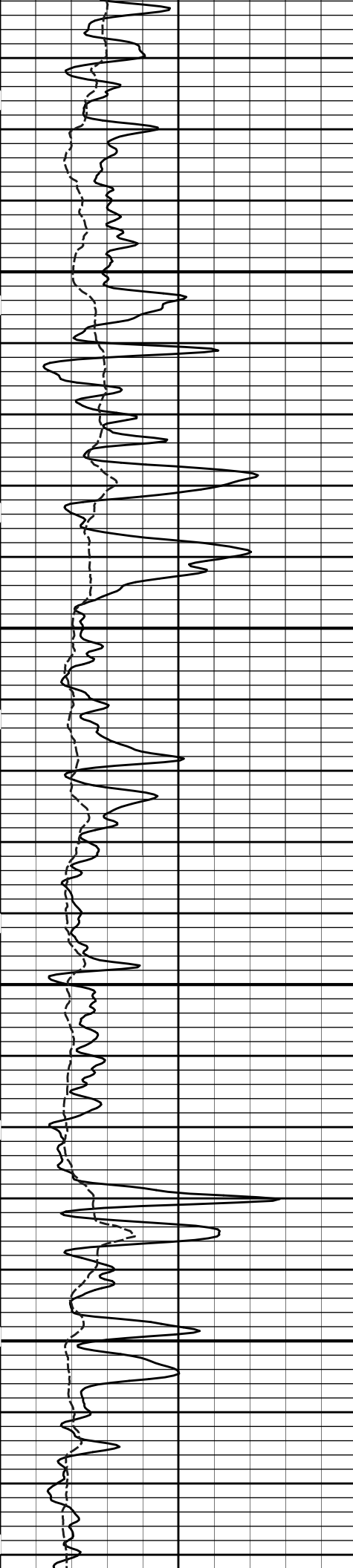


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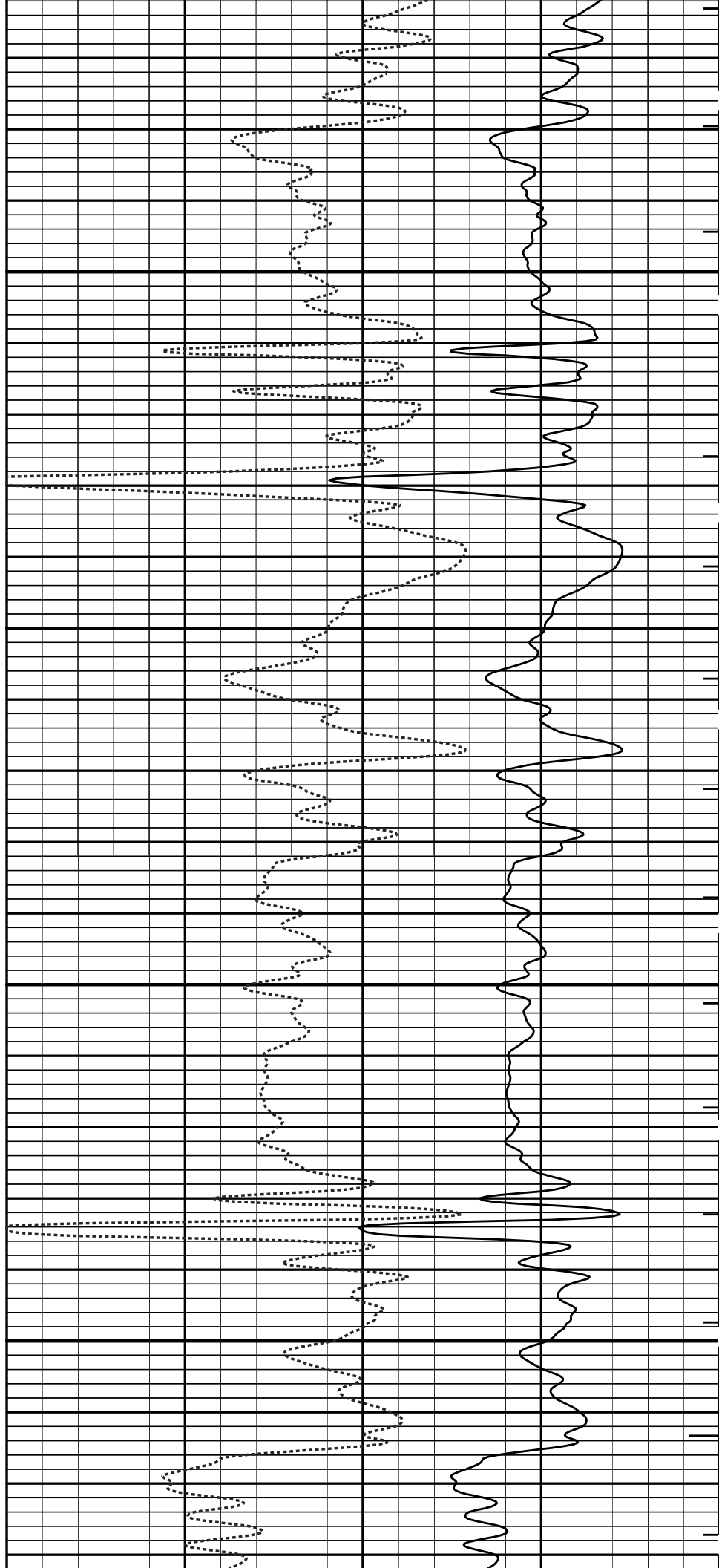
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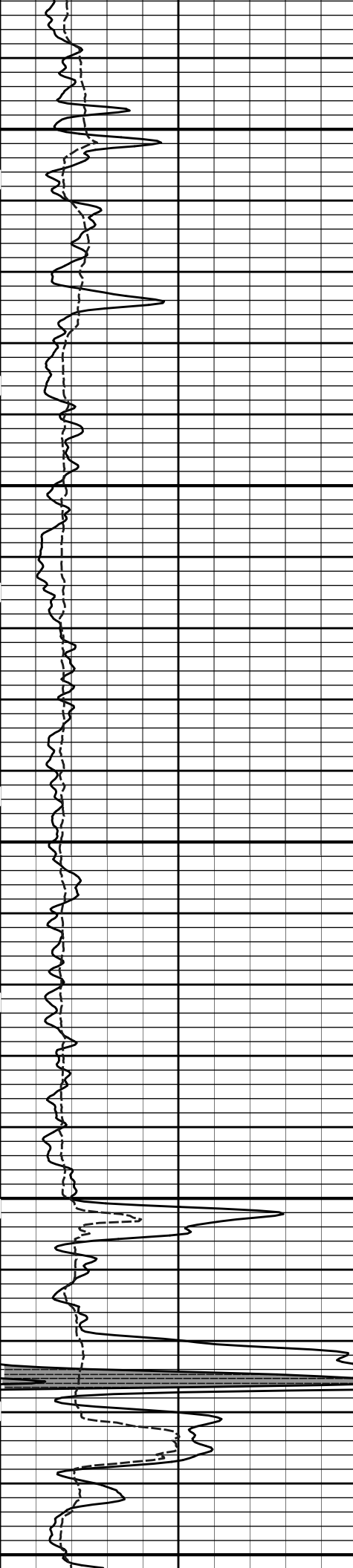




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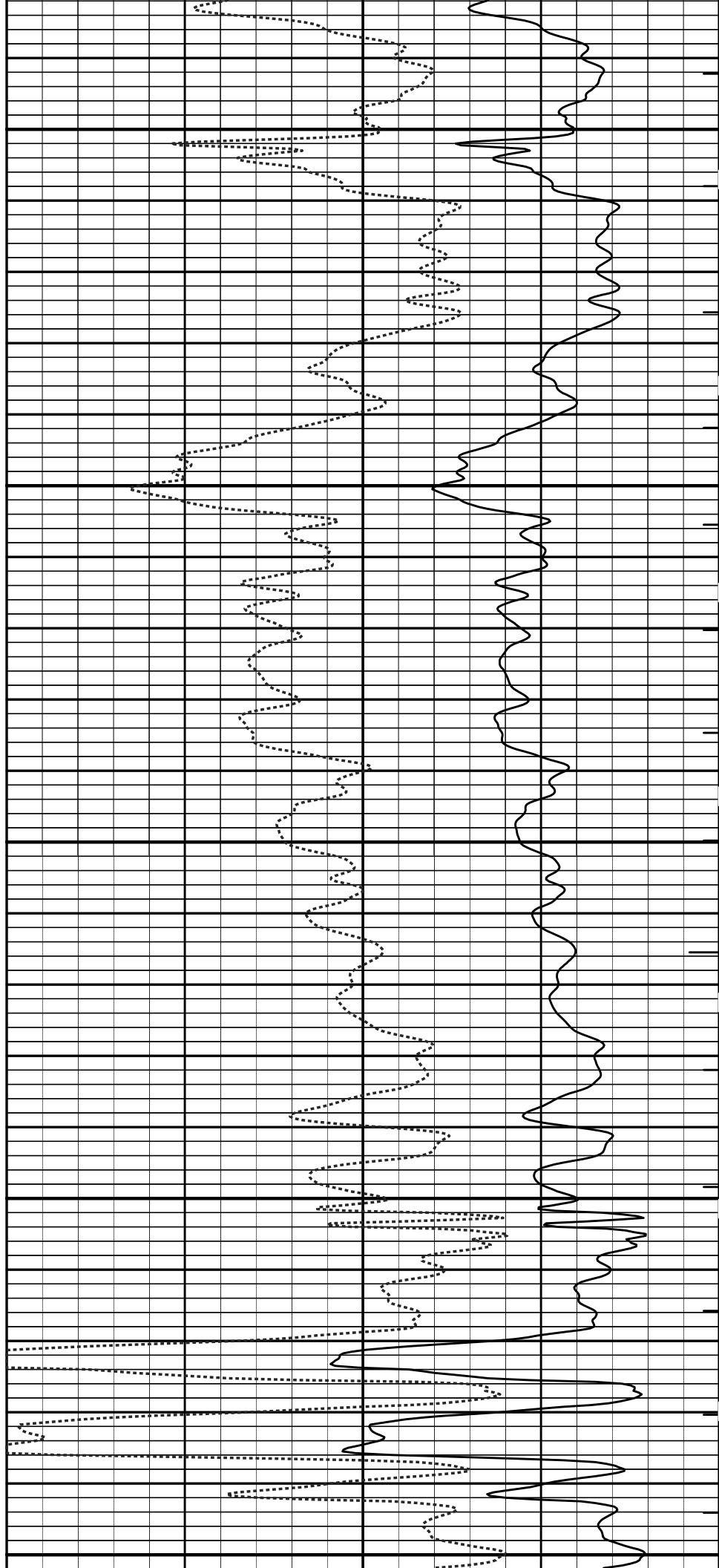
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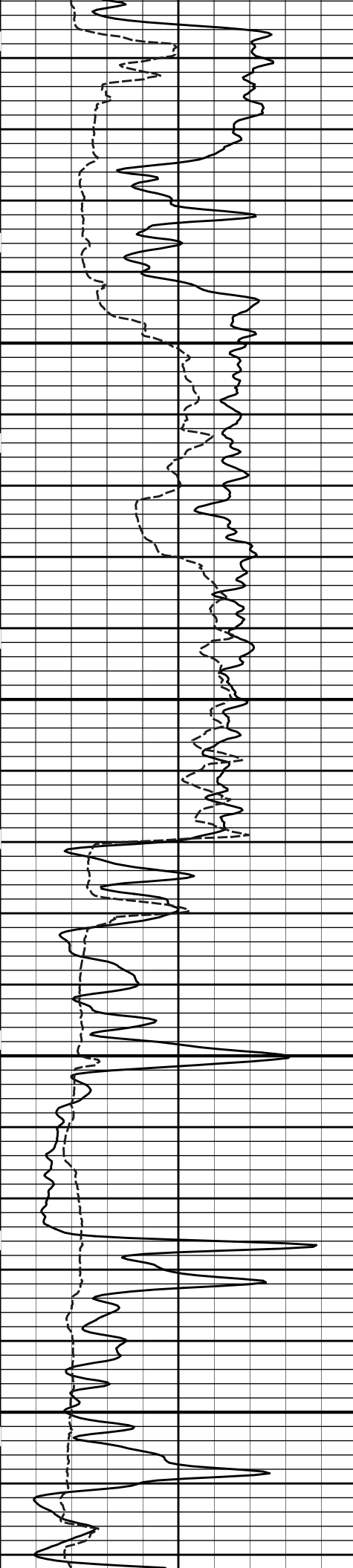




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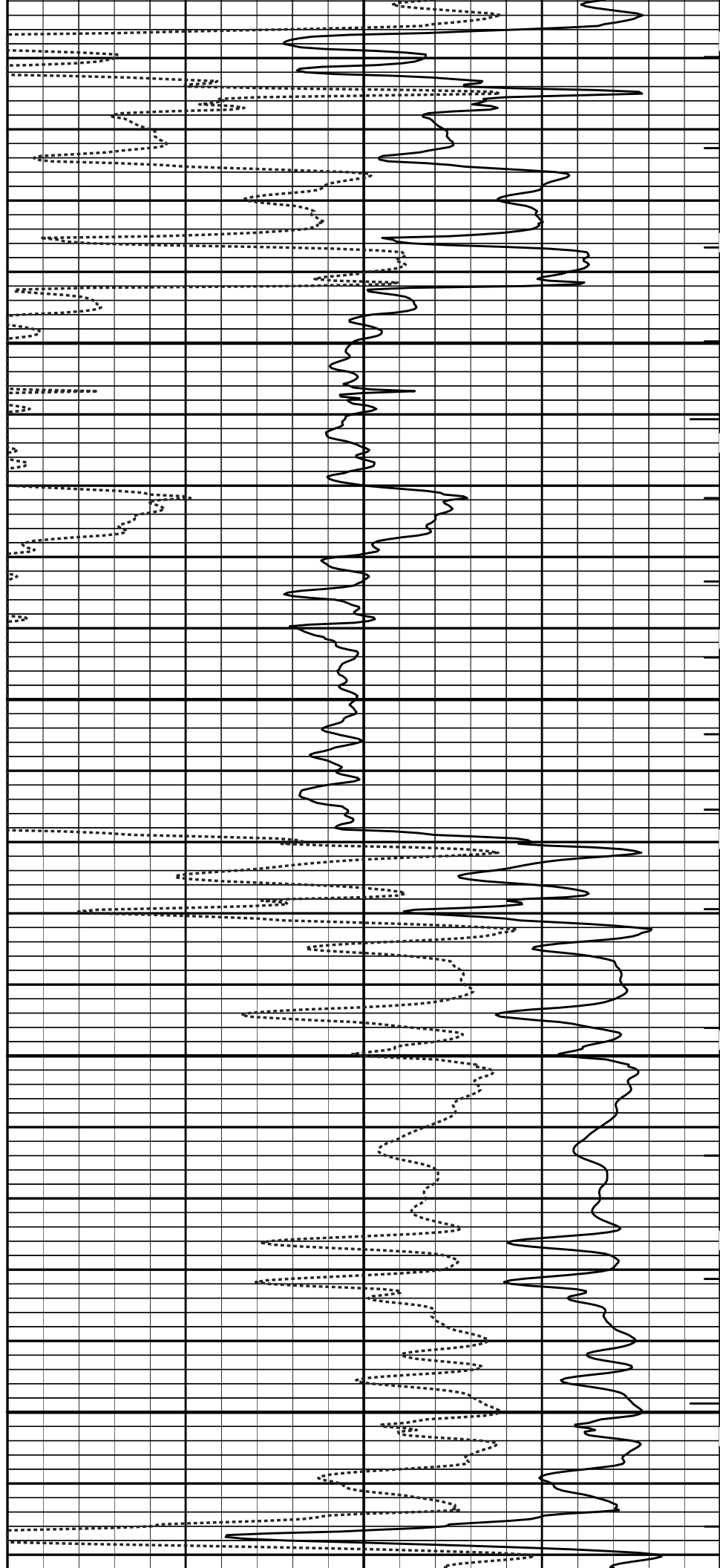
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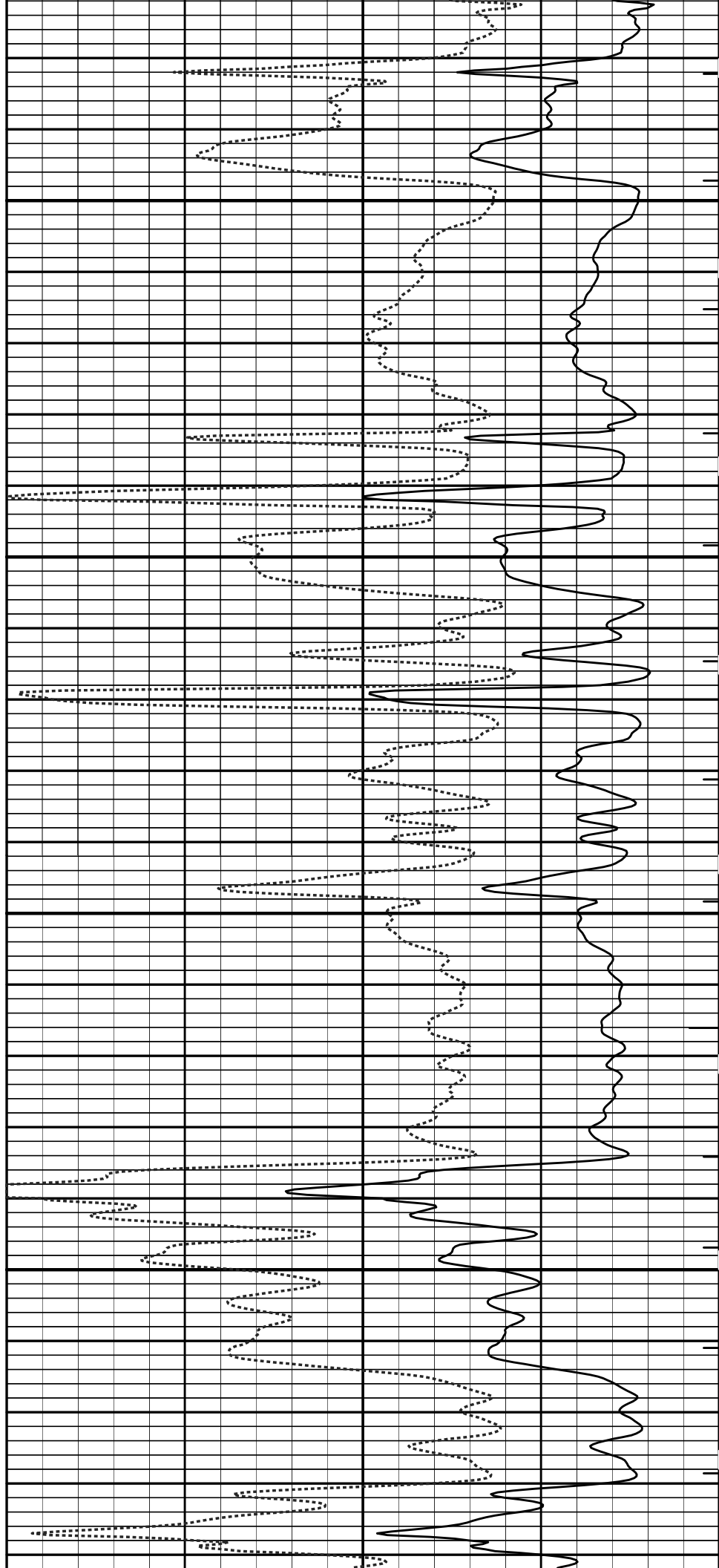
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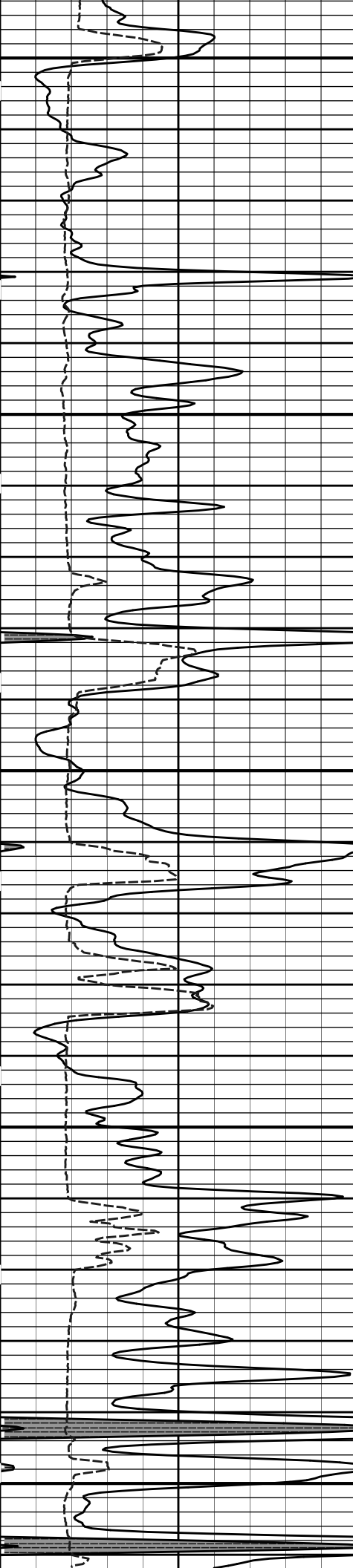




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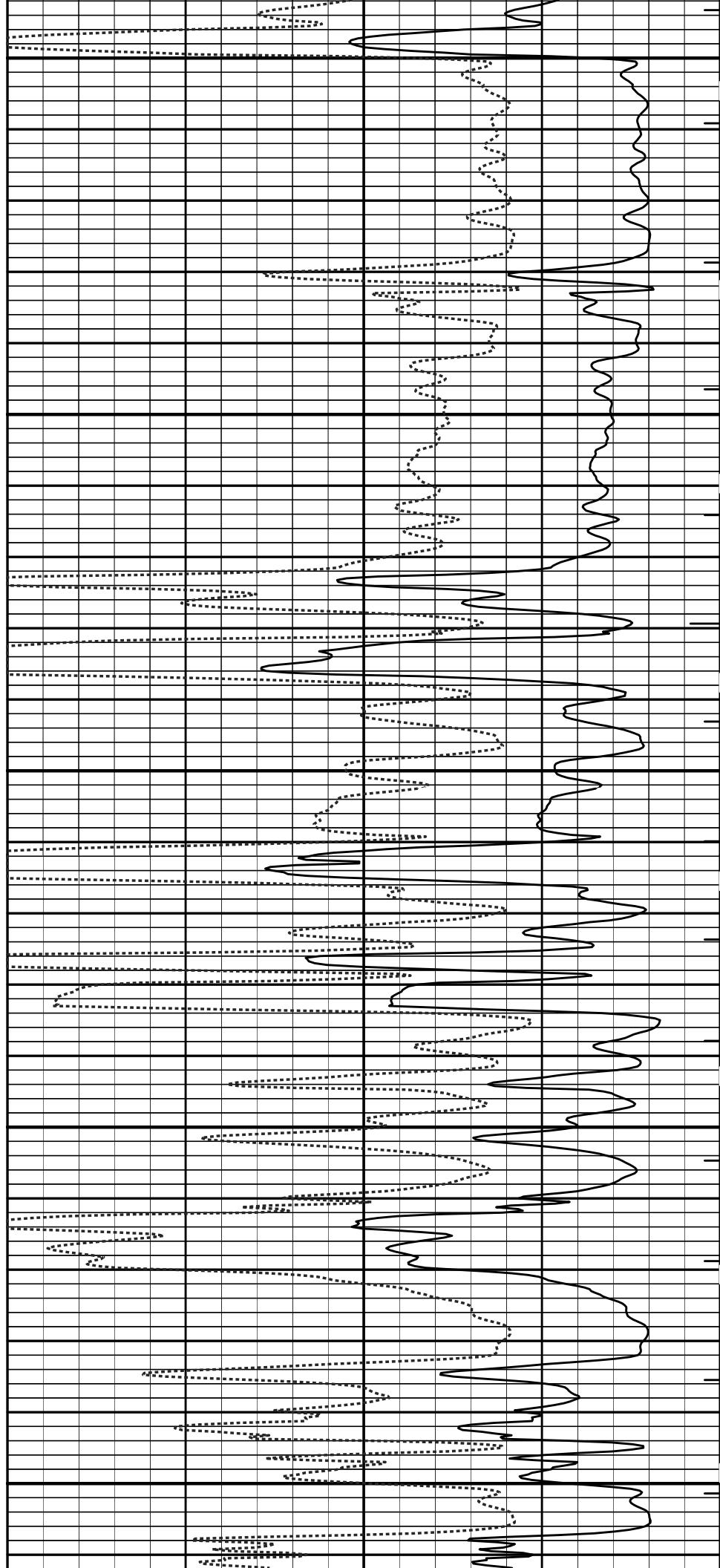


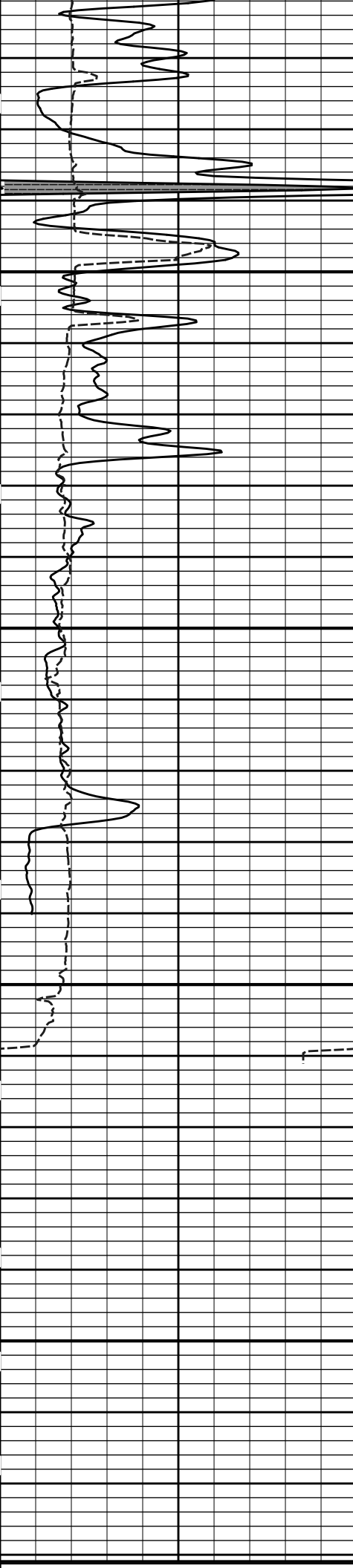


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4600

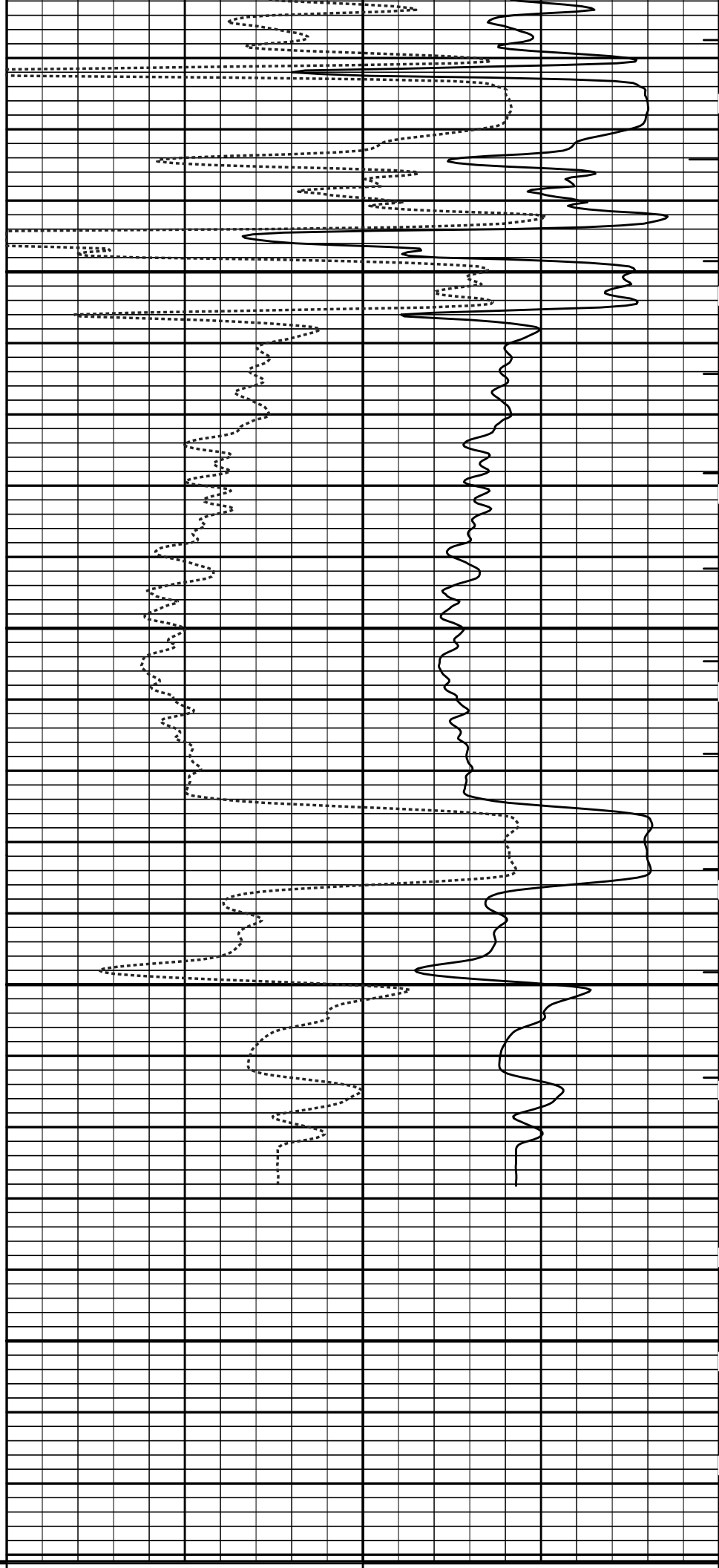
4700





4800

4900



0	Gamma API	150	1 : 240	ft		ITTT
	api					
6	Caliper	16	140		Delta-T	40
	inches				microsec per ft	
	SHALE		30		Acou Porosity	-10
					percent	

HALLIBURTON

Plot Time: 27-Nov-12 21:29:47
Plot Range: 470 ft to 4930.91 ft
Data: END_WRENCH#5\Well Based\ACRT, BSAT\
Plot File: \\BSAT\BSAT_5_MAIN_LIB

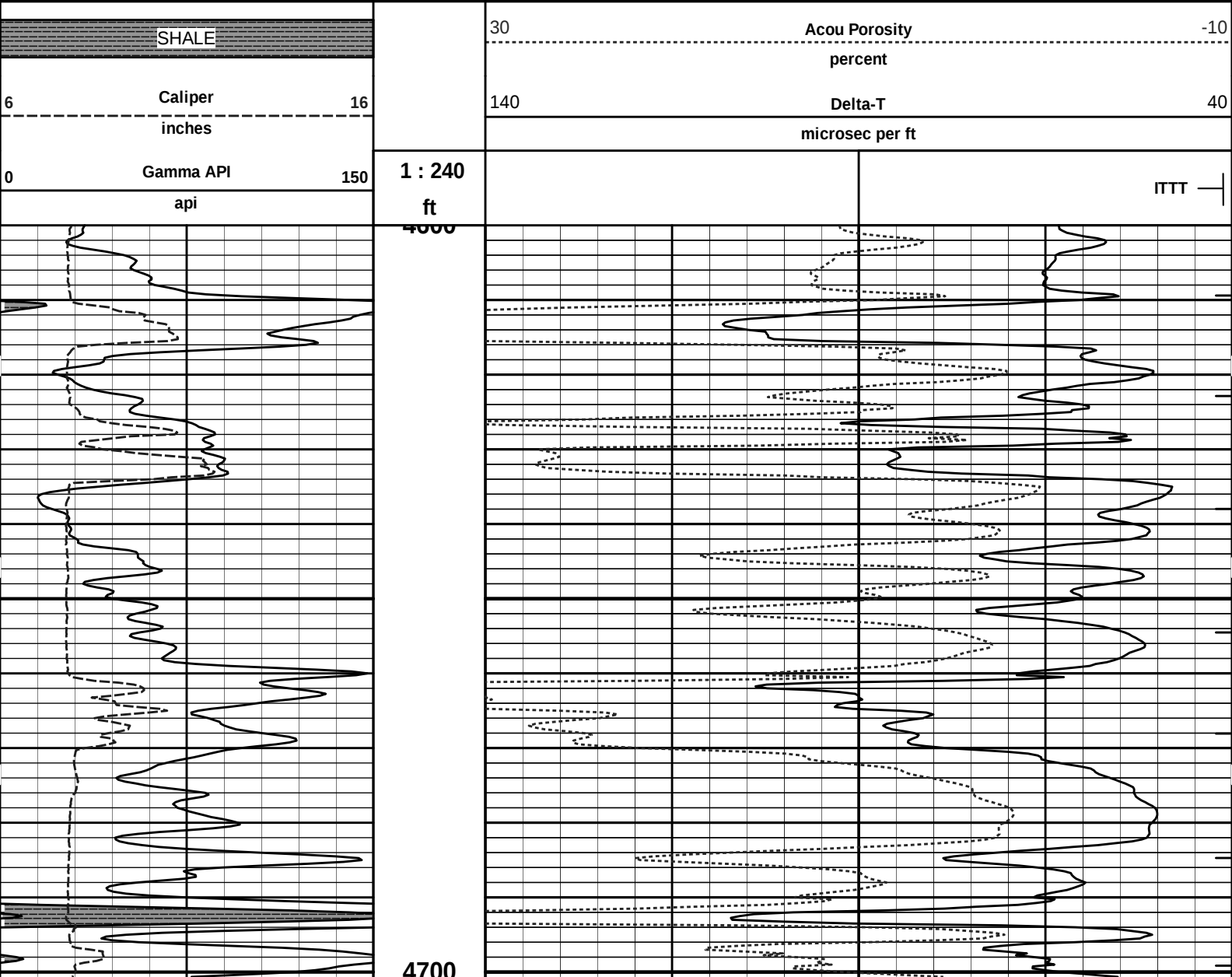
5 INCH MAIN LOG

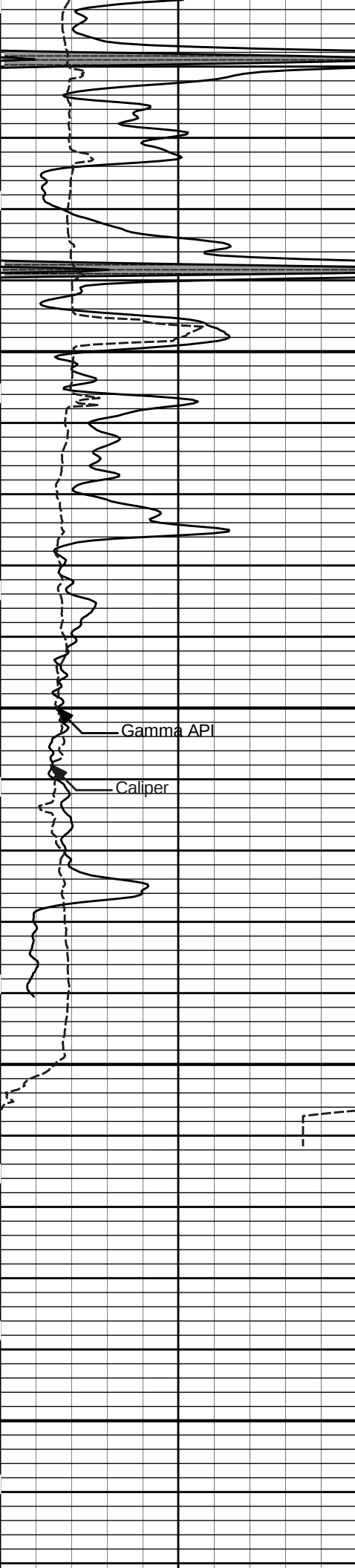
	Gamma API	150	1 : 240	ft		ITTT
	api					
6	Caliper	16	140		Delta-T	40
	inches				microsec per ft	
	SHALE		30		Acou Porosity	-10
					percent	

HALLIBURTON

Plot Time: 27-Nov-12 21:29:47
Plot Range: 4600 ft to 4929.5 ft
Data: END_WRENCH#5\Well Based\REPEAT\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

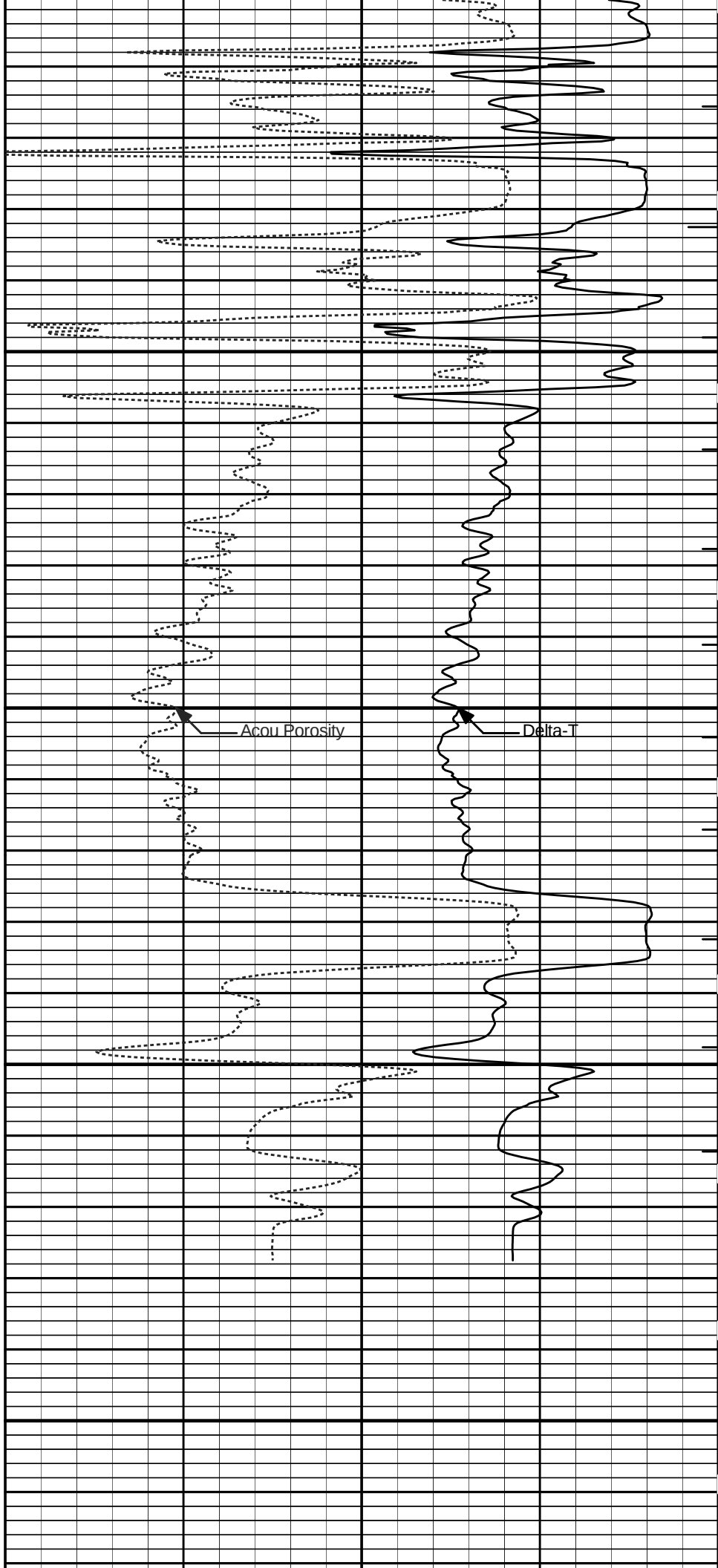




4700

4800

4900



[illegible]

Plot Time: 27-Nov-12 21:29:51
Plot Range: 4600 ft to 4929.5 ft
Data: END_WRENCH#5\Well Based\REPEAT\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length	
RWCH-B097 135.00 lbs		Ø 3.625 in →		← Load Cell @ 101.82 ft ← BH Temperature @ 101.25 ft	6.25 ft	105.50 ft	
SP Sub-PROT01 60.00 lbs		Ø 3.625 in →		← SP @ 97.47 ft	3.74 ft	99.25 ft	
GTET-10811258 165.00 lbs		Ø 3.625 in →		← GammaRay @ 89.45 ft	8.52 ft	95.51 ft	
							86.99 ft
DSNT-10755066 174.00 lbs	DSN Decentralizer- PROT01 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 80.05 ft ← DSN Near @ 79.30 ft	9.69 ft	77.30 ft	

SDLT-10950489
360.00 lbs
SDLT Pad-10844781
65.00 lbs
Microlog Pad-10950489
8.00 lbs

Ø 4.500 in →

Ø 4.750 in* →

Ø 4.750 in* →

Microlog @ 69.49 ft
SDL Caliper @ 69.31 ft
SDL @ 69.30 ft

10.81 ft

66.49 ft

IQ Flex-954
140.00 lbs

Ø 3.625 in →

5.67 ft

60.82 ft

Centralizer 25-1
8.00 lbs

Ø 4.000 in* →

BSAT-10747683
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 52.30 ft

15.77 ft

XRMI Isolator-
10967395
32.50 lbs

Ø 4.500 in →

1.30 ft

45.05 ft

43.74 ft

XRMI-I Instrument-
11682412
290.00 lbs

Ø 4.500 in →

13.00 ft

30.74 ft

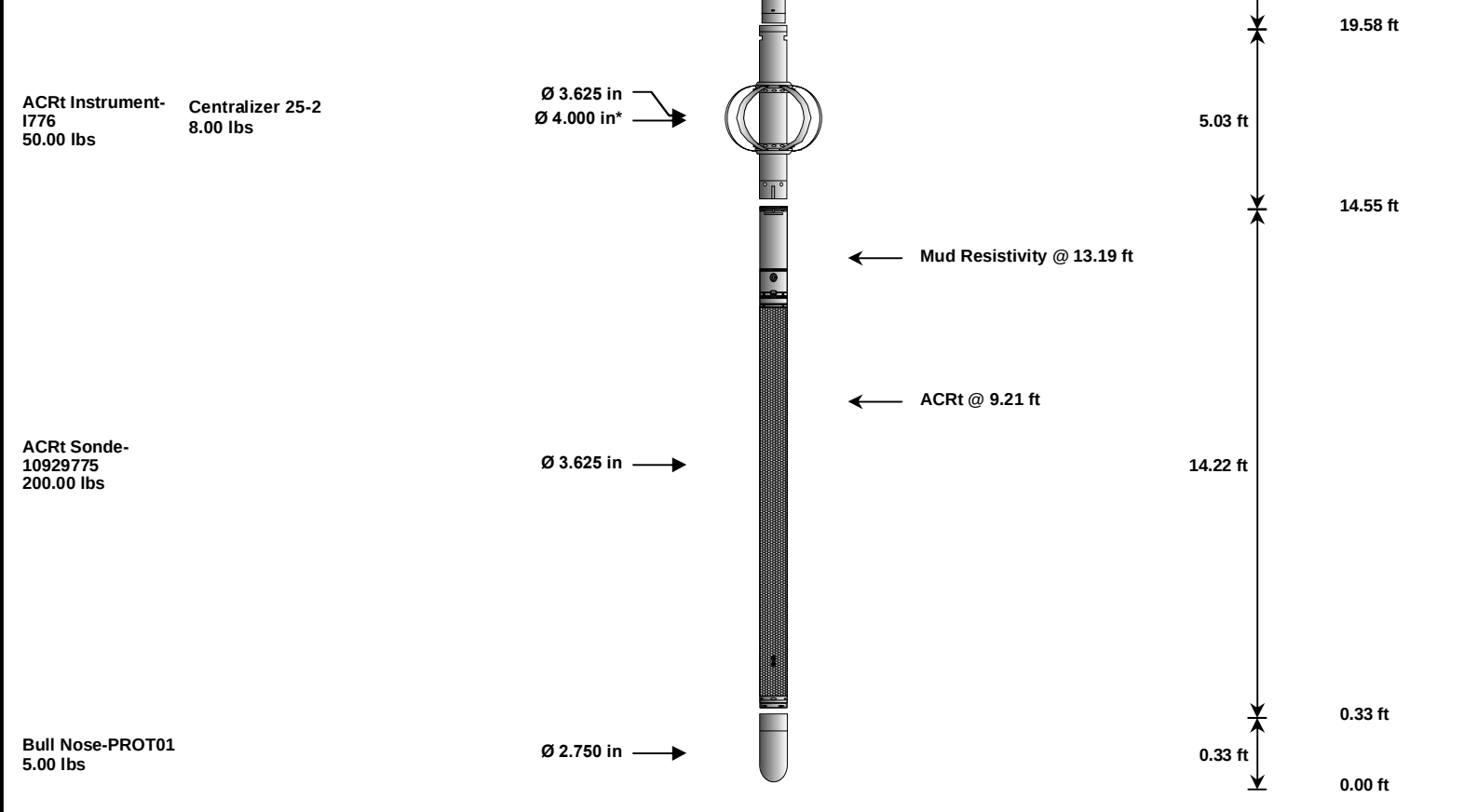
XRMI-I Mandrel-
11682413
206.00 lbs

Ø 5.000 in →

Ø 4.500 in →

11.16 ft

Pads 2, 4, 6 @ 22.35 ft
Pads 1, 3, 5 @ 22.12 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		B097	135.00	6.25	99.25	300.00
SP	SP Sub		PROT01	60.00	3.74	95.51	300.00
GTET	Gamma Telemetry Tool		10811258	165.00	8.52	86.99	60.00
DSNT	Dual Spaced Neutron		10755066	174.00	9.69	77.30	60.00
DCNT	DSN Decentralizer		PROT01	6.60	5.13	* 80.63	300.00
SDLT	Spectral Density Tool		10950489	360.00	10.81	66.49	60.00
MICP	Microlog Pad		10950489	8.00	1.00	* 68.99	60.00
SDLP	Density Insite Pad		10844781	65.00	2.55	* 68.70	60.00
IQF	IQ Flex tool		954	140.00	5.67	60.82	300.00
BSAT	Borehole Sonic Array Tool		10747683	300.00	15.77	45.05	60.00
OBCEN	Centralizer - 25 in. Overbody		1	8.00	2.08	* 57.73	300.00
	Isolator for the XRMI tool		10967395	32.50	1.30	43.74	300.00
XRMI	XRMI Navigation - Insite		11682412	290.00	13.00	30.74	30.00
XRMI-I	XRMI Imager - Insite		11682413	206.00	11.16	19.58	30.00
ACRt	Array Compensated True Resistivity Instrument Section		1776	50.00	5.03	14.55	300.00
OBCEN	Centralizer - 25 in. Overbody		2	8.00	2.08	* 15.98	300.00
ACRt	Array Compensated True Resistivity Sonde Section		10929775	200.00	14.22	0.33	300.00
BLNS	Bull Nose		PROT01	5.00	0.33	0.00	300.00
Total				2,213.10	105.50		
* Not included in Total Length and Length Accumulation.							
Data: END_WRENCH#5\0001 SP-GTET-DSN-SDL-BSAT-XRMI-ACRT-BN\005 27-Nov-12 17:52 Up @4930.5f Date: 27-Nov-12 18:44:52							

HALLIBURTON						
PARAMETERS REPORT						
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units	
TOP						
	SHARED	BS	Bit Size	7.875	in	
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No		

	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.500	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4940.00	ft
	SHARED	BHT	Bottom Hole Temperature	130.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	XRMI-I Instrument	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	XRMI-I Instrument	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DSNO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
	DSNT	DNTP	Temperature Correction Type	None	
	DSNT	DPRS	DSN Pressure Correction Type	None	
	DSNT	SHCO	View More Correction Options	No	
	DSNT	UTVD	Use TVD for Gradient Corrections?	No	
	DSNT	LHWT	Logging Horizontal Water Tank?	No	
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT Pad	DNOK	Process Density?	Yes	
	SDLT Pad	DNOK	Process Density EVR?	No	
	SDLT Pad	CB	Logging Calibration Blocks?	No	
	SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT Pad	DTWN	Disable temperature warning	No	
	SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
	SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
	Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
	BSAT	MBOK	Compute BCAS Results?	Yes	
	BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
	BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
	BSAT	DTFL	Delta -T Fluid	189.00	uspf
	BSAT	DTMT	Delta -T Matrix Tyne	User define	

BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
XRMI-I Instrument	WRTI	Survey Writing Interval	30	ft
XRMI-I Instrument	SOPT	Smoothing Option	None	
XRMI-I Mandrel	DIMG	Process XRMI?	Yes	
XRMI-I Mandrel	ROTI	Rotate Image (N-E-S-W-N)?	Yes	
XRMI-I Mandrel	AGN	Use Button Auto Gain?	Yes	
XRMI-I Mandrel	BCLR	Button Auto Gain Color	127	
XRMI-I Mandrel	BFIL	Button Auto Gain Filter	0.020	
XRMI-I Mandrel	BGAN	Button Gain Value	0.001	
XRMI-I Mandrel	BOFF	Button Offset	0	
XRMI-I Mandrel	DIPE	Process Dipmeter Calculations?	Yes	
XRMI-I Mandrel	BHCS	Process Borehole Corrections?	Yes	
XRMI-I Mandrel	CLOK	Process Caliper Outputs?	Yes	
XRMI-I Mandrel	CMAX	Caliper Maximum Limit	100.0	in
XRMI-I Mandrel	CMIN	Caliper Mimimum Limit	3.5	in
XRMI-I Mandrel	NAVS	Navigation Source Tool	XRMI-I Instrument	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 10811258	Reference Calibration Date:	30-Sep-12 14:49:28
Engineer:	S. INGERSOLL	Calibration Date:	27-Nov-12 15:00:28
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB-185			
Calibrator API Reference:228.00 api			
Equivalent Calibrator API Reference:232.0 api			
	Measurement	Measured	Calibrated
	Background	37.3	37.1
	Background + Calibrator	270.7	269.1
	Calibrator	233.3	232.0
			api
			api
			api
NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 10811258	Reference Calibration Date:	27-Nov-12 15:00:28
Engineer:	S. INGERSOLL	Calibration Date:	27-Nov-12 15:04:17
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	37.1	36.3	api
Background + Calibrator	269.1	264.7	api
Calibrator	232.0	228.4	api

Shop	Field	Difference	Tolerance
232.0	228.4	3.6	+/- 9.00

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10811258						
Gamma Ray Calibrator	232.0	228.4	-----	3.6	+/- 9.00	api

Data: END_WRENCH#5\0001 SP-GTET-DSN-SDL-BSAT-XRMI-ACRT-BN\005 27-Nov-12 17:52 Up @4930.5f

Date: 27-Nov-12 18:51:01

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
RWCH				
DHTN	Downhole Tension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	97.47	NO	
SP	Spontaneous Potential	97.47	BLK	1.250
SPR	Raw Spontaneous Potential	97.47	NO	
SPO	Spontaneous Potential Offset	97.47	NO	
GTET				
TPUL	Tension Pull	89.45	NO	
GR	Natural Gamma Ray API	89.45	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	89.45	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	89.45	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	79.20	NO	
RNDS	Near Detector Telemetry Counts	79.30	BLK	1.417
RFDS	Far Detector Telemetry Counts	80.05	TRI	0.583
DNTT	DSN Tool Temperature	79.30	NO	
DSNS	DSN Tool Status	79.20	NO	
ERND	Near Detector Telemetry Counts EVR	79.30	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	80.05	BLK	0.000
ENTM	DSN Tool Temperature EVR	79.30	NO	
SDLT				
TPUL	Tension Pull	69.31	NO	

TPUL	Tension Pull	69.31	NO	
PCAL	Pad Caliper	69.31	TRI	0.250
ACAL	Arm Caliper	69.31	TRI	0.250
BSAT				
TPUL	Tension Pull	52.30	NO	
STAT	Status	52.30	NO	
DLYT	Delay Time	52.30	NO	
SI	Sample Interval	52.30	NO	
TXRX	Raw Telemetry 10 Receivers	52.30	NO	
FRMC	Tool Frame Count	52.30	NO	
GMOD	Gain processing mode	45.05	NO	
XRMI-I Mandrel				
TPUL	Tension Pull	22.35	NO	
PAD1	XRMI Pad 1 values	22.12	NO	
PAD2	XRMI Pad 2 values	22.12	NO	
PAD3	XRMI Pad 3 values	22.12	NO	
PAD4	XRMI Pad 4 values	22.12	NO	
PAD5	XRMI Pad 5 values	22.12	NO	
PAD6	XRMI Pad 6 values	22.12	NO	
OD1	EMI Odd Button Values Pad 1	22.12	NO	
OD2	EMI Odd Button Values Pad 2	22.35	NO	
OD3	EMI Odd Button Values Pad 3	22.12	NO	
OD4	EMI Odd Button Values Pad 4	22.35	NO	
OD5	EMI Odd Button Values Pad 5	22.12	NO	
OD6	EMI Odd Button Values Pad 6	22.35	NO	
EV1	EMI Even Button Values Pad 1	22.14	NO	
EV2	EMI Even Button Values Pad 2	22.32	NO	
EV3	EMI Even Button Values Pad 3	22.14	NO	
EV4	EMI Even Button Values Pad 4	22.32	NO	
EV5	EMI Even Button Values Pad 5	22.14	NO	
EV6	EMI Even Button Values Pad 6	22.32	NO	
ITMP	Instrument Temperature	19.58	NO	
EMIM	Tool Mode	19.58	NO	
HAZI	Hole Azimuth	21.87	NO	
HAZI	Hole Azimuth - Down Delay	22.37	NO	
ZACC	Accelerometer Z	22.12	NO	
TPUL	Tension Pull	22.35	NO	
FIR1	Current Button R - Pad 1	22.12	NO	
FIR2	Current Button R - Pad 2	22.35	NO	
FIR3	Current Button R - Pad 3	22.12	NO	
FIR4	Current Button R - Pad 4	22.35	NO	
FIR5	Current Button R - Pad 5	22.12	NO	
FIR6	Current Button R - Pad 6	22.35	NO	
FIX1	Current Button X - Pad 1	22.12	NO	
FIX2	Current Button X - Pad 2	22.35	NO	
FIX3	Current Button X - Pad 3	22.12	NO	
FIX4	Current Button X - Pad 4	22.35	NO	
FIX5	Current Button X - Pad 5	22.12	NO	
FIX6	Current Button X - Pad 6	22.35	NO	
SIR1	Current Slow Button R - Pad 1	22.12	BLK	3.000
SIR2	Current Slow Button R - Pad 2	22.35	BLK	3.000
SIR3	Current Slow Button R - Pad 3	22.12	BLK	3.000
SIR4	Current Slow Button R - Pad 4	22.35	BLK	3.000
SIR5	Current Slow Button R - Pad 5	22.12	BLK	3.000
SIR6	Current Slow Button R - Pad 6	22.35	BLK	3.000

SIR6	Current Slow Button R - Pad 6	22.35	BLK	3.000
SIX1	Current Slow Button X - Pad 1	22.12	BLK	3.000
SIX2	Current Slow Button X - Pad 2	22.35	BLK	3.000
SIX3	Current Slow Button X - Pad 3	22.12	BLK	3.000
SIX4	Current Slow Button X - Pad 4	22.35	BLK	3.000
SIX5	Current Slow Button X - Pad 5	22.12	BLK	3.000
SIX6	Current Slow Button X - Pad 6	22.35	BLK	3.000
EMMR	Phasor Voltage - Real Part	22.12	NO	
EMMX	Phasor Voltage - Imaginary Part	22.12	NO	
PADV	Pad Voltage	19.58	BLK	0.250
ITMP	Instrument Temperature	19.58	BLK	0.000
CON1	Conductivity Pad 1	22.12	BLK	3.000
CON2	Conductivity Pad 2	22.35	BLK	3.000
CON3	Conductivity Pad 3	22.12	BLK	3.000
CON4	Conductivity Pad 4	22.35	BLK	3.000
CON5	Conductivity Pad 5	22.12	BLK	3.000
CON6	Conductivity Pad 6	22.35	BLK	3.000
UIR2	Current Button R No Delay - Pad 2	22.12	NO	
UIR4	Current Button R No Delay - Pad 4	22.12	NO	
UIR6	Current Button R No Delay - Pad 6	22.12	NO	
UIX2	Current Button X No Delay - Pad 2	22.12	NO	
UIX4	Current Button X No Delay - Pad 4	22.12	NO	
UIX6	Current Button X No Delay - Pad 6	22.12	NO	
TPUL	Tension Pull	22.35	NO	
ARM1	Caliper 1 measurement	22.12	BLK	0.000
ARM2	Caliper 2 measurement	22.12	BLK	0.000
ARM3	Caliper 3 measurement	22.12	BLK	0.000
ARM4	Caliper 4 measurement	22.12	BLK	0.000
ARM5	Caliper 5 measurement	22.12	BLK	0.000
ARM6	Caliper 6 measurement	22.12	BLK	0.000
MOTV	Motor Voltage Monitor 1	22.12	BLK	0.000
PRES	Caliper percentage of total compression of the spring	19.58	BLK	0.000
HAZI	Hole Azimuth	22.12	NO	
RB	Relative Bearing	22.12	NO	
AZI1	PAD1 Azimuth	22.12	NO	
DEVI	Inclination	22.12	NO	
ACRt Sonde				
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000

F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	
SDLT Pad				
TPUL	Tension Pull	69.30	NO	
NAB	Near Above	69.12	BLK	0.920
NHI	Near Cesium High	69.12	BLK	0.920
NLO	Near Cesium Low	69.12	BLK	0.920
NVA	Near Valley	69.12	BLK	0.920
NBA	Near Barite	69.12	BLK	0.920
NDE	Near Density	69.12	BLK	0.920
NPK	Near Peak	69.12	BLK	0.920
NLI	Near Lithology	69.12	BLK	0.920
NBAU	Near Barite Unfiltered	69.12	BLK	0.250
NLIU	Near Lithology Unfiltered	69.12	BLK	0.250
FAB	Far Above	69.47	BLK	0.250
FHI	Far Cesium High	69.47	BLK	0.250
FLO	Far Cesium Low	69.47	BLK	0.250
FVA	Far Valley	69.47	BLK	0.250
FBA	Far Barite	69.47	BLK	0.250
FDE	Far Density	69.47	BLK	0.250
FPK	Far Peak	69.47	BLK	0.250
FLI	Far Lithology	69.47	BLK	0.250
PTMP	Pad Temperature	69.31	BLK	0.920

NHV	Near Detector High Voltage	68.70	NO	
FHV	Far Detector High Voltage	68.70	NO	
ITMP	Instrument Temperature	68.70	NO	
DDHV	Detector High Voltage	68.70	NO	
Microlog Pad				
TPUL	Tension Pull	69.49	NO	
MINV	Microlog Lateral	69.49	BLK	0.750
MNOR	Microlog Normal	69.49	BLK	0.750
Data: END_WRENCH#5\0001 SP-GTET-DSN-SDL-BSAT-XRMI-ACRT-BN\005 27-Nov-12 17:52 Up @4930.5f			Date: 27-Nov-12 20:03:52	

COMPANY	TGT PETROLEUM CORPORATION		
WELL	END WRENCH #5		
FIELD	EINSEL		
COUNTY	KIOWA	STATE	KANSAS
HALLIBURTON		BOREHOLE COMPENSATED SONIC ARRAY LOG	