

ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

Fold here

Service Ticket No.: 904936929				API No.: 15-151-22474-01-00				PGM Version: WL INSITE R5.6.0 (Build 2)					
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	ECEN	N/A			
Rmc @ Meas. Temp.		@			@		I-11026095						
Source Rmf	Rmc						S-11005908						
Rm @ BHT		@			@								
Rmf @ BHT		@			@								
Rmc @ BHT		@			@								
EQUIPMENT DATA													
GAMMA			ACOUSTIC			DENSITY			NEUTRON				
Run No.	ONE		Run No.			Run No.	ONE		Run No.	ONE			
Serial No.	10971172		Serial No.			Serial No.	10865873		Serial No.	11020487			
Model No.	GTET		Model No.			Model No.	SDLT		Model No.	DSNT			
Diameter	3.625"		No. of Cent.			Diameter	5.5"		Diameter	3.625"			
Detector Model No.	GTET		Spacing			Log Type	GAM-GAM		Log Type	NEU-NEU			
Type	SCINT					Source Type	Cs-137		Source Type	Am241Be			
Length	8"		LSA [Y/N]			Serial No.	5471GW		Serial No.	DSN-424			
Distance to Source	10'		FWDA [Y/N]			Strength	1.78 Ci		Strength	15.0 Ci			
LOGGING DATA													
GENERAL			GAMMA		ACOUSTIC		DENSITY			NEUTRON			
Run	Depth		Speed	Scale		Scale	Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L		R	L		R	L	
ONE	TD	CSG	PEC	0	150			30	-10	2.71 g/cc	30	-10	LIME

[illegible]**HALLIBURTON**

Plot Time: 15-Aug-18 17:13:49

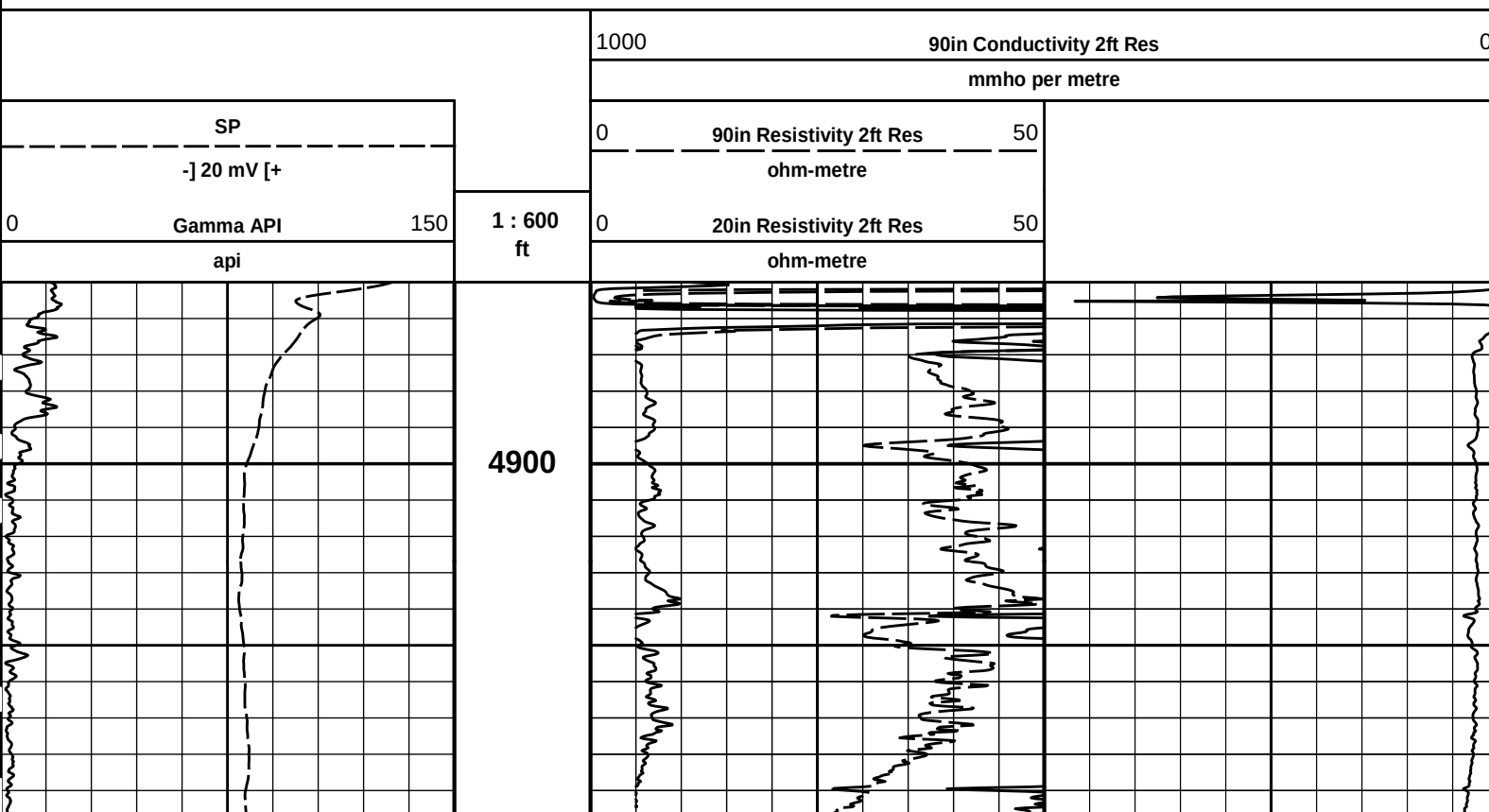
Plot Range: 4850 ft to 10779.3 ft

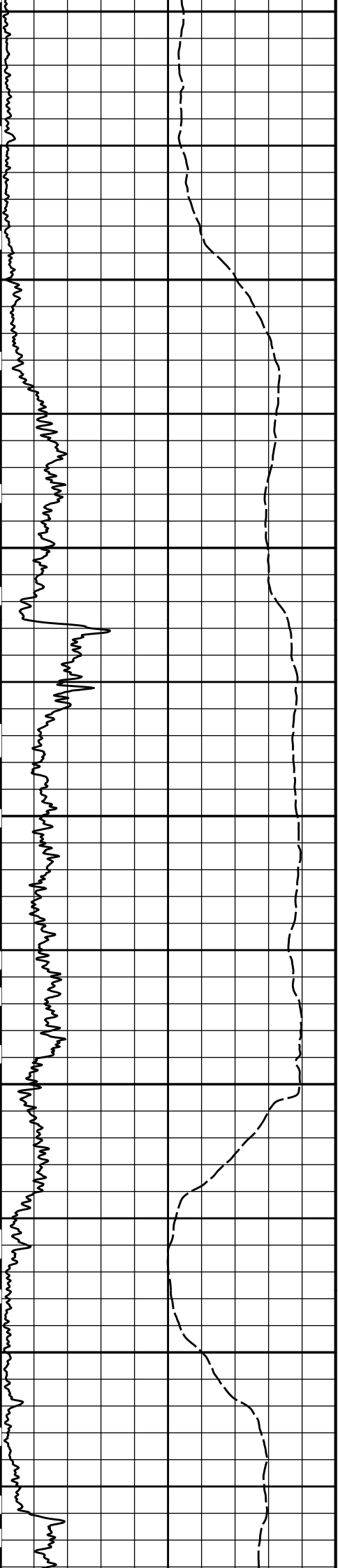
Data: BRUBAKER_1-17H\Well Based*

Plot File: \\-LOCAL-\\NPSU 35-2\\Well Based\\ACRT\\ACRT 2 main

2 INCH MAIN LOG

2 INCH MAIN LOG





5000

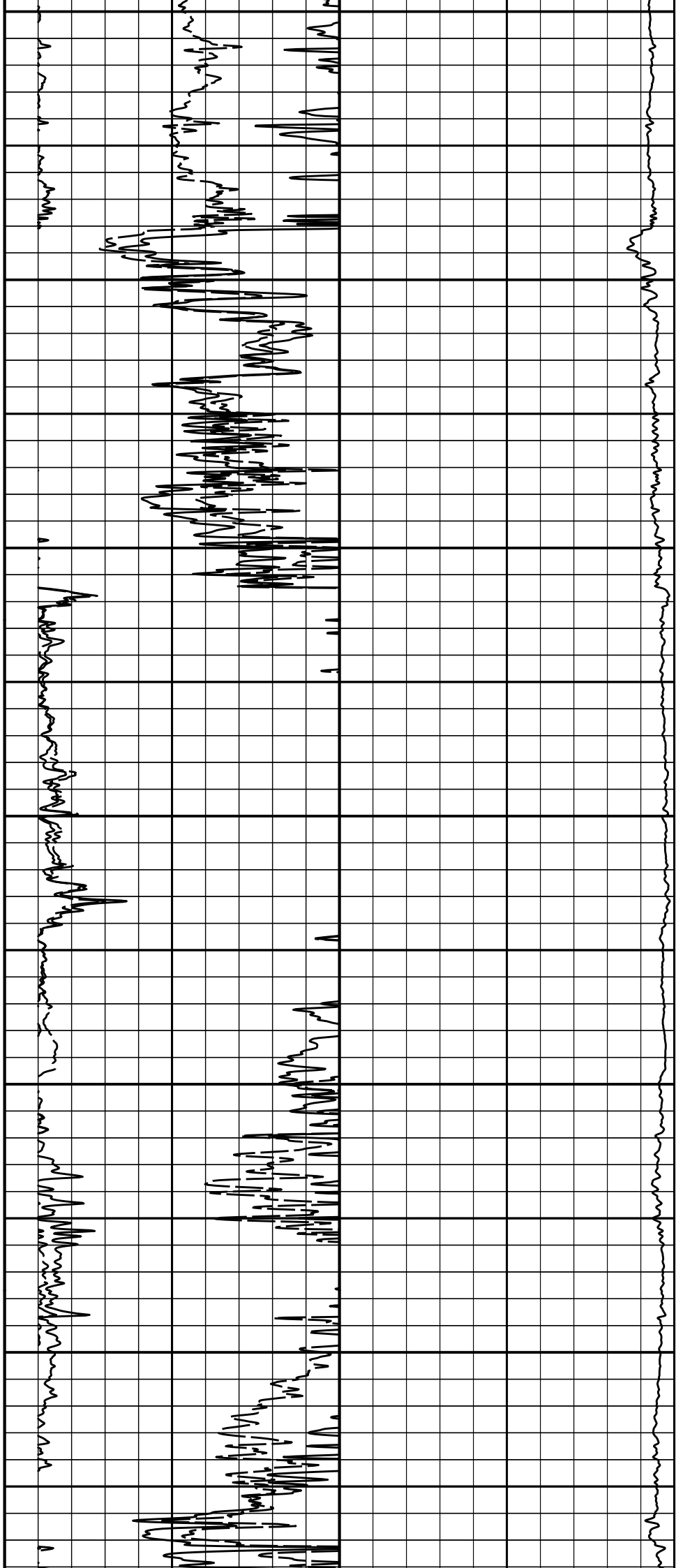
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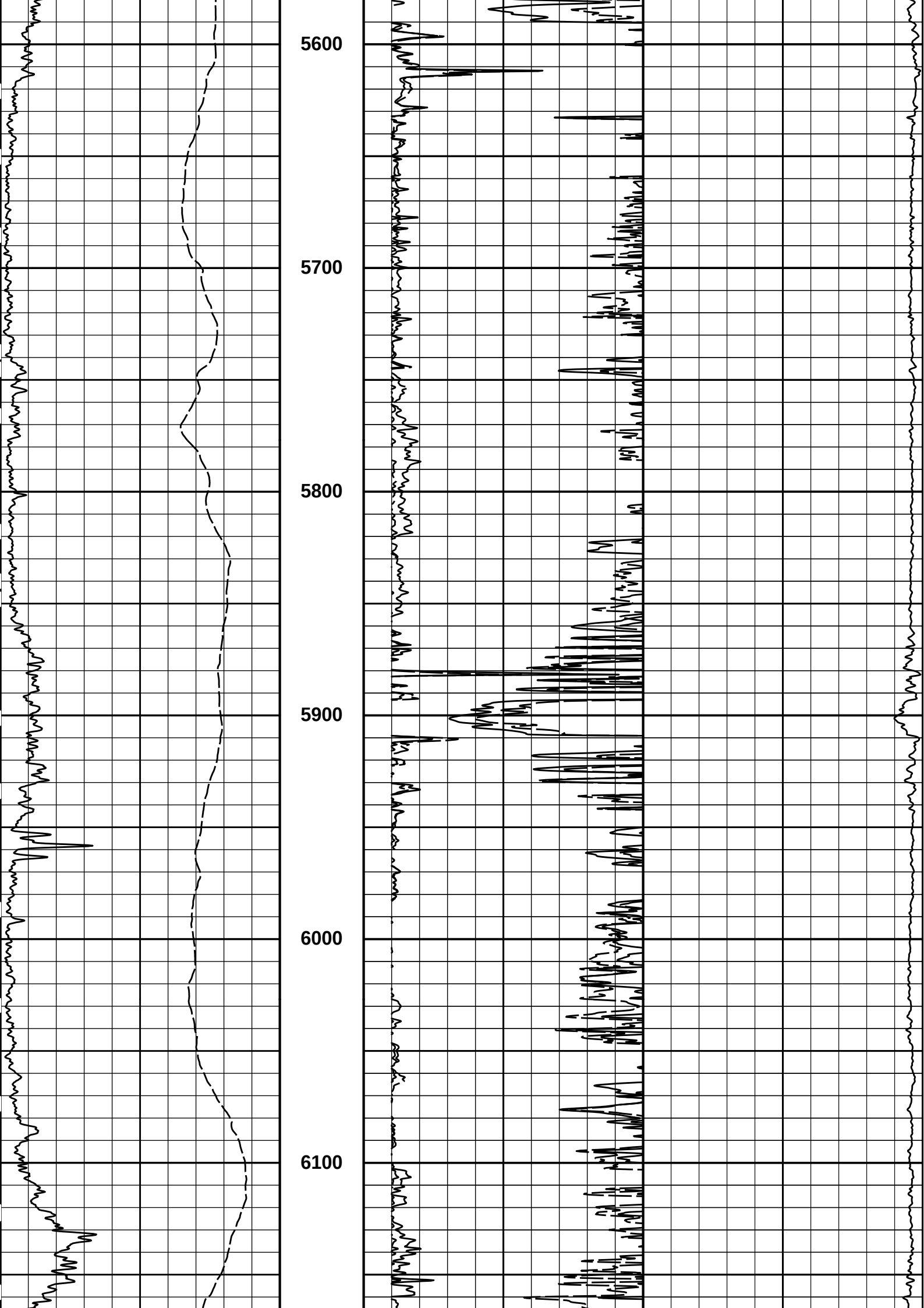
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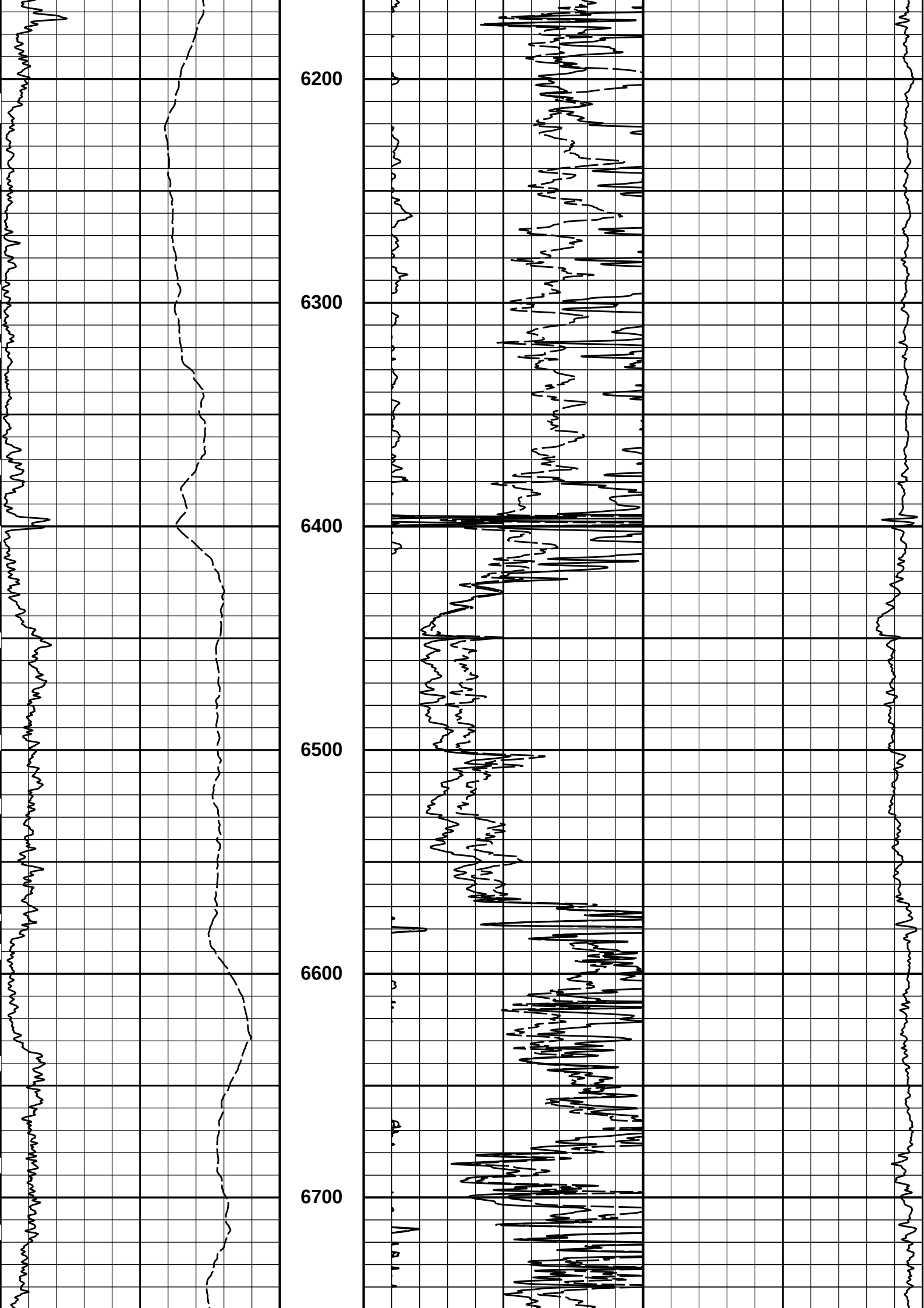
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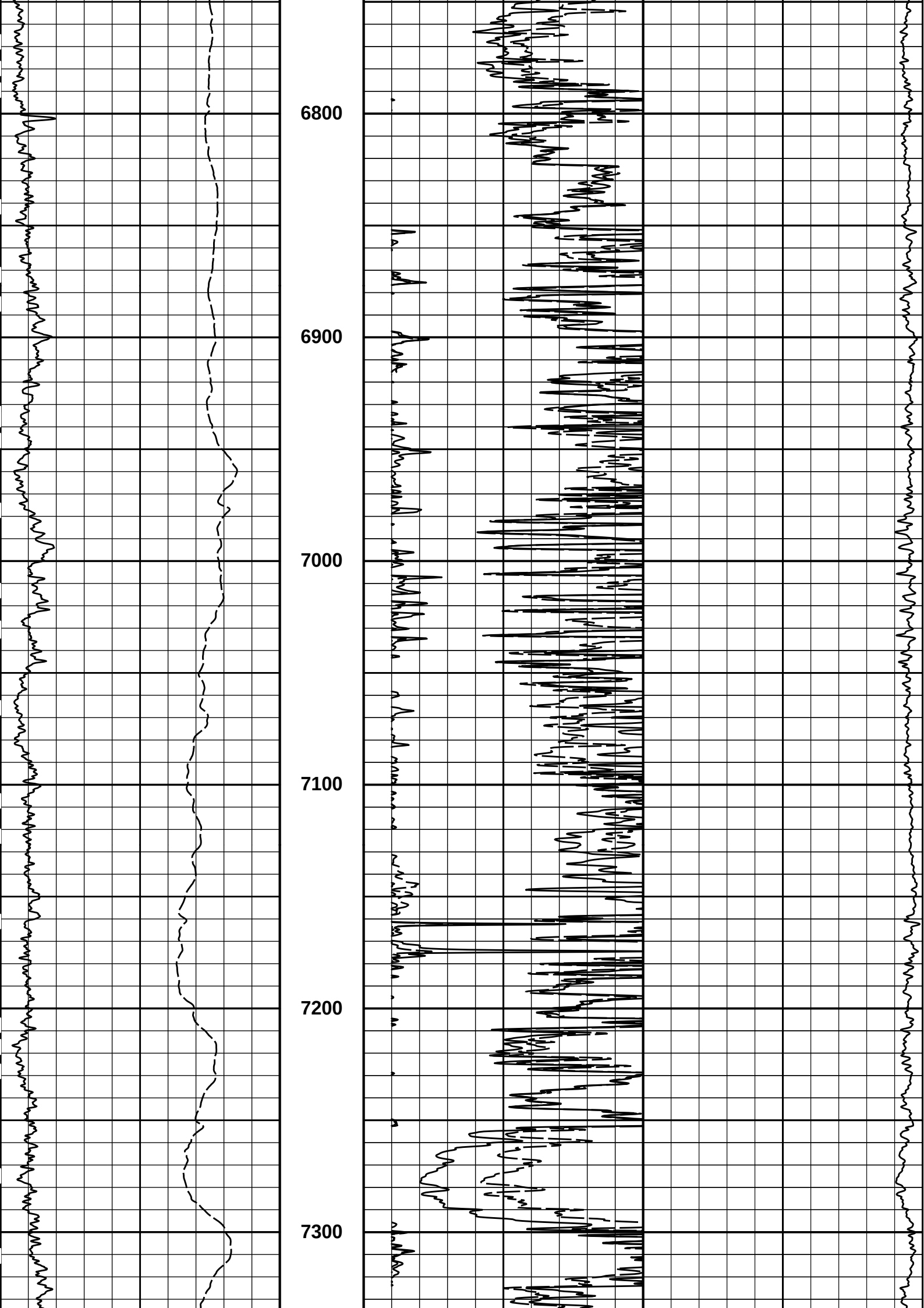
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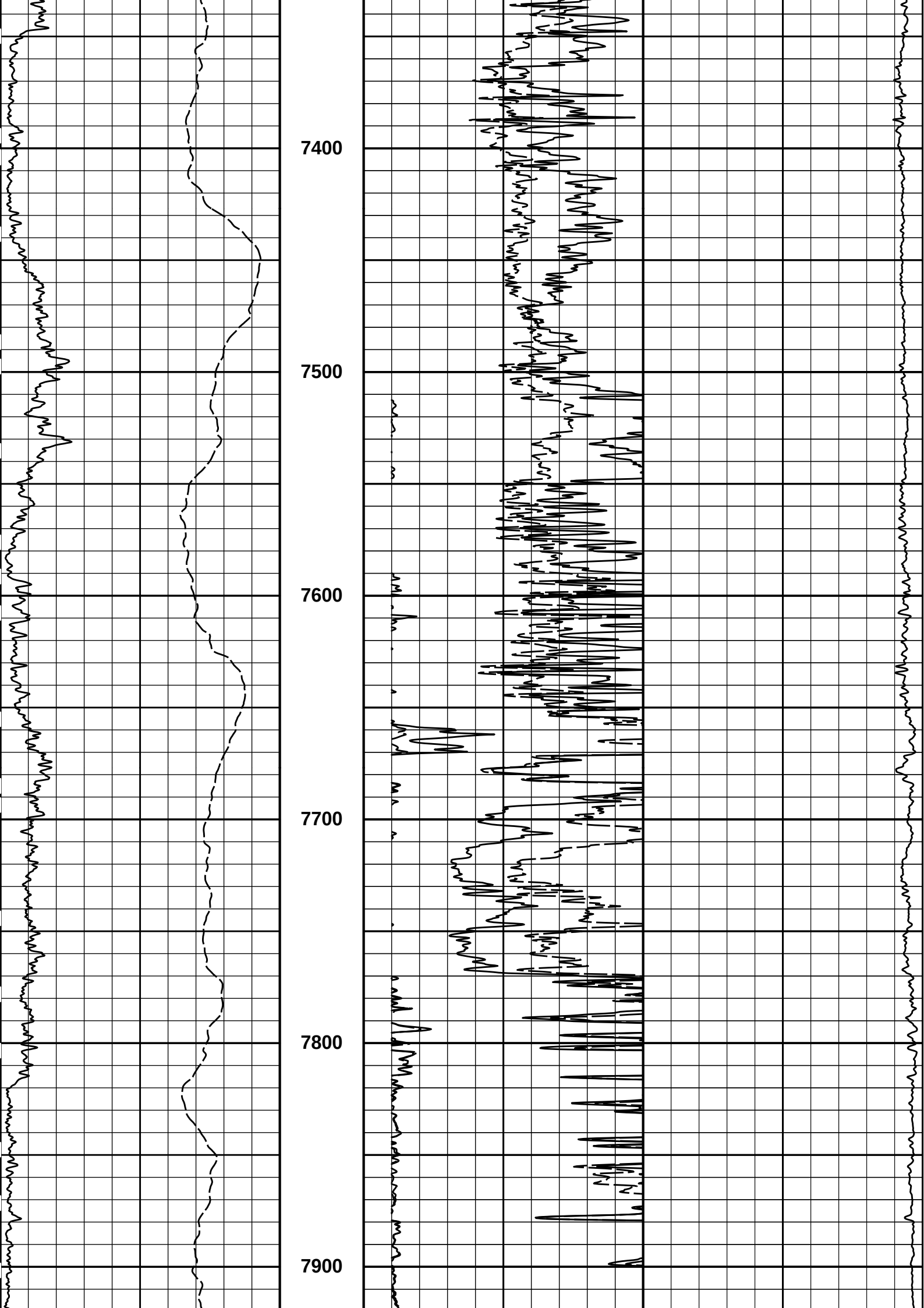
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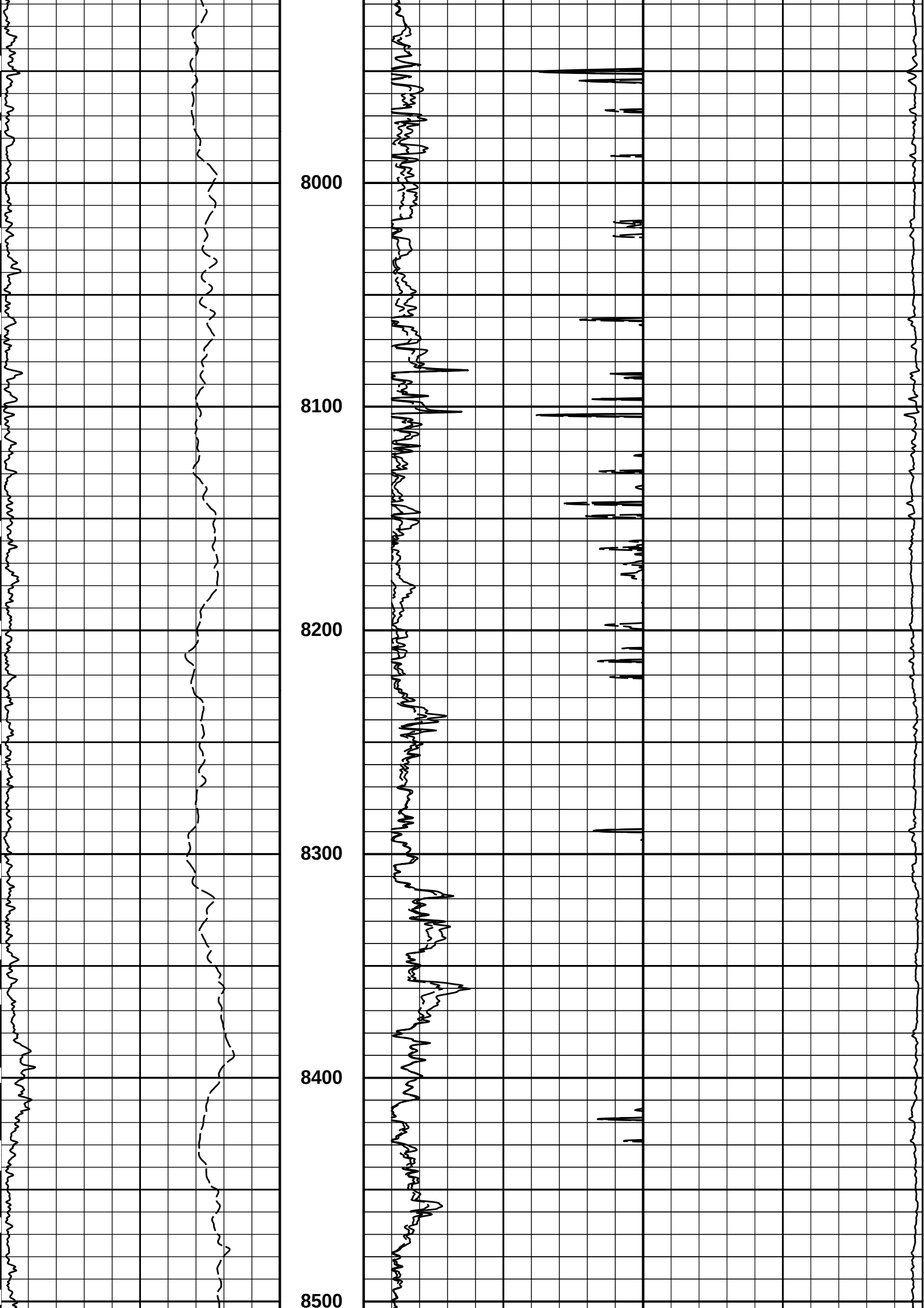


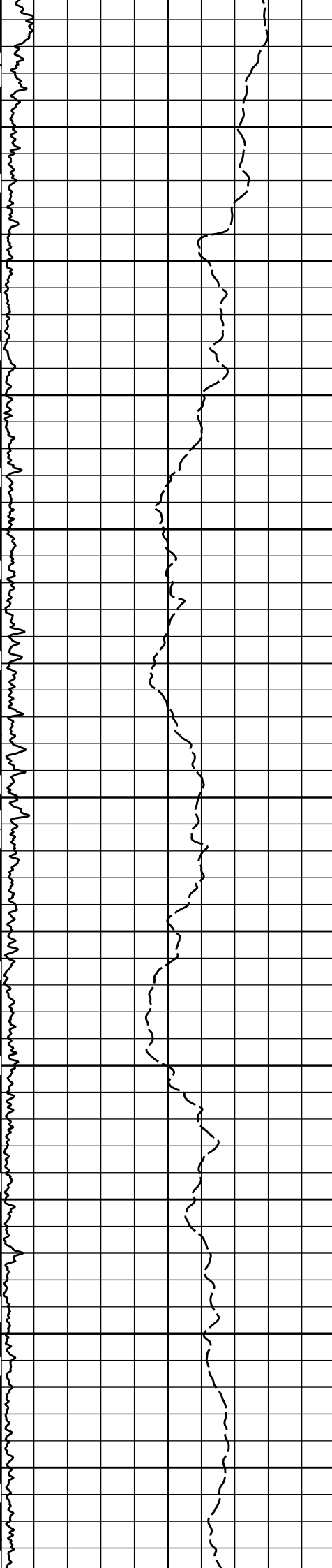












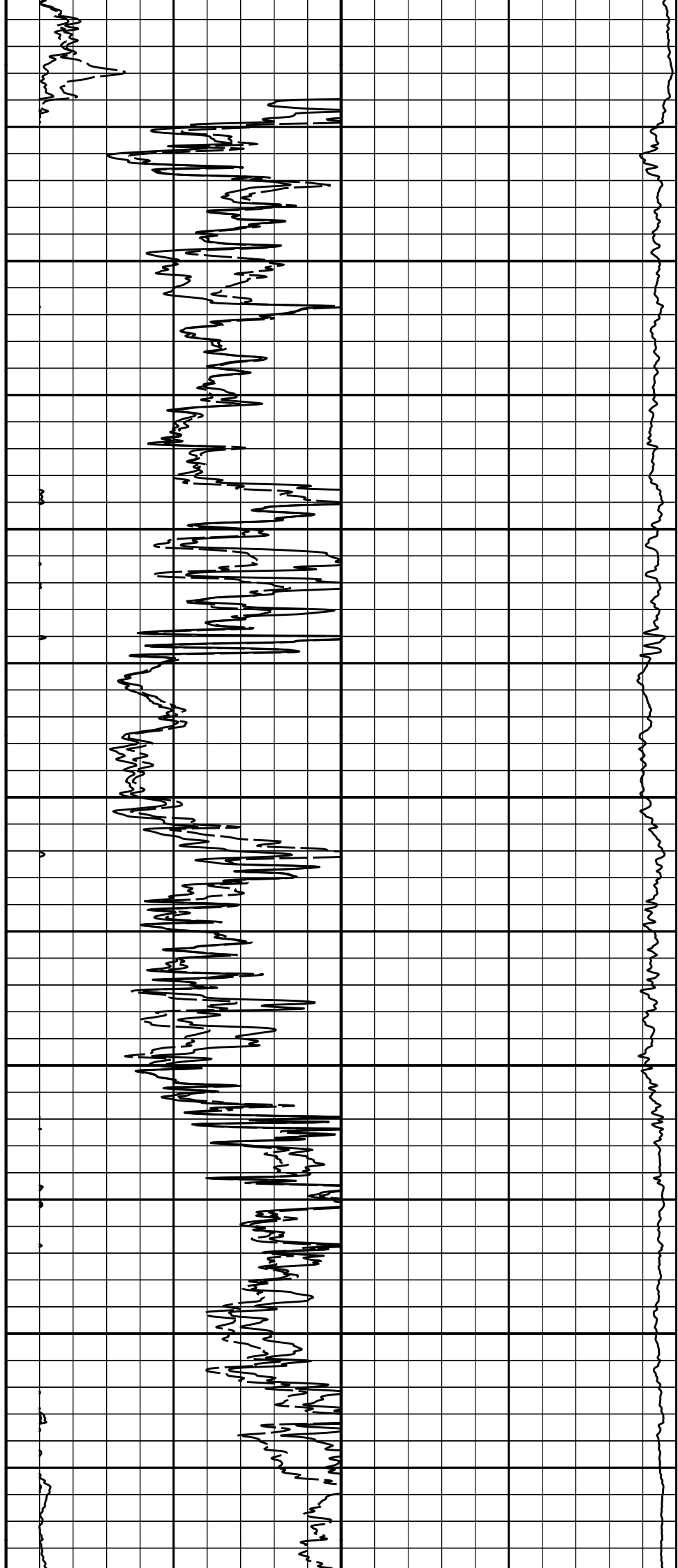
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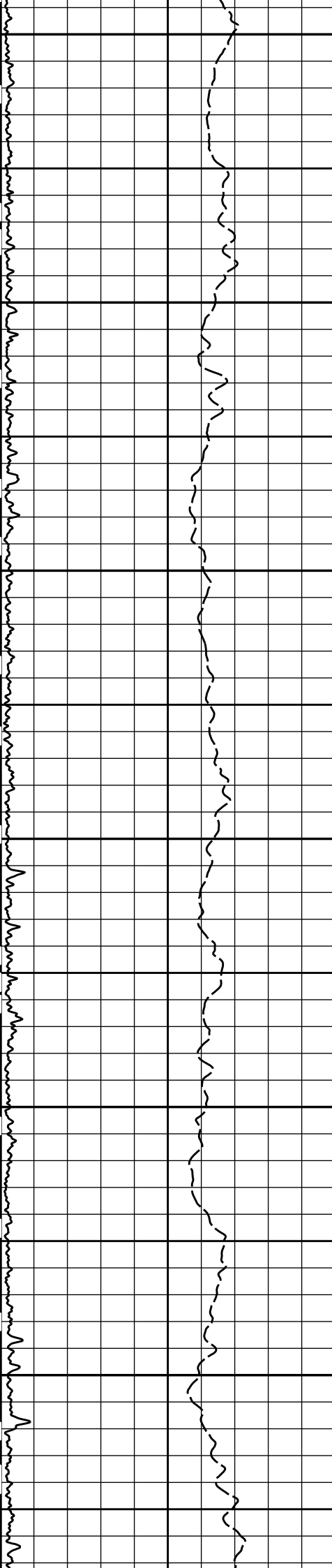
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8800

8900

9000





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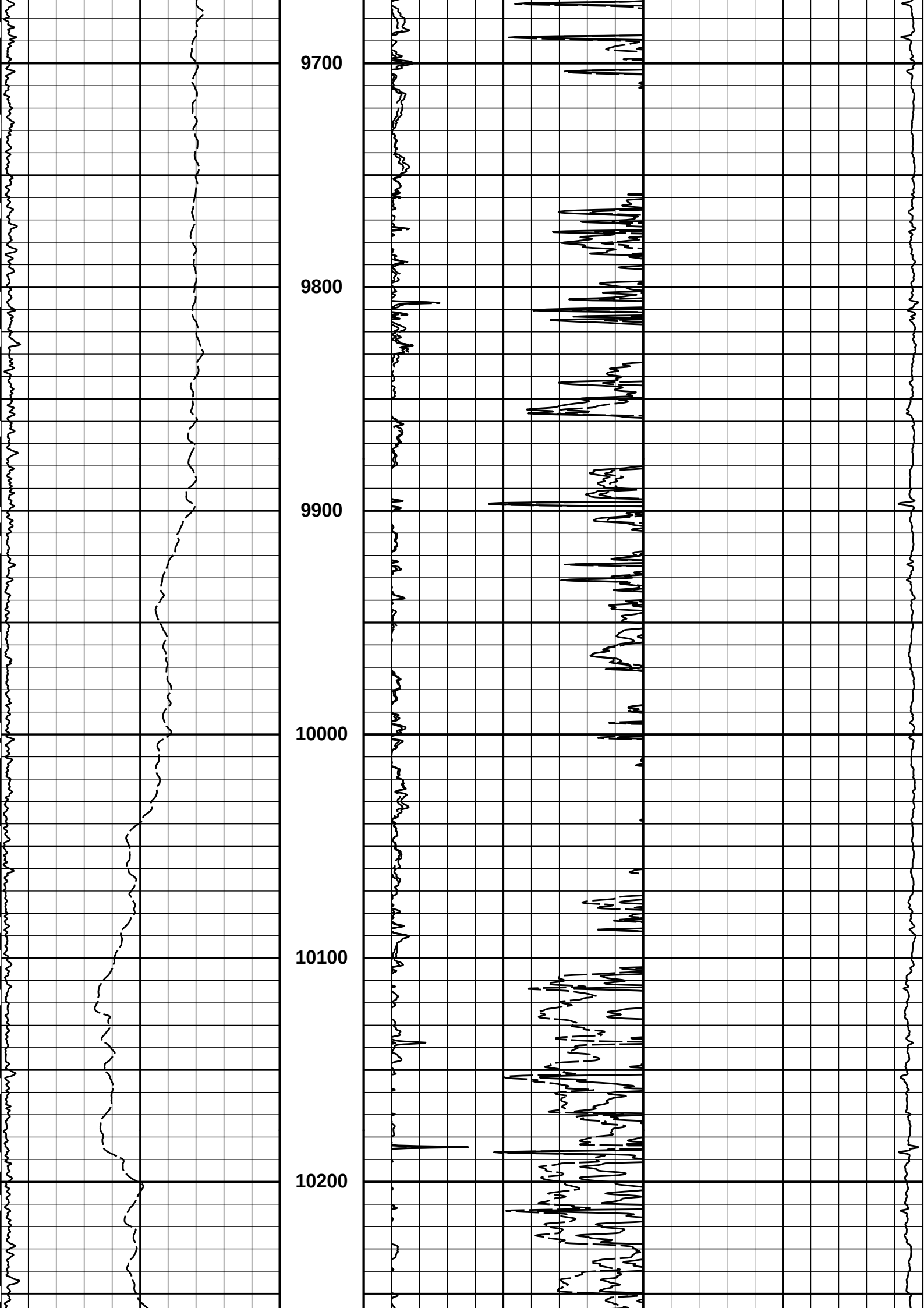
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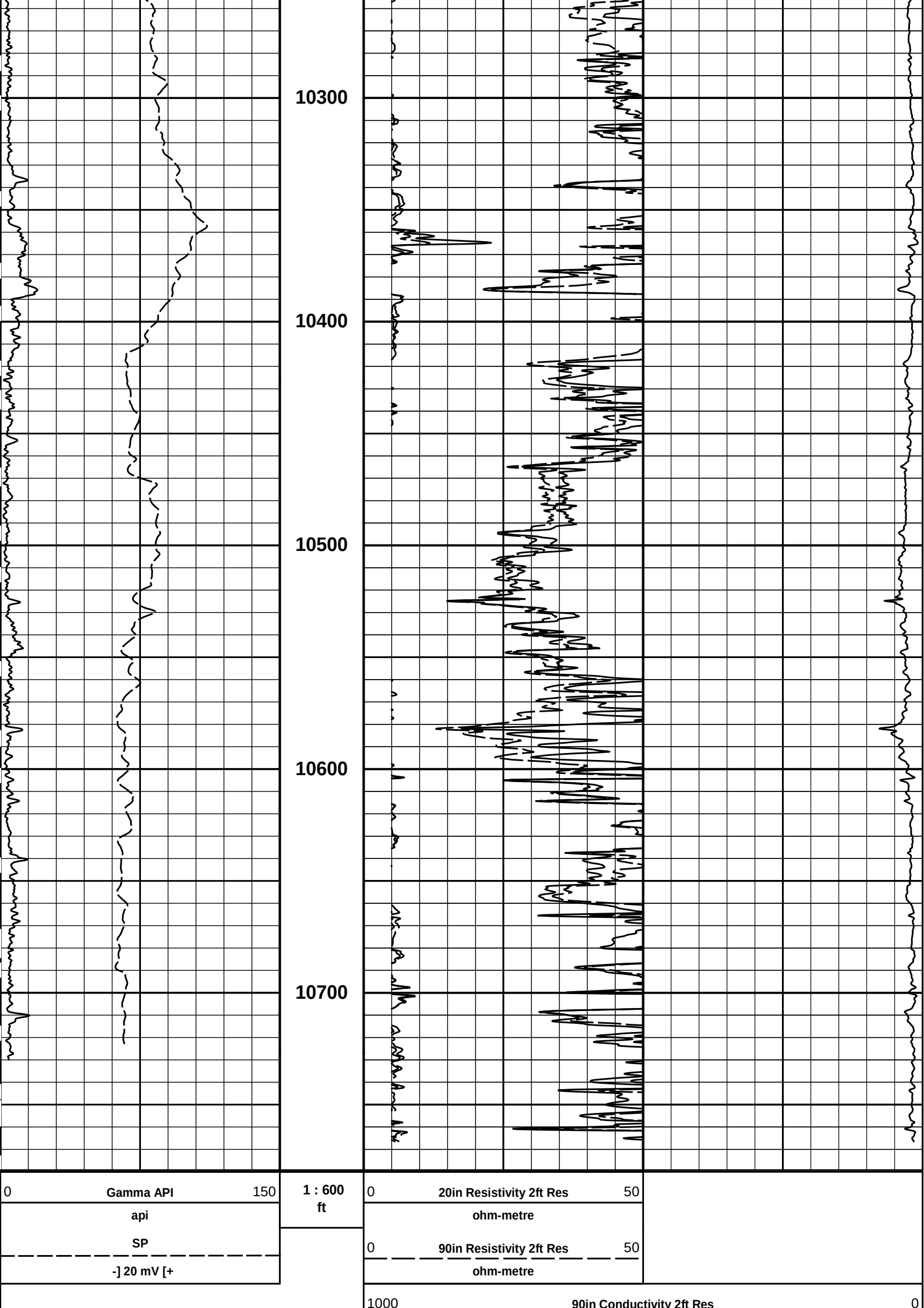
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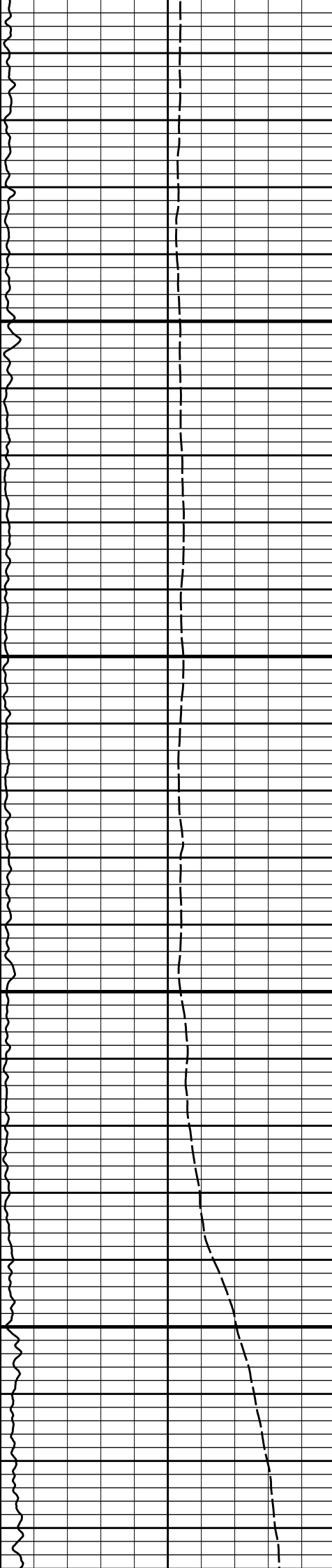
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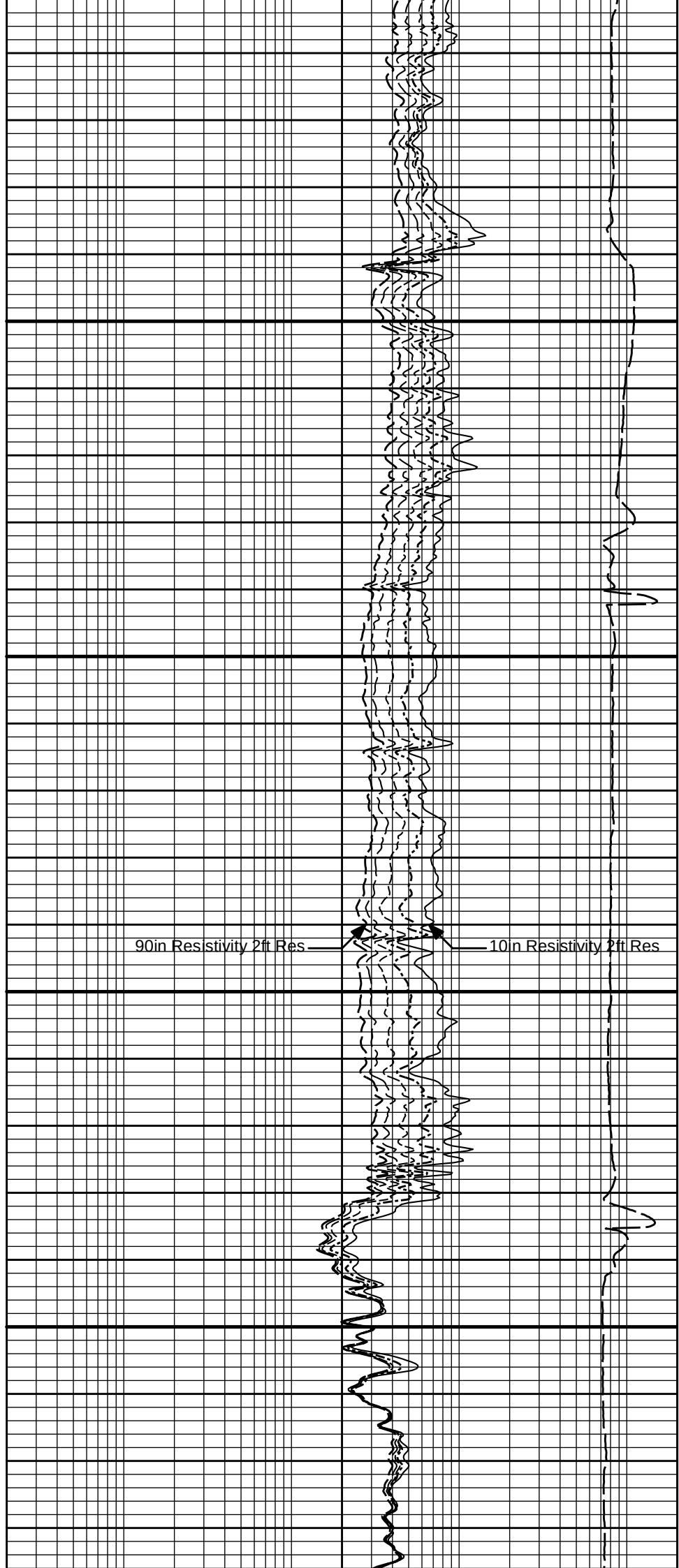


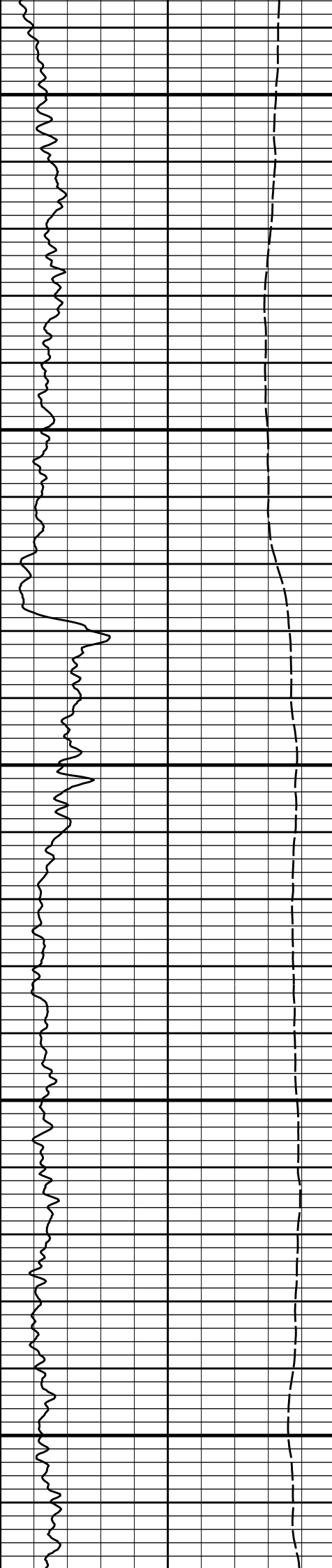
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	api		ft		ohm-metre		
	SP			0	90in Resistivity 2ft Res	50	
	-] 20 mV [+]				ohm-metre		
				1000	90in Conductivty 2ft Res	0	



5000

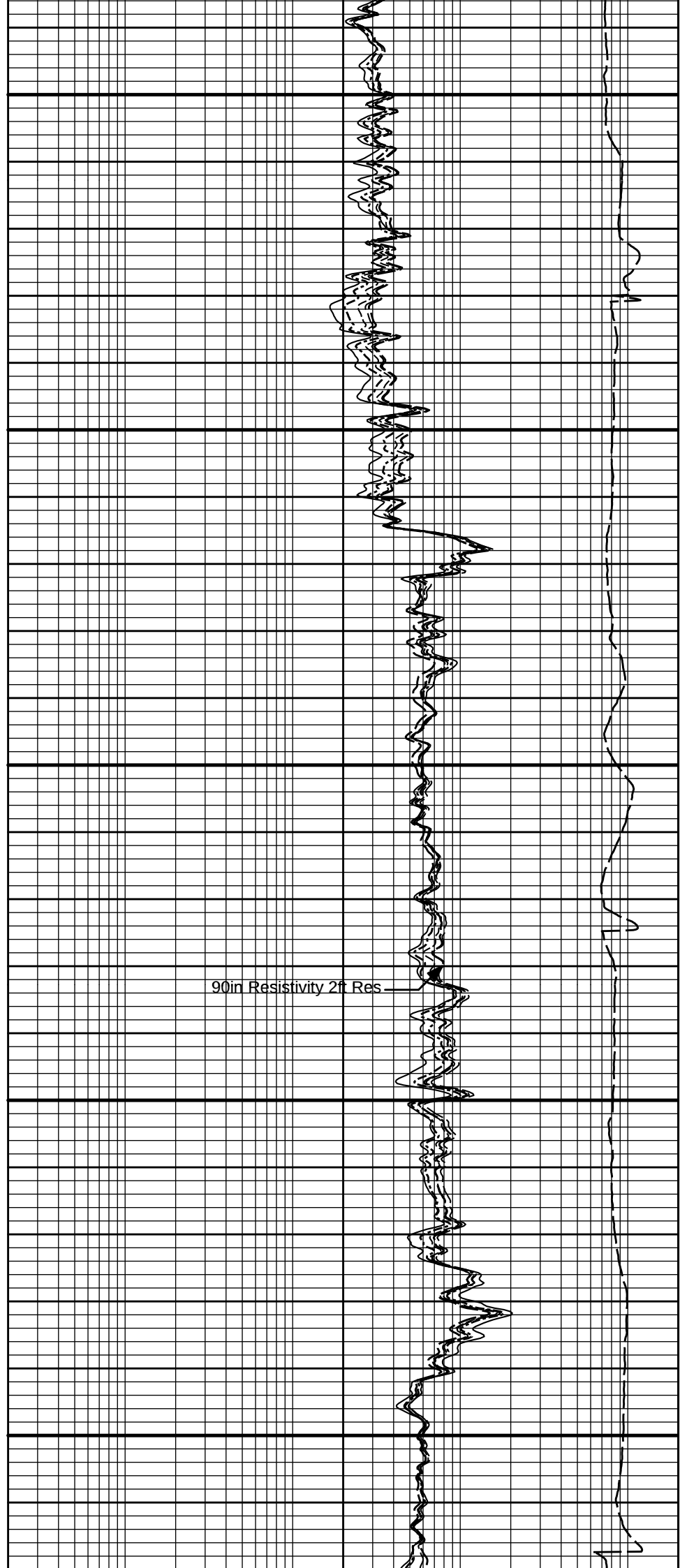
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5200

5300



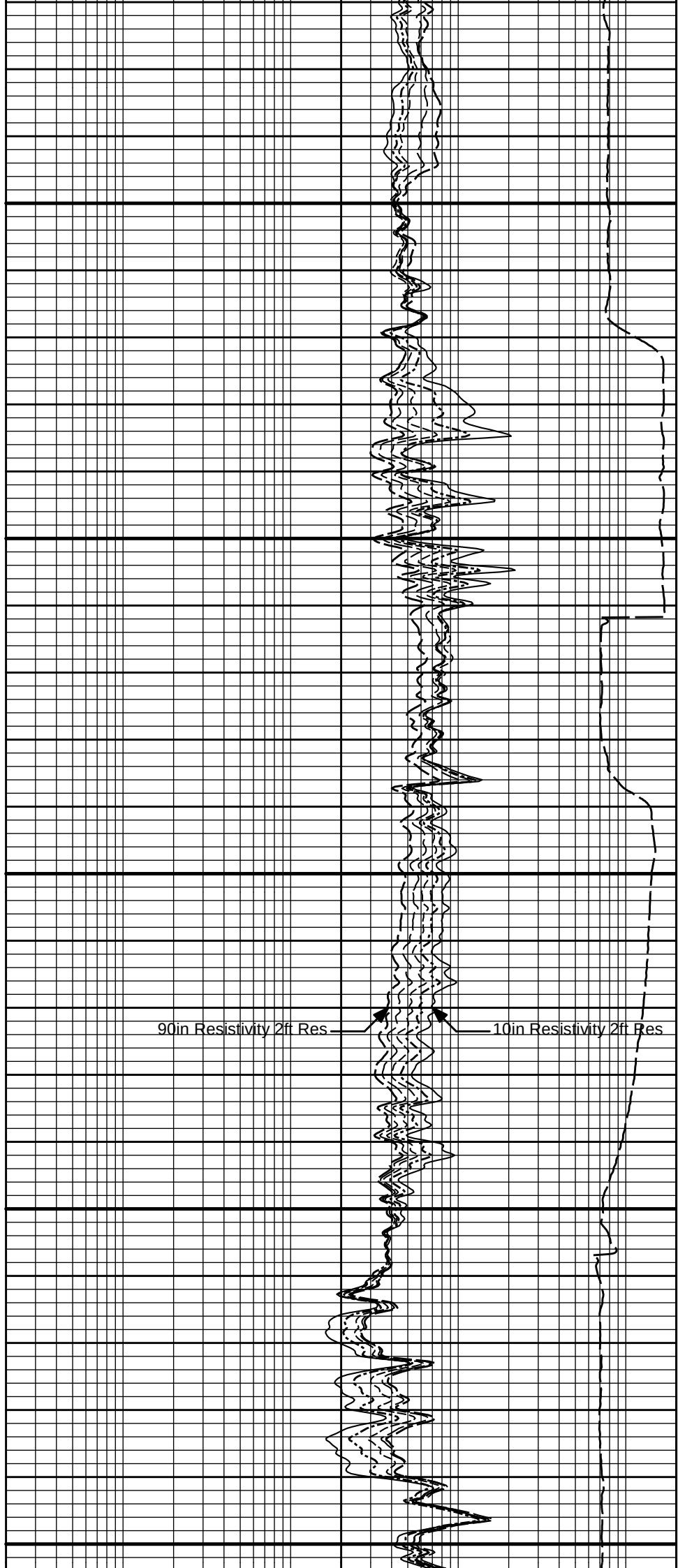
90in Resistivity 2ft Res



5400

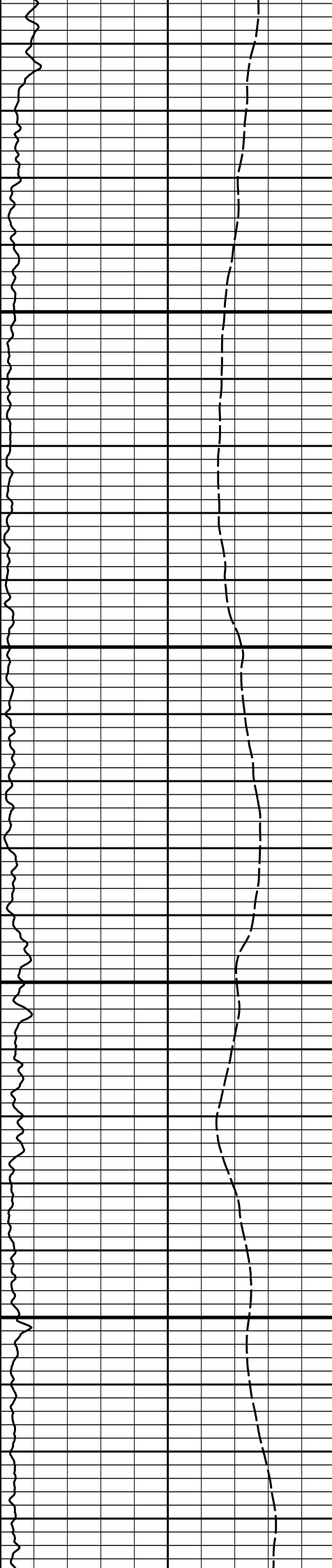
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5600



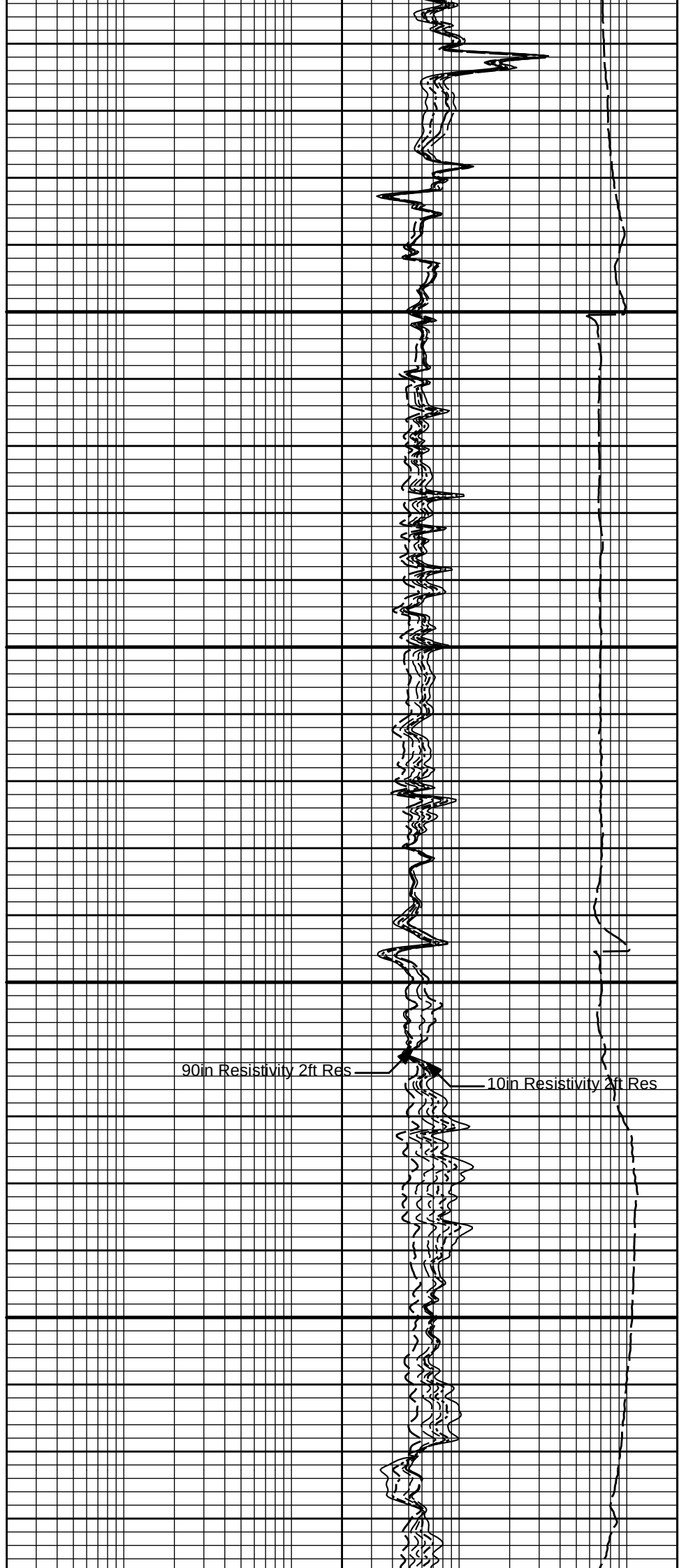
90in Resistivity 2ft Res

10in Resistivity 2ft Res



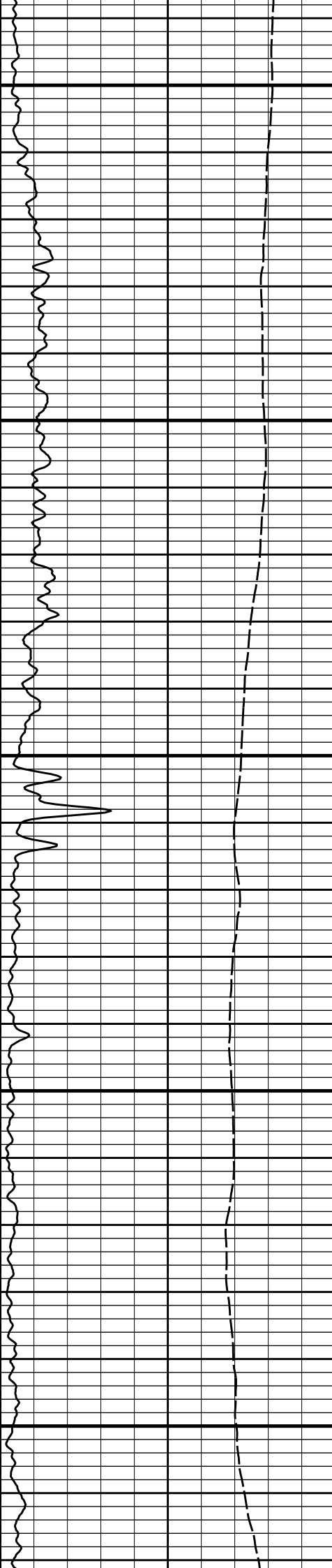
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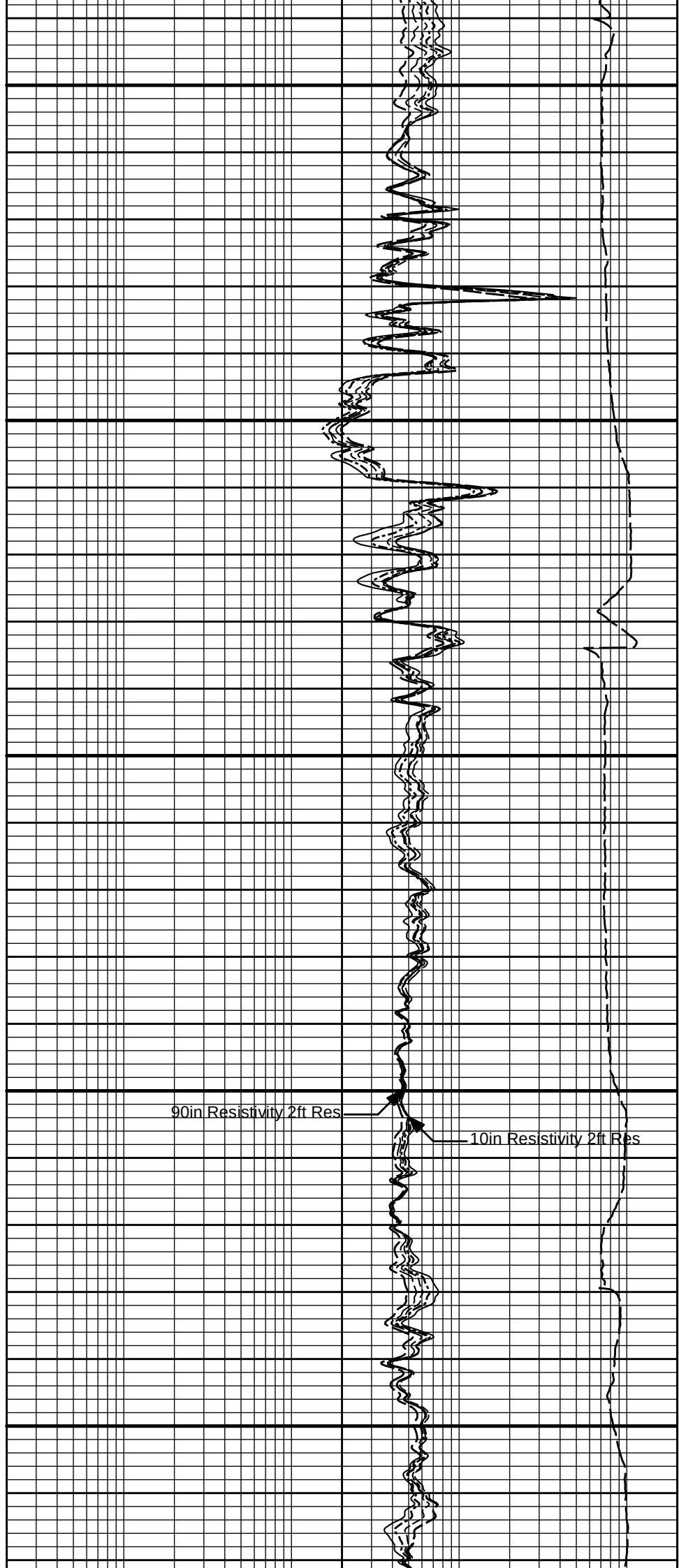
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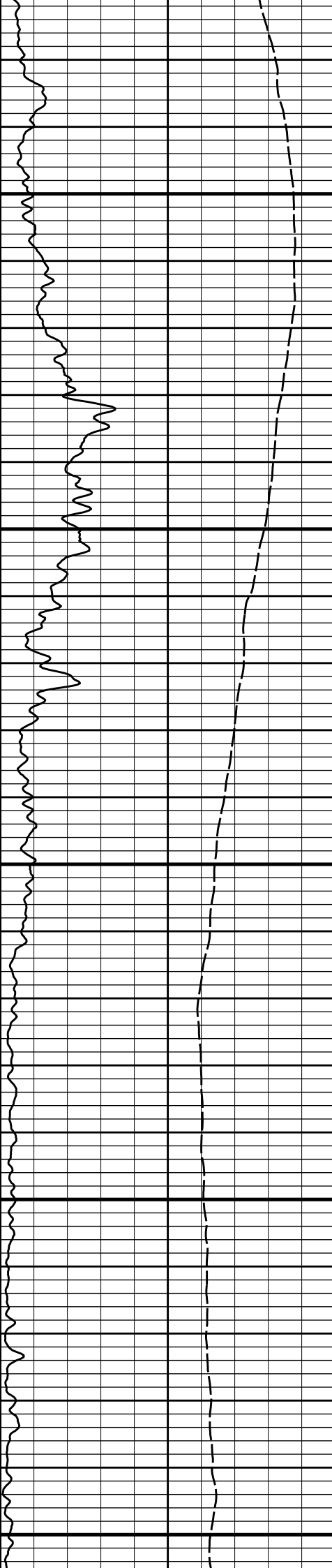
10in Resistivity 2ft Res



5900

6000

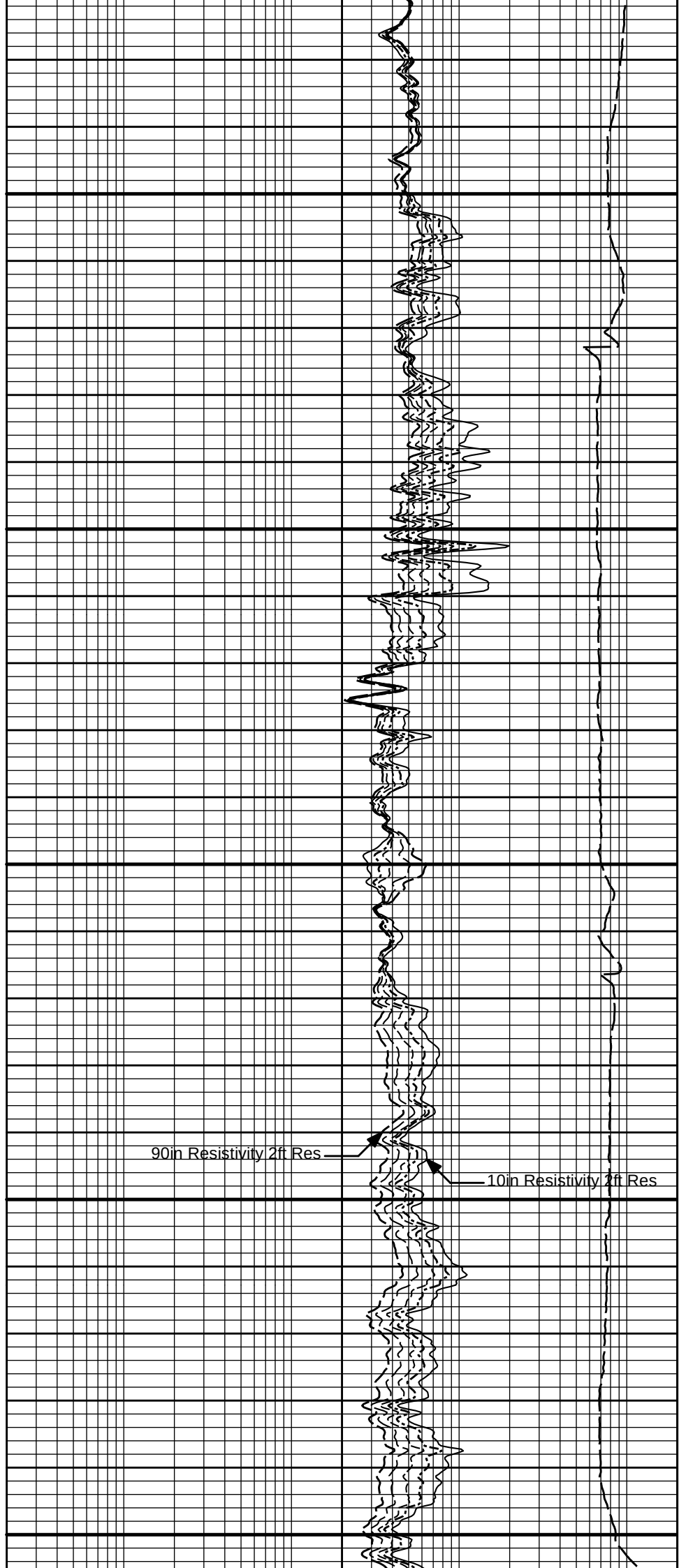




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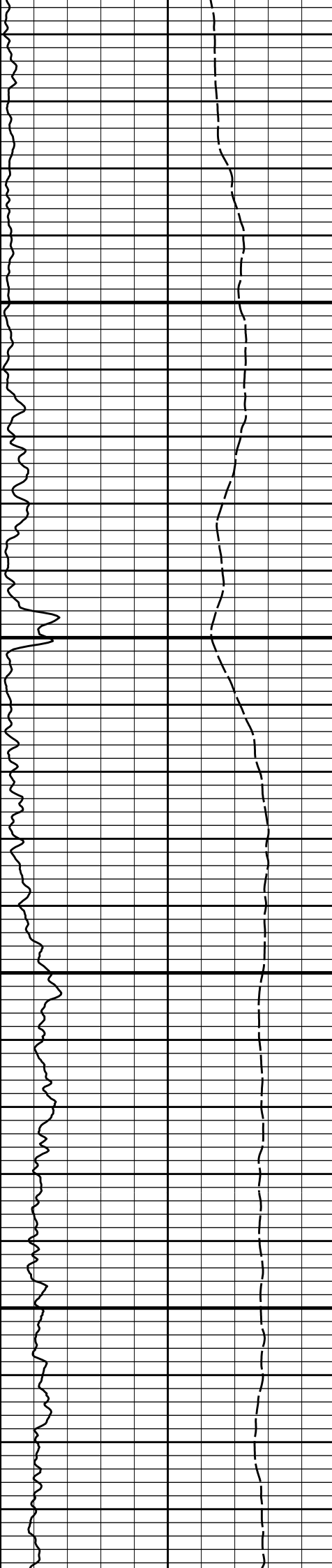
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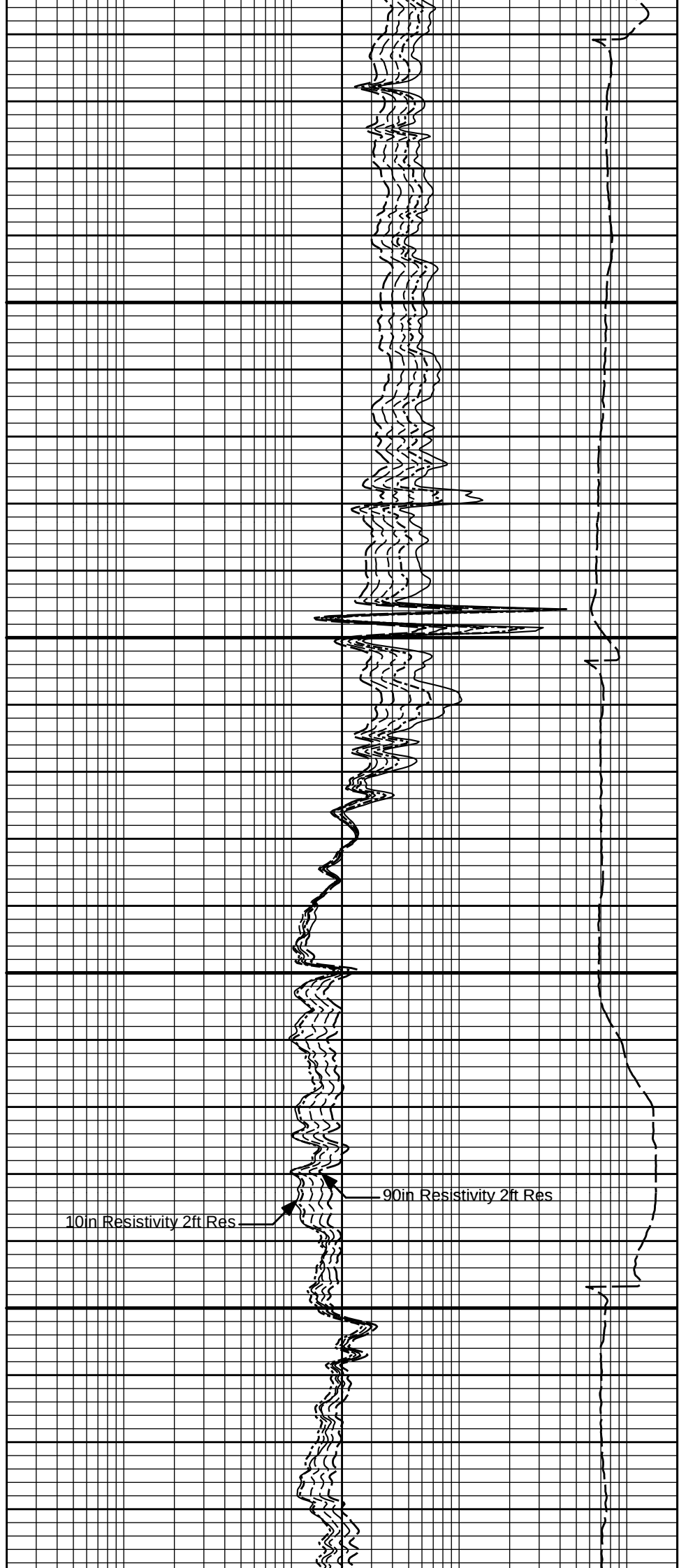
90in Resistivity 2ft Res

10in Resistivity 2ft Res



6400

6500



10in Resistivity 2ft Res

90in Resistivity 2ft Res

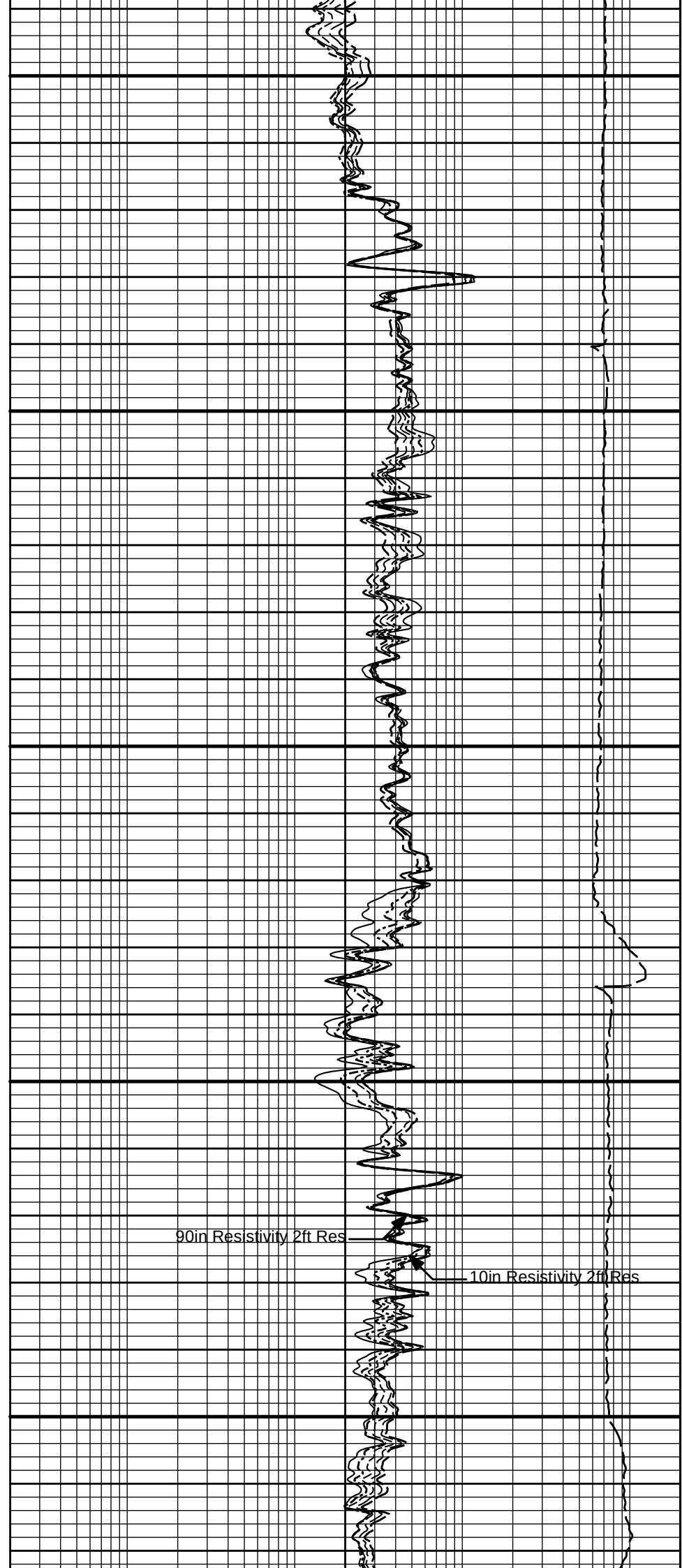


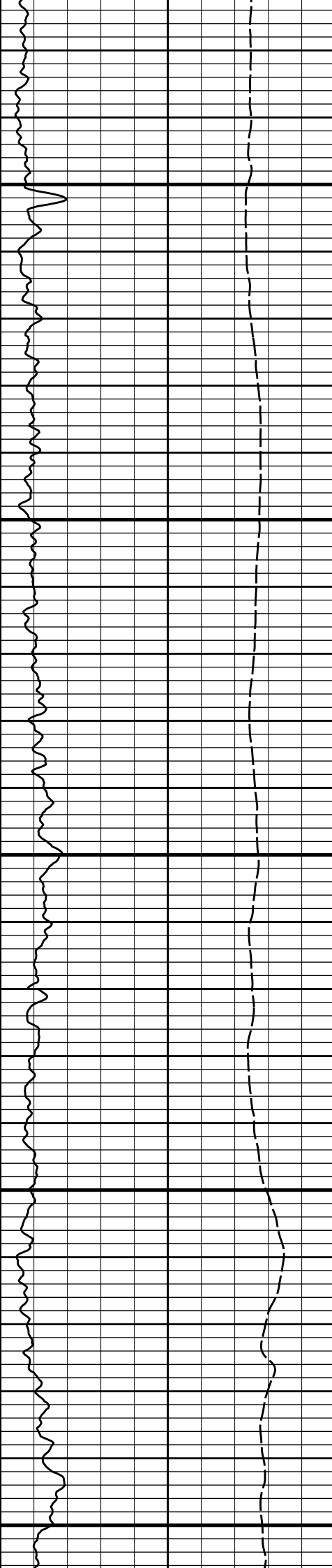
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6700

90in Resistivity 2ft Res

10in Resistivity 2ft Res

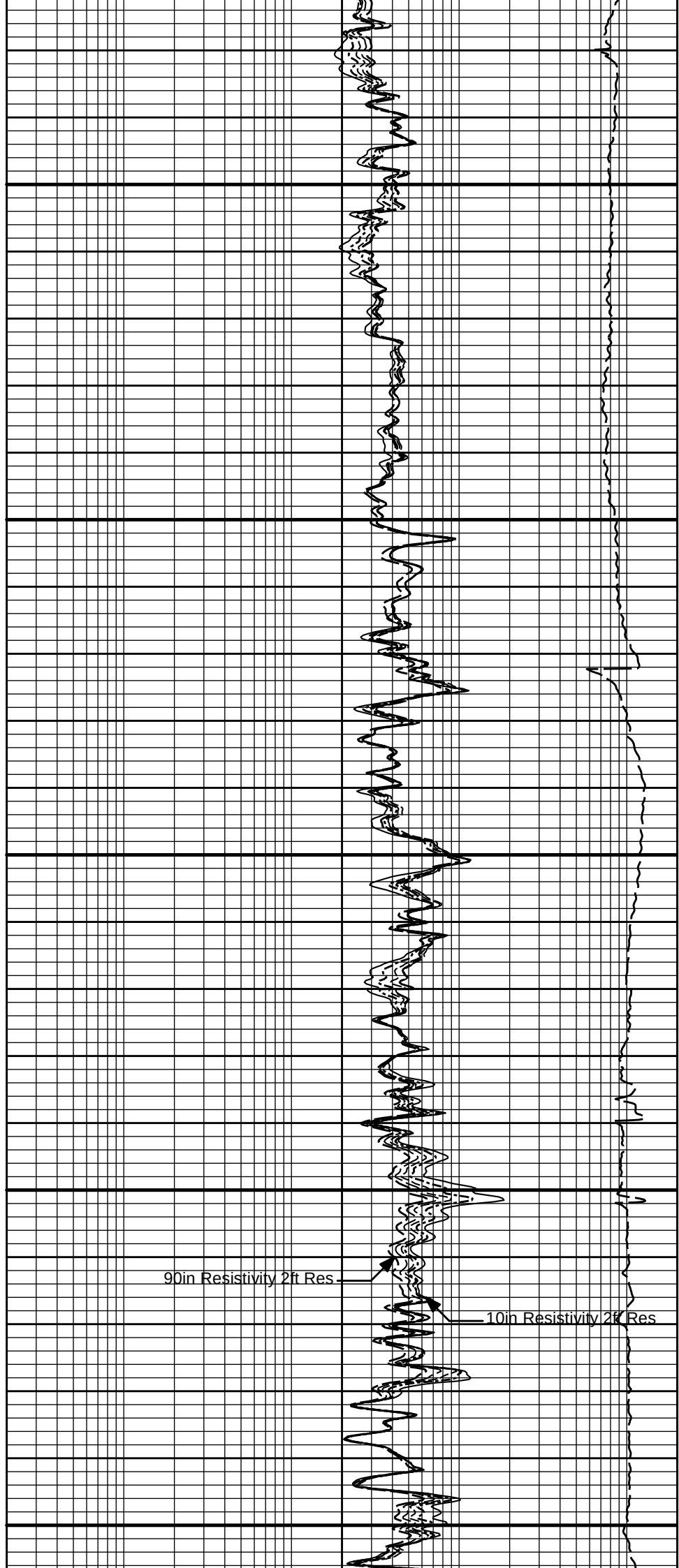




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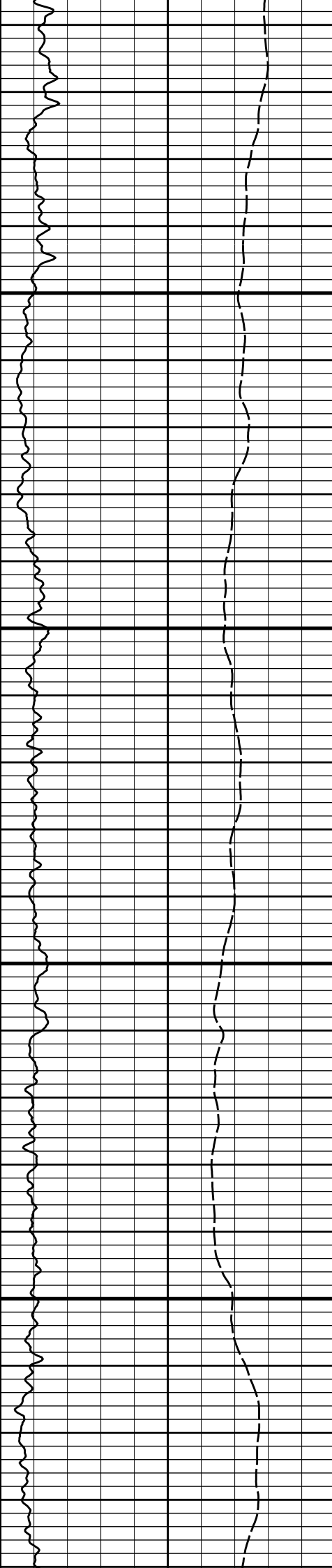
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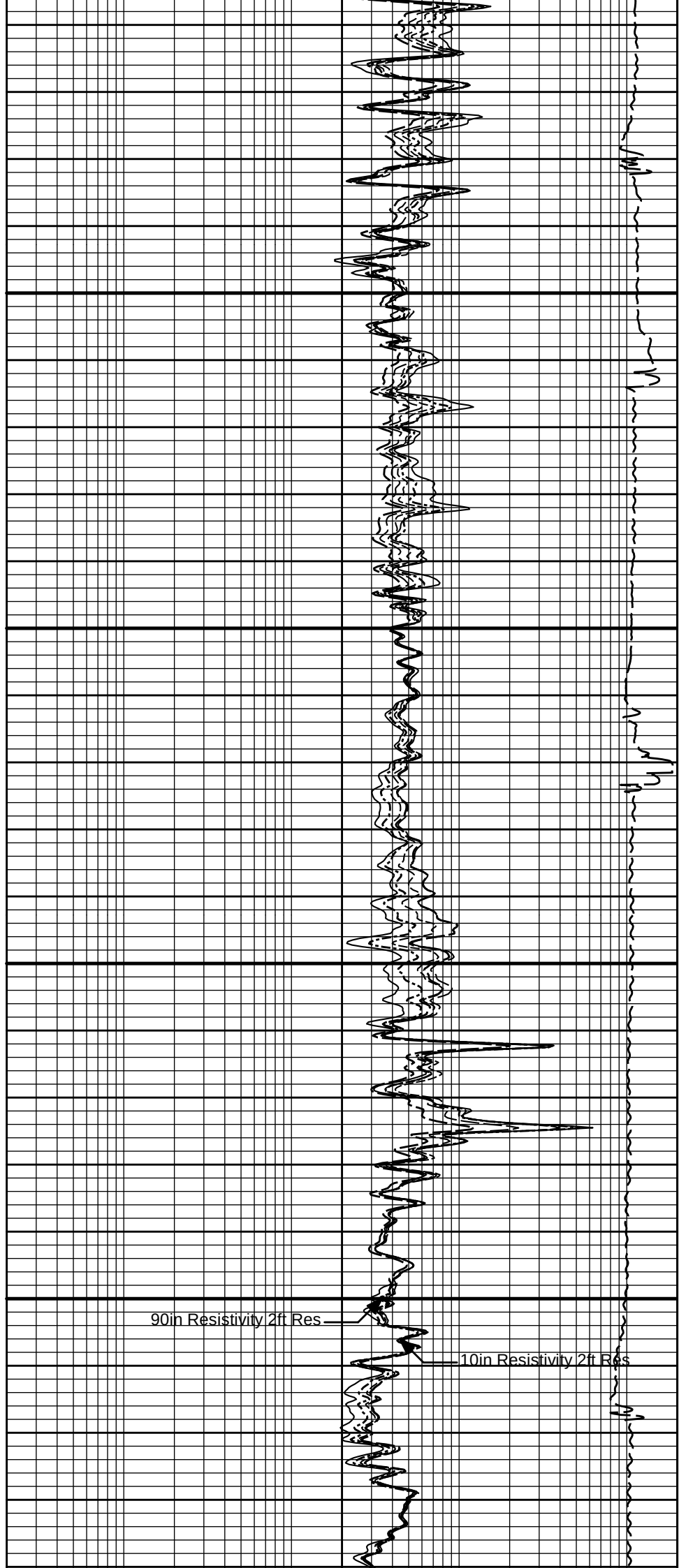
90in Resistivity 2ft Res.

10in Resistivity 2ft Res



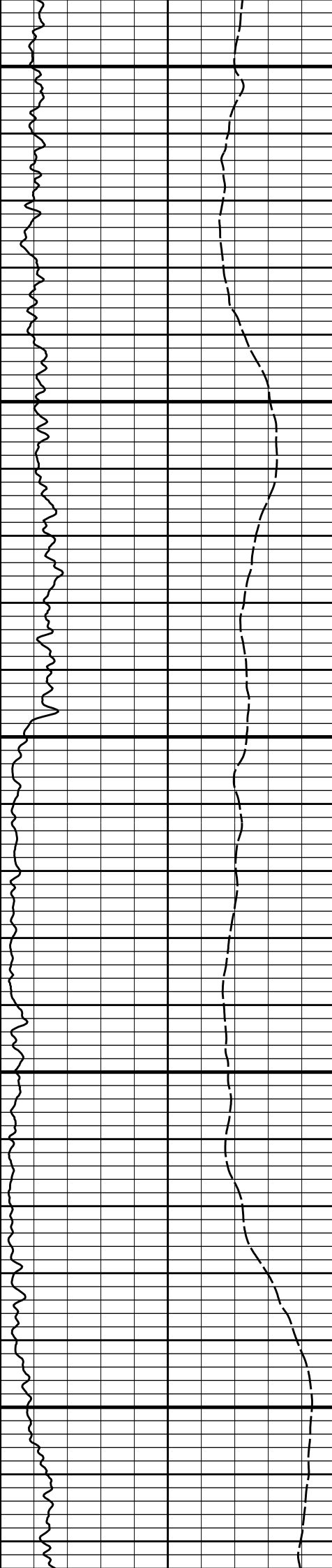
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7200



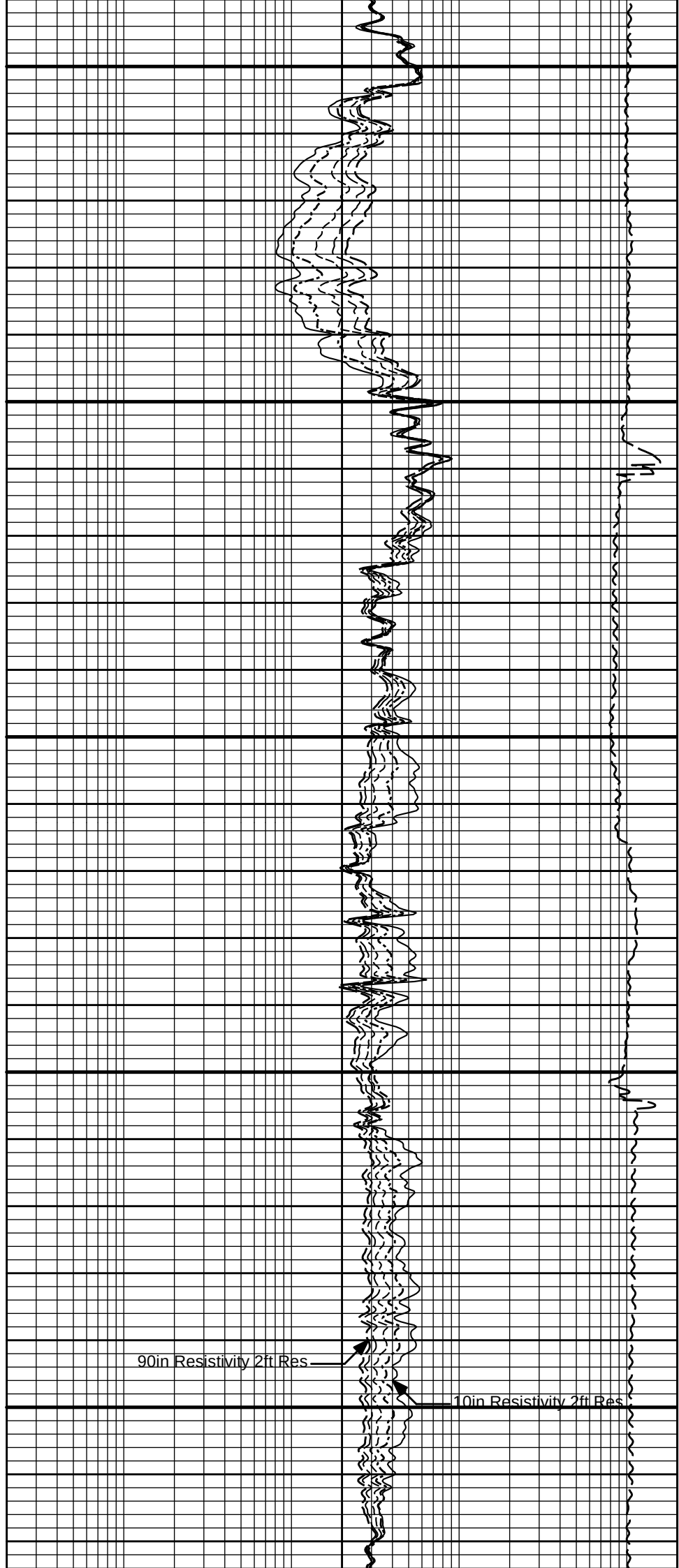
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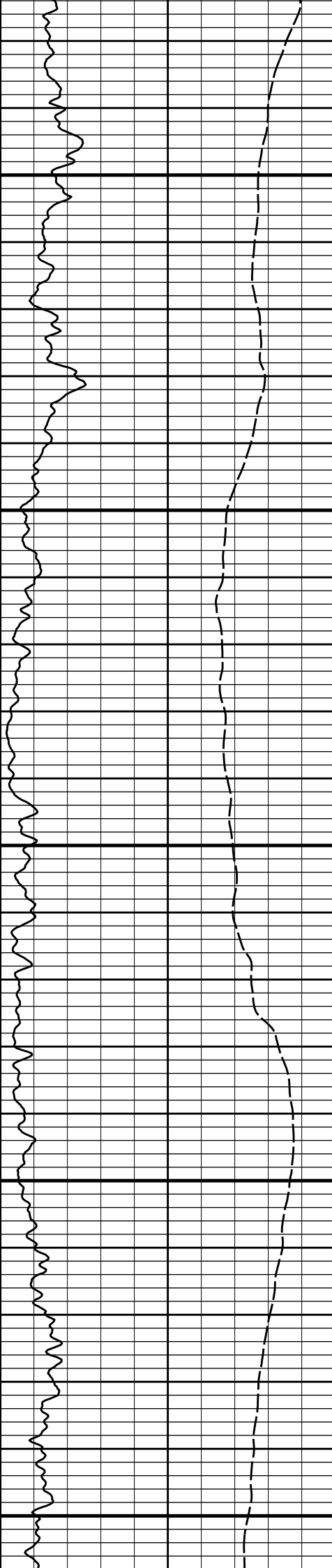
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7300

7400

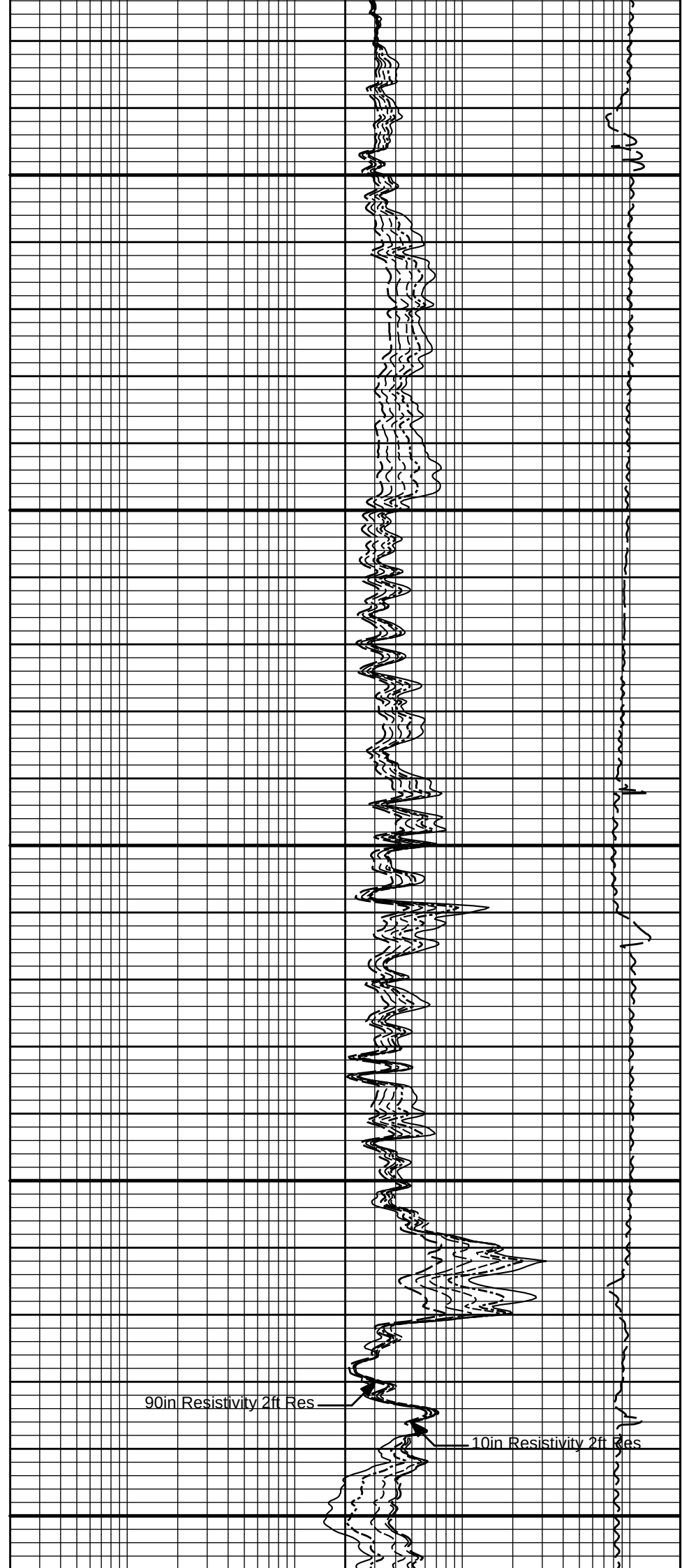




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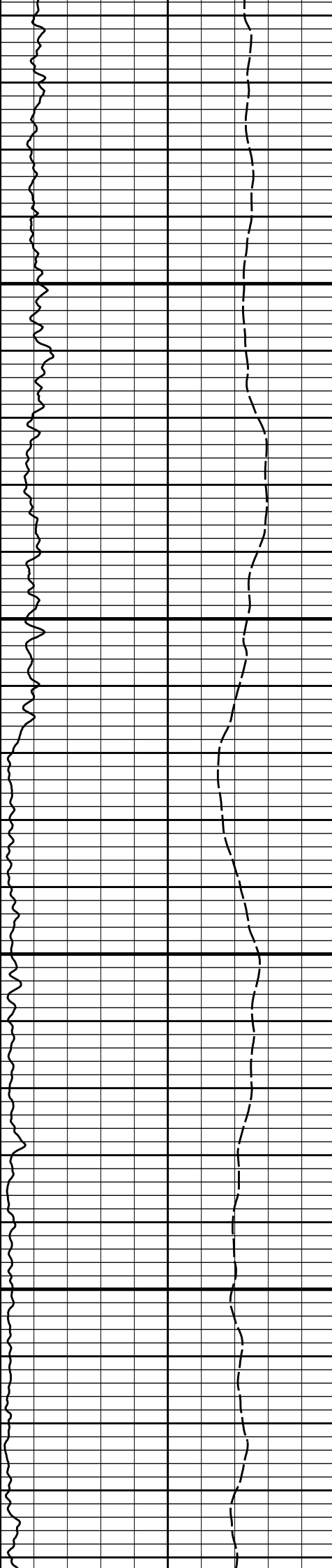
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7700



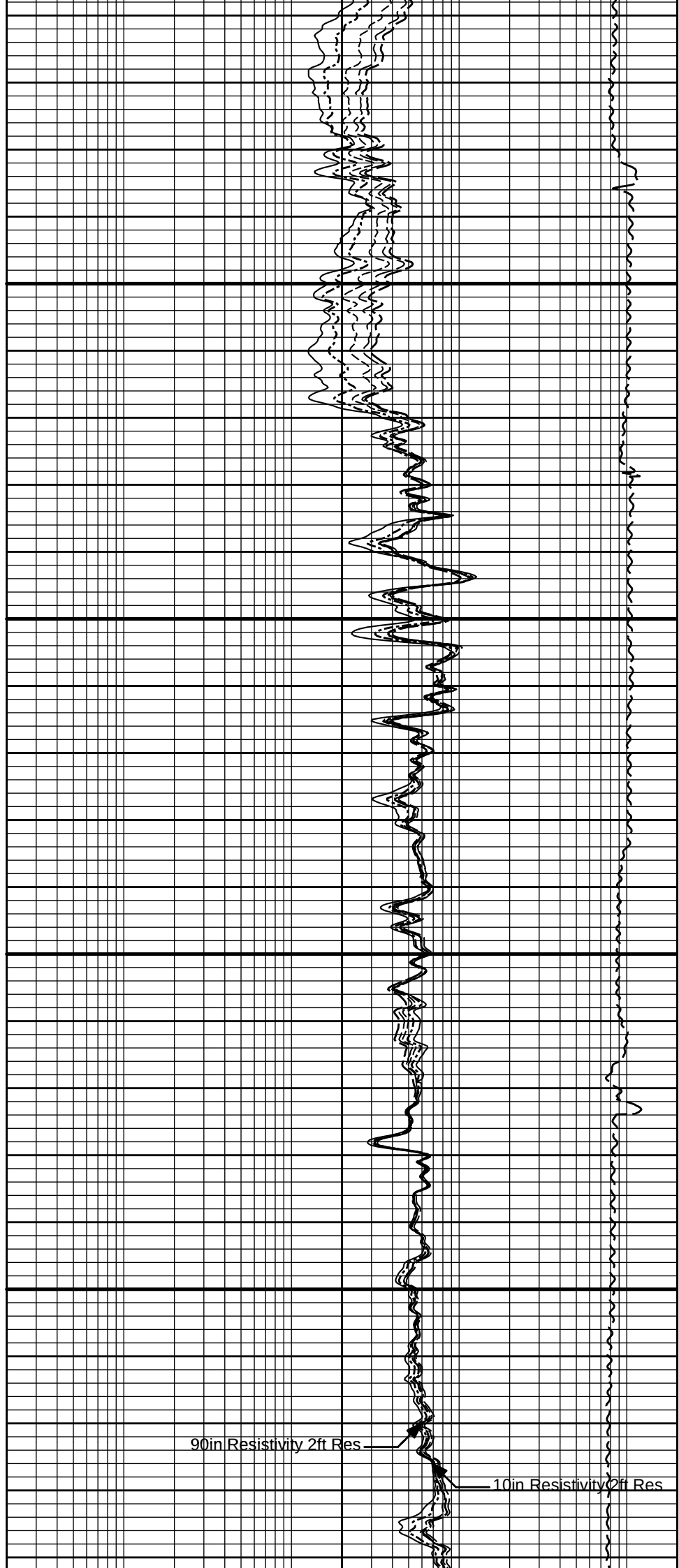
90in Resistivity 2ft Res

10in Resistivity 2ft Res



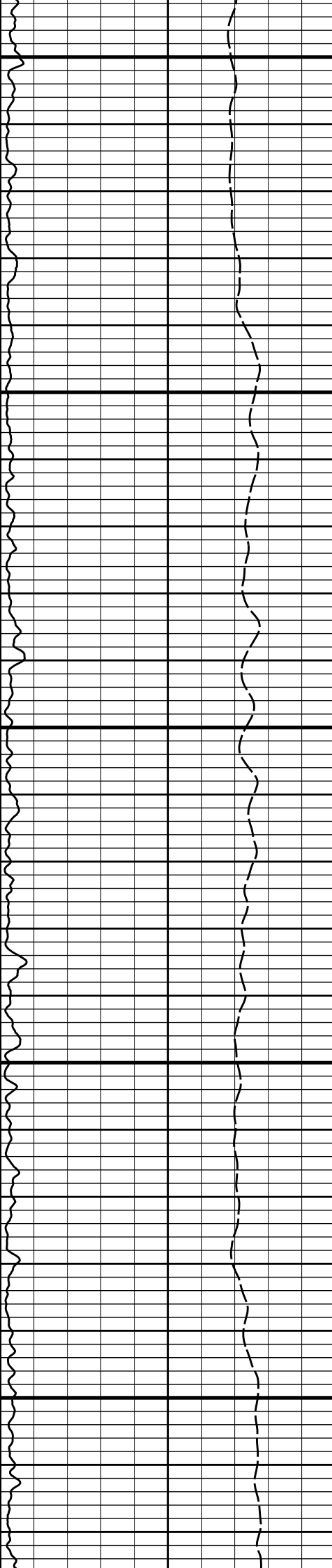
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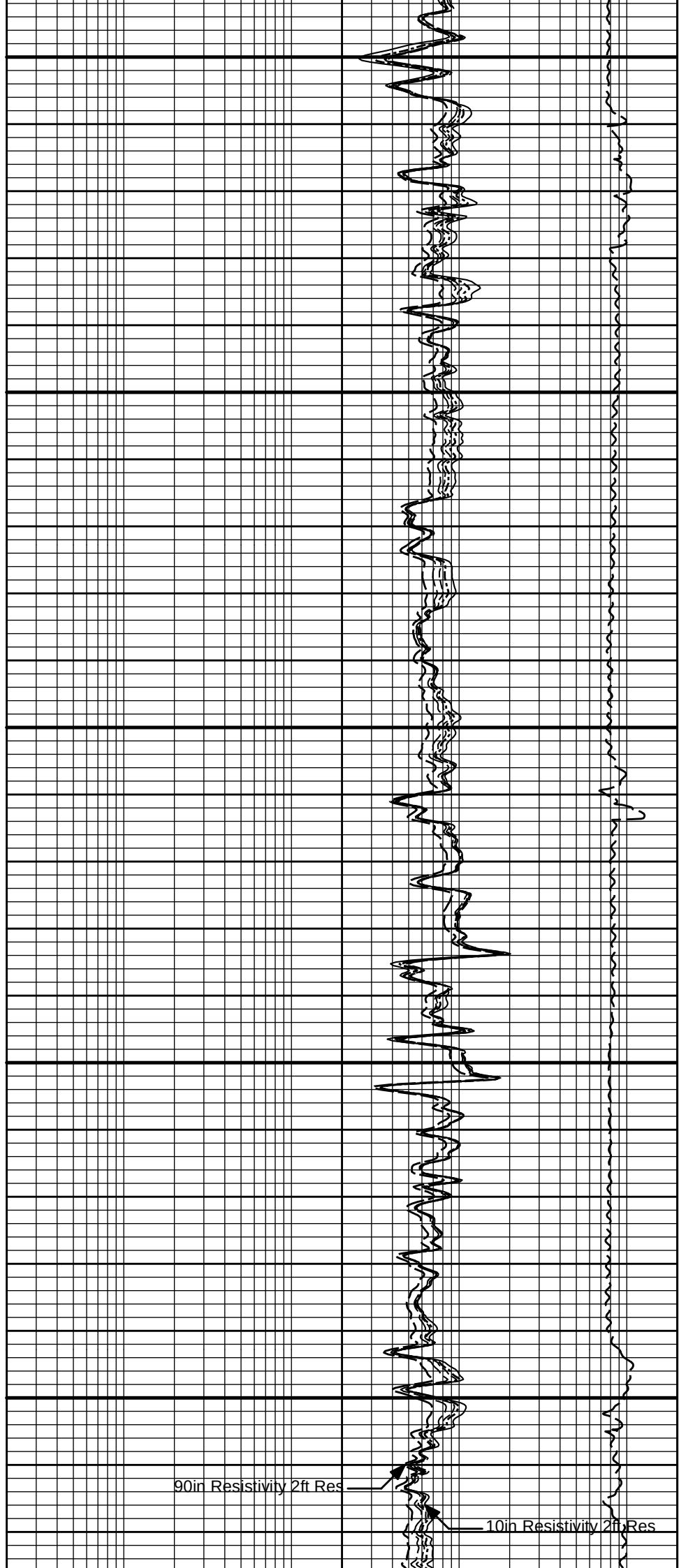
90in Resistivity 2ft Res

10in Resistivity 2ft Res



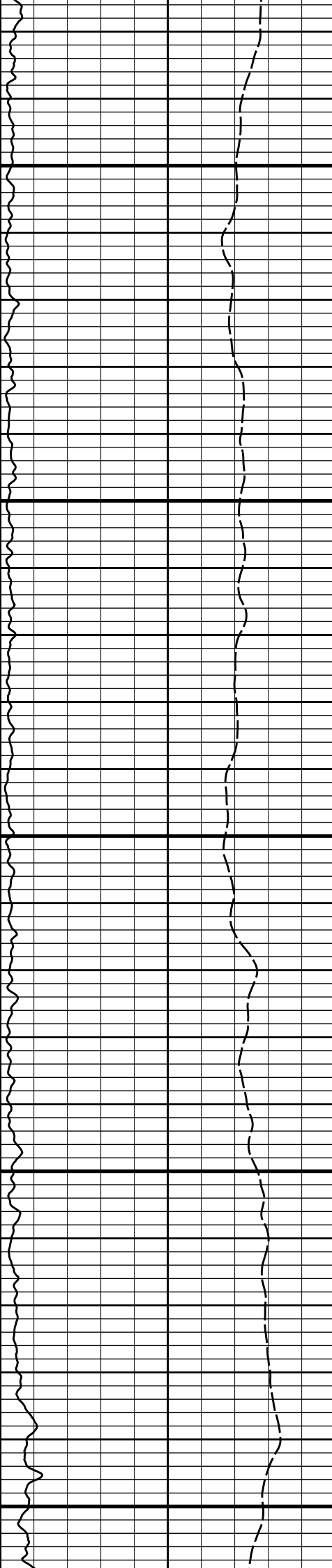
8000

8100



90in Resistivity 2ft Res

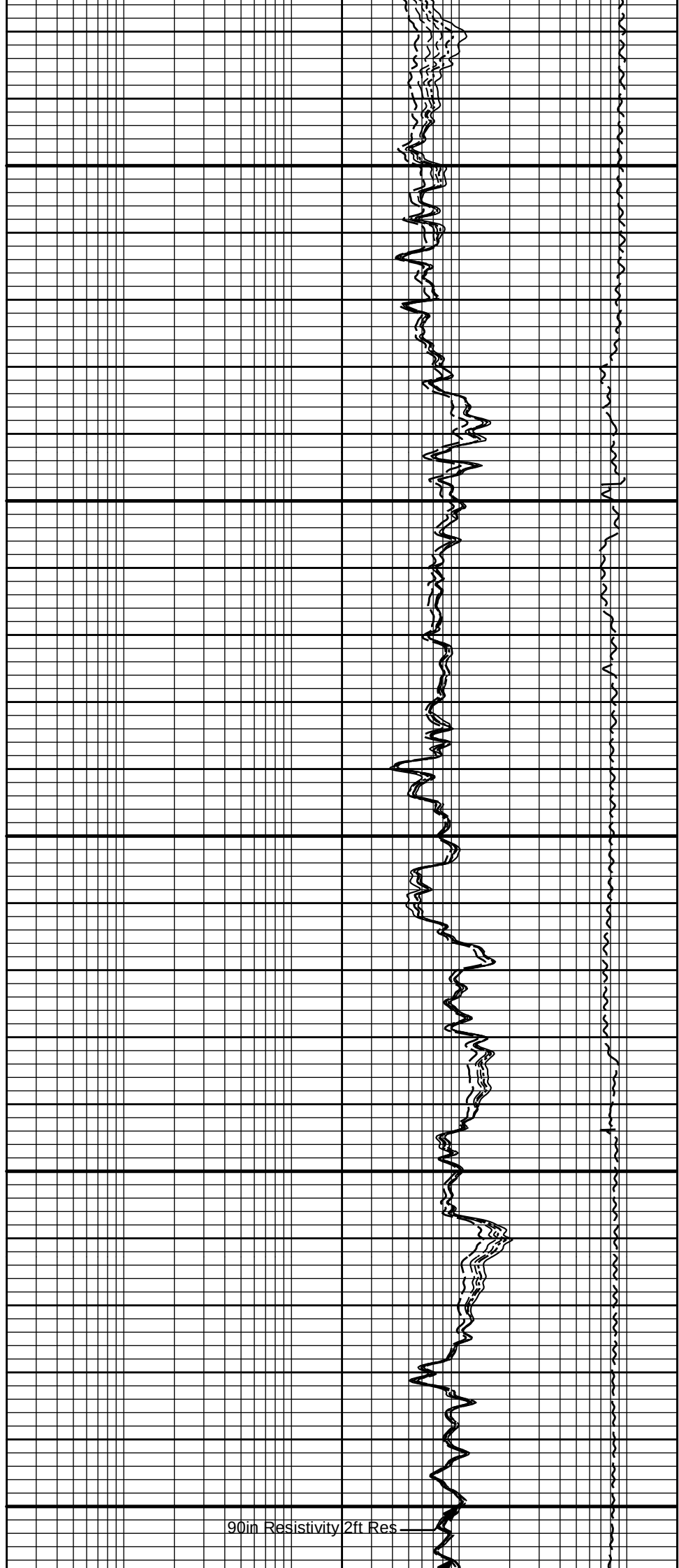
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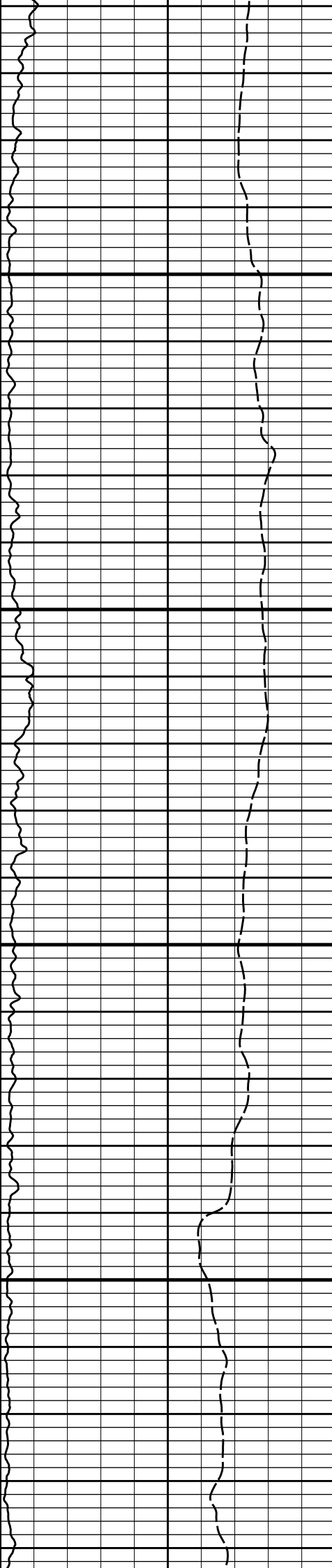
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8400

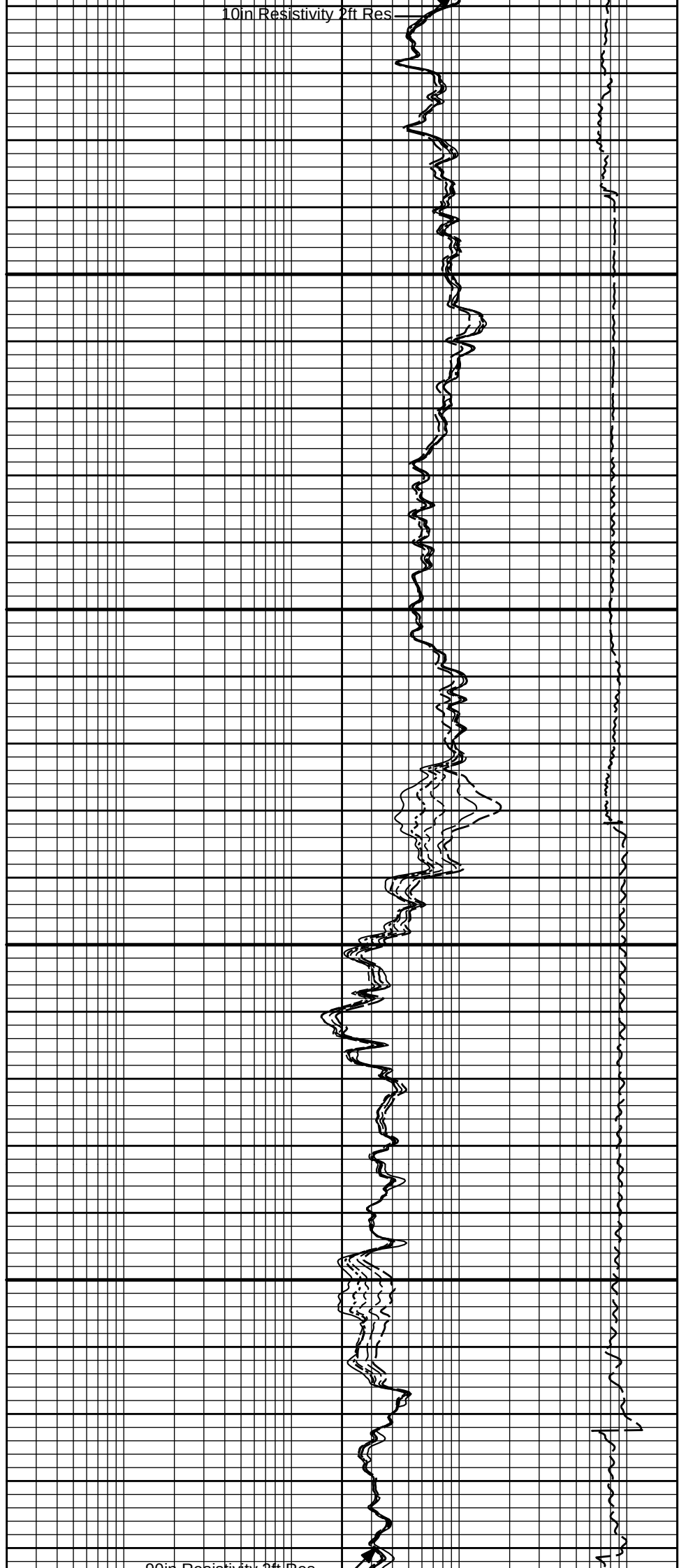


90in Resistivity 2ft Res.

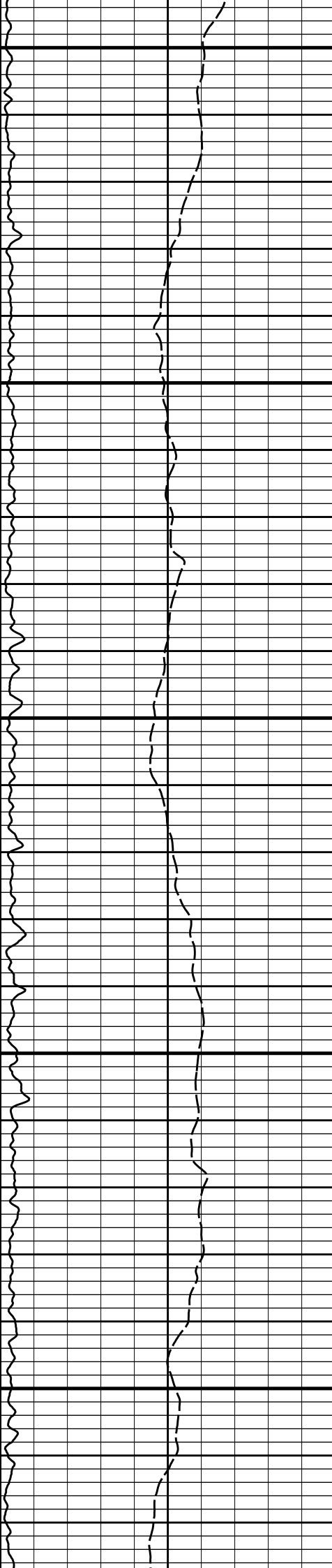


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8600

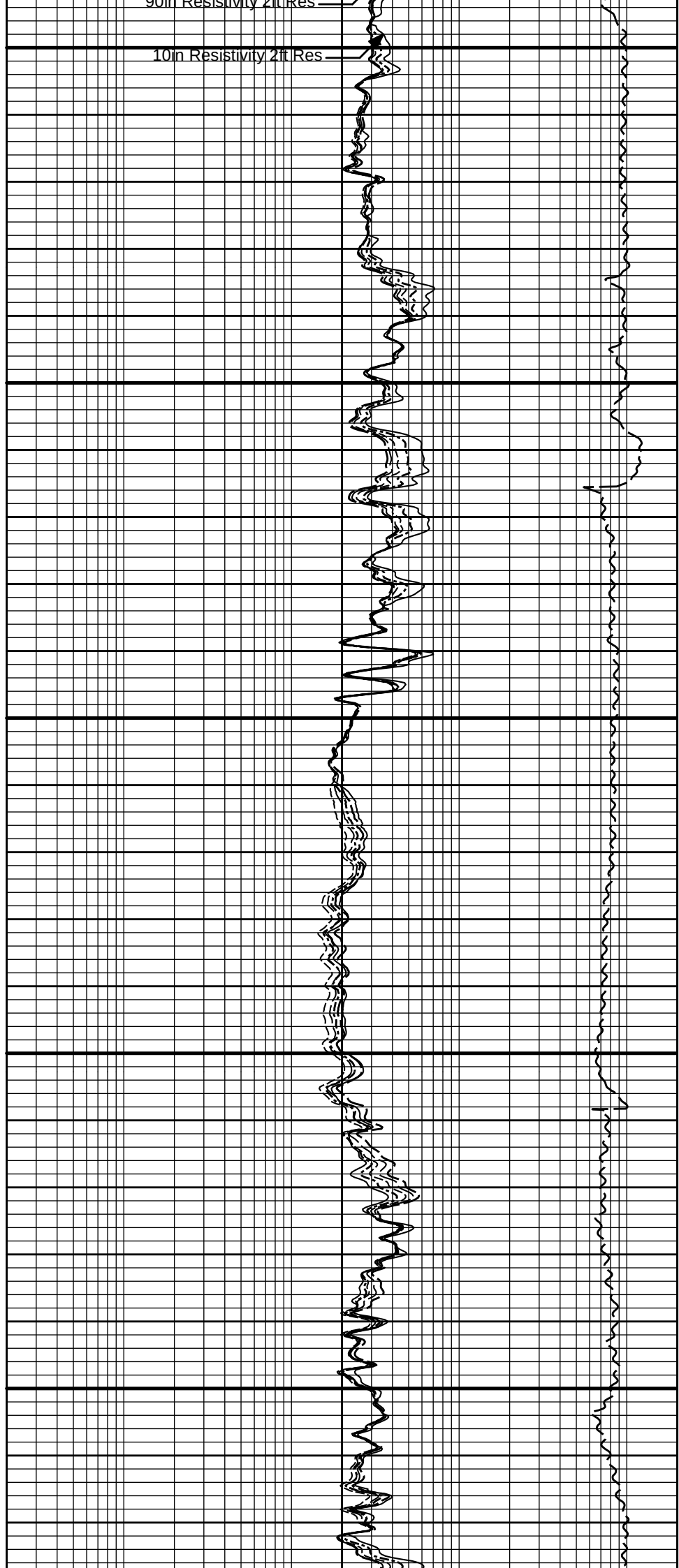


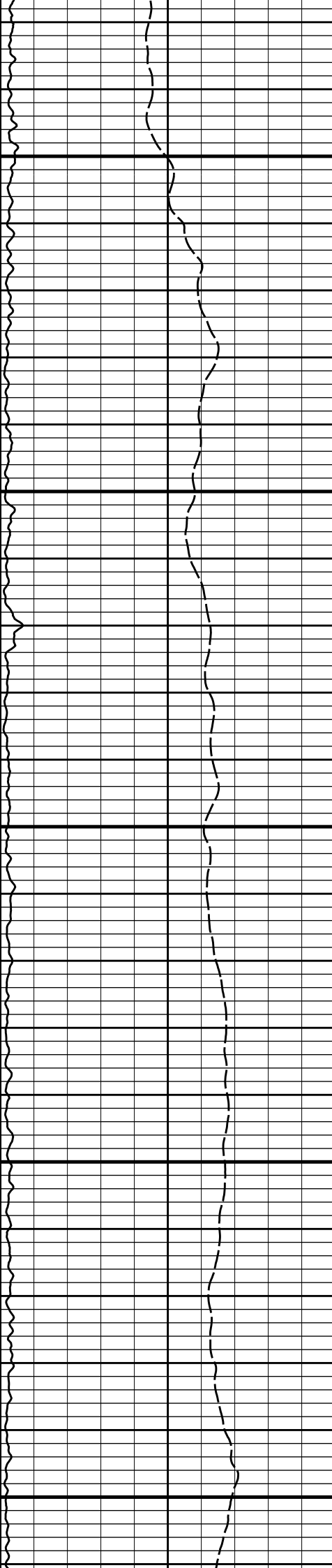
10in Resistivity 2ft Res



8700

8800

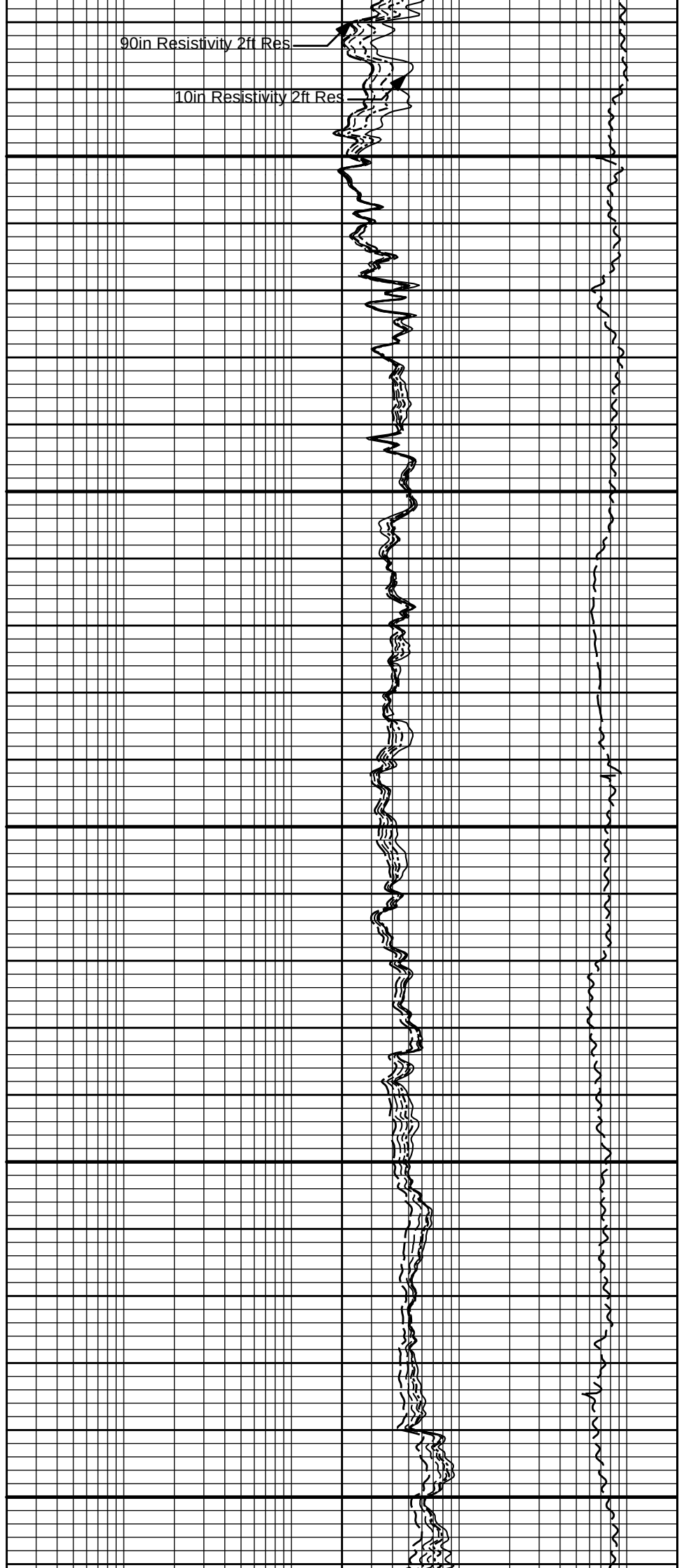




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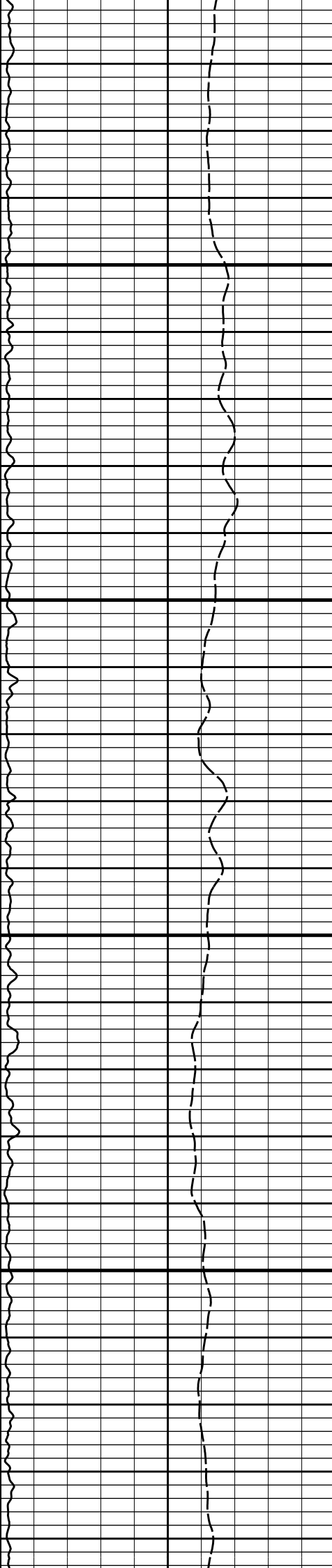
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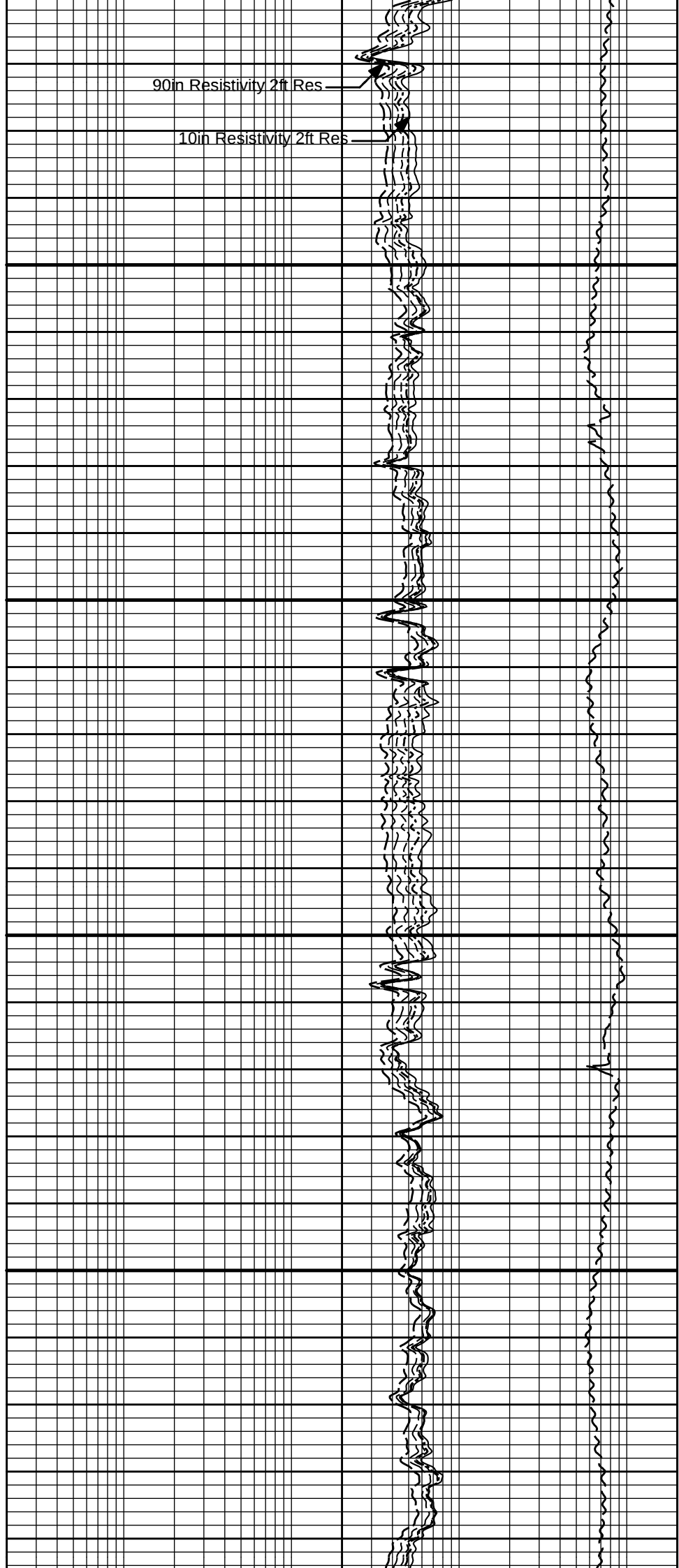
90in Resistivity 2ft Res

10in Resistivity 2ft Res



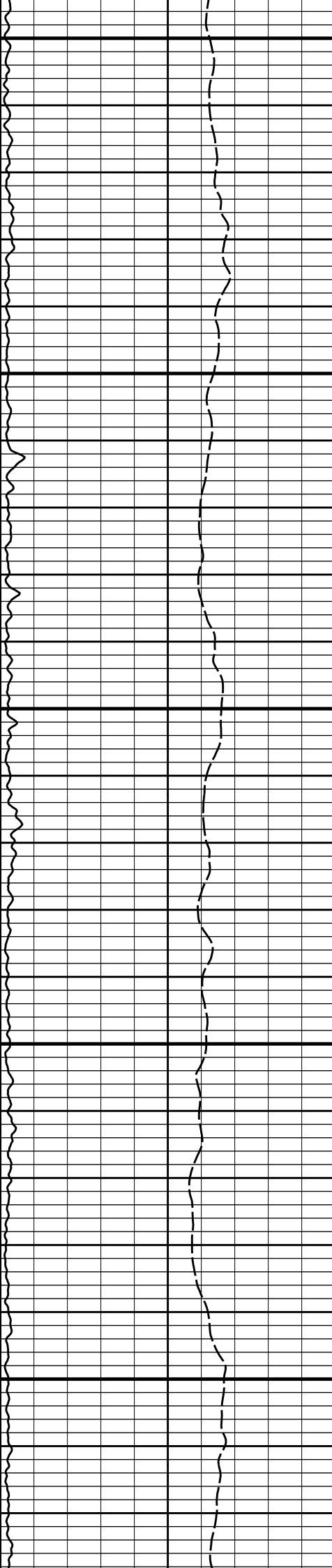
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9300



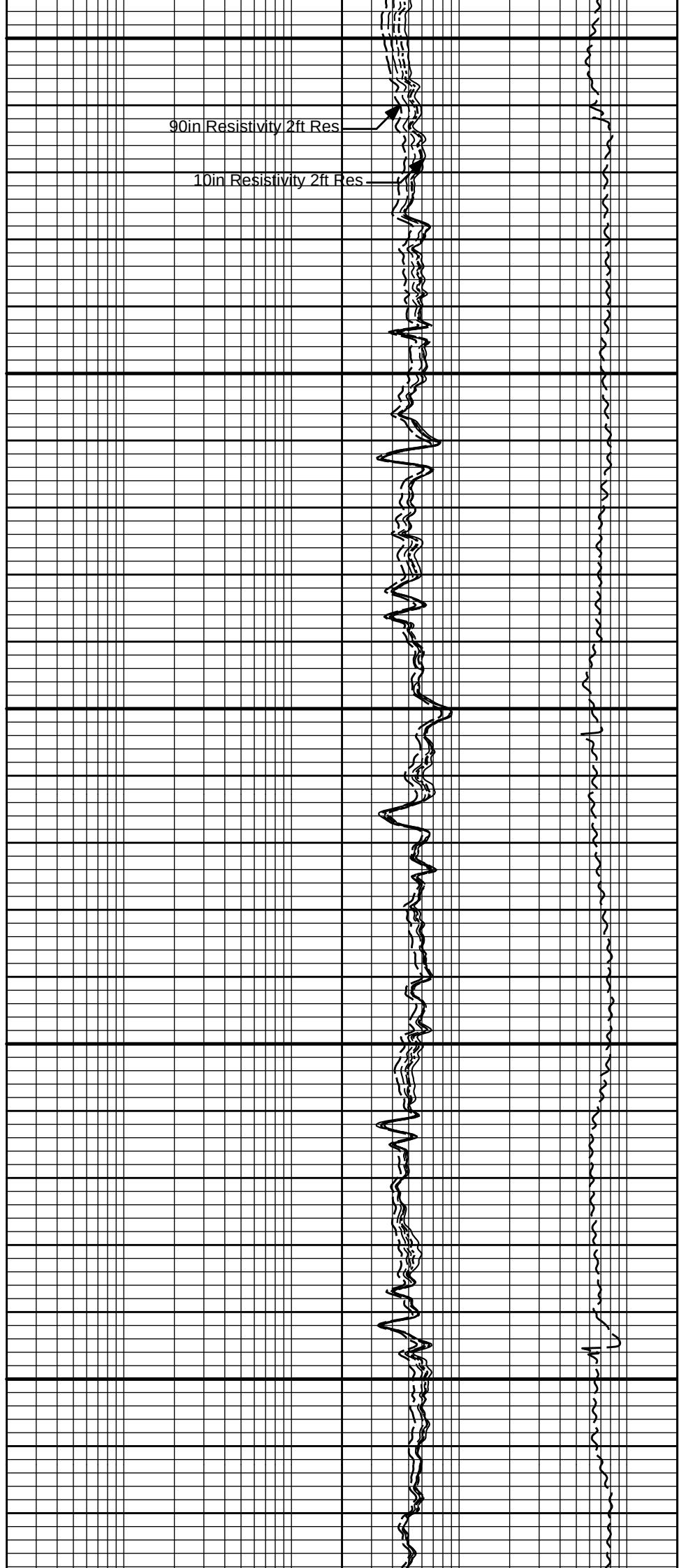
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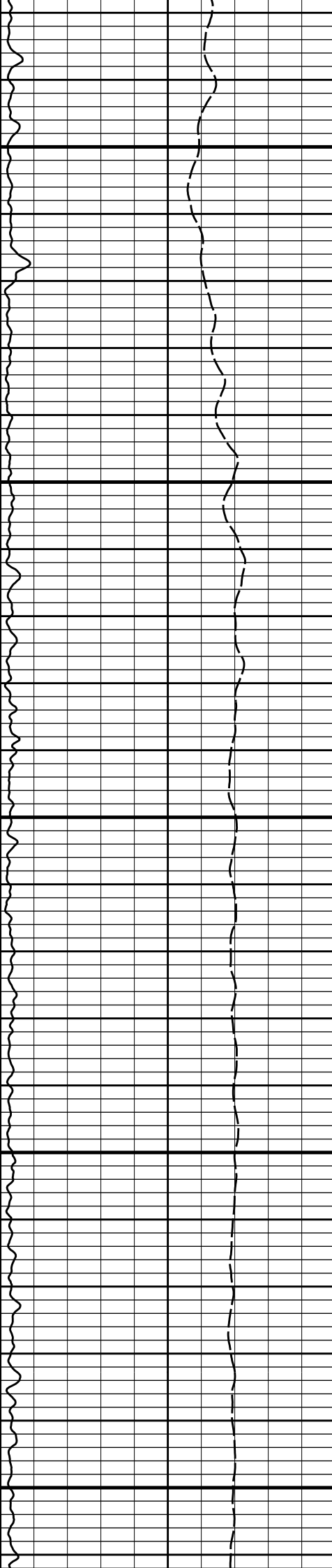
10in Resistivity 2ft Res



9400

9500





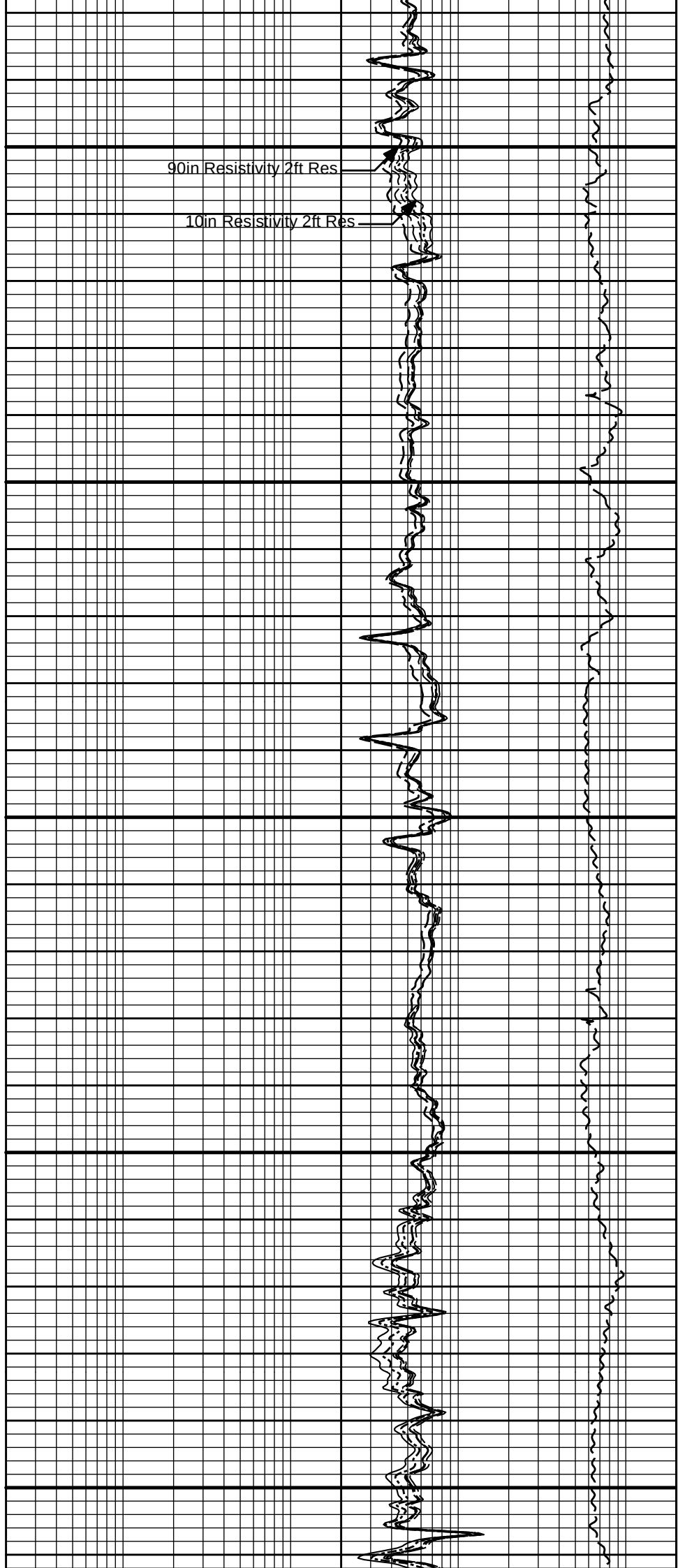
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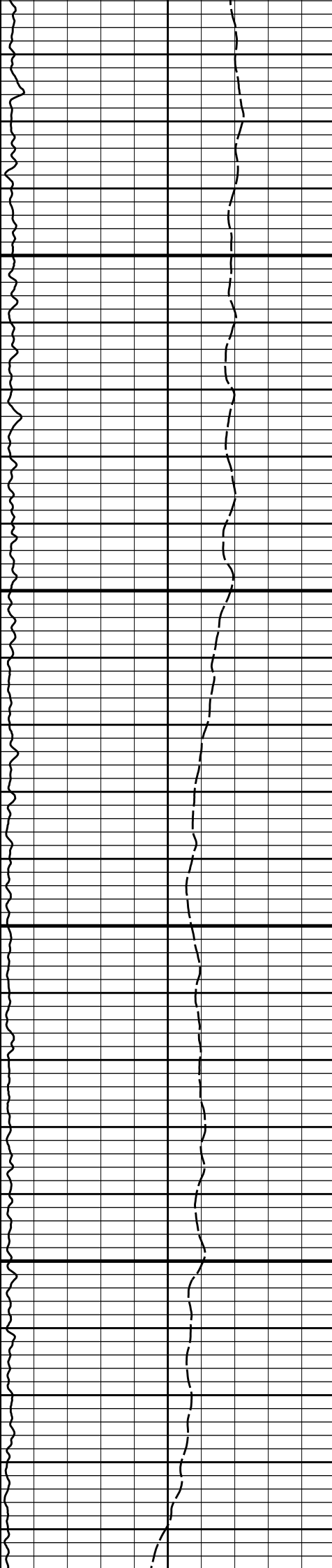
90in Resistivity 2ft Res

10in Resistivity 2ft Res

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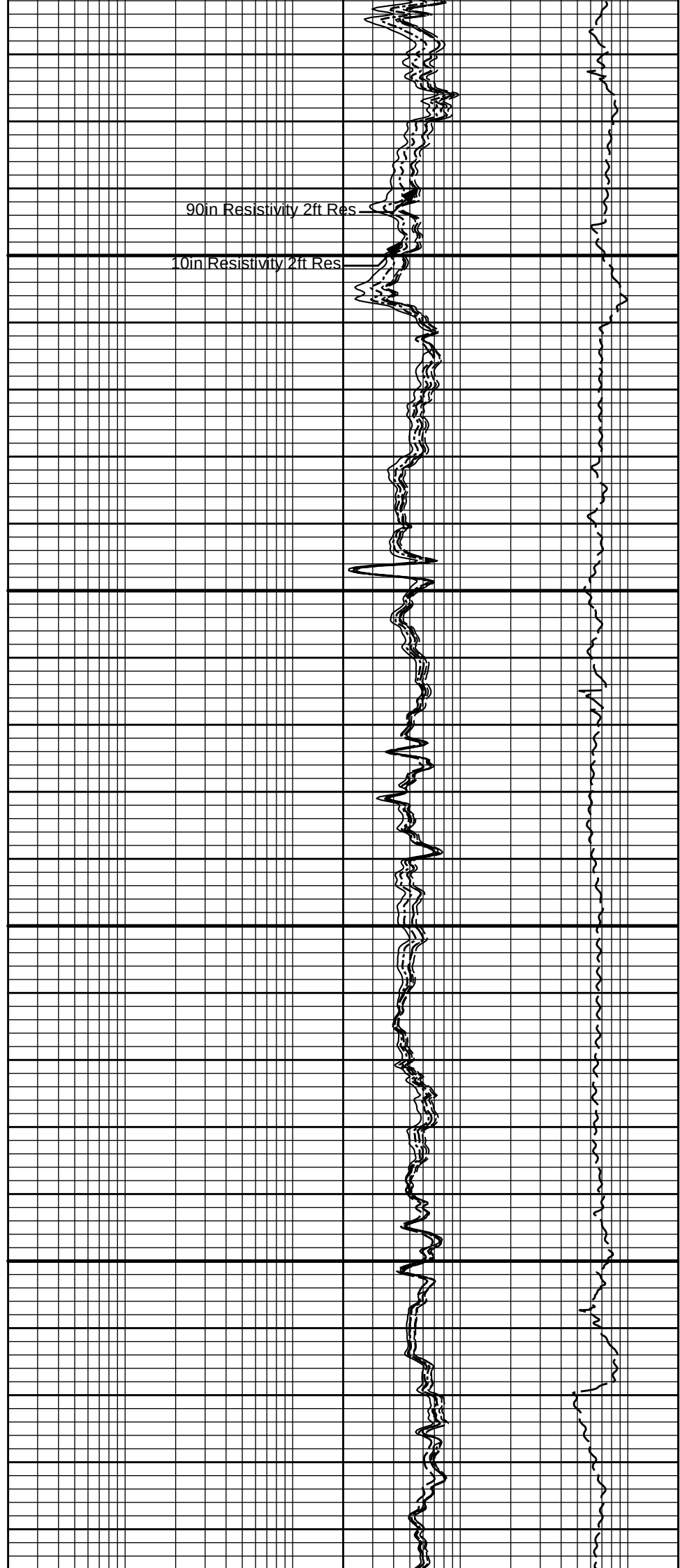
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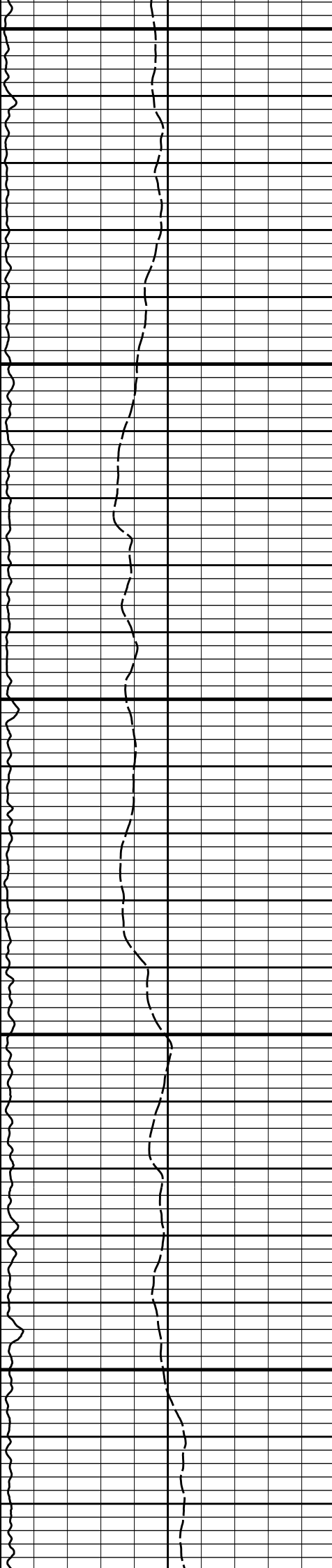




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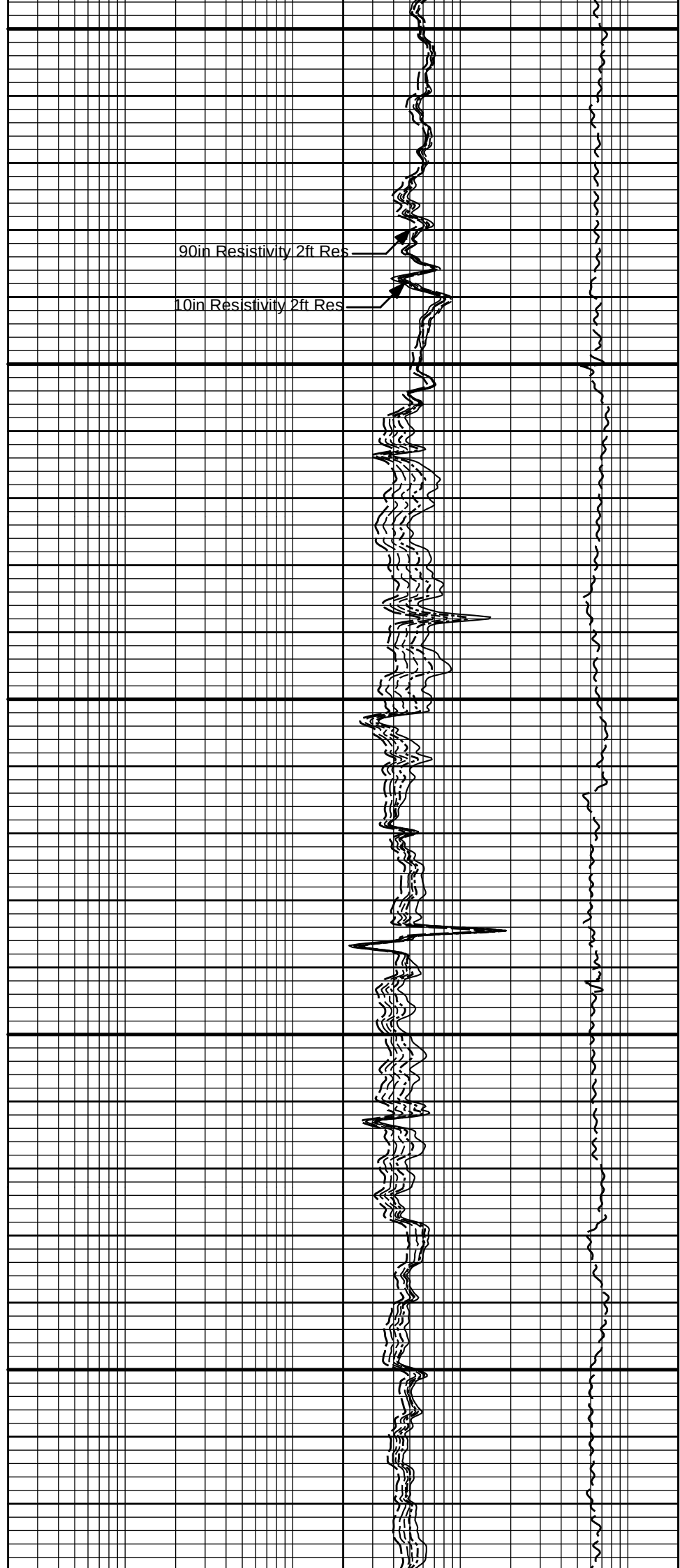
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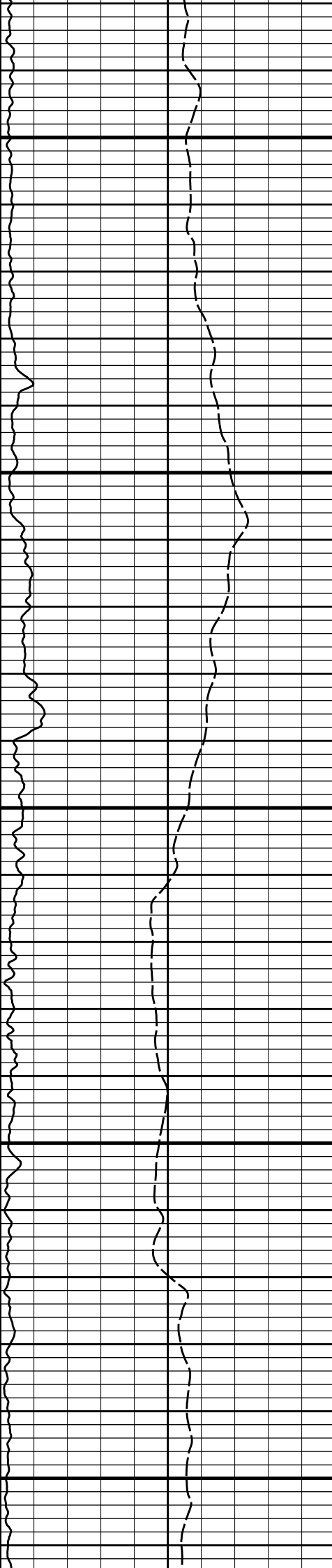




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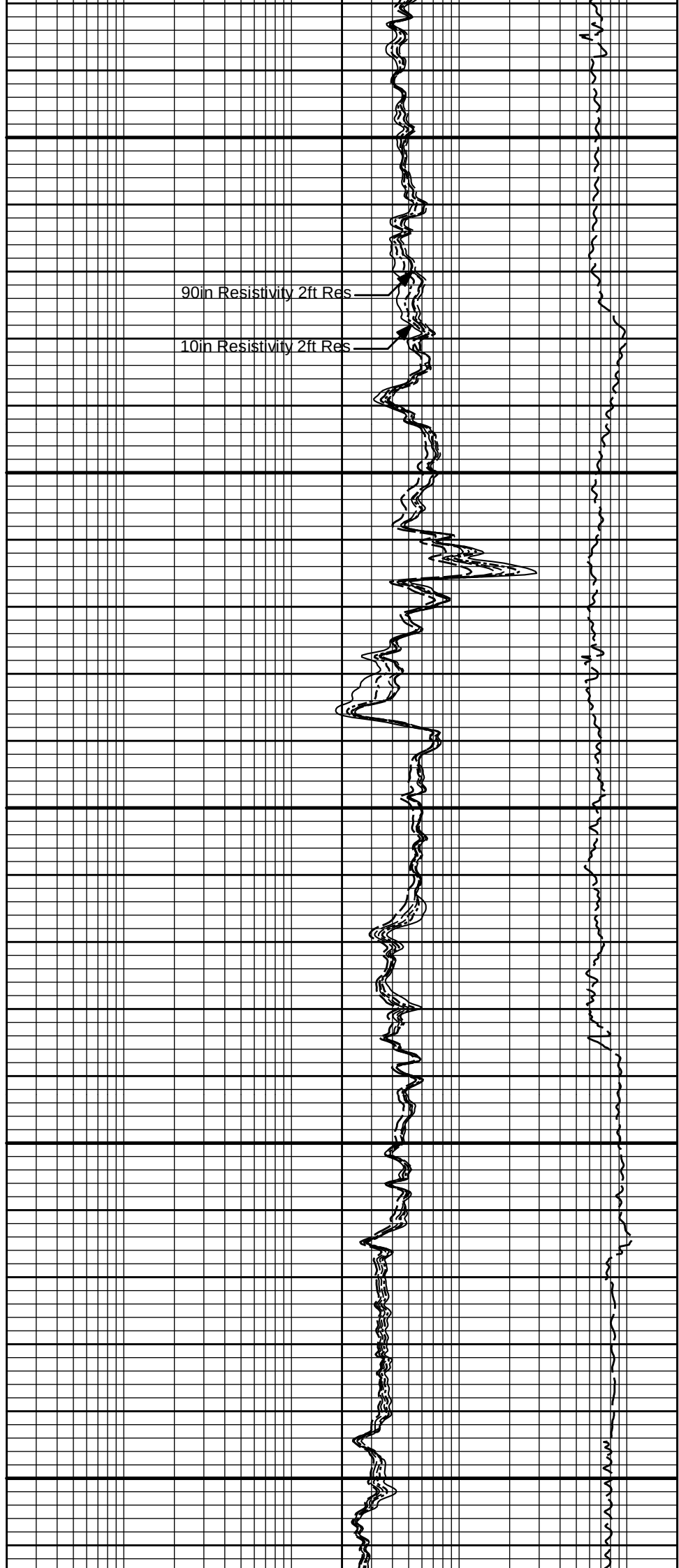
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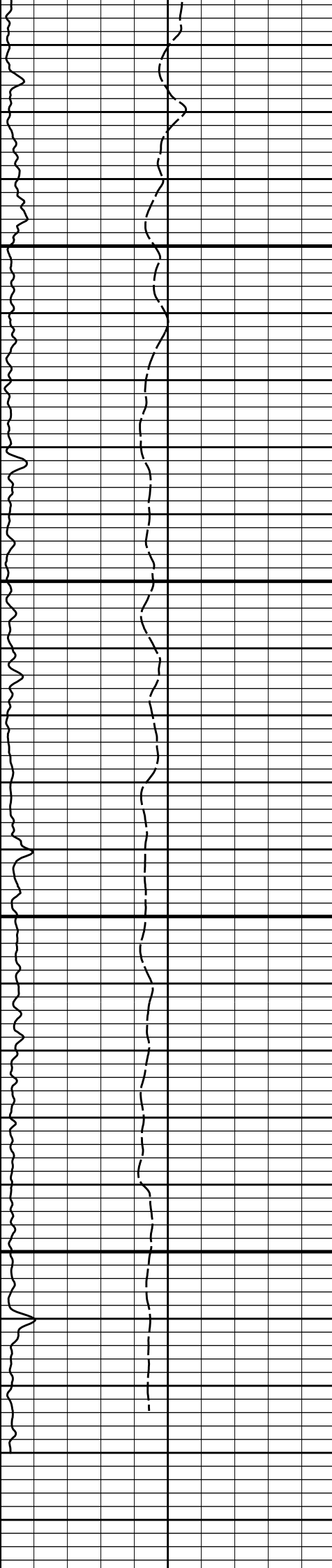
90in Resistivity 2ft Res

10in Resistivity 2ft Res

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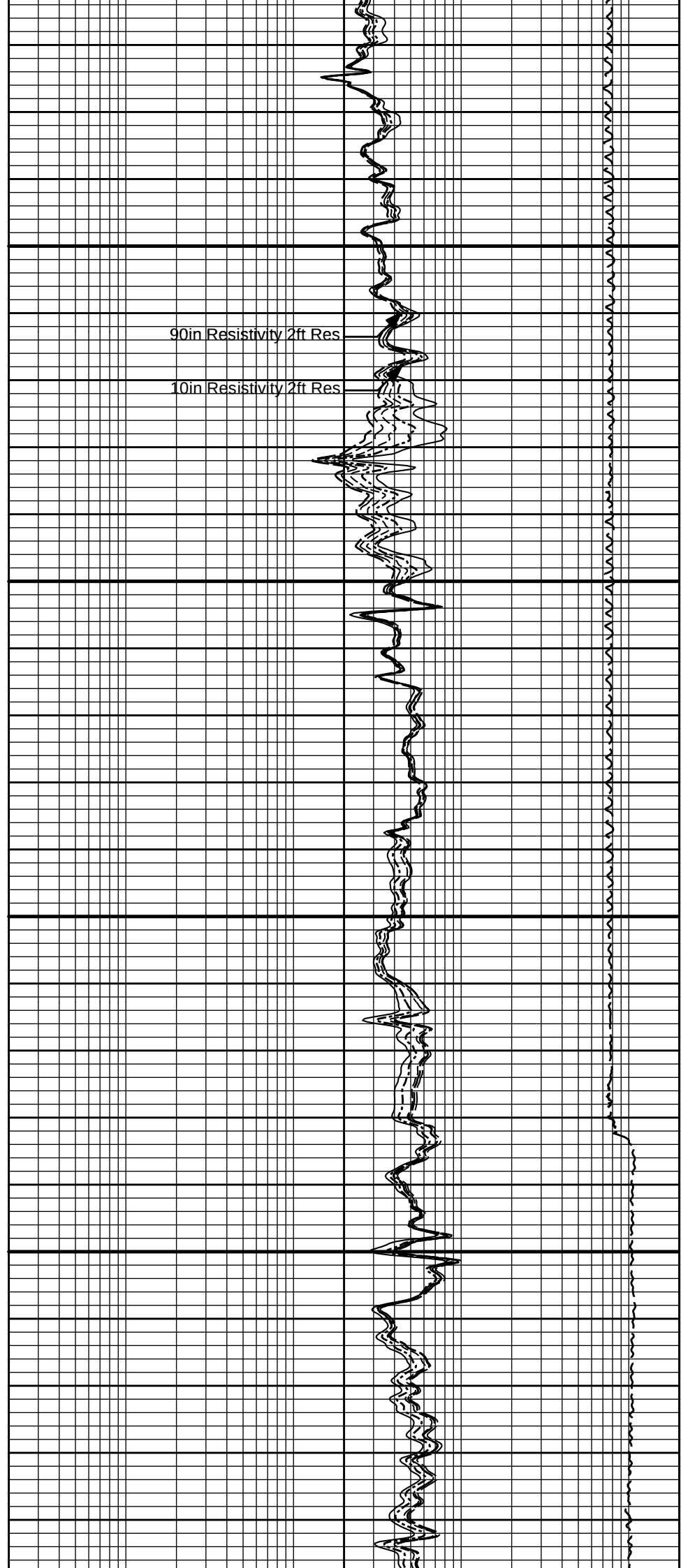
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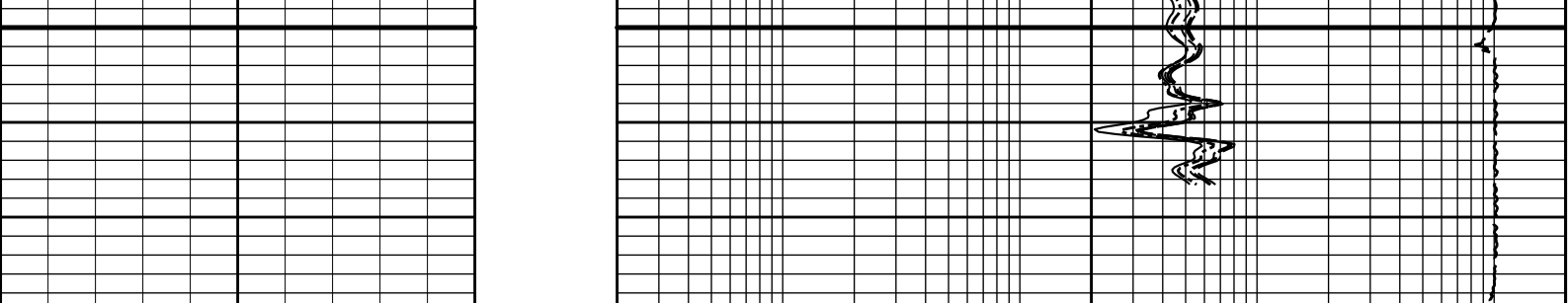




10600

10700





0	Gamma API	150			15K	Tension	0
	api					pounds	
	SP			0.2	90in Resistivity 2ft Res		2000
	-] 20 mV [+]				ohmm		
				0.2	60in Resistivity 2ft Res		2000
					ohmm		
				0.2	30in Resistivity 2ft Res		2000
					ohmm		
				0.2	20in Resistivity 2ft Res		2000
					ohmm		
				0.2	10in Resistivity 2ft Res		2000
					ohmm		

HALLIBURTON

Plot Time: 15-Aug-18 17:13:59
Plot Range: 4850 ft to 10779.3 ft
Data: BRUBAKER_1-17H\Well Based*l
Plot File: \\LOCAL-INPSU_35-2\Well Based\ACRT\ACRT_5inch_main

5 INCH MAIN LOG

5 INCH MAIN LOG

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	6.125	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.800	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	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	CSTR	Compressive Strength	1000.00	psia
	SHARED	ST	Surface Temperature	75.0	degF

SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	10799.00	ft
SHARED	BHT	Bottom Hole Temperature	170.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	CBM Temperature Master Tool	GTET	
SHARED	SOCI	Source of Casing Information	Parameters	
SHARED	MSAL	Water-base mud filtrate salinity	0.00	ppm
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	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	SDLT	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTT	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	
DSNT	UCLA	Classic Neutron Parameter utilized?	No	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
Microlog Pad	MLOK	Process MicroLog 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
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	RTOK	Process ACRT?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
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	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 10971172	Reference Calibration Date:	23-Jul-18 10:19:40
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	23-Jul-18 10:24:24
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1
Calibrator Source S/N: TB-146			
Calibrator API Reference:225.00 api			
Equivalent Calibrator API Reference:228.9 api			
Measurement	Measured	Calibrated	Units
Background	23.5	23.2	api
Background + Calibrator	255.8	252.1	api
Calibrator	232.3	228.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 10971172	Reference Calibration Date:	23-Jul-18 10:24:24
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	23-Jul-18 10:28:05
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1
Calibrator Source S/N: TB-146			
Calibrator API Reference:225.00 api			
Equivalent Calibrator API Reference:228.9 api			
Field Verification	Shop	Field	Units
Background	23.2	23.1	api
Background + Calibrator	252.1	254.0	api
Calibrator	228.9	230.9	api
Shop	Field	Difference	Tolerance
228.9	230.9	-2.0	+/- 9.00

ACCELEROMETER SHOP CALIBRATION

Tool Name:	GTET - 10971172	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	WHITLOCK	Calibration Date:	20-Oct-08 14:40:55
Software Version:	WL INSITE R2.2 (Build 2)	Calibration Version:	1
Horizontal-1 Telemetry	Horizontal-2 Telemetry	Vertical Telemetry	Units
-85.64	-67.18	-16422.00	cnts
Coefficient	Coefficient Value	Tolerance	
Gain	-0.000061	----	
Offset	-0.005	----	
Noise	0.0000	0.0000 - 0.0000	
Orientation	Measured	Tolerance	Calibrated
Horizontal	-76.41	-0.10 - 0.10	0.00
Vertical	-16422.00	0.90 - 1.10	1.00
			Tolerance
			0.90 - 1.10

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11020487	Reference Calibration Date:	02-Jun-18 12:06:48
Engineer:	SEAN WOLTEMATH	Calibration Date:	02-Jun-18 12:32:43

Software Version: WL INSITE R5.6.0 (Build 2)		Calibration Version: 1		
Logging Source S/N: DSN-424 Tank Serial Number: 12345678 Reference value assigned to Tank: 56.100 Snow Block S/N: 12345678 Calibration Tank Water Temperature: 68 degF Min. Tool Housing Outside Diameter: 3.625 in				
CALIBRATION CONSTANTS				
Measurement	Prev. Value	New Value	Control Limit On New Value	
Gain:	1.00899	1.00539	0.900 - 1.100	
WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2369	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.5973	10.5595	0.038	+/- 0.050
VERIFIER				
Measurement	Value	Control Limit		
Snow-Block Porosity (decp):	0.0737	0.02000 - 0.09000		
PASS/FAIL SUMMARY				
Background Check:		Passed		
Gain-Range Check:		Passed		
Snow-Block Check:		Passed		

DUAL SPACED NEUTRON FIELD CALIBRATION			
Tool Name:	DSNT - 11020487	Reference Calibration Date:	02-Jun-18 12:32:43
Engineer:	SEAN WOLTEMATH	Calibration Date:	17-Jul-18 11:46:32
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1
Logging Source S/N: DSN-424 Snow Block S/N: 12345678			
NEUTRON FIELD-CHECK SUMMARY			
	Shop	Field	Control Limit On Change
Snow-Block Porosity (decp):	0.0737	0.0615	+/- 0.0150
PASS/FAIL SUMMARY			
Block Change Check:		Passed	
Snow Block Stat Check:		Passed	
Temperature Check:		Passed	

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - 10951315	Reference Calibration Date:	05-Jun-18 15:52:51
Engineer:	SEAN WOLTEMATH	Calibration Date:	12-Jul-18 10:21:55
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1
Host Tool Name:	DSNT - 11020487		
CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3384.37	-3428.66	-7000.00 - -1000.00
Pad Gain	0.0003746	0.0003776	0.0002000 - 0.0006000
Arm Offset	-2796.96	-2996.48	-5000.00 - 3000.00
Arm Gain	0.0005327	0.0005516	0.000300 - 0.000700

Arm Power	-0.000006524	-0.000007437	-0.000010000 - 0.000010000	
The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER				
Tool Diameter: 4.50 in				
CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.74	3.75	0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.56	6.50	-0.06	+/- 0.20
Medium Ring (in)	8.26	8.25	-0.01	+/- 0.20
Large Ring (in)	14.98	15.00	0.02	+/- 0.20
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	
Ring-Measurement Check:			Passed	
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	

MICRO LOG SHOP CALIBRATION			
Tool Name:	Microlog Pad - 10951315	Reference Calibration Date:	05-Jun-18 16:17:44
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	05-Jun-18 16:20:19
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1
Host Tool Name:	DSNT - 11020487		

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.08	-0.09	-0.00	-0.00	ohmm
Calibration Point #1	0.01	0.00	0.00	0.00	ohmm
Calibration Point #2	20.00	20.00	20.01	20.00	ohmm
Internal Reference	19.92	19.91	20.01	20.01	ohmm

Measurement	Micro Log Normal	Micro Log Lateral	Units
	Tool Value	Tool Value	
Tool Zero	-2.58	1.07	V
Calibration Point #1	22.26	2.44	V
Calibration Point #2	5354.48	6944.42	V
Internal Reference	5330.80	6946.23	V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 10951315		Reference Calibration Date:	05-Jun-18 16:20:19	
Engineer:	JORGE ORLANDO PEREZ		Calibration Date:	23-Jul-18 10:07:26	
Software Version:	WL INSITE R5.6.0 (Build 2)		Calibration Version:	1	

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.09	-0.08	-0.00	-0.01	ohmm
Internal Reference	19.91	19.88	20.01	19.96	ohmm
Summary					
Signal	Shop	Field	Difference		Tolerance
Microlog Normal	19.91	19.88	0.03		+/- 0.80
Microlog Lateral	20.01	19.96	0.05		+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDI T Pad - 10865873		Reference Calibration Date:	07-Jun-18 09:45:44	

Tool Name: SDET Pad - 10005073		Reference Calibration Date: 07-Jun-18 09:45:44		
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	07-Jun-18 10:06:09	
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1	
Logging Source S/N: 5471GW				
Aluminum Block S/N: EL RENO STD ALUMINUM		Density: 2.581g/cc	Pe: 3.170	
Magnesium Block S/N: EL RENO		Density: 1.687g/cc	Pe: 2.594	
DENSITY CALIBRATION SUMMARY				
Measurement	Previous Value	New Value	Control Limit	
Near Bar Gain	1.0237	1.0324	0.90 - 1.10	
Near Dens Gain	1.0143	1.0165	0.90 - 1.10	
Near Peak Gain	1.0353	1.0338	0.90 - 1.10	
Near Lith Gain	1.0390	1.0348	0.90 - 1.10	
Far Bar Gain	1.0089	1.0082	0.90 - 1.10	
Far Dens Gain	1.0003	1.0003	0.90 - 1.10	
Far Peak Gain	1.0005	0.9992	0.90 - 1.10	
Far Lith Gain	0.9773	0.9763	0.90 - 1.10	
Near Bar Offset	-0.1478	-0.2291	NONE	
Near Dens Offset	-0.0668	-0.0857	NONE	
Near Peak Offset	-0.2518	-0.2374	NONE	
Near Lith Offset	-0.3043	-0.2679	NONE	
Far Bar Offset	-0.0330	-0.0259	NONE	
Far Dens Offset	0.0141	0.0136	NONE	
Far Peak Offset	-0.0280	-0.0190	NONE	
Far Lith Offset	0.1016	0.1099	NONE	
Near Bar Background	817.02	819.19	700 - 1450	
Near Dens Background	268.27	268.51	230 - 480	
Near Peak Background	118.83	120.08	100 - 210	
Near Lith Background	144.34	141.71	125 - 260	
Far Bar Background	599.84	599.35	450 - 900	
Far Dens Background	235.92	235.85	175 - 345	
Far Peak Background	92.65	93.06	70 - 140	
Far Lith Background	95.74	95.63	75 - 145	
CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.686	1.687	0.001	+/- 0.015
Pe	2.563	2.559	-0.004	+/- 0.150
ALUMINUM				
Density (g/cc)	2.581	2.581	0.000	+/- 0.01500
Pe	3.151	3.132	-0.019	+/- 0.150
TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0015	+/- 0.0110	0.0004	+/- 0.0140
Magnesium Block	-0.0011	+/- 0.0110	-0.0001	+/- 0.0140
Aluminum Block	-0.0005	+/- 0.0110	0.0001	+/- 0.0140
Resolution	10.01	6.00 - 11.50	8.92	6.00 - 11.50
Internal Verifier(B+D+P+L)	1349	1200 - 2700	1024	800 - 1700
PASS/FAIL SUMMARY				

	Background Quality Check:	Passed
	Background Range Check:	Passed
	Background Resolution Check:	Passed
	Background Verification Check:	Passed
	Magnesium Quality Check:	Passed
	Aluminum Quality Check:	Passed
	Gains Check:	Passed
	Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK			
Tool Name:	SDLT Pad - 10865873	Reference Calibration Date:	07-Jun-18 10:06:09
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	23-Jul-18 10:13:53
Software Version:	WL INSITE R5.6.0 (Build 2)	Calibration Version:	1

Pad Temperature: 73.4 degF				
DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1349.485	1347.028	-2.457	14.854
Far (B+D+P+L) cps	1023.890	1020.740	-3.150	17.067
Near Resolution	10.01	10.00	-0.010	0.50
Far Resolution	8.92	8.99	0.070	1.00
PASS/FAIL SUMMARY				
Bkg Quality Check:			Passed	
Bkg Resolution Check:			Passed	
Bkg Verification Check:			Passed	

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION			
Tool Name:	ACRt Sonde - 11005908	Reference Calibration Date:	12-Sep-17 09:46:32
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	06-Jun-18 11:09:43
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1
Host Tool Name:	ACRt Instrument - 11026095		

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0428	1.05	0.95	1.0248	1.05	0.95	1.0160	1.05
A2 (50")	0.95	1.0376	1.05	0.95	1.0200	1.05	0.95	1.0143	1.05
A3 (29")	0.95	1.0342	1.05	0.95	1.0155	1.05	0.95	1.0062	1.05
A4 (17")	0.95	1.0432	1.05	0.95	1.0223	1.05	0.95	1.0141	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0162	1.05	0.95	1.0071	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0000	1.05	0.95	0.9905	1.05
SONDE OFFSET									
Subarray	R12KHz			R36KHz			R72KHz		
	(mmho/m)			(mmho/m)			(mmho/m)		
A1 (80")	1.334			-4.052			-5.782		
A2 (50")	-0.783			-4.054			-5.057		
A3 (29")	-14.308			-4.509			-3.767		
A4 (17")	-93.379			-29.338			-24.647		
A5 (10")	N/A			-111.483			-49.304		
A6 (6")	N/A			353.379			183.122		

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)

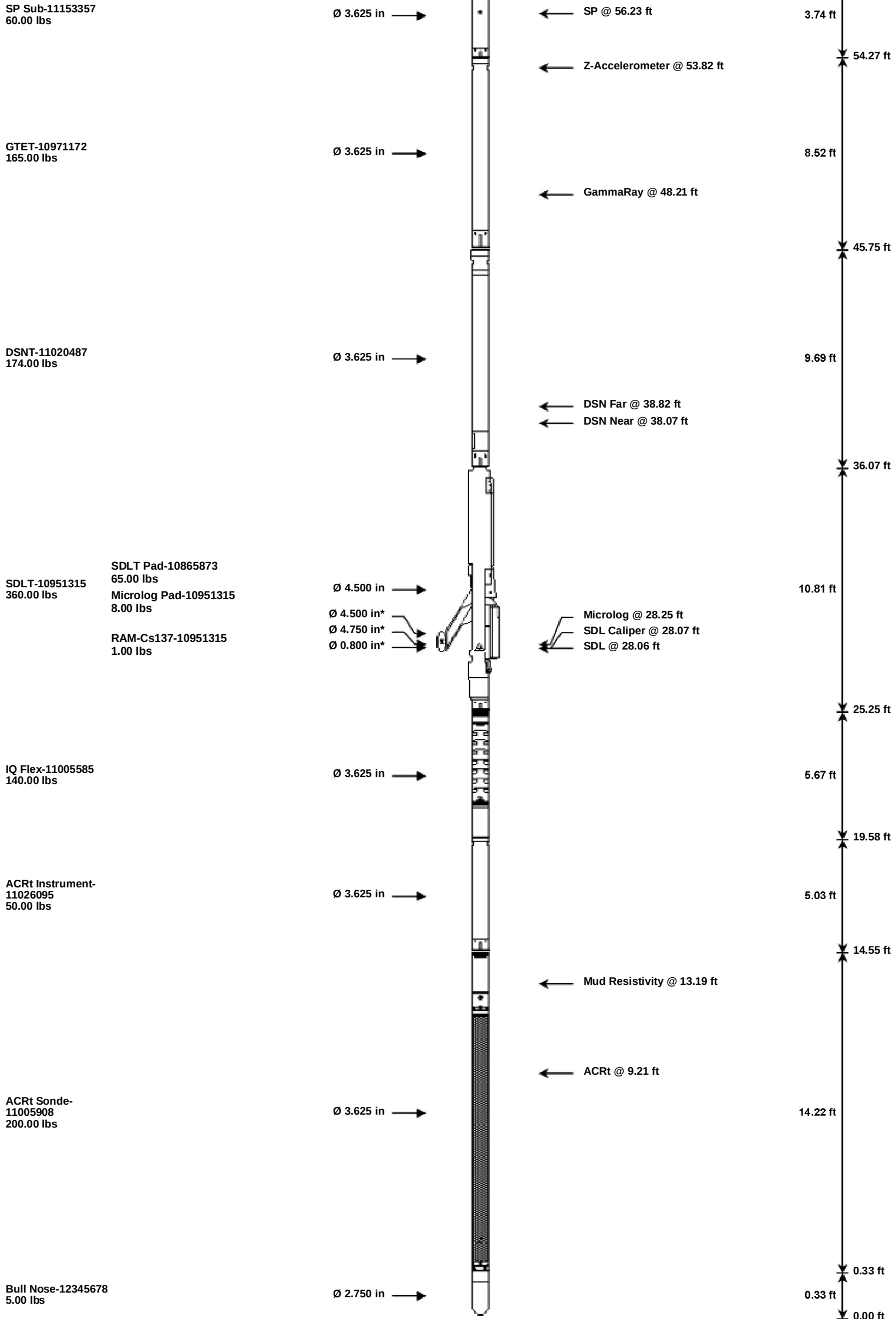
12K	0.6	0.97	1.3	Mud Cell	0.95	1.00	1.05
36K	1.0	1.94	2.0				
72K	1.0	1.32	2.0				
PASS/FAIL SUMMARY							
GAIN RANGE CHK				PASS			
SONDE OFFSET CHK				PASS			
TOOL OK TO LOG							

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10971172						
Gamma Ray Calibrator	228.9	230.9	-----	-2.0	+/- 9.00	api
DSNT-11020487						
Snow-Block Porosity	0.0737	0.0615	-----	0.0122	+/- 0.0150	decp
SDLT-10951315						
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
Microlog Pad-10951315						
MicroLog Normal	19.91	19.88	-----	0.03	+/-0.80	ohmm
MicroLog Lateral	20.01	19.96	-----	0.05	+/-0.80	ohmm
SDLT Pad-10865873						
Near(B+D+P+L)	1349.485	1347.028	-----	2.457	+/-14.854	cps
Far(B+D+P+L)	1023.890	1020.740	-----	3.150	+/-17.067	cps
ACRt Sonde-11005908						
Mud Cell	1.00	-----	-----	0	-----	ohm-m
Data: BRUBAKER_1-17HI0001 TPL-GTET-DSNT-SDLT-ACRTIDLE						
Date: 15-Aug-18 02:45:07						

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Spacer-12345678 100.00 lbs		Ø 3.625 in →			77.55 ft	
					6.08 ft	
Flex Joint-10271064 140.00 lbs		Ø 3.625 in →			71.47 ft	
					5.67 ft	
HDDS-A-10746201 125.00 lbs		Ø 4.060 in →			65.80 ft	
					4.13 ft	
					61.67 ft	
DTDD-11411576 90.00 lbs		Ø 3.625 in →		← Load Cell @ 60.58 ft	3.66 ft	
				← Pad Locator @ 58.99 ft		
					58.01 ft	



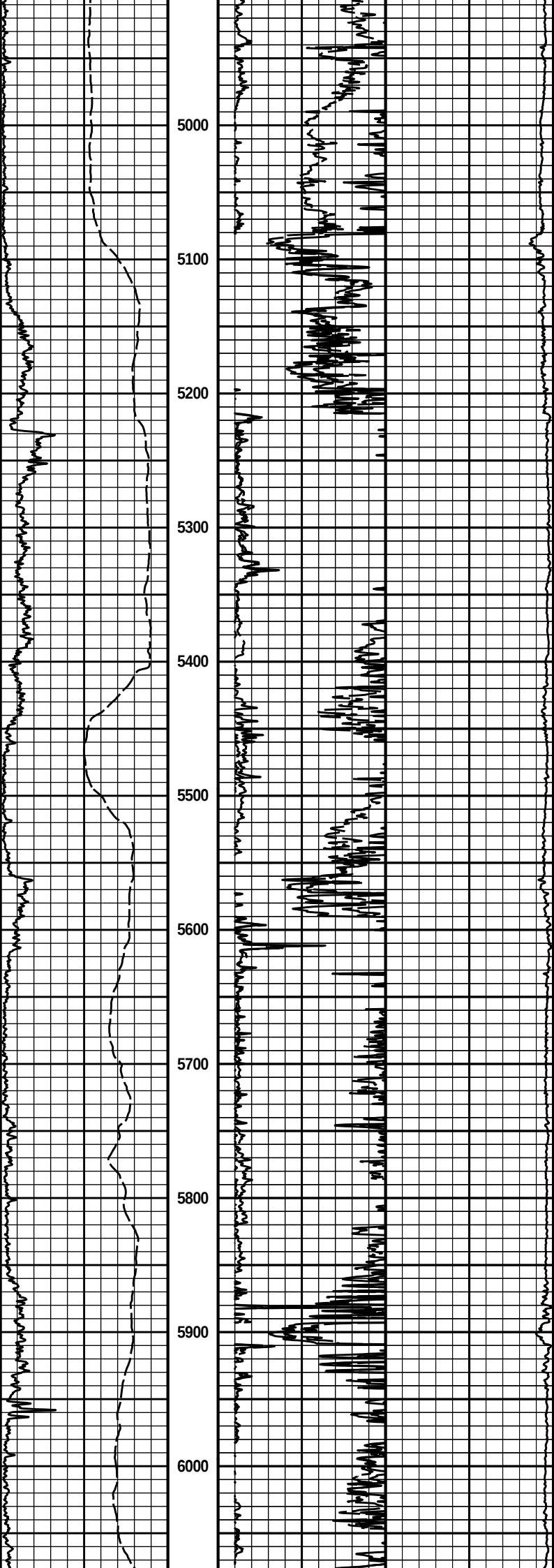
HALLIBURTON

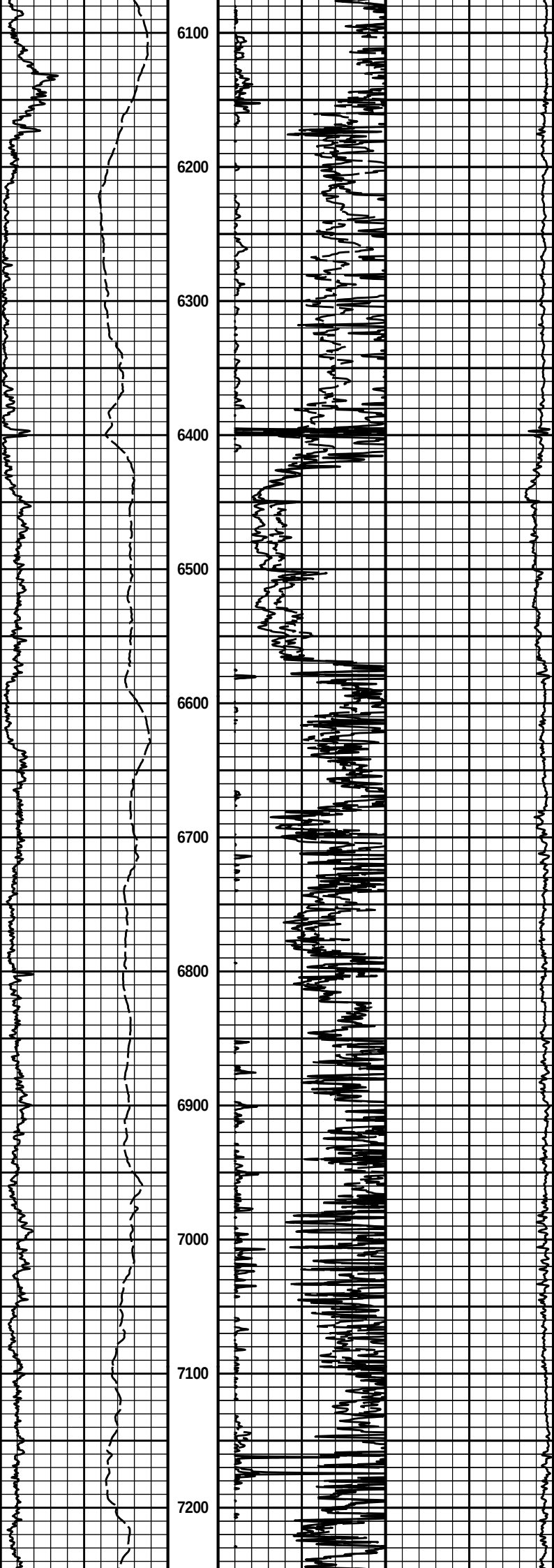
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 Plot Range: 4850 ft to 10766.5 ft
 Data: BRUBAKER_1-17HIWell Based**\
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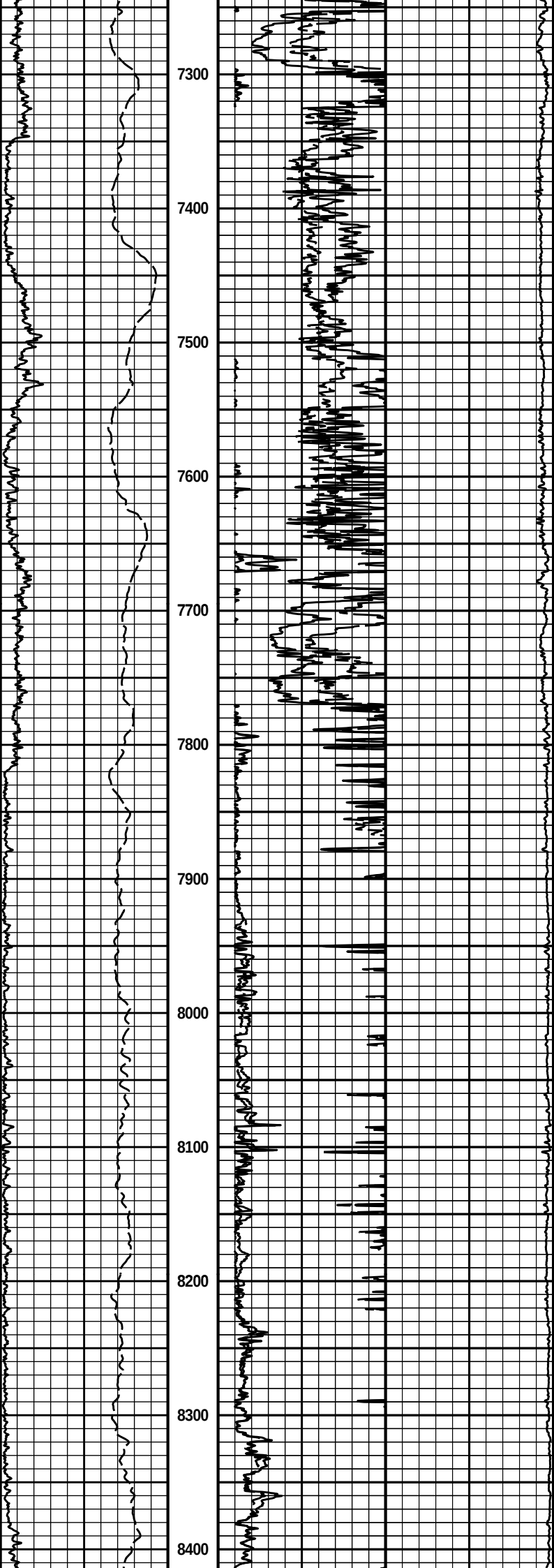
1 INCH CORRELATION LOG

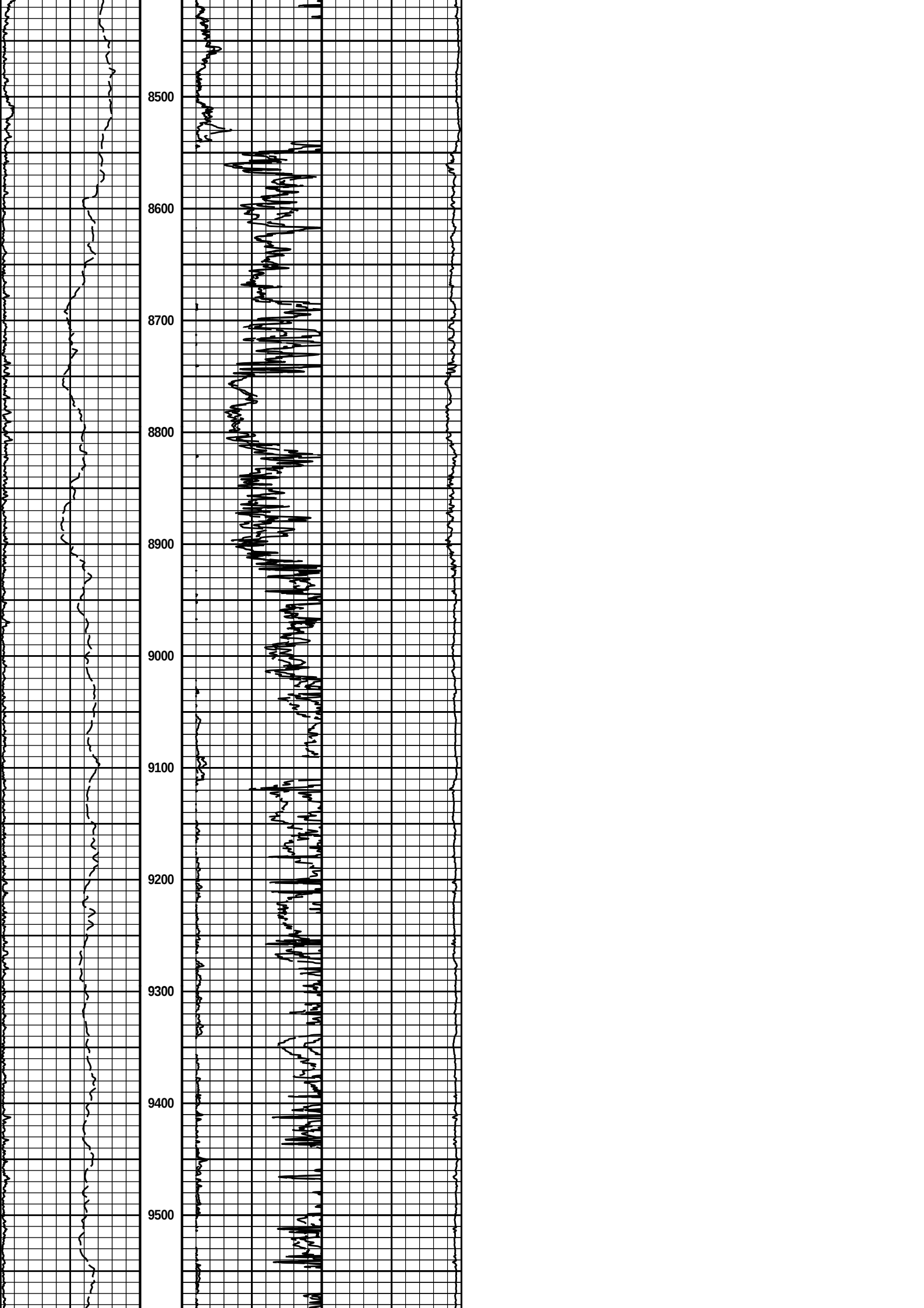
1 INCH CORRELATION LOG

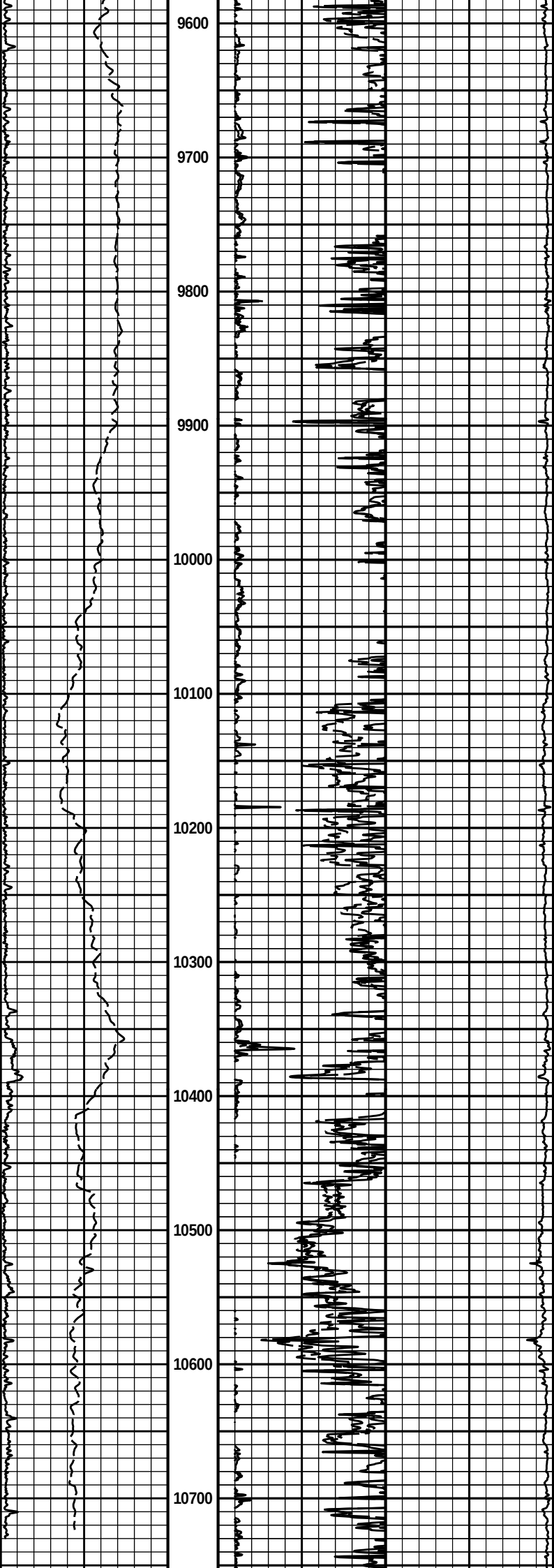
SP		1000 90in Conductivity 2ft Res 0	
-] 20 mV [+]		mmho per metre	
0 Gamma API 150		0 90in Resistivity 2ft Res 50	
api		ohm-metre	
1 : 1200 FT		0 RT20 50	
ohm-metre		ohm-metre	
4900			











0	Gamma API	150	1 : 1200	0	RT20	50	
	api		FT		ohm-metre		
	SP			0	90in Resistivity 2ft Res	50	
	-] 20 mV [+]				ohm-metre		
				1000	90in Conductivity 2ft Res		0
					mmho per metre		

HALLIBURTON

Plot Time: 15-Aug-18 17:14:07
Plot Range: 4850 ft to 10766.5 ft
Data: BRUBAKER_1-17HIWell BasedI*
Plot File: \\LOCAL-INPSU_35-2IWell BasedIACRTIACRT_1_main

1 INCH CORRELATION LOG

1 INCH CORRELATION LOG