Com

Well
Field
Rig:

Rig:	ENSCO 102
Field:	Trefoil
Location:	GDA94 Zone 55

Logging	
Run Nu	
Depth D	
Schlumb	
Bottom	
Top Log	
Casing	
Casing	
Bit Size	
Type Fl	
MUD Density	
MUD Fluid L	
MUD Source	
RM @ M	
RMF @	
RMC @	
Source	
RM @ M	
Maximu	
Circulat	
Logger	
Unit Nu	
Recorde	
Witness	

Schlumberger

npany: **Origin Energy Resources Ltd.**

l: **Trefoil−1**

d: **Trefoil**

ENSCO 102 Country: **Australia**

SP−HRLA−PEX−CMR−G

Nuclear−Resistivity Print

1:200 Scale

Location: GDA94 Zone 55 | Well: Trefoil−1 | Company: Origin Energy Resources Ltd.

LOCATION

GDA94 Zone 55
Northings 5,586,346 m
Eastings 361,028 m

Elev.: K.B. 39.9 m
G.L. −68.9 m
D.F. 39.9 m

Permanent Datum: Mean Sea Level — Elev.: 0 m
Log Measured From: Drill Floor (RT) — 39.9 m above Perm. Datum
Drilling Measured From: Drill Floor (RT)

State:	Max. Well Deviation	Longitude	Latitude
Tasmania	0.67 deg	145 22' 30.87"E	39 51' 41.58"S

	Run 1	Run 2	Run 3
g Date	24−Nov−2004		
mber	Suite−1, Run 1		
Driller	3545.1 m		
berger Depth	3418.3 m		
Log Interval	3406.8 m		
g Interval	2420.1 m		
Driller Size @ Depth	9.625 in @ 2421 m	@	@
Schlumberger	2420.1 m		
	8.500 in		
uid In Hole	Seawater/Drispac/Soltex		
y / Viscosity	9.4 lbm/gal / 49 s		
oss / PH	3.8 cm3 / 9.3		
e Of Sample	Flowline		
Measured Temperature	0.206 ohm.m @ 25 degC	@	@
Measured Temperature	0.174 ohm.m @ 25 degC	@	@
Measured Temperature	0.280 ohm.m @ 25 degC	@	@
RMF / RMC	Pressed / Pressed		
MRT / RMF @ MRT	0.069 @ 117 / 0.058 @ 117	@ / @	@ / @
m Recorded Temperatures	117 degC		
ion Stopped / Time	24−Nov−2004 / 0:45		
On Bottom / Time	24−Nov−2004 / 14:20		
mber / Location	571 / AUSL		
ed By	J. Robertson/C. Bassignana/M.Webb		
sed By	Dave Cohen/Mark Tindale		

	Run 1	Run 2	Run 3
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		@
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD: Density / Viscosity			
MUD: Fluid Loss / PH			
MUD: Source Of Sample			
RM @ Measured Temperature	@		@
RMF @ Measured Temperature	@		@
RMC @ Measured Temperature	@		@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ / @		@ / @
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			

@

Run 4

DEPTH SUMMARY LISTING

Date Created: 2−DEC−2004 15:29:34

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−E	Type:	CMTD−B/A	Type:	7−46ZV−XS
Serial Number:	1914	Serial Number:	2336	Serial Number:	74172
Calibration Date:	24−Mar−2004	Calibration Date:	28−Apr−2004	Length:	7324.04 M
Calibrator Serial Number:	9	Calibrator Serial Number:	1051		
Calibration Cable Type:	7−46V−XS	Calibration Gain:	0.87	Conveyance Method:	Wireline
Wheel Correction 1:	−5	Calibration Offset:	115.00	Rig Type:	Offshore_Fixed
Wheel Correction 2:	−5				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	88.35 M
Rig Up Length At Bottom:	88.05 M
Rig Up Length Correction:	0.30 M
Stretch Correction:	1.30 M
Tool Zero Check At Surface:	0.00 M

Depth Control Remarks

1. First Run in Hole. Full Schlumberger depth procedure applied.
2. Primary depth reference IDW−E. Secondary depth reference Z−chart.
3. Log corrected for stretch.
4. Difference between rig up length at surface and bottom was 0.3m and was not applied to log.
5.
6.

DISCLAIMER
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OTHER SERVICES1
OS1: VSI−GR
OS2: MDT−GR
OS3: MSCT−GR
OS4: FMI−DSI−HNGS
OS5:

REMARKS: RUN NUMBER 1

First run in hole. Full Schlumberger first run depth procedures applied − see Depth Summary Listing above.
Toolstring run as per tool sketch, with HRLT eccentred with 4x2.0" standoffs, bowspring on HGNS and on CMR.
PEX was logged in high resolution mode from TDL (3418.3) to casing shoe.
GR logged through casing to sea bed at standard resolution.
CNL data corrected for hole size (caliper), borehole salinity, mud weight and pressure/temperature.
CNL data corrected for formation salinity (FSCO is applied) using mud filtrate resistivity (RMF) as correction input.
Density data corrected for hole size using bit size.
TD was not reached due to hang up at 3418.3m.
Two attempts made to move down further but large overpull (1700lb) prevented further attempts to log below this depth.
Maximum hole deviation from Sperry Sun survey.
Maximum temperature of 117 degC from thermometers in logging head.

Maximum temperature of 117 degC from thermometers in logging head.

Mud data taken from Baroid Mud Report, 23−NOV−2004, from flowline sample taken at 20:00.

Additional mud data: PV/YP = 49degC/51lbs/100ft2, Gels = 3/4/7 lbs/100ft2, LGS/HGS = 5.0/0.9%.

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 12C0−301
FLUID LEVEL: 0 m

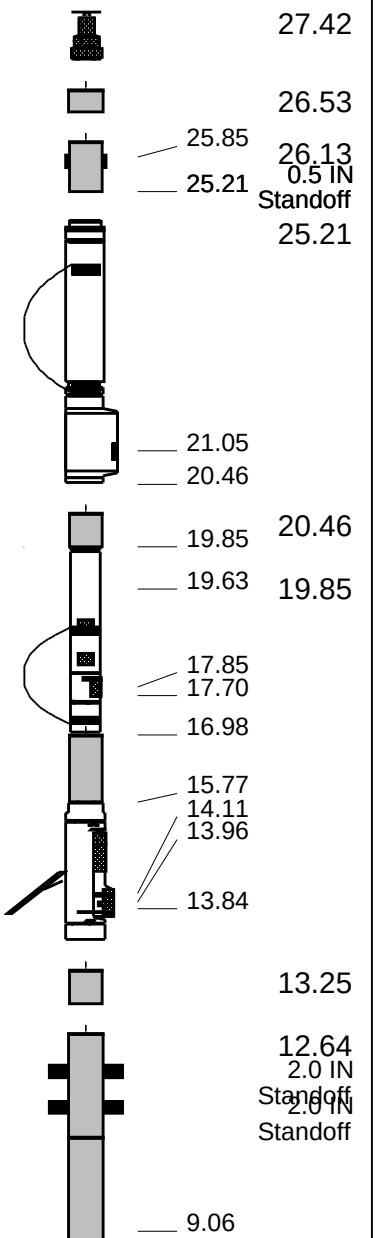
EQUIPMENT DESCRIPTION

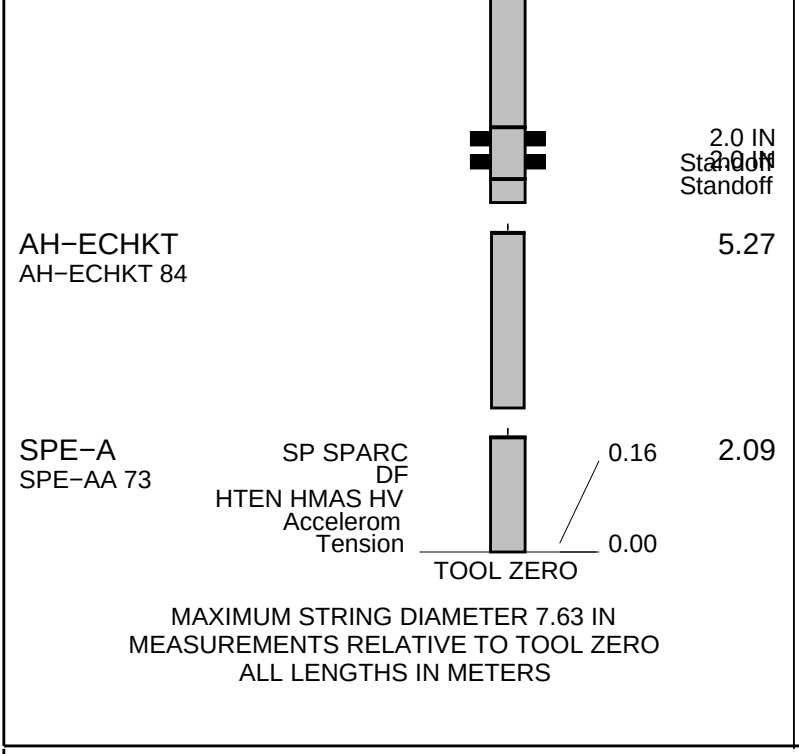
RUN 1

SURFACE EQUIPMENT

WITM (DTS)−A 964 NCS−YC 5025
GSR−U 2003
NCT−B 2033
CNB−AB

DOWNHOLE EQUIPMENT





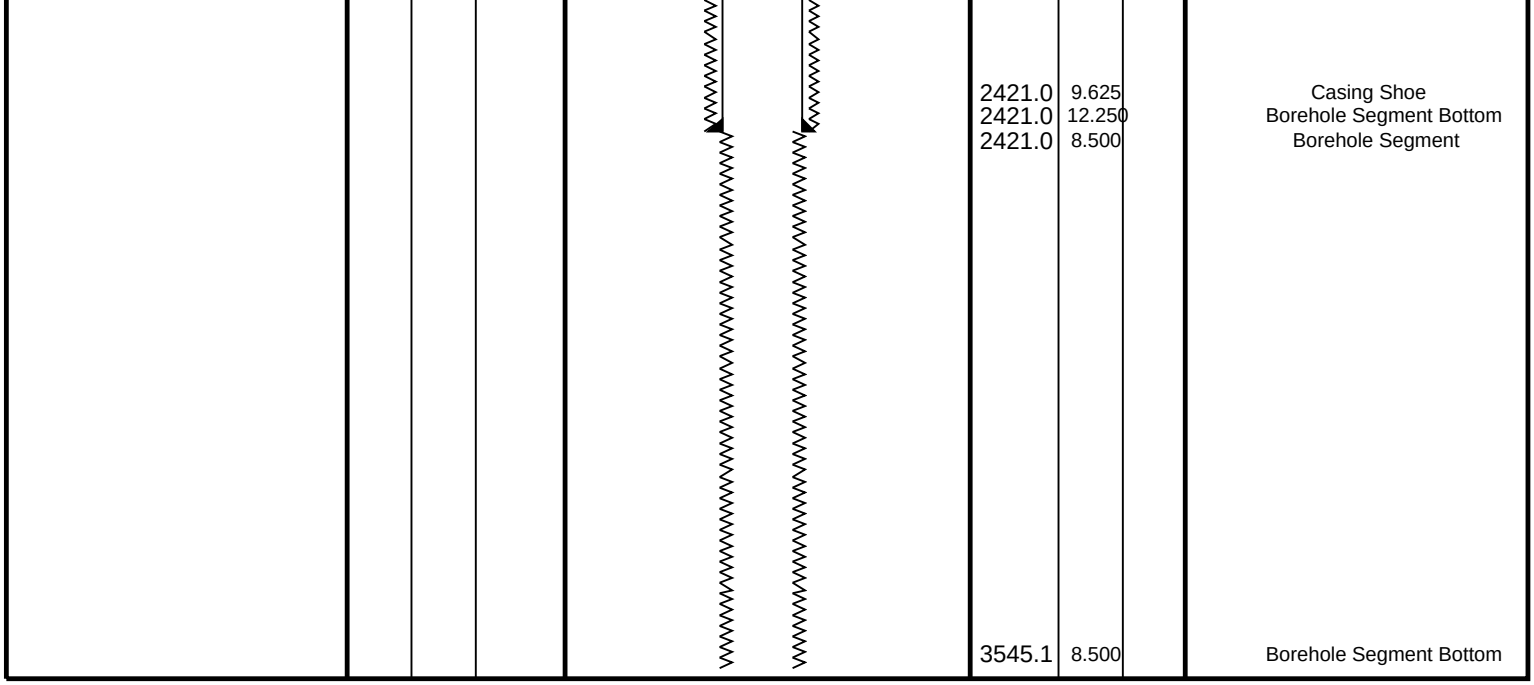
MAXIMUM STRING DIAMETER 7.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Client: Origin Energy Resources Ltd.
Well: Trefoil−1
Field: Trefoil
State: Tasmania
Country: Australia

Drawing Date: 12/2/2004

Rig Name: ENSCO 102
Reference Datum: Mean Sea Level
Elevation: 39.6 m

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
					0.0	36.000		Borehole Segment
					0.0	30.000		Casing String, 310 lb/ft
					142.6	30.000		Casing Shoe
					142.6	26.000		Borehole Segment
					0.0	20.000		Casing String, 133 lb/ft
					214.6	20.000		Casing Shoe
					214.6	16.000		Borehole Segment
					0.0	13.375		Casing String, 54.5 lb/ft
					659.6	13.375		Casing Shoe
					659.6	12.250		Borehole Segment
					0.0	9.625		Casing String, 43.5 lb/ft



2421.0	9.625	Casing Shoe
2421.0	12.250	Borehole Segment Bottom
2421.0	8.500	Borehole Segment
3545.1	8.500	Borehole Segment Bottom

Schlumberger

Main Log (1:200)

MAXIS Field Log

Company: Origin Energy Resources Ltd. **Well: Trefoil−1**

Input DLIS Files

02−Dec−2004 12:10

Output DLIS Files

DEFAULT	**HRLA_TLD_MCFL_CNL_020PUP**	**FN:19**	**PRODUCER**	**02−Dec−2004 15:14**	**3416.4 M**	**2414.3 M**

Integrated Hole/Cement Volume Summary

Hole Volume = 35.69 M3

Cement Volume = 13.53 M3 (assuming 6.63 IN casing O.D.)

Computed from 3416.4 M to 2420.1 M using data channel(s) HCAL

OP System Version: 12C0−301

MCM

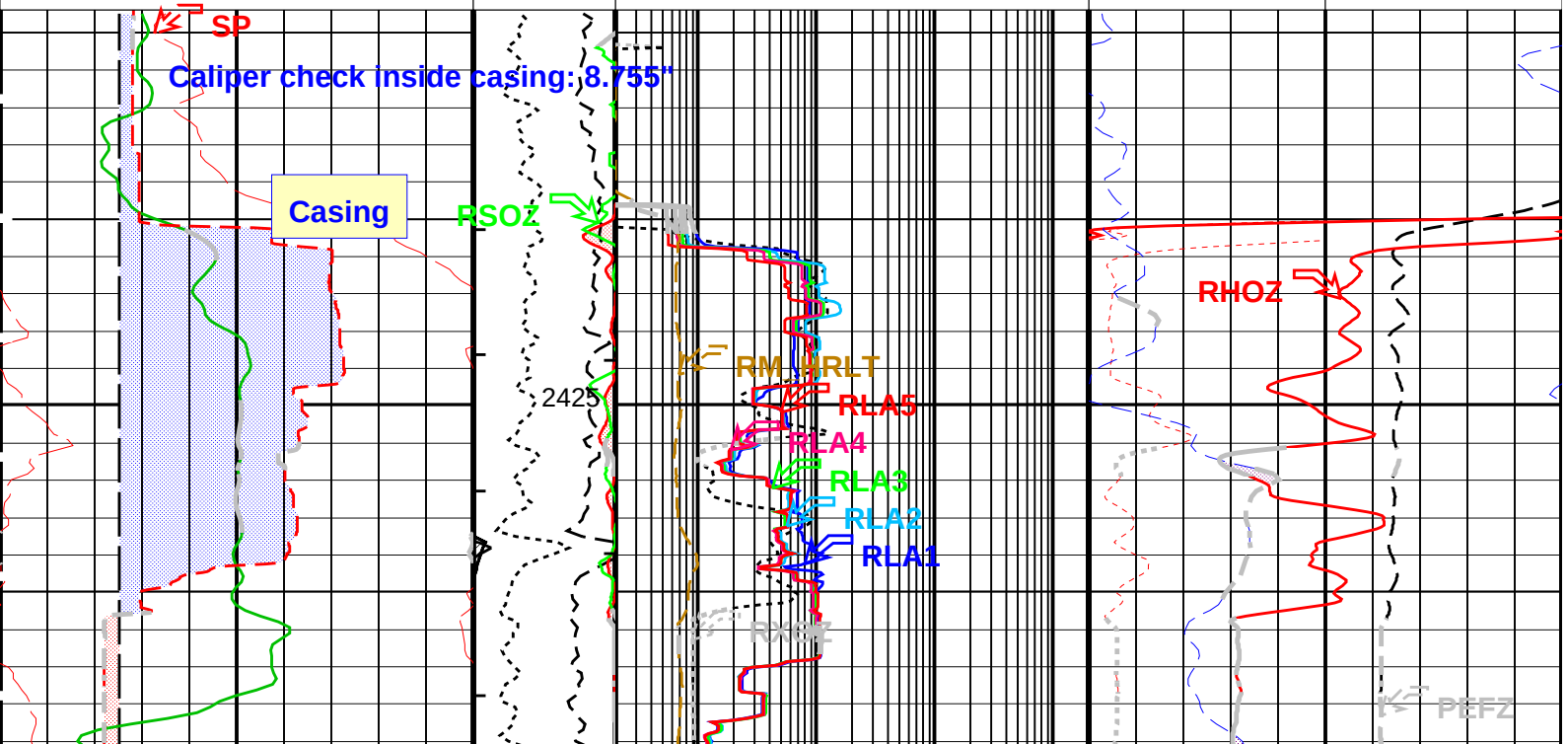
SPE−A	**12C0−301**	**HRLT−B**	**12C0−301**
HILTH−FTB	**12C0−301**	**CMRT−B**	**12C0−301**

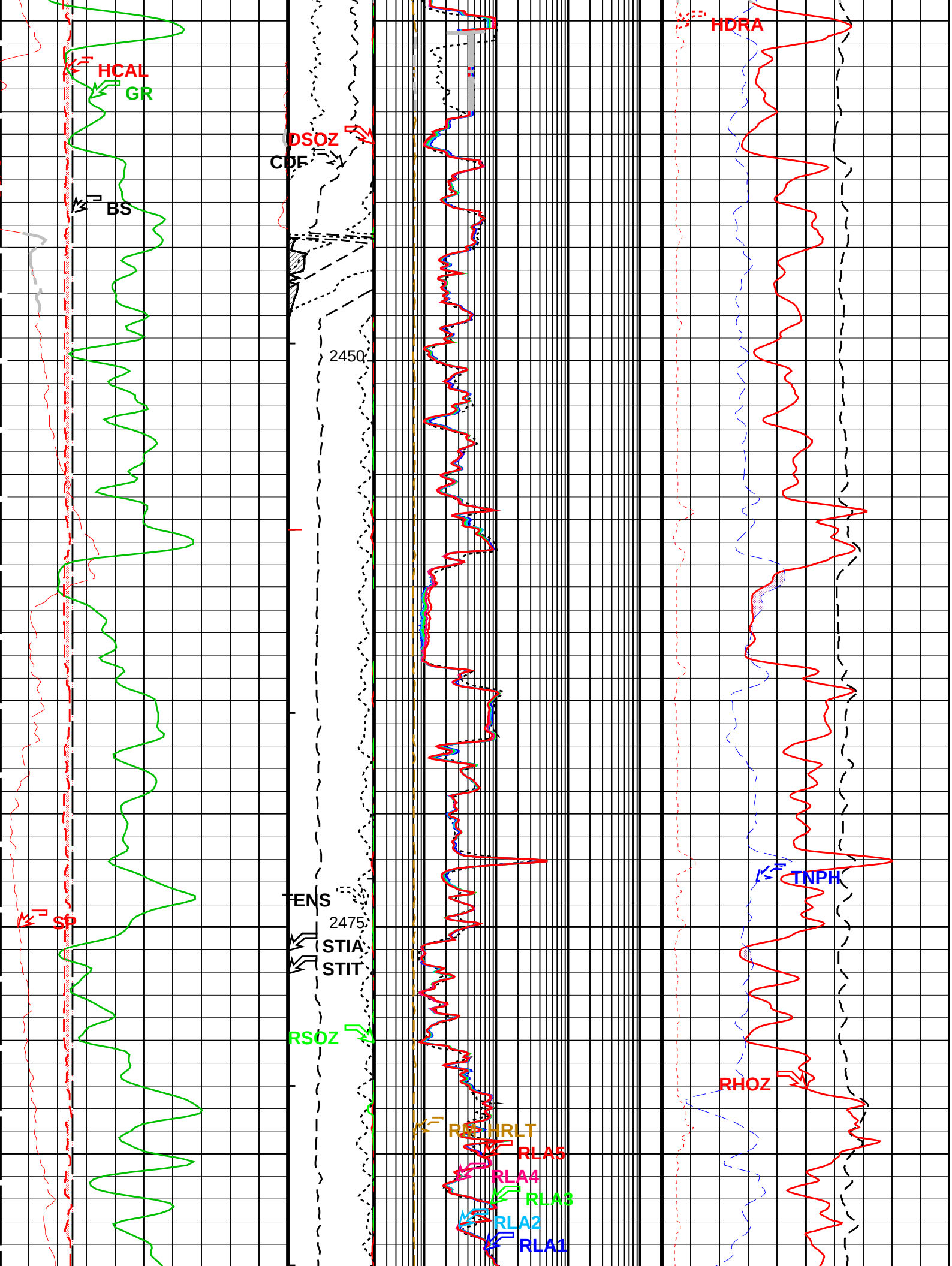
DTC−H 12C0−301

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 10 F3
Integrated Hole Volume Major Pip Every 100 F3
Integrated Cement Volume Minor Pip Every 10 F3
Integrated Cement Volume Major Pip Every 100 F3
Time Mark Every 60 S

	Calibrated Downhole Force (CDF) (LBF) 0 1000	HRLT Mud Resistivity (RM_HRLT) 0.02 (OHMM) 200	
Undergauge From HCAL to BS	Std. Res. Resistivity Standoff (RSOZ) 2.5 (IN) 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 2000	
Washout From BS to HCAL	Std. Res. Density Standoff (DSOZ) 2.5 (IN) 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 2000	
HILT Caliper (HCAL) 6 (IN) 16	Tool/Tot. Drag From D3T to STIA	HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 2000	Crossover From RHOZ to TNPH
Gamma Ray (GR) 0 (GAPI) 200	Cable Drag From STIA to STIT	HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 2000	Env.Corr.Thermal Neutron Porosity (TNPH) 0.45 (V/V) −0.15
Bit Size (BS) 6 (IN) 16	Stuck Stretch (STIT) 0 (F) 50	HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 2000	Std. Res. Formation Density (RHOZ) 1.95 (G/C3) 2.95
SP (SP) −50 (MV) 50	Tension (TENS) (LBF) 0 1000	Std. Res. Invaded Zone Resistivity (RXOZ) 0.2 (OHMM) 2000	Density Correction (HDRA) −0.05 (G/C3) 0.45 / Std. Res. Formation Pe (PEFZ) 0 (−−−− 10

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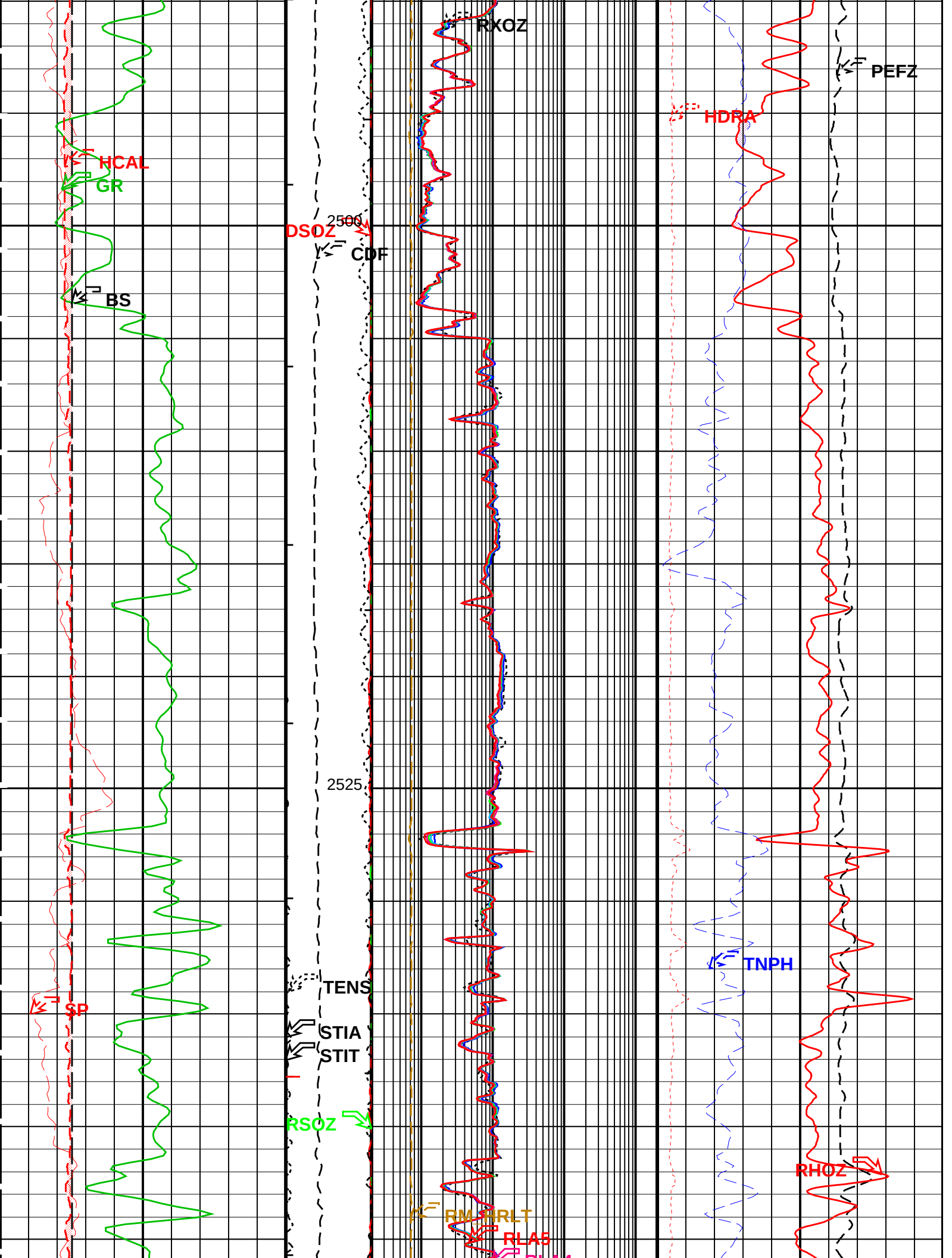
RHOZ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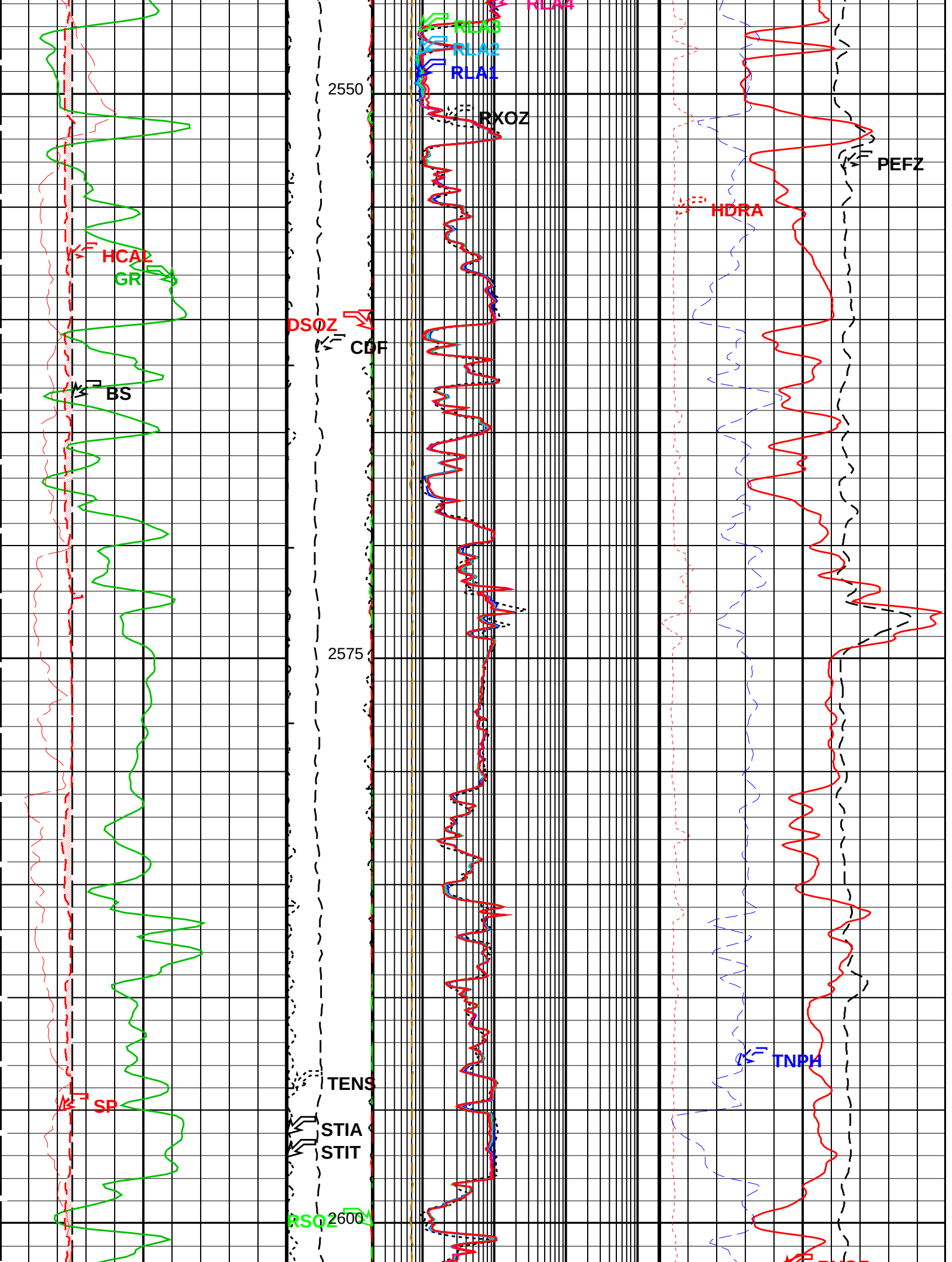
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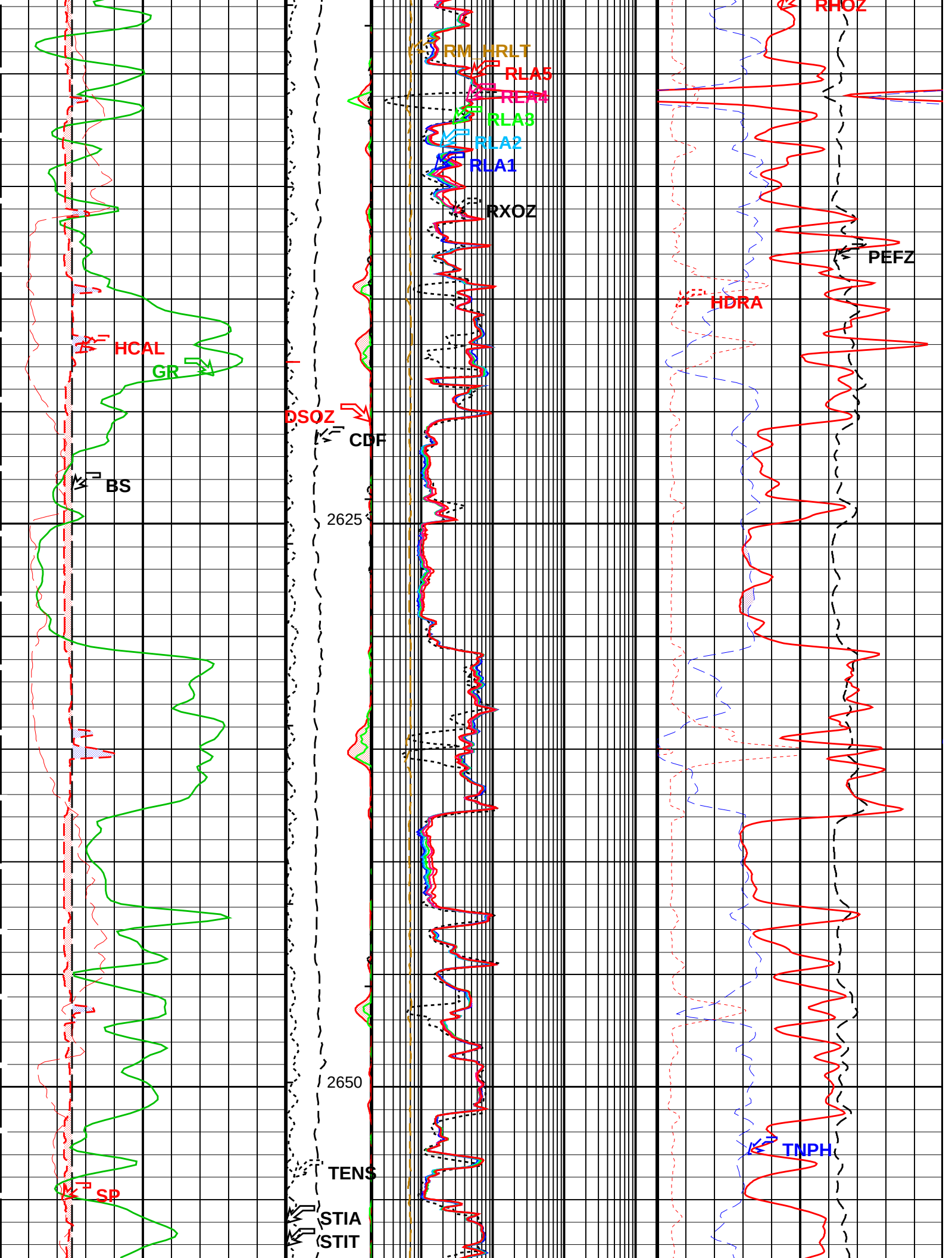
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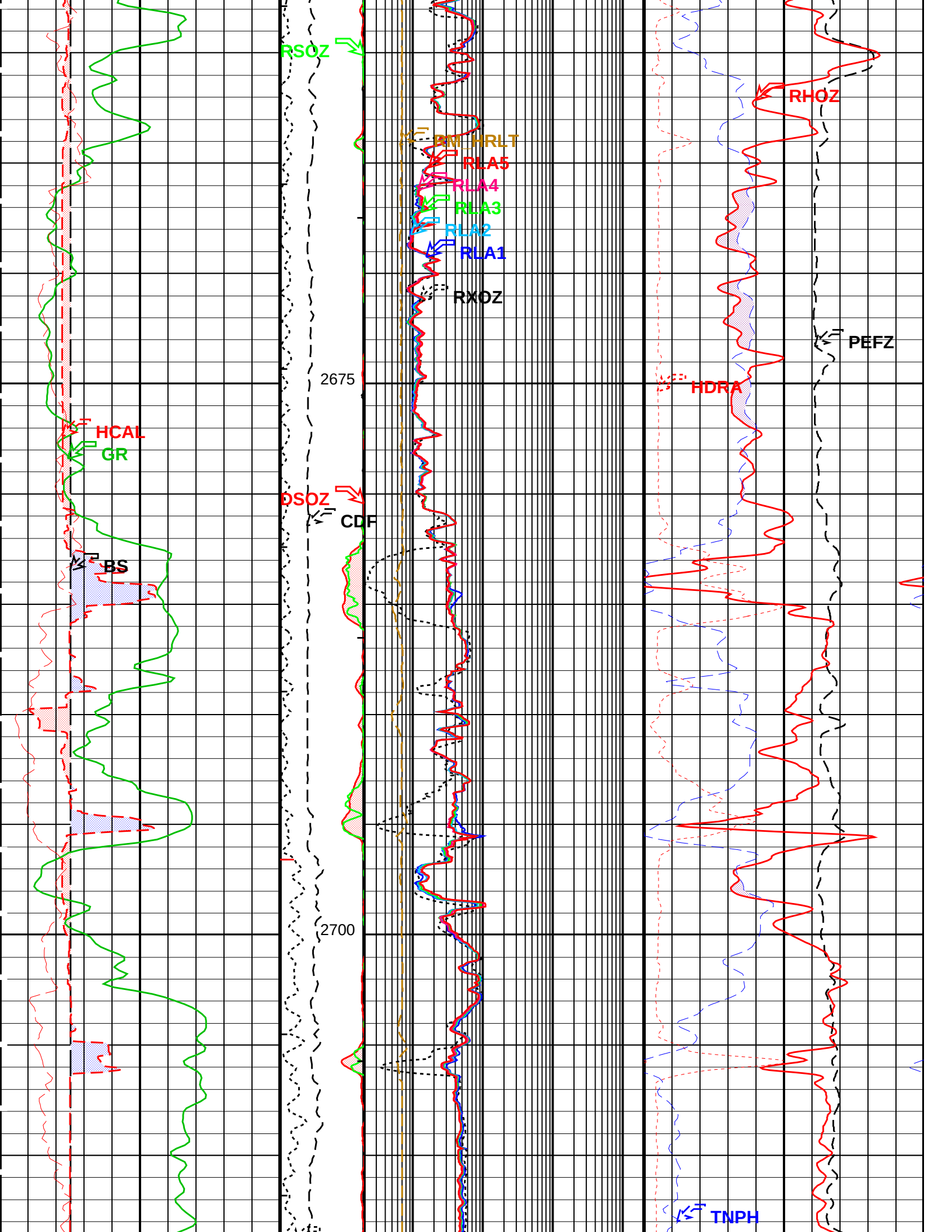
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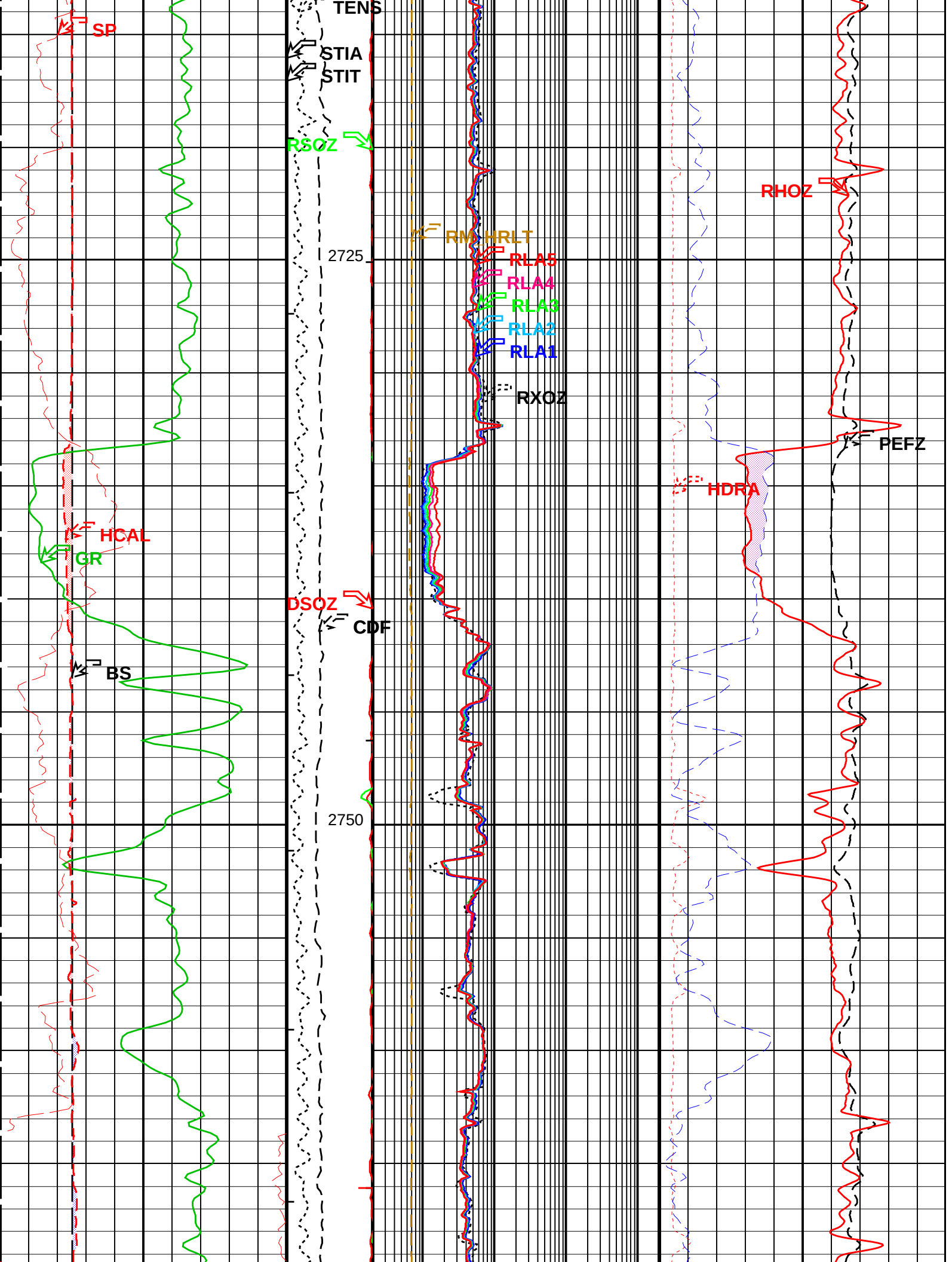
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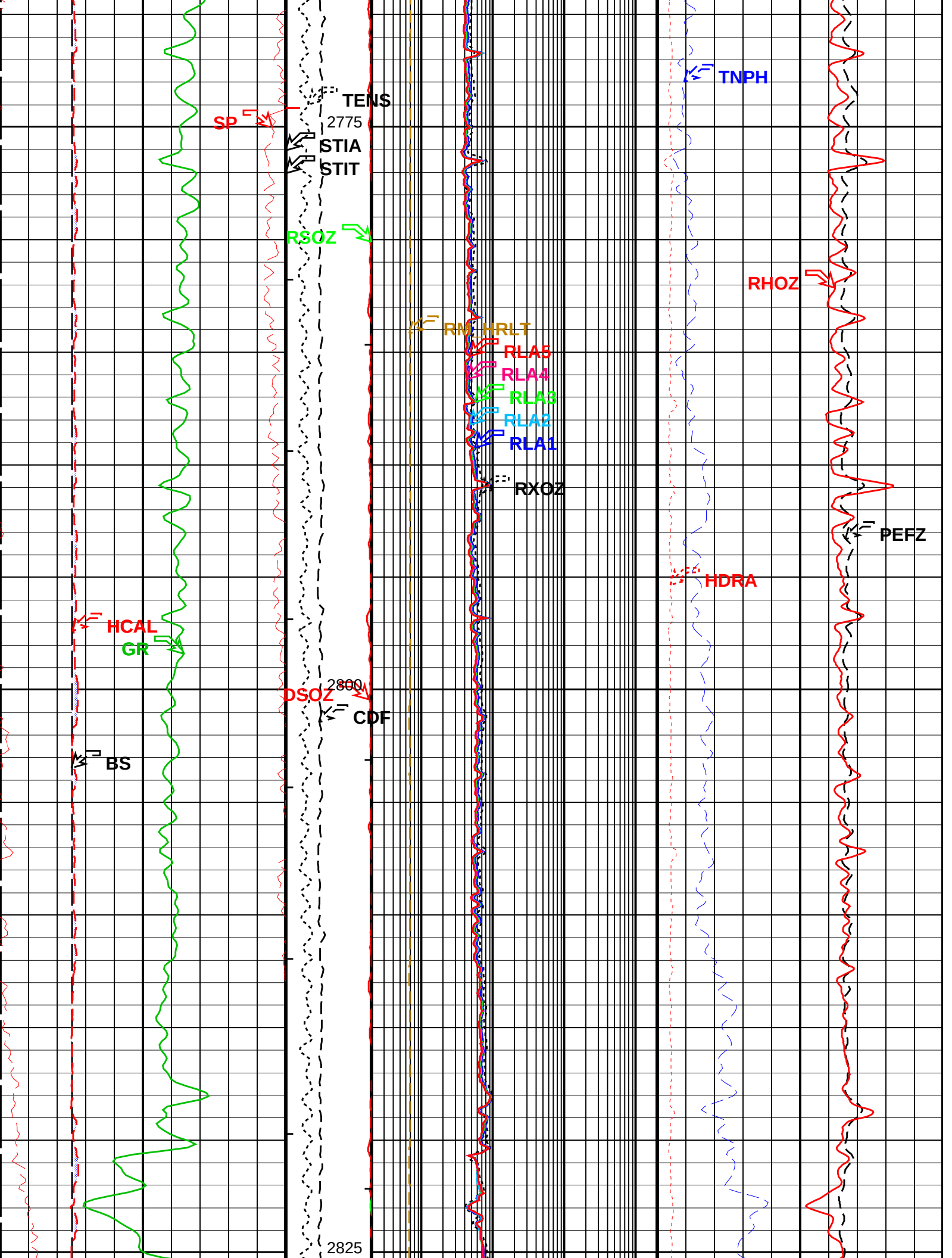
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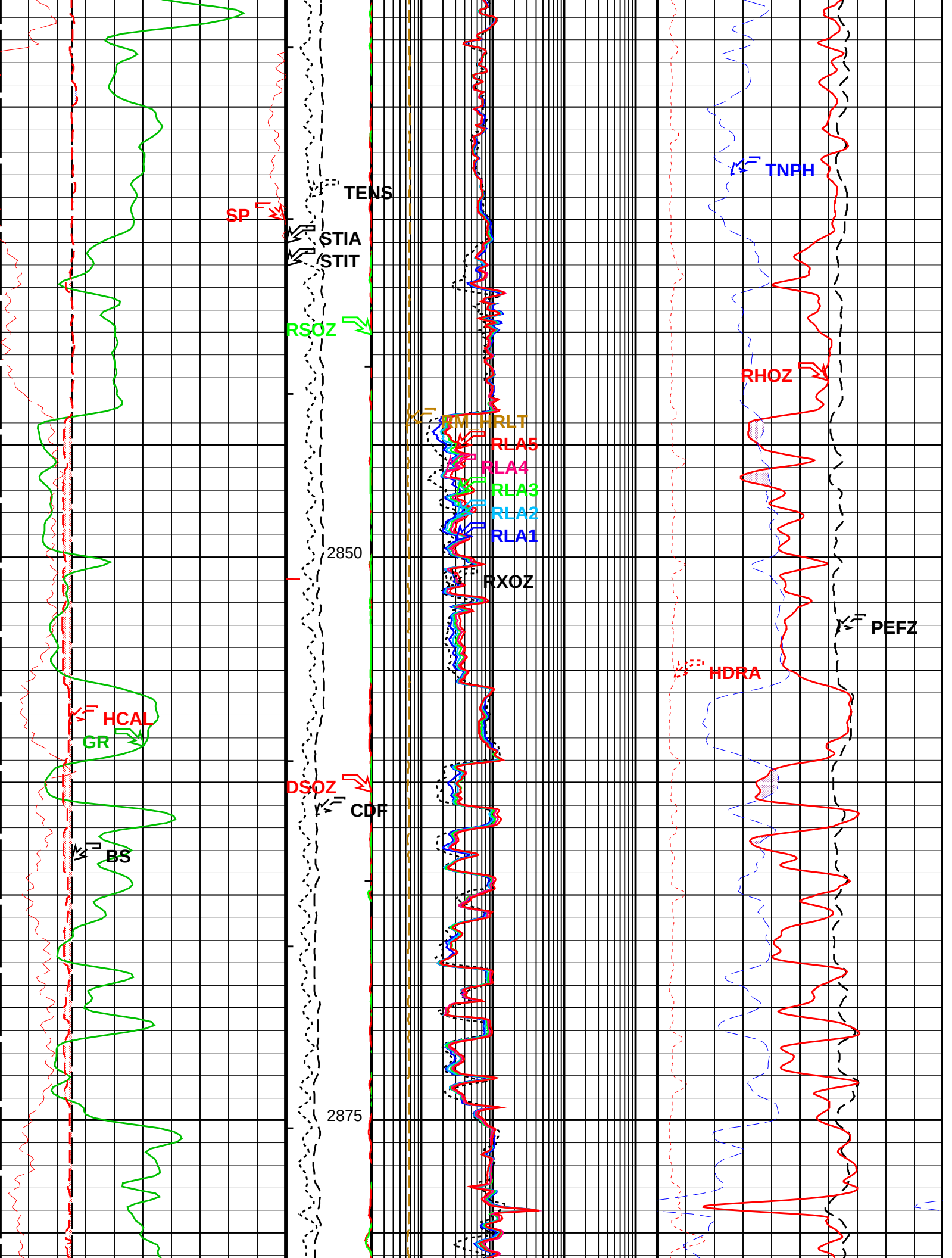
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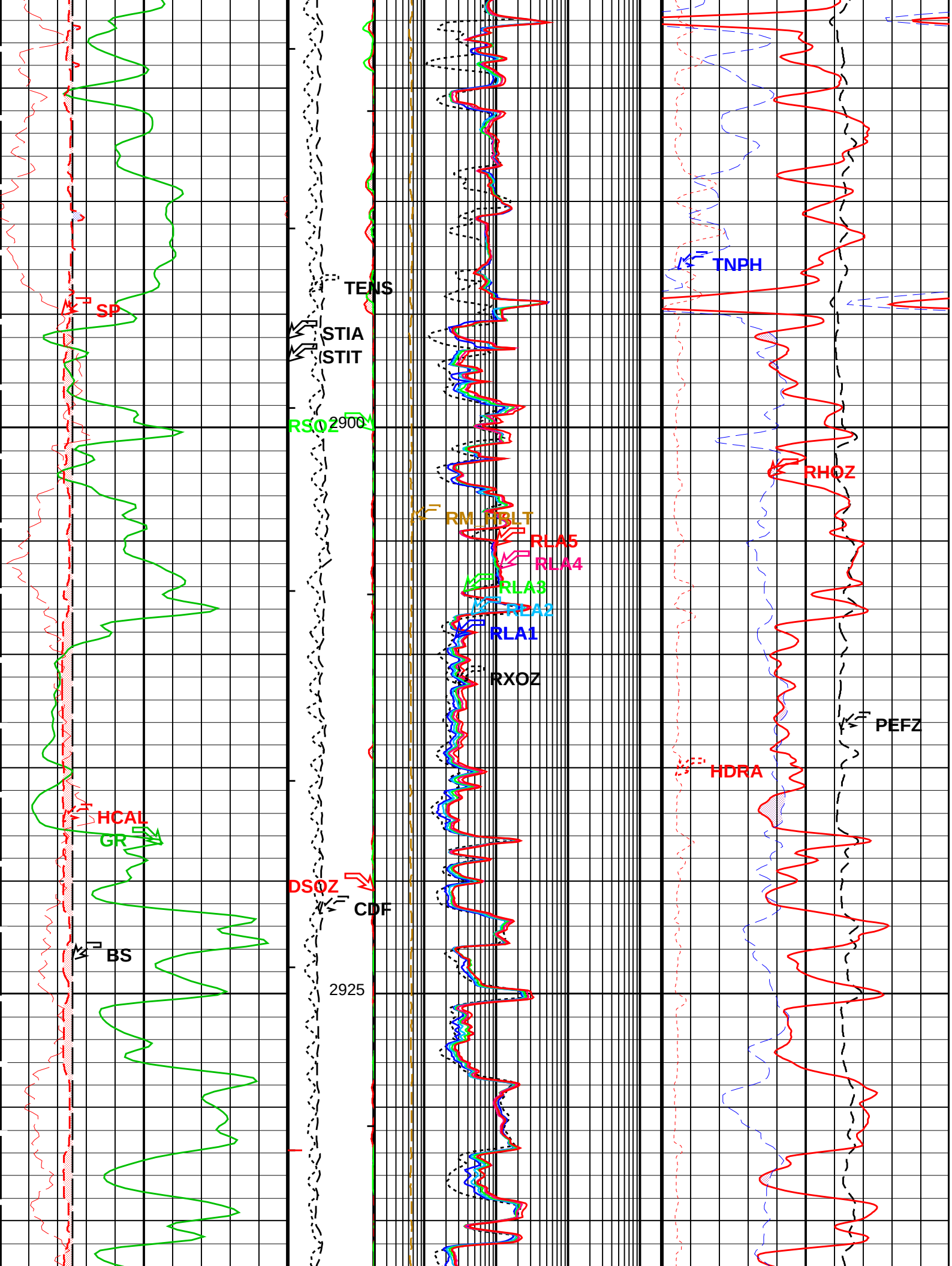
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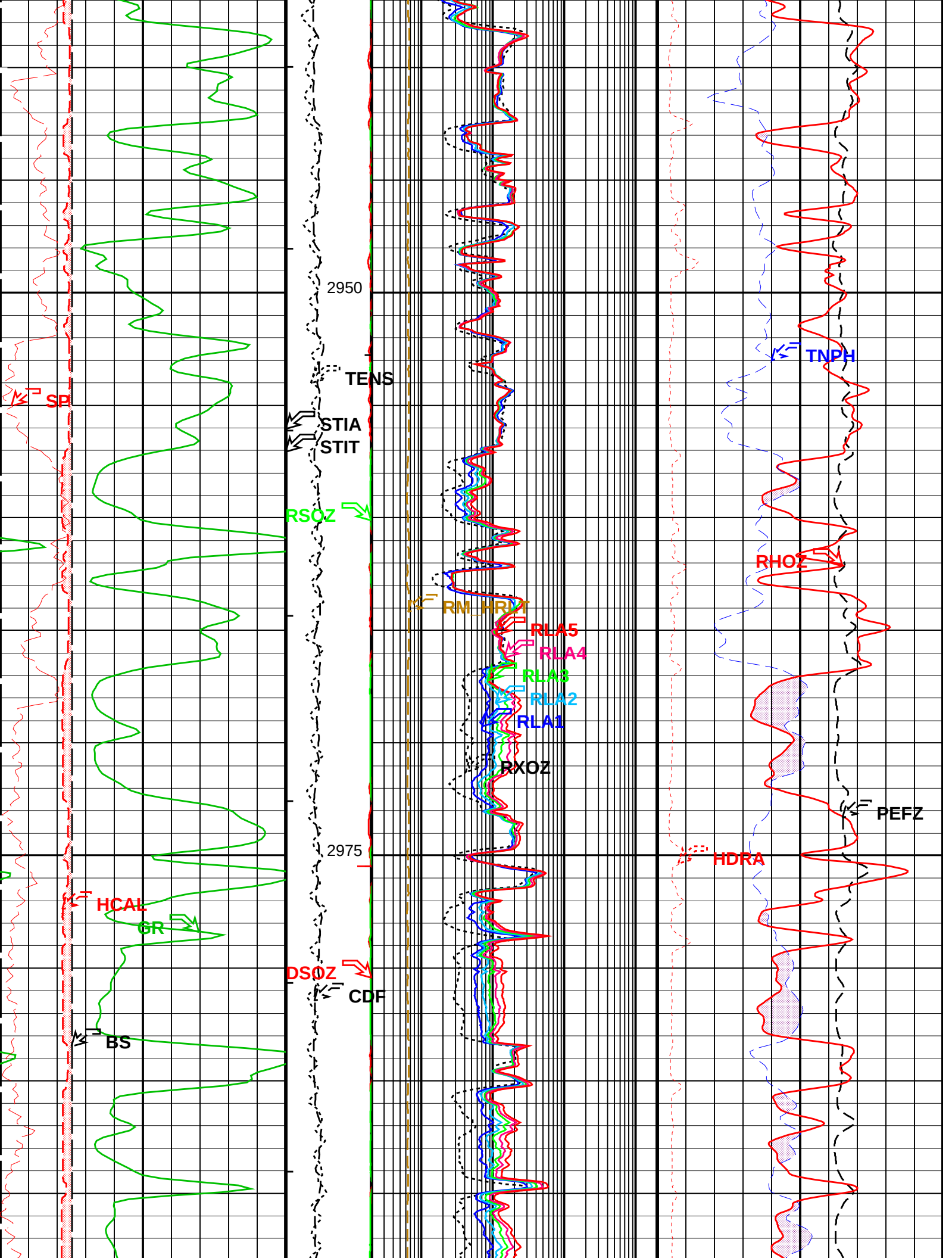
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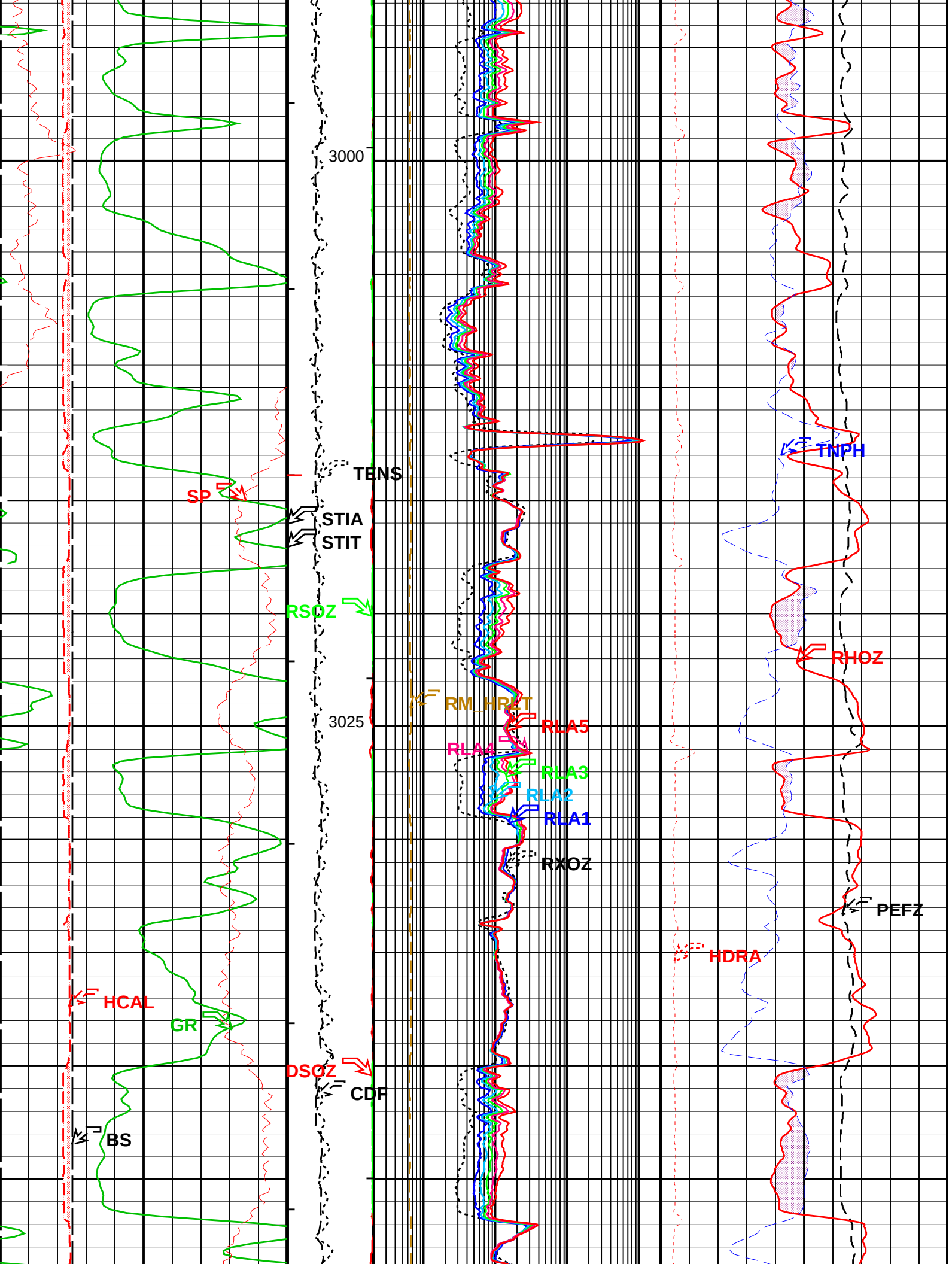
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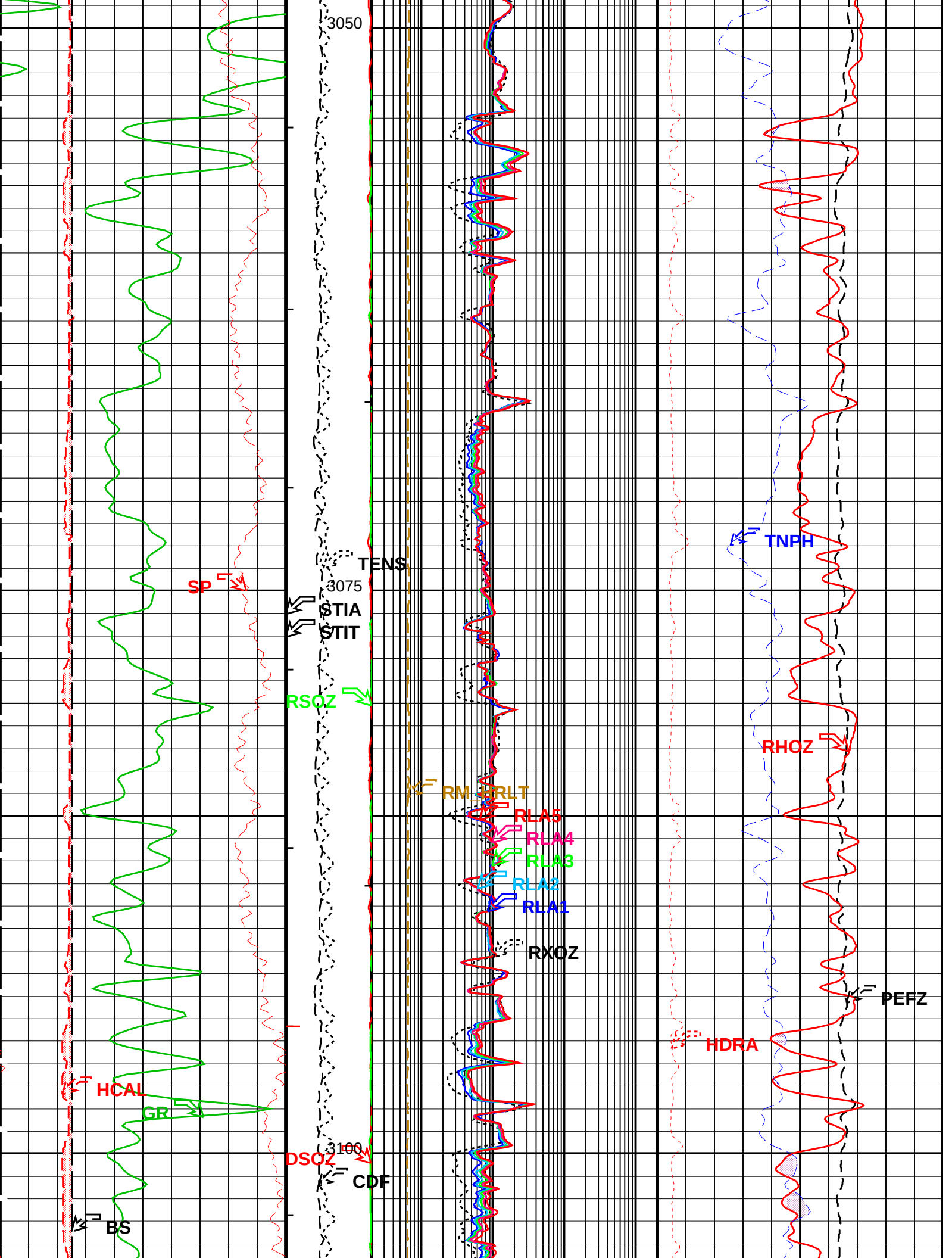
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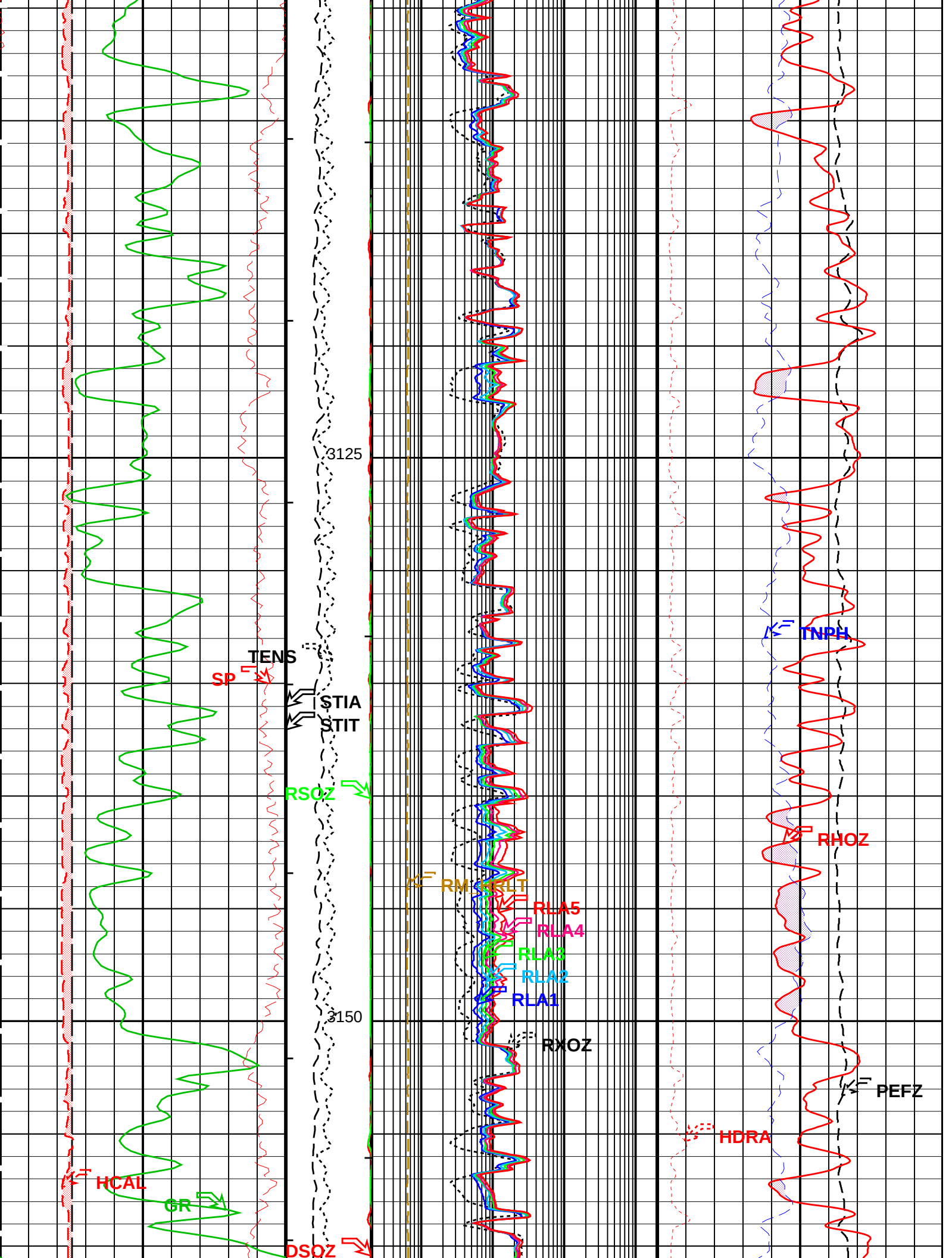
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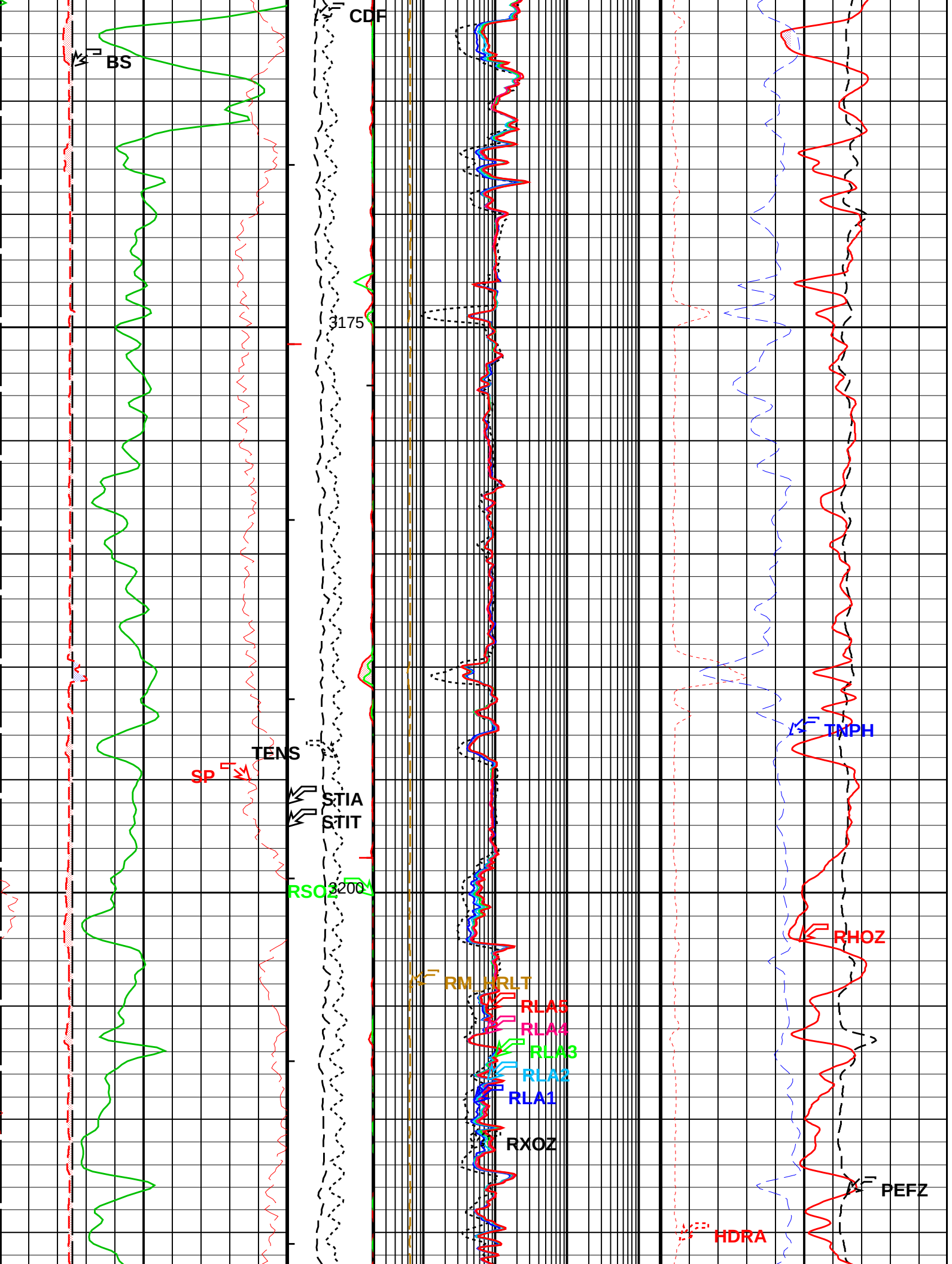
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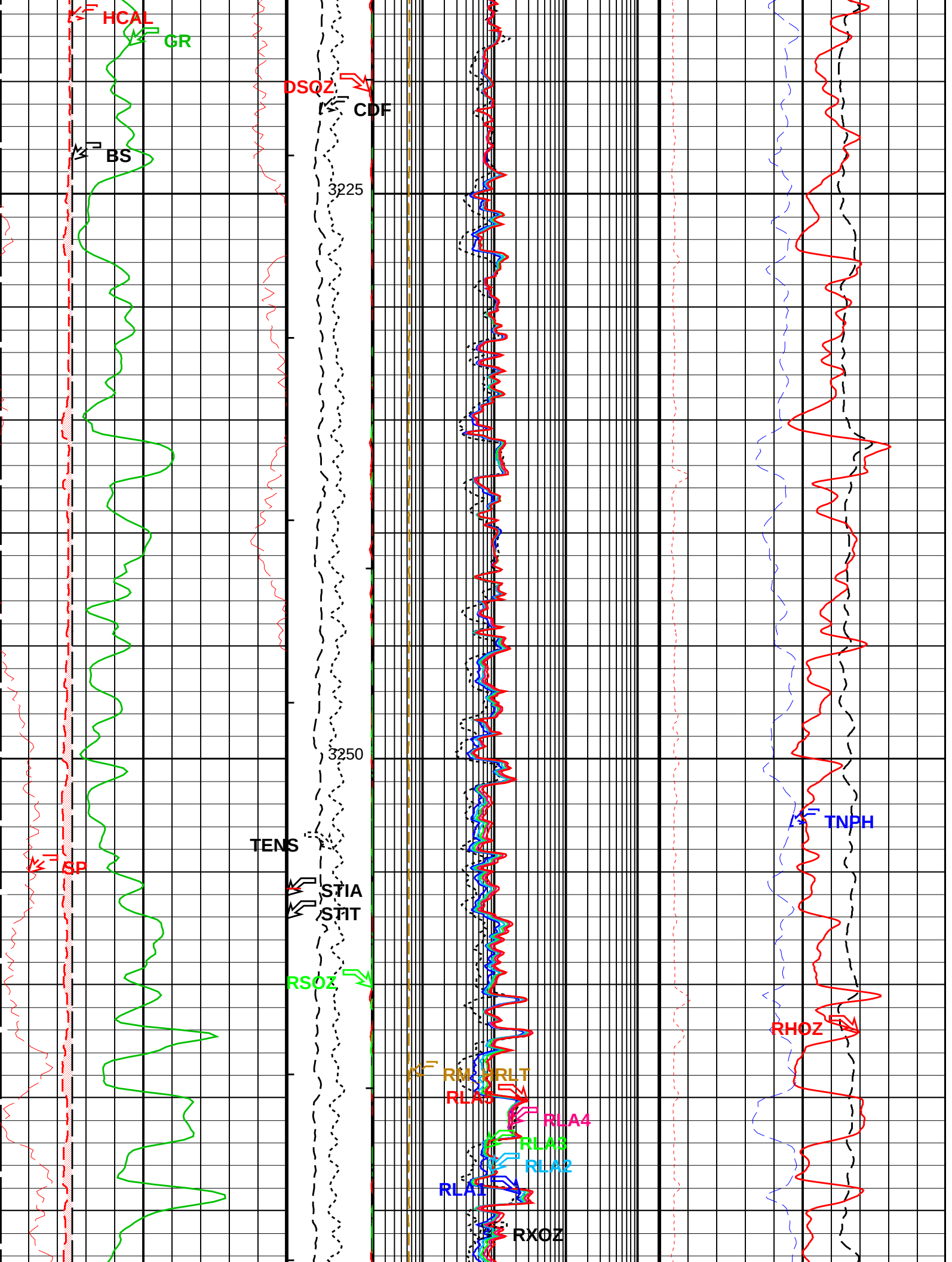
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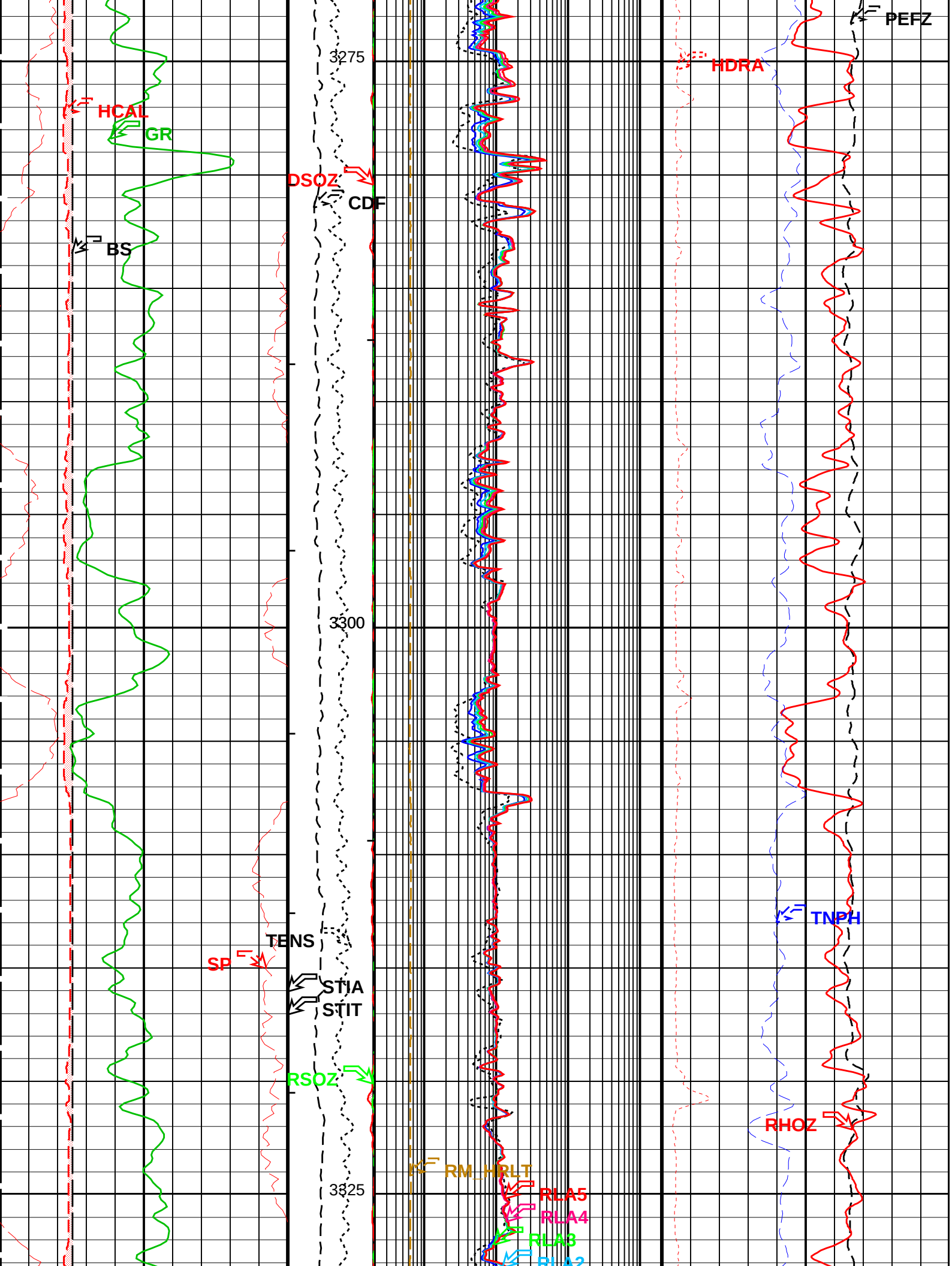
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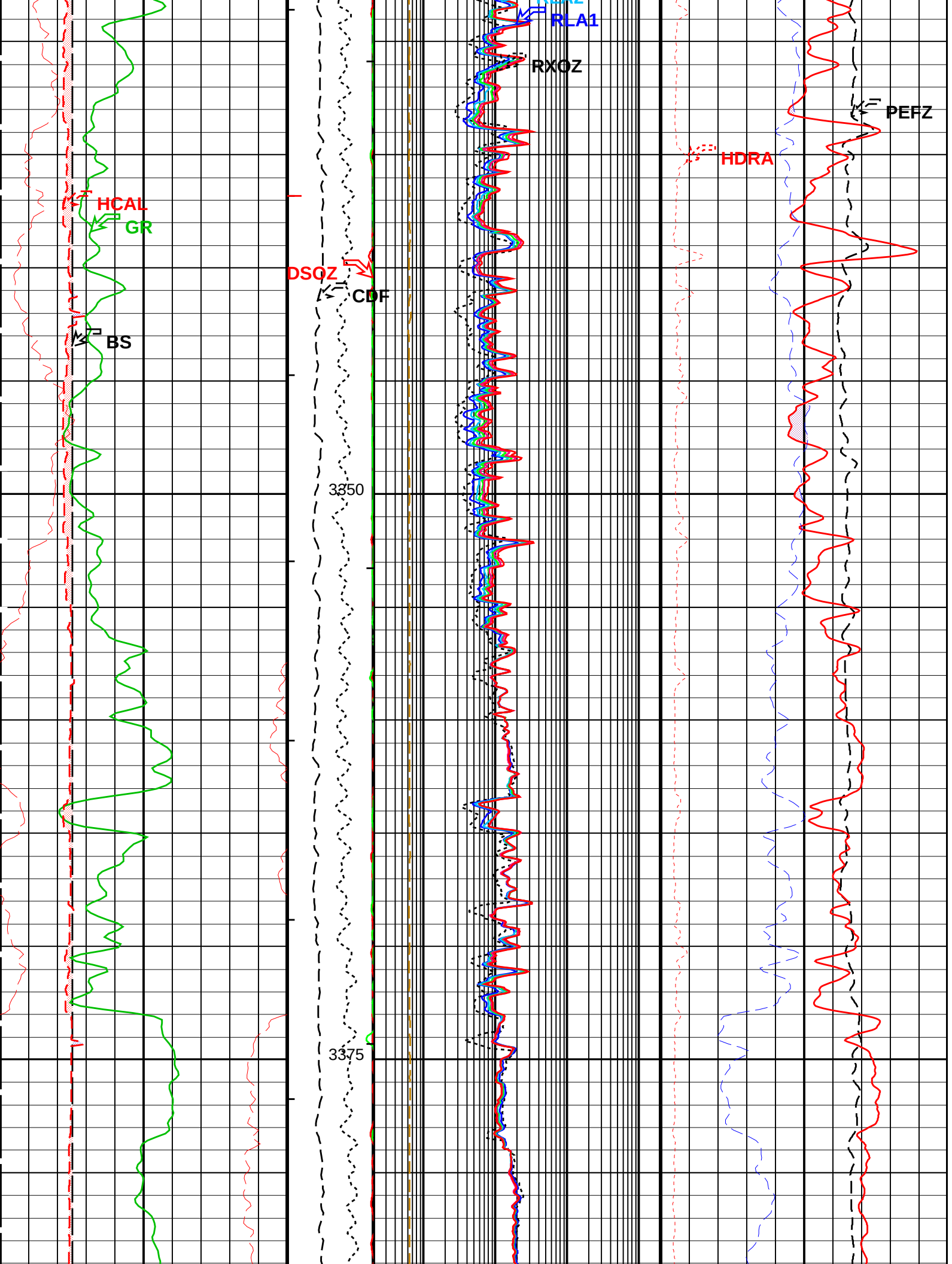
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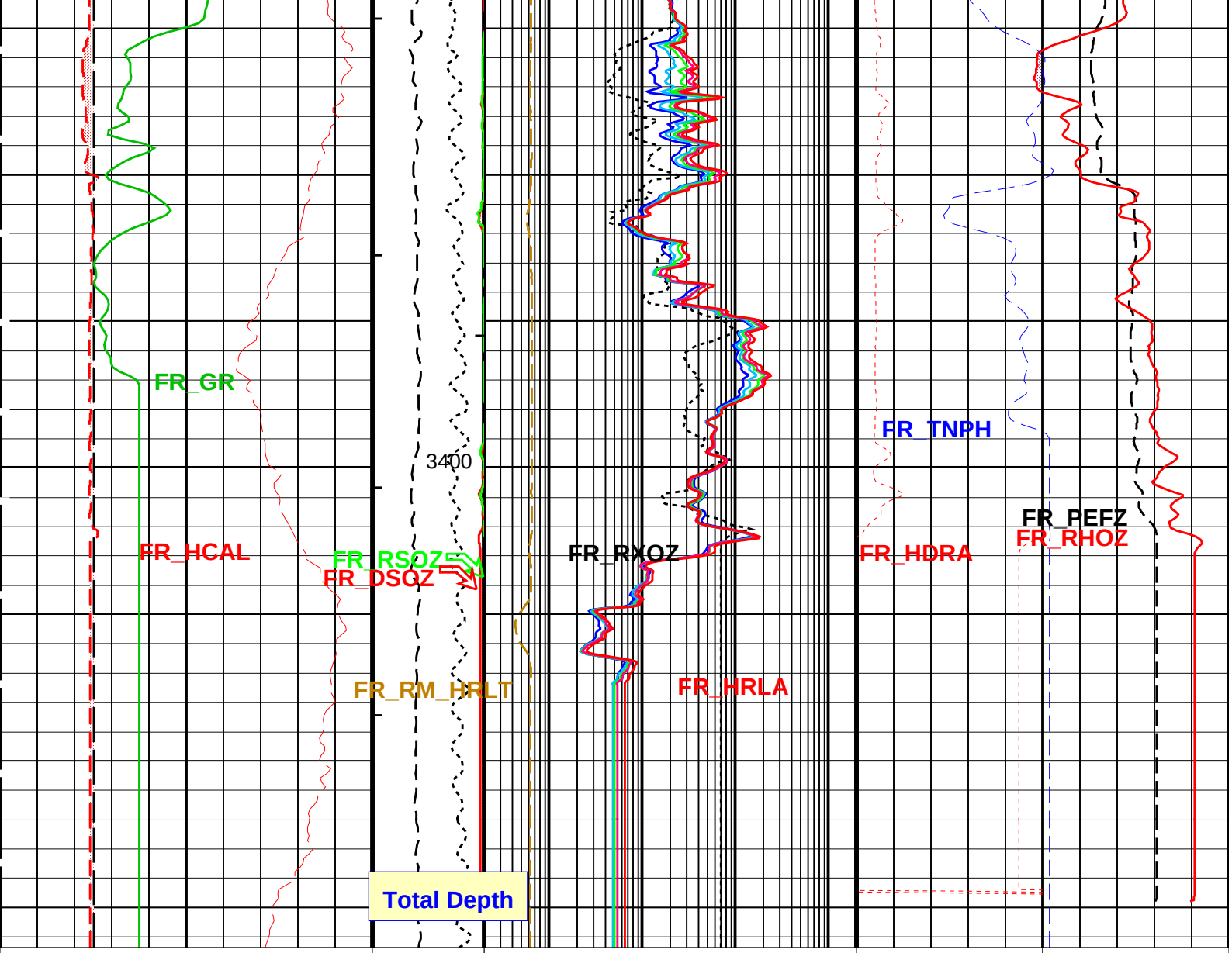


SP (SP) −50 (MV) 50	Tension (TENS) (LBF) 0 1000	Std. Res. Invaded Zone Resistivity (RXOZ) 0.2 (OHMM) 2000	Density Correction (HDRA) −0.05 (G/C3) 0.45	Std. Res. Formation Pe (PEFZ) 0 (---- 10
Bit Size (BS) 6 (IN) 16	Stuck Stretch (STIT) 0 (F) 50	HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 2000	Std. Res. Formation Density (RHOZ) 1.95 (G/C3) 2.95	
Gamma Ray (GR) 0 (GAPI) 200	Cable Drag From STIA to STIT	HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 2000	Env.Corr.Thermal Neutron Porosity (TNPH) 0.45 (V/V) −0.15	
HILT Caliper (HCAL) 6 (IN) 16	Tool/Tot. Drag From D3T to STIA	HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 2000	Crossover From RHOZ to TNPH	
Washout From BS to HCAL	Std. Res. Density Standoff (DSOZ) 2.5 (IN) 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 2000		
Undergauge From HCAL to BS	Std. Res. Resistivity Standoff (RSOZ)	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 2000		

	2.5 (IN) 0	
	Calibrated Downhole Force (CDF) (LBF) 0 1000	HRLT Mud Resistivity (RM_HRLT) 0.02 (OHMM) 200

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 10 F3
Integrated Hole Volume Major Pip Every 100 F3
Integrated Cement Volume Minor Pip Every 10 F3
Integrated Cement Volume Major Pip Every 100 F3
Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	SPE−A: Extended Spontaneous Potential − A		
SPNV	SP Next Value	0	MV
	HRLT−B: High Resolution Laterolog Array − E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	95.1643	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	RXO8	
PROCMSO	Mechanical Standoff Fin Size	2	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
SHT	Surface Hole Temperature	20	DEGC
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	YES	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	25	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	

HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e−005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e−005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
CMRT−B: Combinable Magnetic Resonance Tool − B			
ACQ_METHOD_OPT	Acquisition Method Option	SEQ	
AECS	Auto Electronic Calibration Switch	On	
AFS	Auto Frequency Switch	On	
B0_TEMP_COEF	Exponential Coef. for Static B from Temp.	−0.000399888	
BFV_MIN	Minimum BFV	0.02	M3M3
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
CMRP_POLC_MAX	Polar. Correct. Maximum to Trigger Insufficient Wait Time Flag	0.015	M3M3
CMR_FORM_H2O_SAL	Formation Water Salinity	−50000	PPM
CMR_HI_COR_SW	CMR Hydrogen Index Correction Switch	Off	
CMR_HR_OPT	CMR High Resolution Option	Off	
CMR_LOG_DIRECTION	Logging Direction	Up	
CMR_LOG_SPEED	Optimal CMR logging speed	182.88	M/HR
CMR_SIGNAL_PROC_SW	CMR Signal Processing Switch	On	
CMR_TEMP_MC	CMR Temperature during Master Calibration	25.2319	DEGC
CPMG_OPT	Option for CPMG Data	No	
DC_GAS	Diffusion Coefficient of Gas	8	E−4CM2/S
DDFL	Uphole Stacking	1	
DEPTH_CMR_SL	Depth for CMR Station Log	0	M
DESPIKE_OPT	Despiking Option	Off	
DE_ALPHA	Diffusion Editing Alpha Coefficient	0.84	
DE_BETA	Diffusion Editing Beta Coefficient	0	
DE_OPT	Diffusion Editing Option	Off	
DMRP_CAL_OPT	DMRP Calculation Option	60/40	
DMRP_OPT	DMRP Option	Off	
DP_OPT	Density Porosity Option	AUTO	
EPM_OPT	Enhanced Precision Mode Option	On	
FLUID_DENSITY	Density of Liquid Phase	1	G/C3
GAMMA_REG	Gamma Regularization − Depth Log	** V **	
GAMMA_REG_SL	Gamma Regularization − Station Log	** V **	
GAS_DENSITY	Density of Gas	0.3	G/C3
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GOR	Gas Oil Ratio	0	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HIFF	Hydrogen Index of Formation Fluid	1	
HI_GAS	Hydrogen Index of Gas	0.4	
HI_H2O	Hydrogen Index of Water	1	
HI_OBMF	Hydrogen Index of OBMF	1	
HI_OIL	Hydrogen Index of Oil	1	
HP_H0	0th Coefficient for Hall Probe	239.534	
HP_H1	1st Coefficient for Hall Probe	6.35651	
HP_H2	2nd Coefficient for Hall Probe	0	
HP_H3	3rd Coefficient for Hall Probe	0	
INV_MC_AMP	Inverse of Master Calibration Amplitude	0.0346734	
KBFV_OPT	KBFV Option	Off	
KECHO_HR_A	Scale Factor for High Resolution Permeability	1	
KECHO_HR_B	Sensitivity Factor for High Resolution Permeability	1	
KSDR_A	Multiplier for SDR Permeability	4	MD
KSDR_B	T2 Exponent for SDR Permeability	2	
KSDR_C	Porosity Exponent for SDR Permeability	4	
KTIM_A	Multiplier for Timur/Coates Permeability	1	MD
KTIM_B	Porosity Exponent for Timur/Coates Permeability	4	
KTIM_C	PHI Ratio Exponent for Timur/Coates Permeability	2	
LFST_SEARCH_FREQ	LFST Search Operating Frequency	2.182e+006	HZ

LOOP_MC	Calibration Loop during Master Calibration	1685.29	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MATRIX_DENSITY	Density of Formation Matrix	2.65	G/C3
MPHI_SW	Porosity Channel Selection for KBFV Computation	DPHZ	
MRF_B	Oil Diffusion/T2 Scaling Factor for Magnetic Resonance Fluid Technique	1	
NCOMP	Number of Components − Depth Log	30	
NCOMP_OIL	Number of Oil Components	14	
NCOMP_SL	Number of Components − Station Log	30	
NECH_V	Number of Echo Amplitudes per CPMG	** V **	
NMR_FLUID_MODEL	Fluid Model for Magnetic Resonance Fluid Typing	WATER	
NSTACK	Number of Stacks Down−Hole	3	
NWT	Number of Wait Times	2	
OBM	Oil Based Mud	Water	
PHI_FOR_BADF	Porosity Threshold to Trigger Bad Hole Flag	0.4	M3M3
POLC_SW	Polarization Correction Switch	On	
PT_V	Polarization Times	** V ** S	
Q_SWITCH_ON_TIME	Duration of Q−Switch ON State	10	US
RINGING_COUNT	Number of Ringing Data Samples	100	
RPTN_V	Repetition Number for each Wait Time	** V **	
RSV_WSUM_MUD	R (Residual) Square Value of Window Sum Fit for Mud	** V **	
SEND_ECHO_SW	Send Echo Switch	On	
SHT	Surface Hole Temperature	20	DEGC
SLUINT	Station Logging Update Interval	1	S
SPOILER_COUNT	Number of Spoiler Pulses	8	
SPOILER_WIDTH	Spoiler pulse width	26	
T180	Time Width for 180 degree Pulse	27.2	US
T1T2R_IN	T1/T2 Ratio	2	
T1T2R_MAX	T1/T2 Ratio − Maximum	3	
T1T2R_MIN	T1/T2 Ratio − Minimum	1	
T1T2R_OIL_IN	T1/T2 Ratio for oil − Input	1	
T1_GAS	T1 of Gas	4	S
T1_OBMF	T1 of OBMF	1.8	S
T2C1	T2 Cutoff 1	1	MS
T2C2	T2 Cutoff 2	3	MS
T2C3	T2 Cutoff 3	10	MS
T2C4	T2 Cutoff 4	33	MS
T2C5	T2 Cutoff 5	100	MS
T2C6	T2 Cutoff 6	300	MS
T2C7	T2 Cutoff 7	1000	MS
T2CUT	T2 Cutoff	33	MS
T2MF	T2 Mud Filtrate	50000	MS
T2_DISTRIBUTION_V	T2 Distribution Vector	** V **	
T2_FOR_BADF	T2 Threshold to Trigger Bad Hole Flag	10	MS
T2_MAX	T2 Maximum	3000	MS
T2_MAX_OIL	Maximum T2 for Oil	1590	MS
T2_MIN	T2 Minimum	0.3	MS
T2_MIN_OIL	Minimum T2 for Oil	14	MS
T90	Time Width for 90 degree Pulse	16.4	US
TCP	Time between 90X, 180Y Pulses	100	US
TCP_DIFF	TCP Difference (TCP1 − TCP2)	−8.8	US
TCP_V	Array of TCP's	** V ** US	
TDEL	Difference between Start of Echo and TCP	18	US
TEMP_SL	Station Logging Temperature	25	DEGC
VIS_OBMF	Viscosity of OBMF	0.857535	CP
WT_V	Acquisition Wait Times	** V ** S	
X_DC_WATER	Scale Factor for Diffusion Coefficient of Water	1	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
FCD	Future Casing (Outer) Diameter	6.625	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	3545.10	M
TDL	Total Depth − Logger	3418.30	M
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	26300.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	43.50	LB/F
DFD	Drilling Fluid Density	9.40	LB/G
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	24.60	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	

PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.1738	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3418.3	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: Combo_200 Vertical Scale: 1:200 Graphics File Created: 02−Dec−2004 15:15

OP System Version: 12C0−301

MCM

SPE−A	12C0−301	HRLT−B	12C0−301
HILTH−FTB	12C0−301	CMRT−B	12C0−301
DTC−H	12C0−301		

Input DLIS Files

02−Dec−2004 12:10

Output DLIS Files

DEFAULT HRLA_TLD_MCFL_CNL_020PUP FN:19 PRODUCER 02−Dec−2004 15:14

Schlumberger

High Resolution Log (1:200)

MAXIS Field Log

Company: Origin Energy Resources Ltd. Well: Trefoil−1

Input DLIS Files

02−Dec−2004 12:10

Output DLIS Files

DEFAULT HRLA_TLD_MCFL_CNL_020PUP FN:19 PRODUCER 02−Dec−2004 15:14 3416.4 M 2414.3 M

Integrated Hole/Cement Volume Summary

Hole Volume = 35.69 M3

Cement Volume = 13.53 M3 (assuming 6.63 IN casing O.D.)

Computed from 3416.4 M to 2420.1 M using data channel(s) HCAL

OP System Version: 12C0−301

MCM

SPE−A	12C0−301	HRLT−B	12C0−301
HILTH−FTB	12C0−301	CMRT−B	12C0−301
DTC−H	12C0−301		

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 10 F3

Integrated Hole Volume Major Pip Every 100 F3

Integrated Cement Volume Minor Pip Every 10 F3

Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Calibrated Downhole Force (CDF) (LBF)	HRLT Mud Resistivity (RM_HRLT)
0 1000	0.02 (OHMM) 200

Undergauge
From HCAL to BS

Washout
From BS to HCAL

Gamma Ray (EHGR)
0 (GAPI) 200

HILT Caliper (HCAL)
6 (IN) 16

Bit Size (BS)
6 (IN) 16

SP (SP)
−50 (MV) 50

H. Res. Resistivity Standoff (RSO8)
2.5 (IN) 0

H. Res. Density Standoff (DSO8)
2.5 (IN) 0

Tool/Tot. Drag From D3T to STIA

Cable Drag From STIA to STIT

Stuck Stretch (STIT)
0 (F) 50

Tension (TENS) (LBF)
0 1000

HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 2000

HRLT Resistivity 4 (RLA4)
0.2 (OHMM) 2000

HRLT Resistivity 3 (RLA3)
0.2 (OHMM) 2000

HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 2000

HRLT Resistivity 1 (RLA1)
0.2 (OHMM) 2000

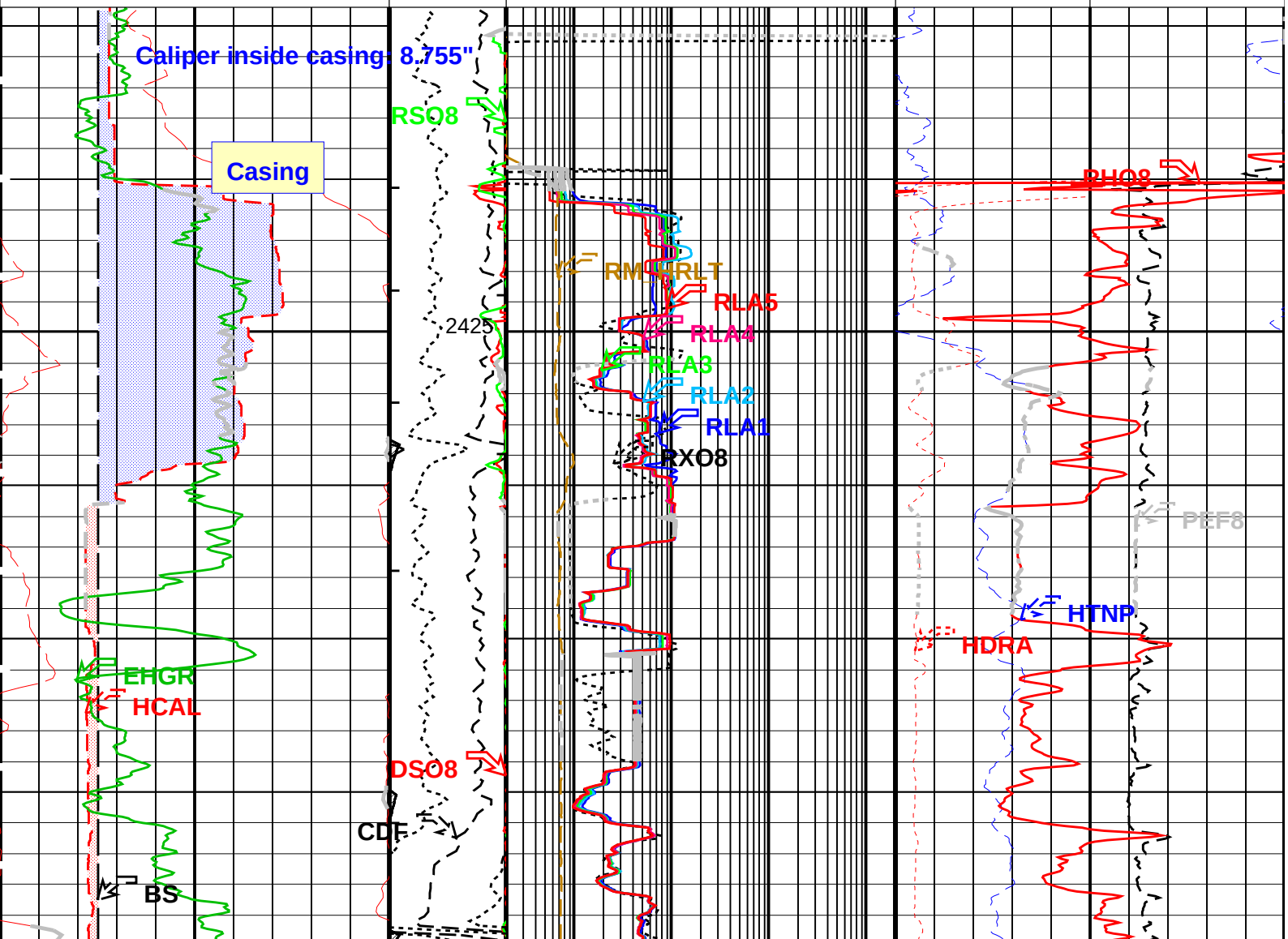
H. Res. Invaded Zone Resistivity (RXO8)
0.2 (OHMM) 2000

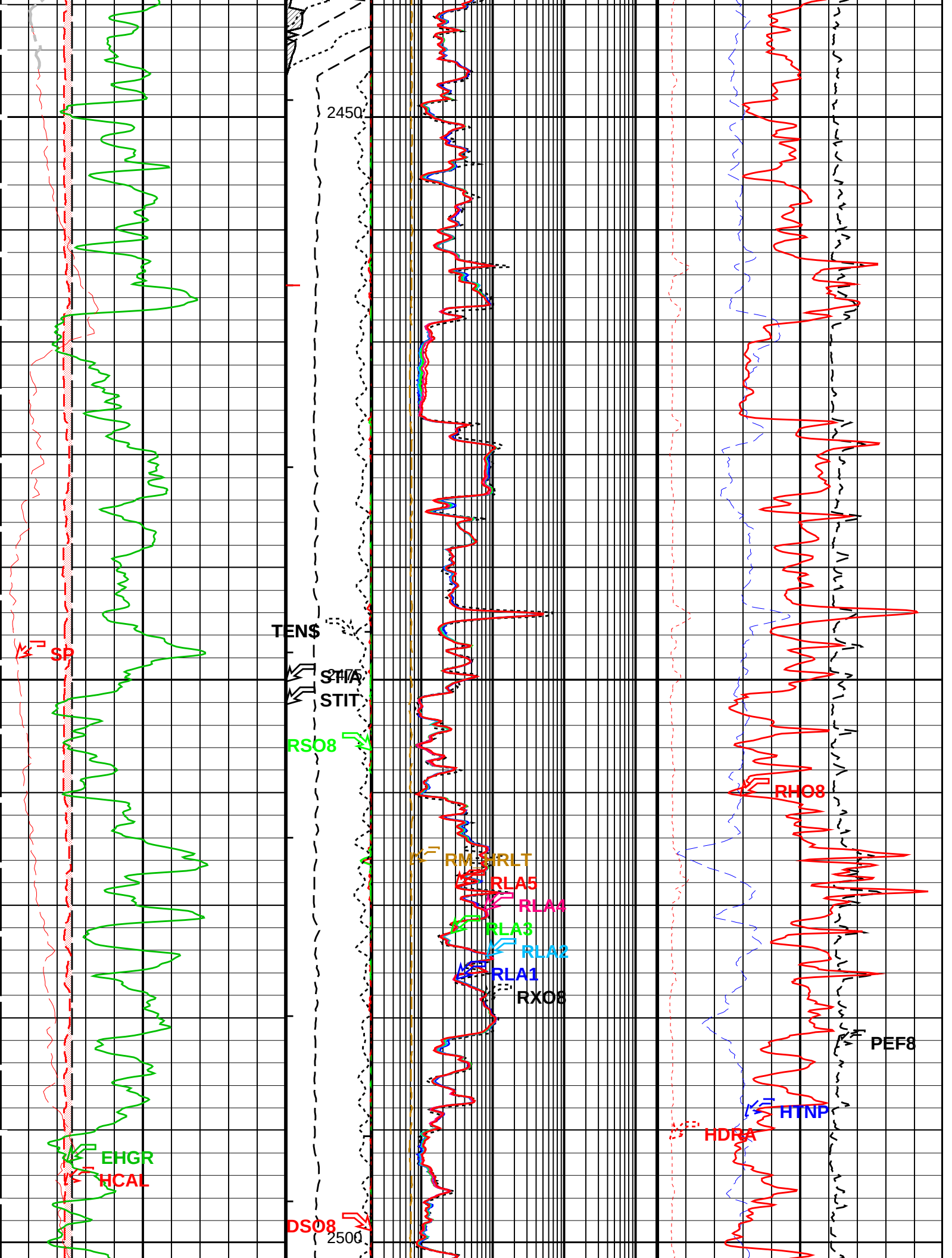
H. Res. Formation Density (RHO8)
1.95 (G/C3) 2.95

HiRes TNPH (HTNP)
0.45 (V/V) −0.15

Density Correction (HDRA)
−0.05 (G/C3) 0.45

H. Res. Formation Pe (PEF8)
0 (---- 10





2450
TEN$
SP
STIA
STIT
RSO8
RHO8
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RLT
RLA5
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RXO8
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HTNP
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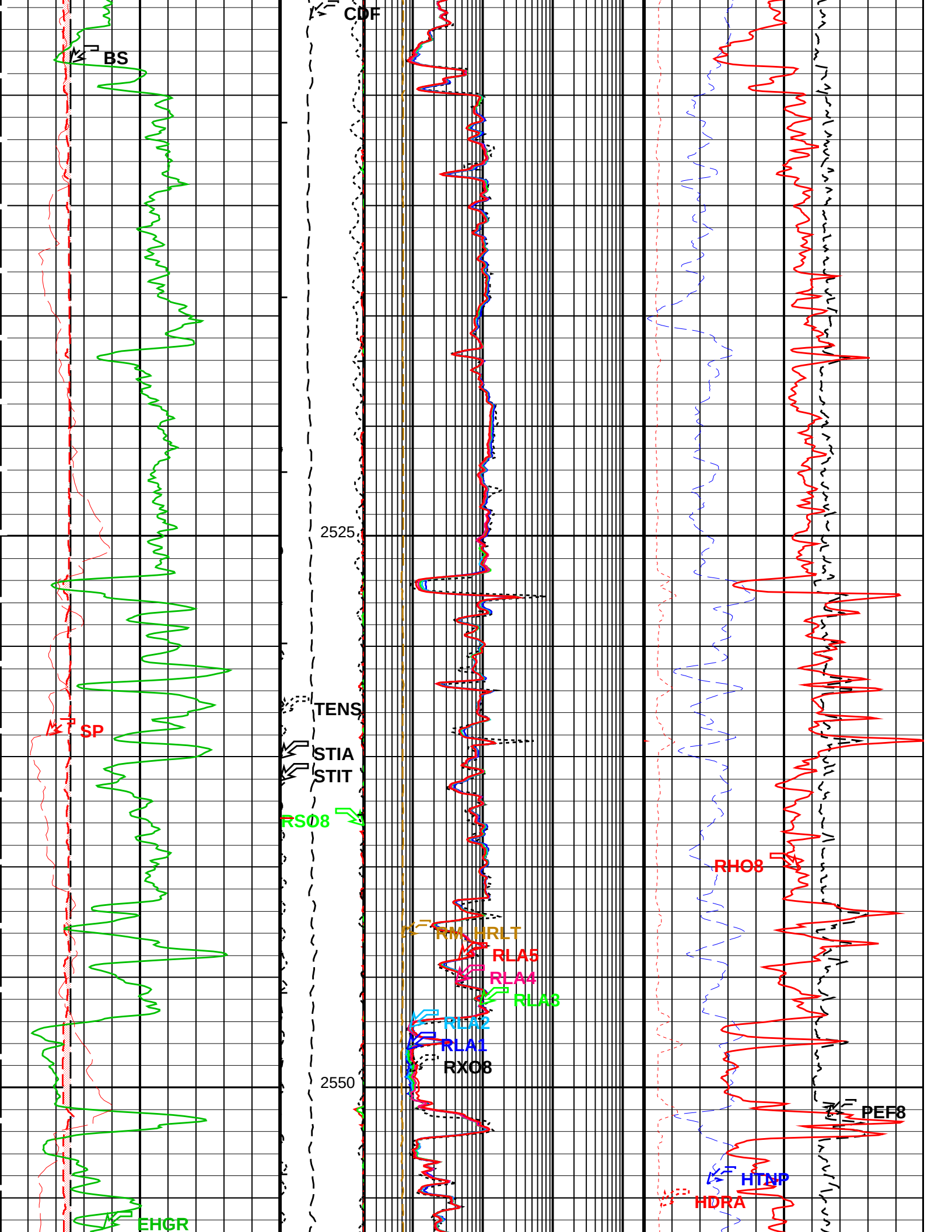
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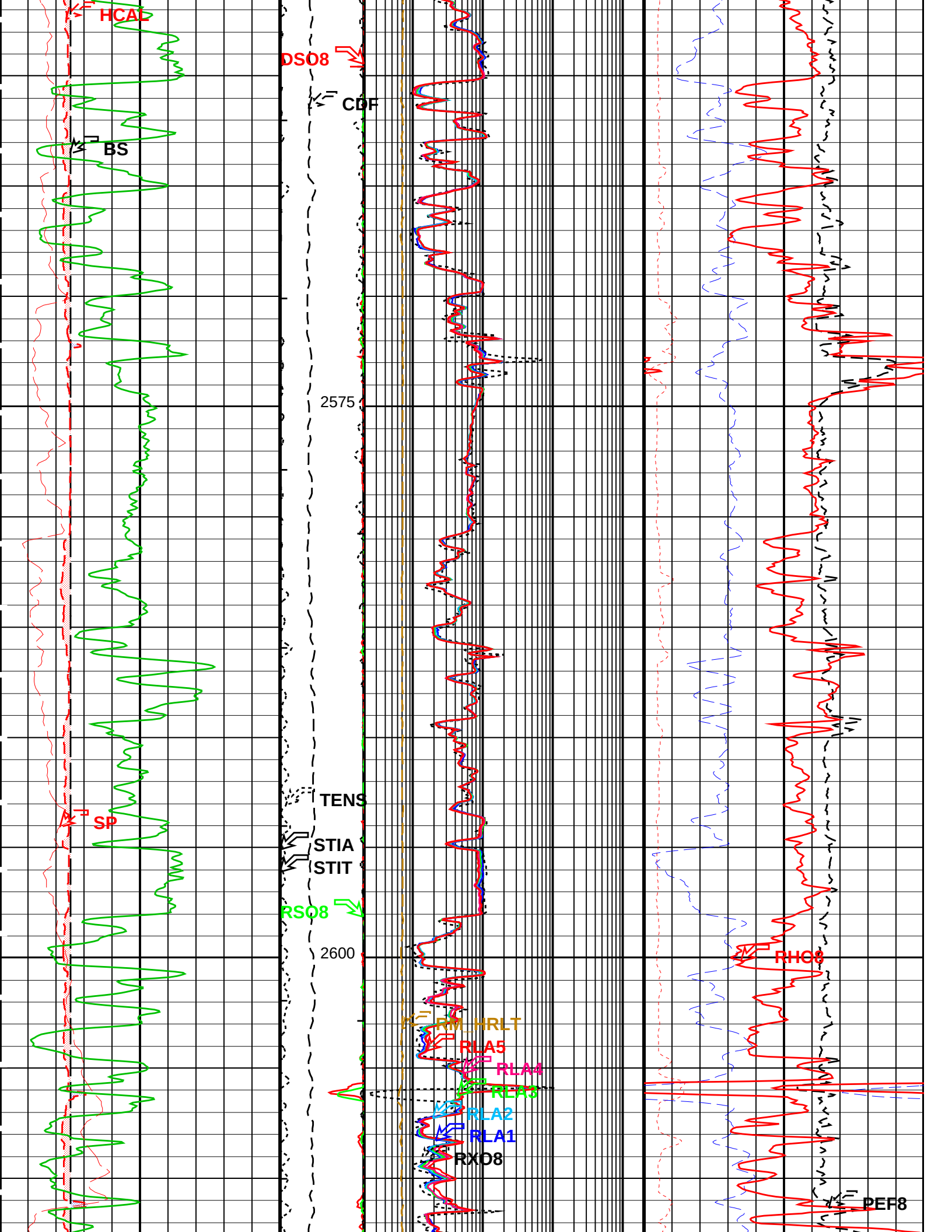
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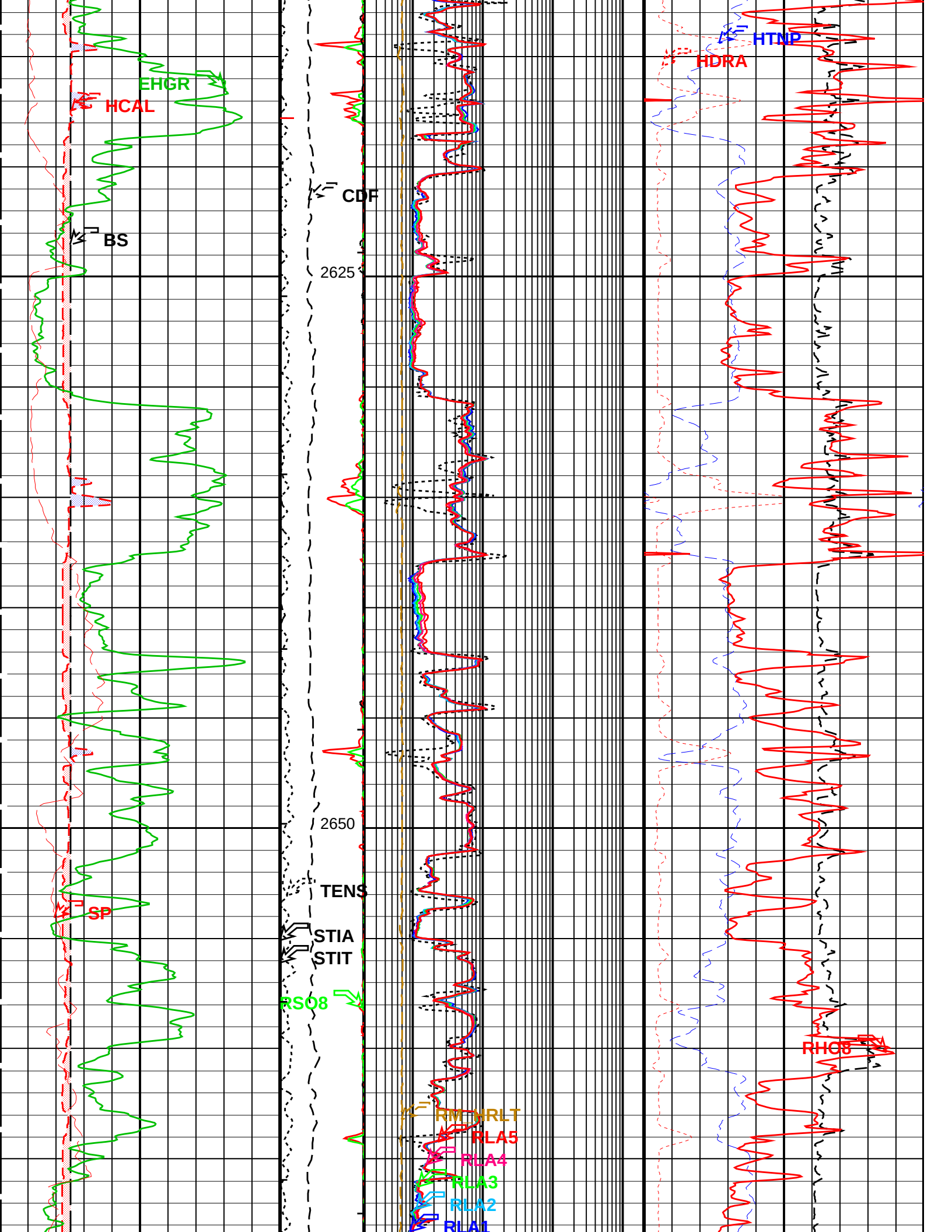
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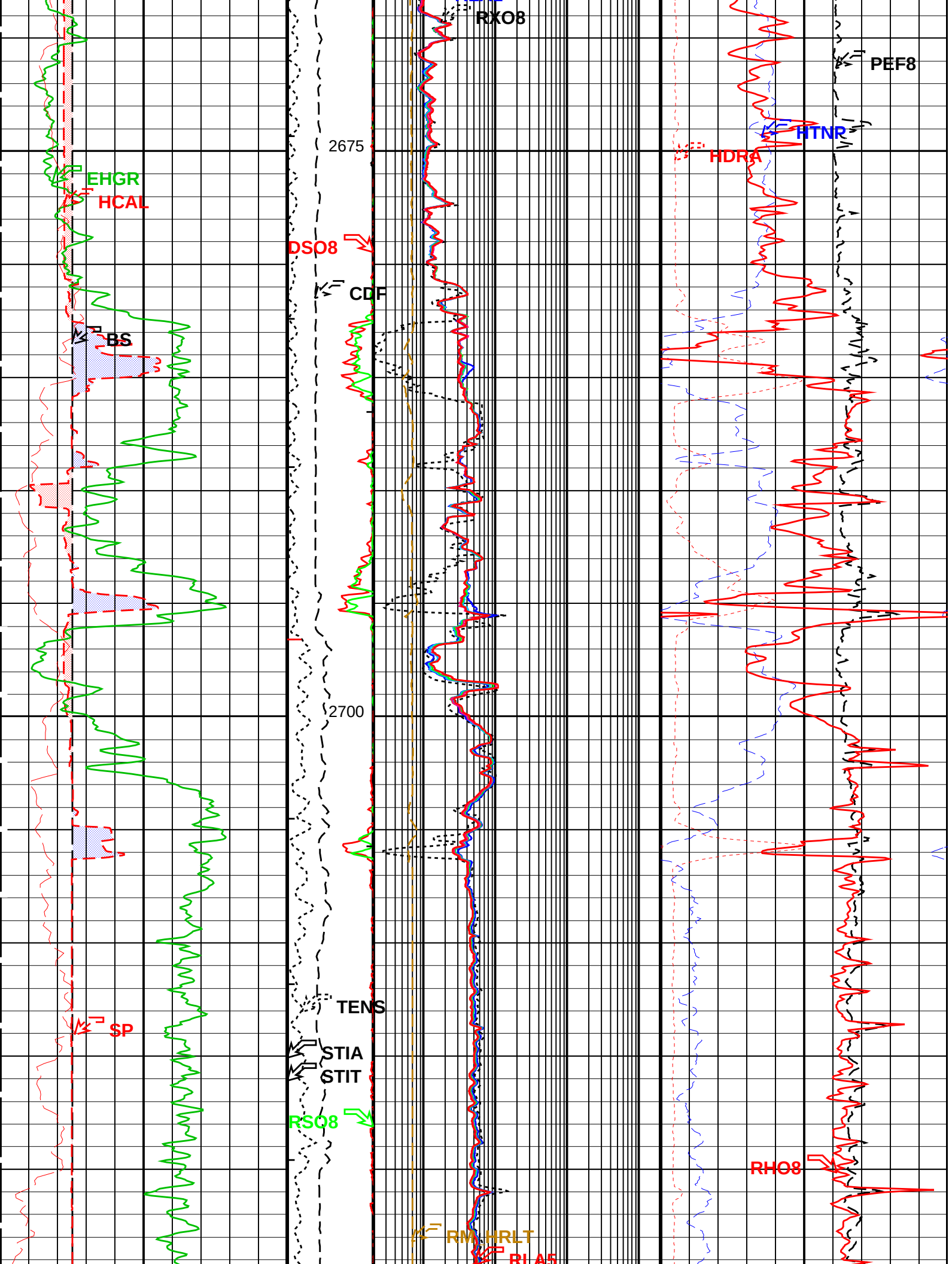
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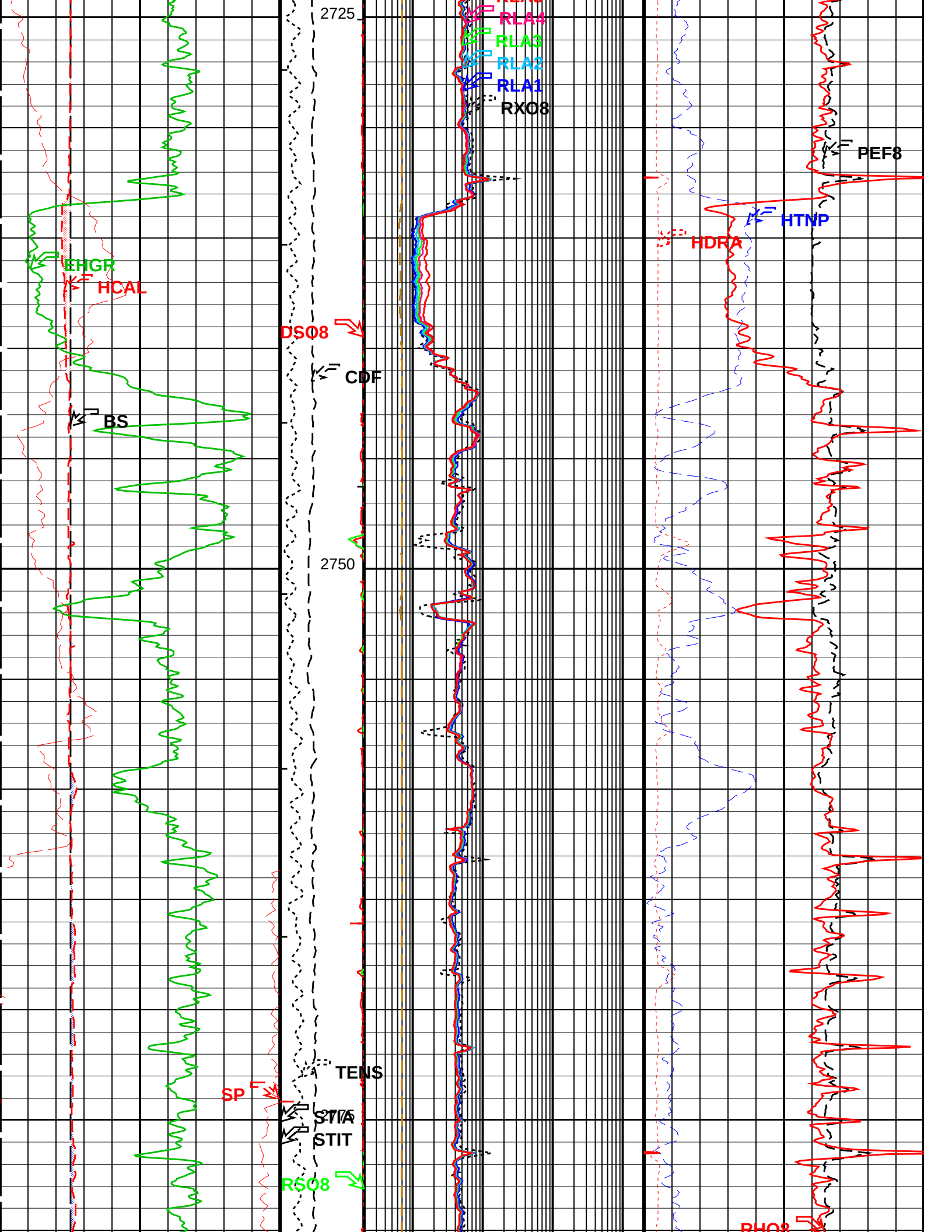
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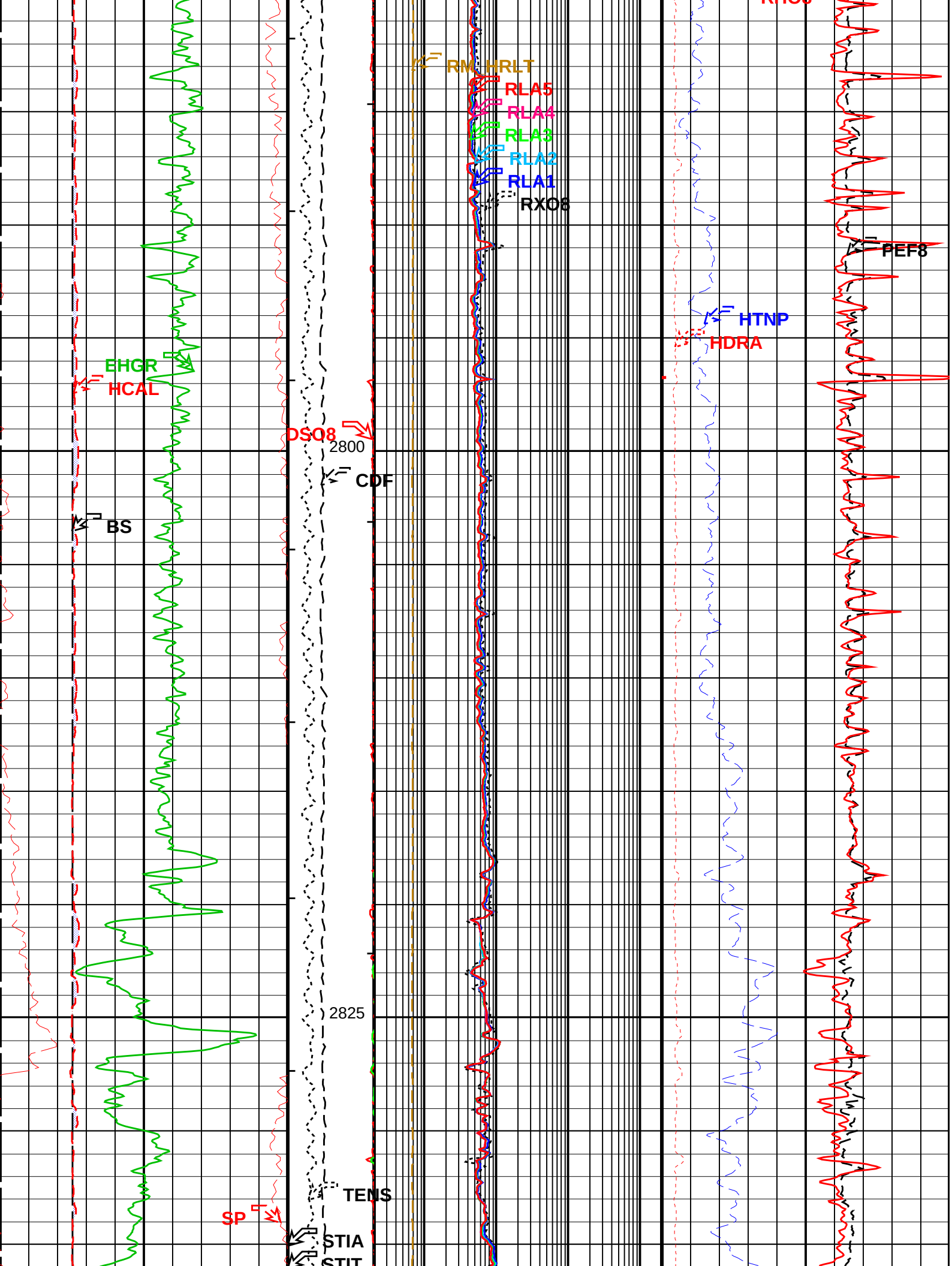
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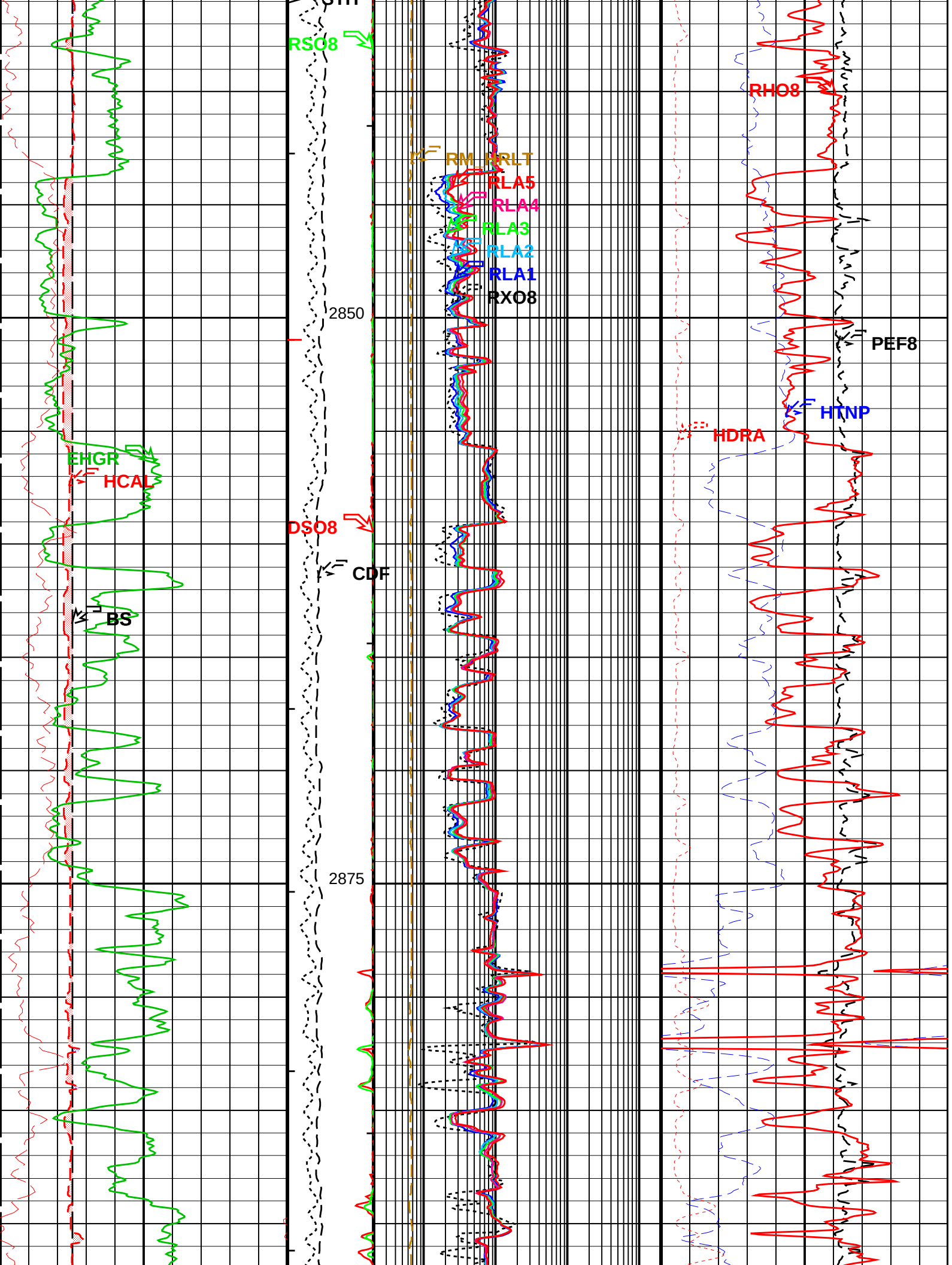
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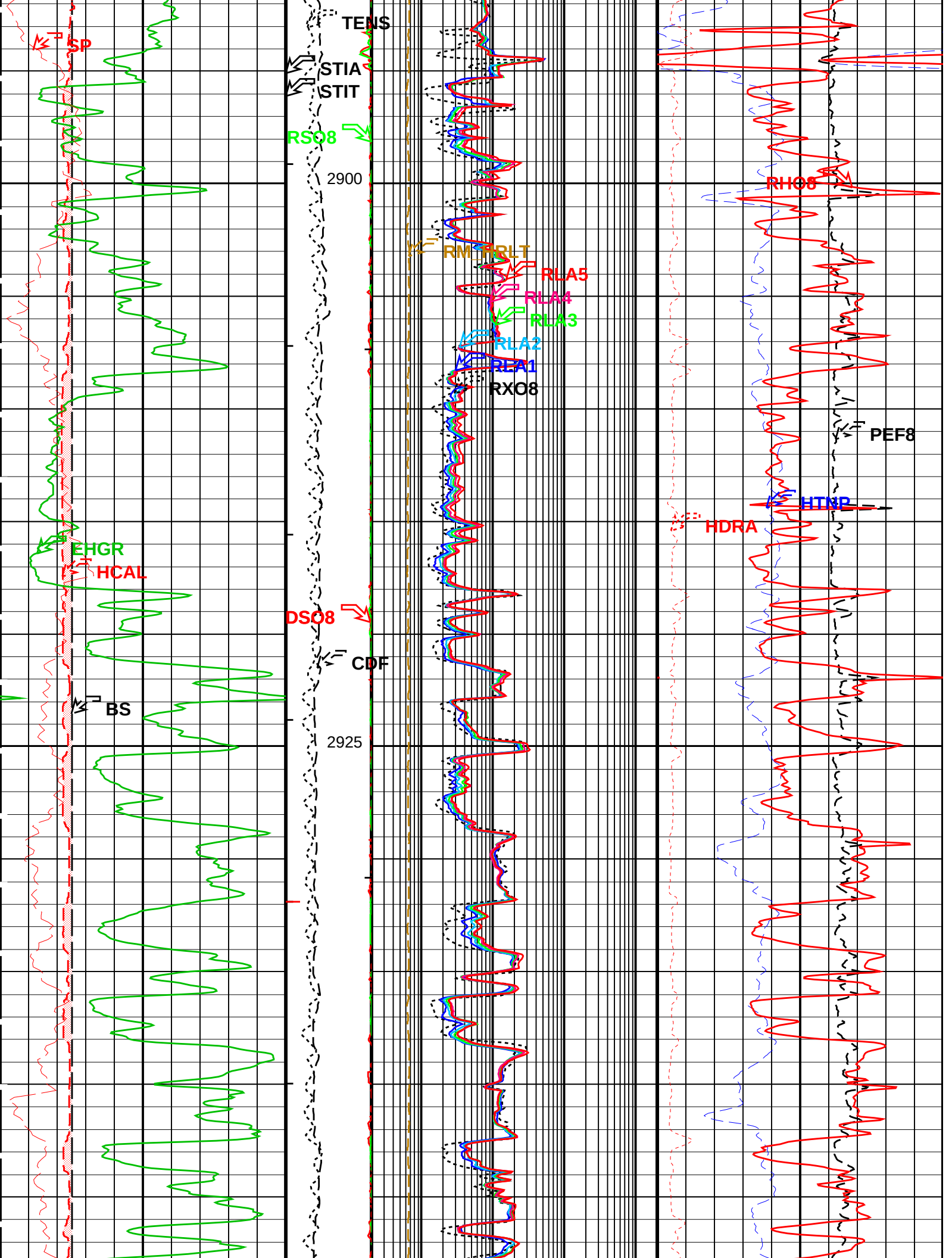
HDRA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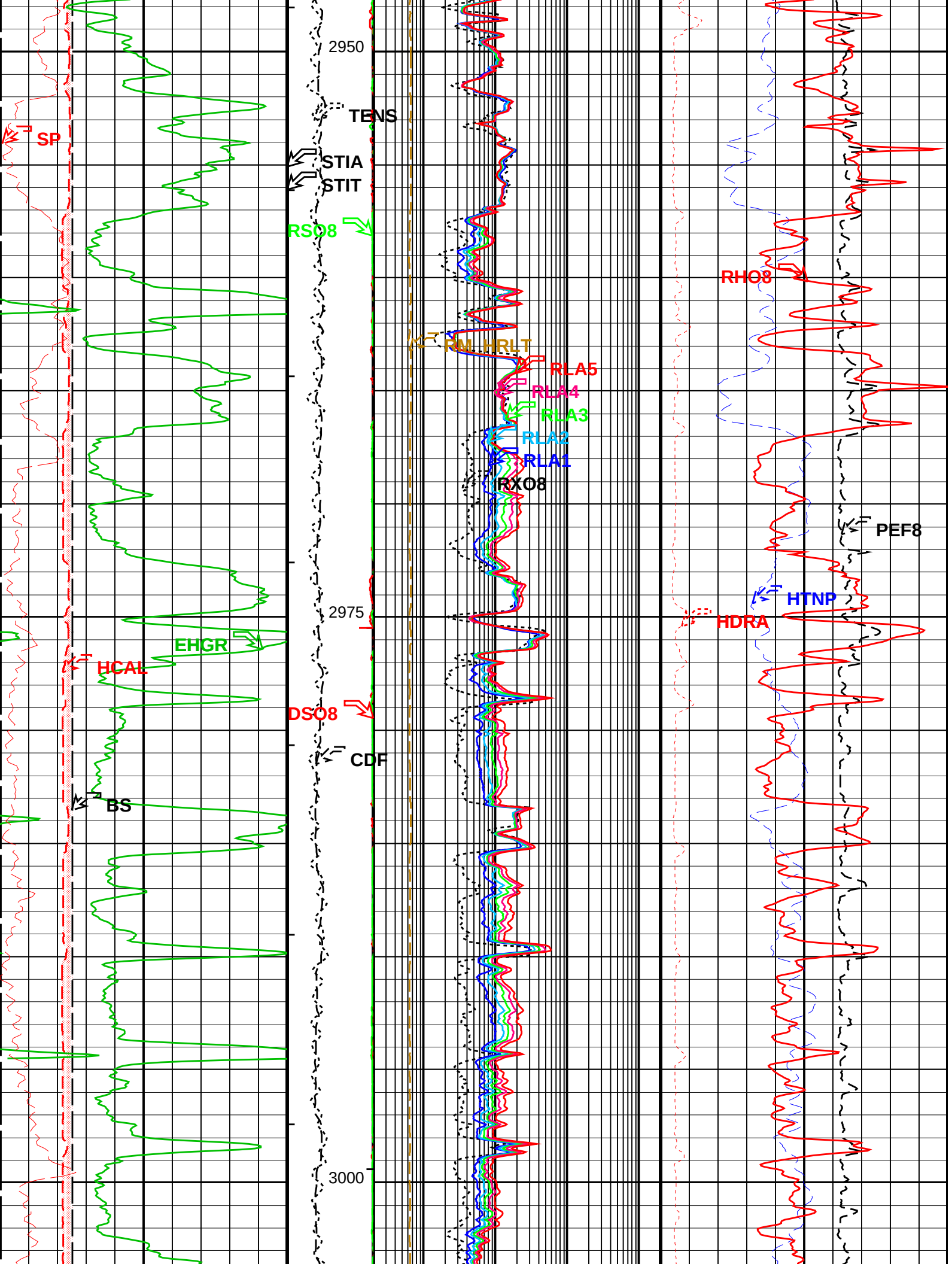
RLA2
RLA1
RXO8
PEF8
HTNP
HDRA
EHGR
HCAL
DSO8
CDF
BS
2925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HTNP
HDRA
EHGR
HCAL
DSO8
CDF
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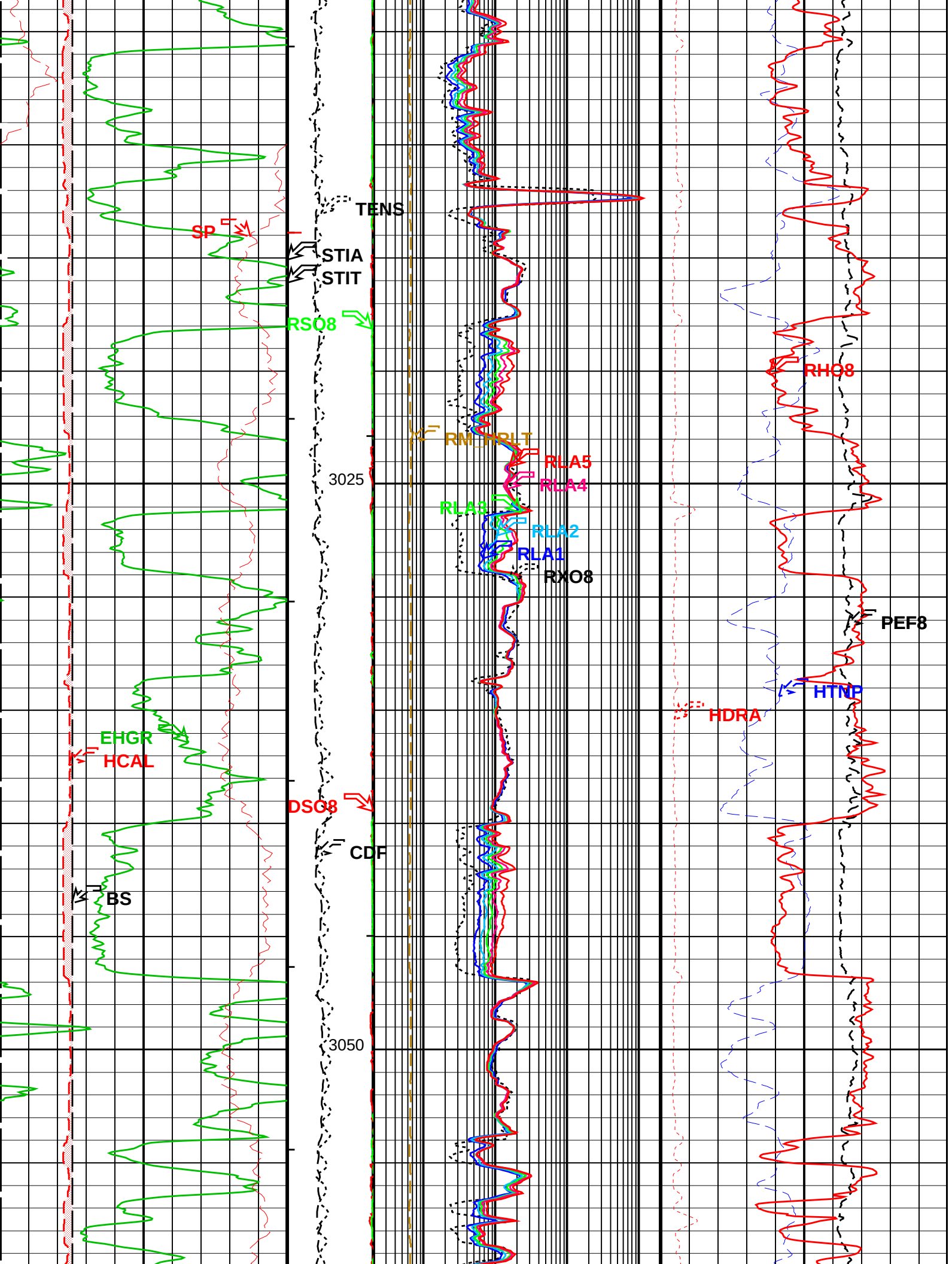
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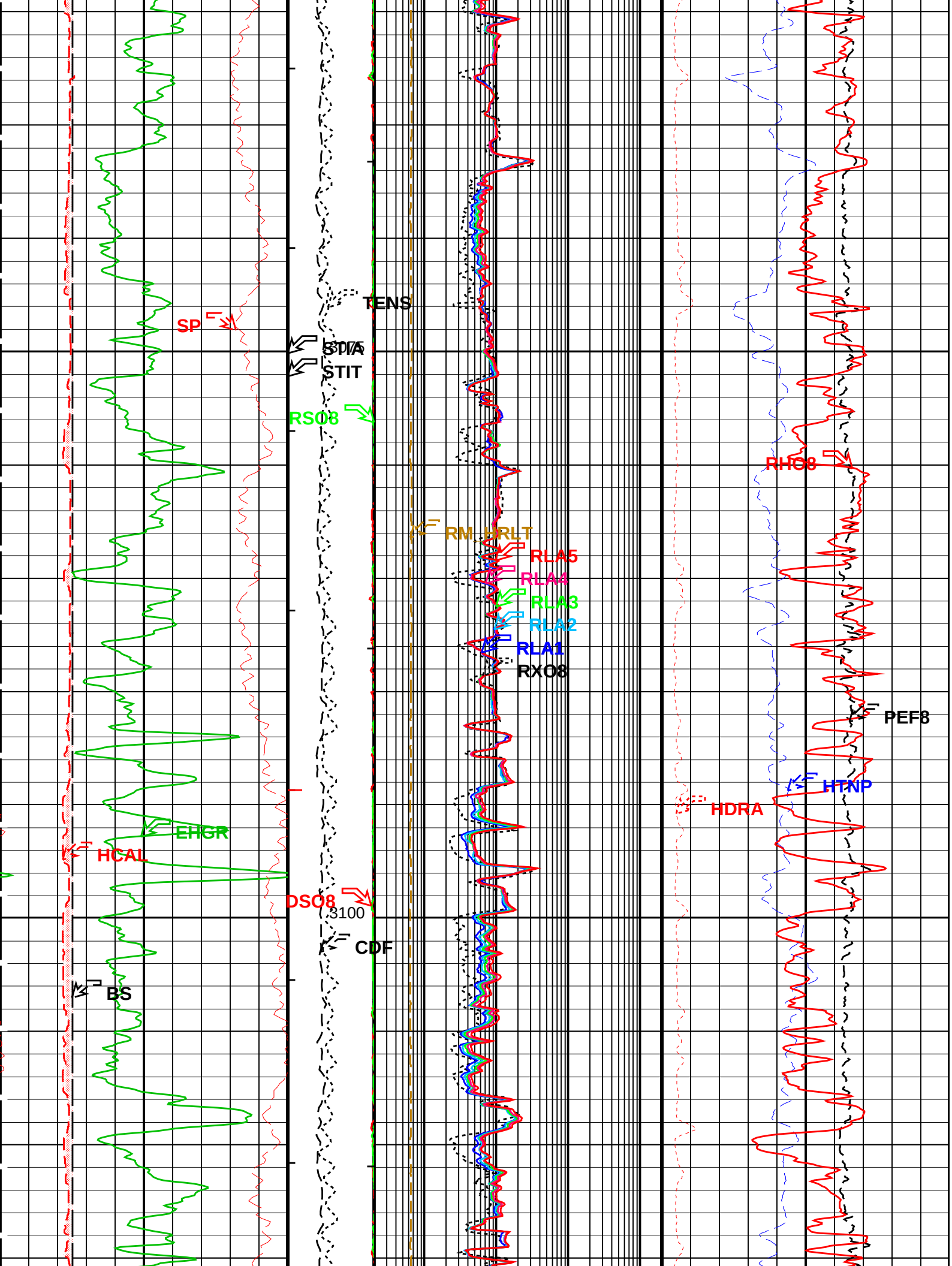
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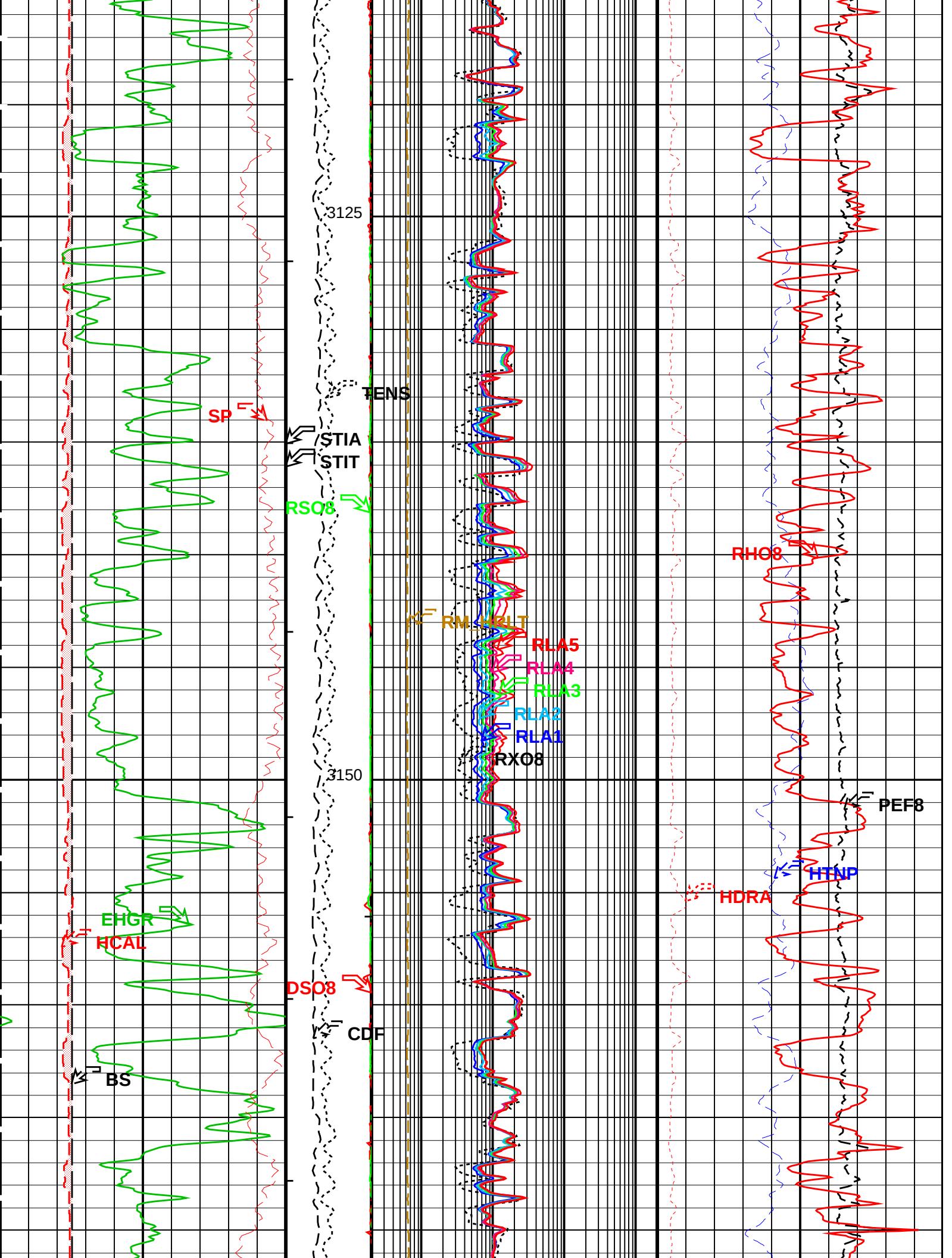
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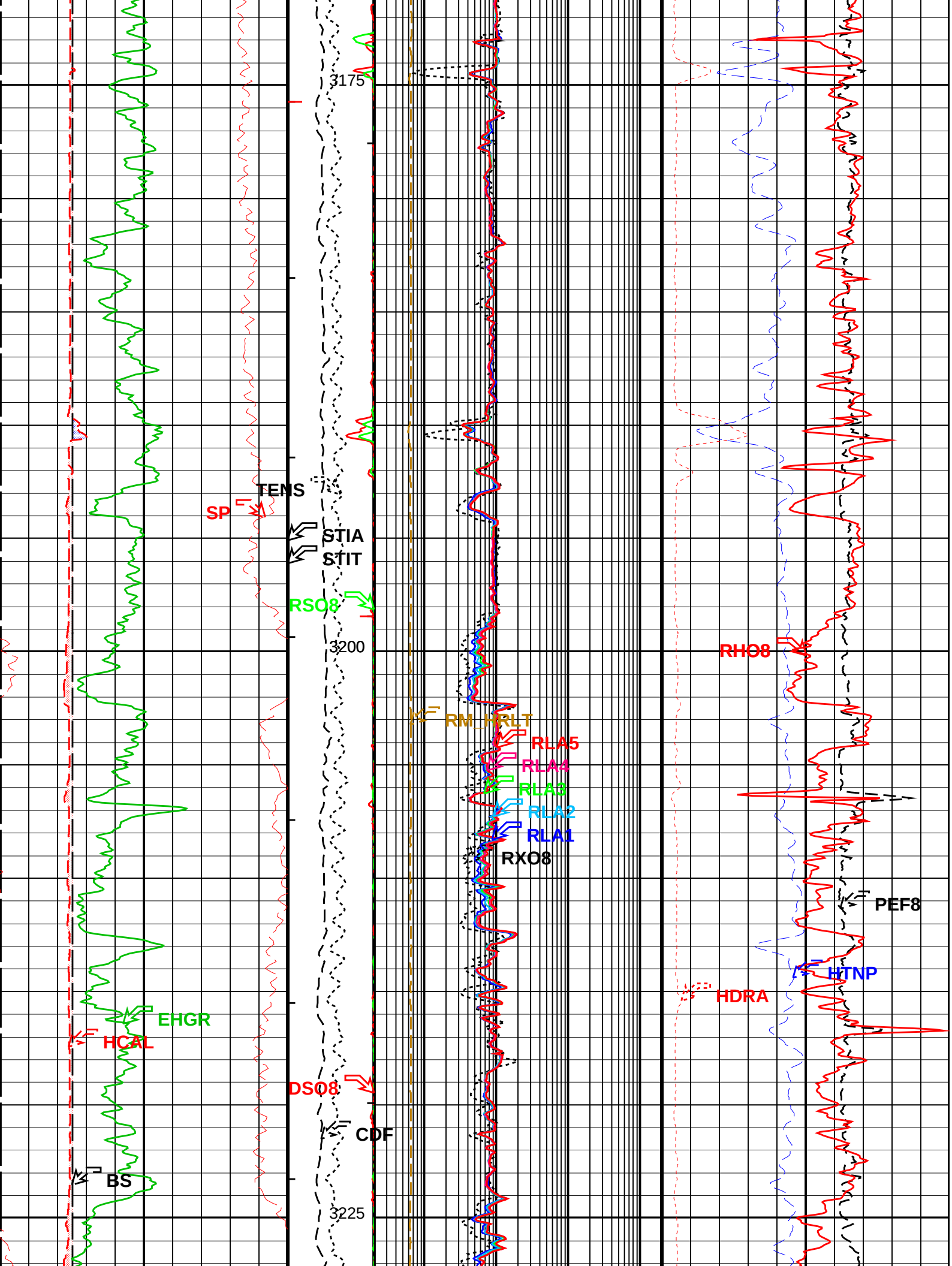
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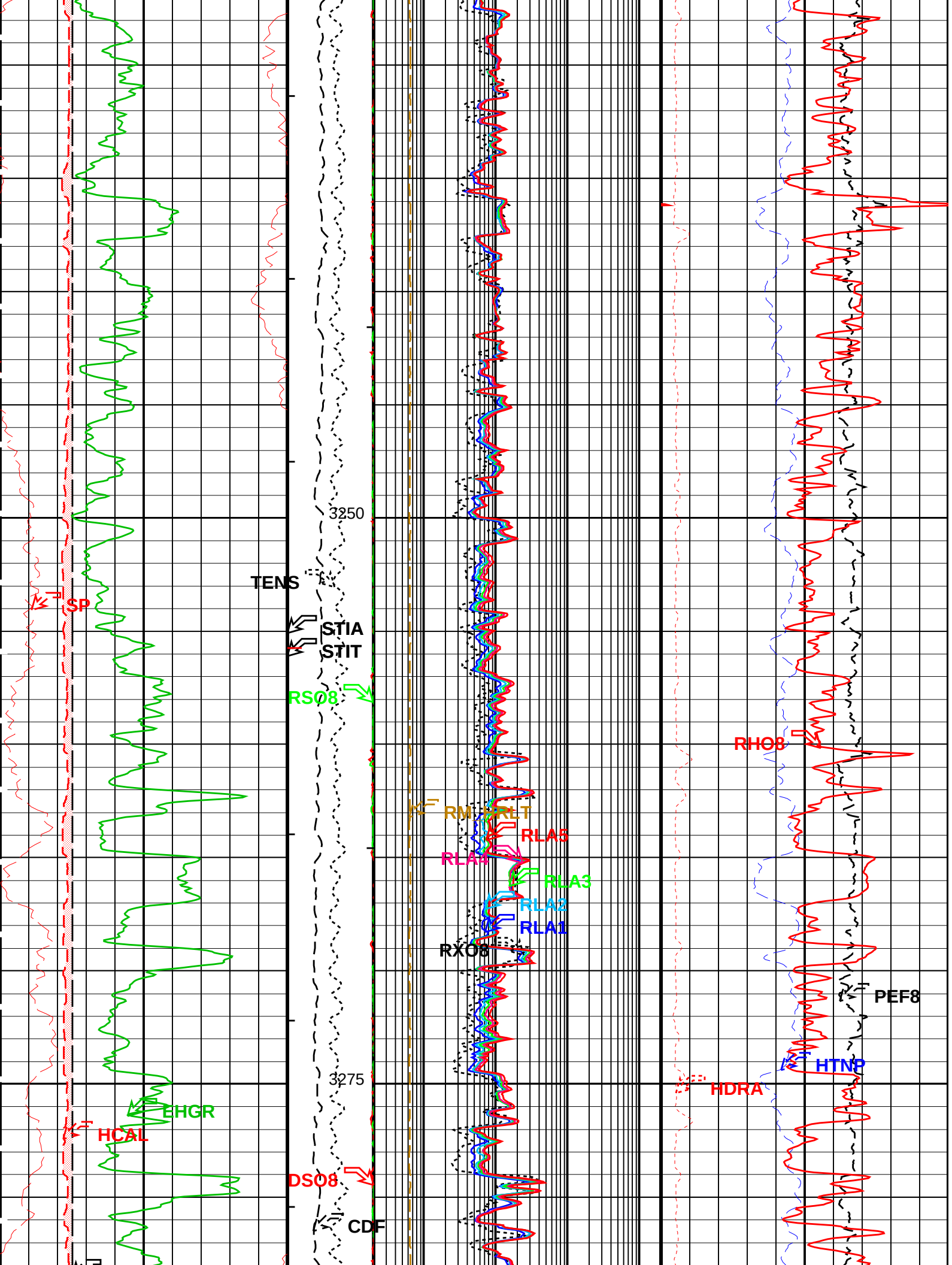
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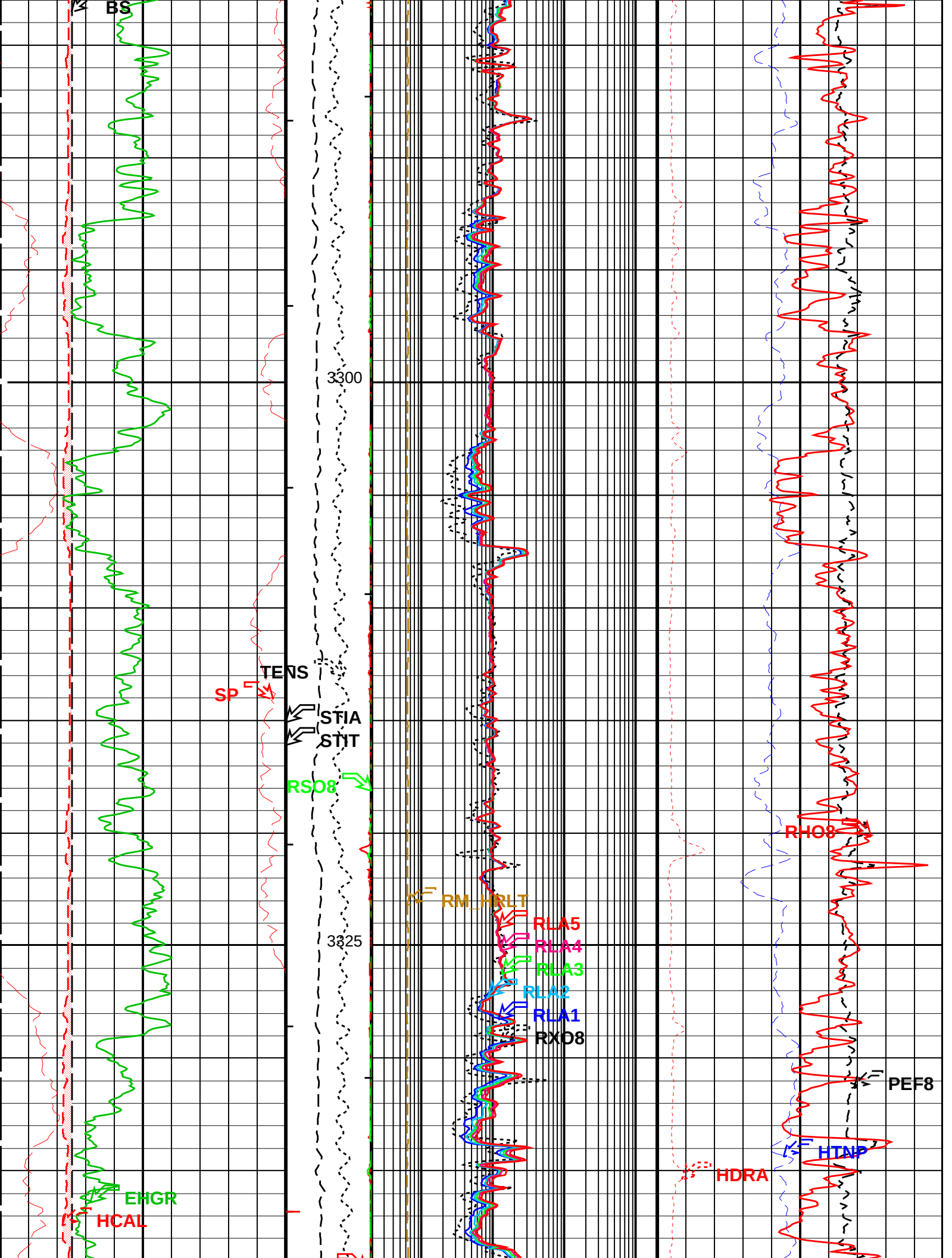
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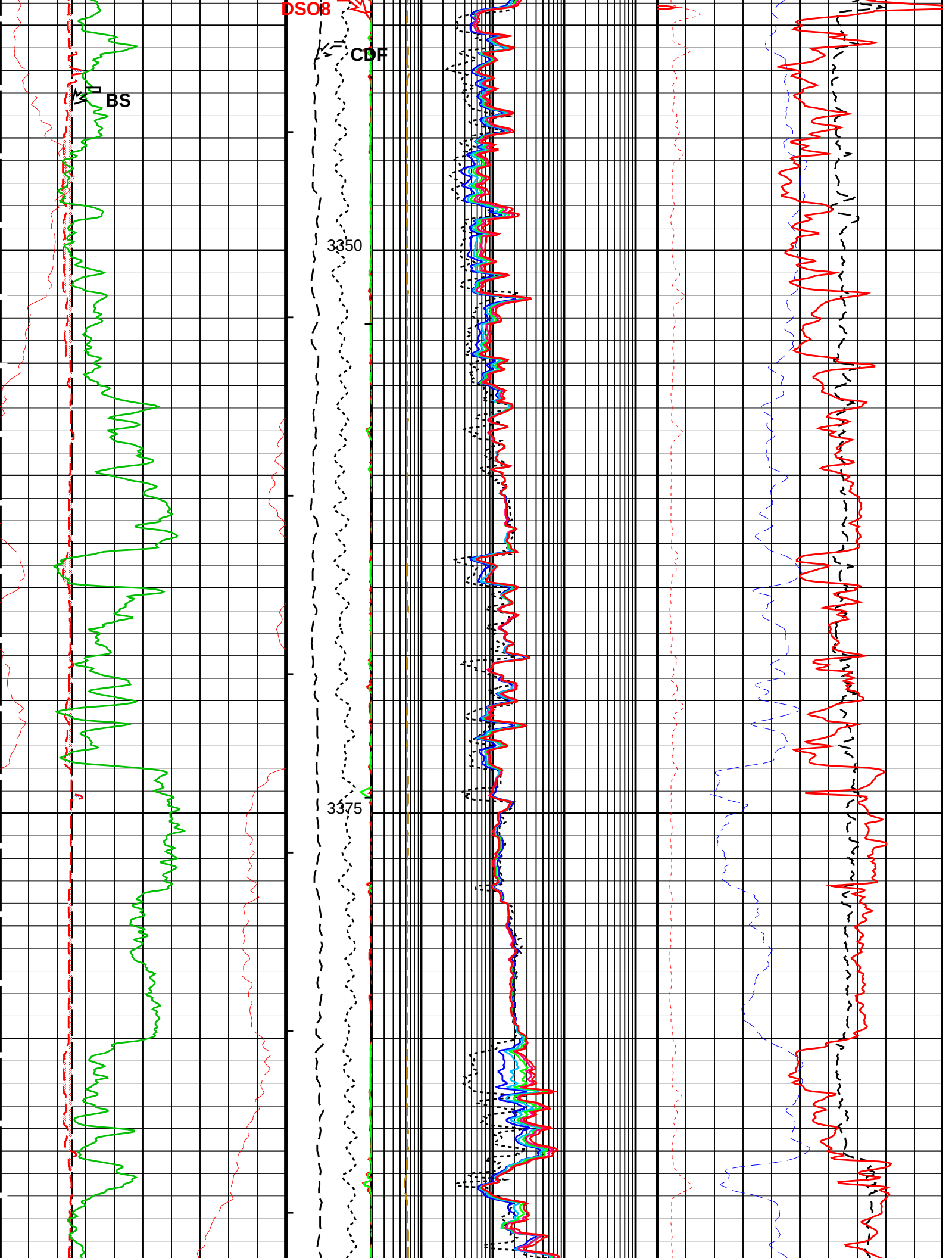
PEF8
HTNP
HDRA
EHGR
HCAL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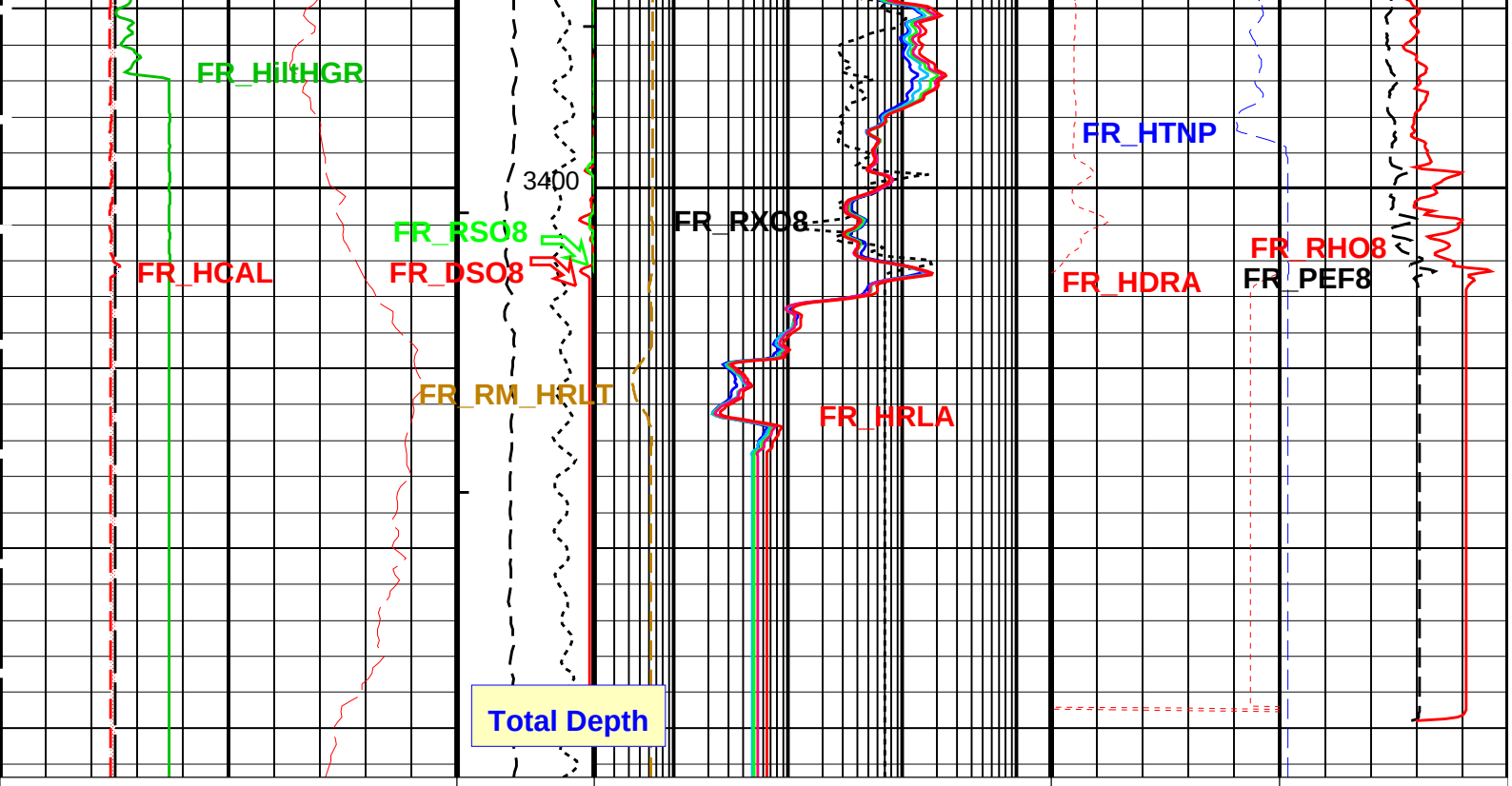

SP (SP) −50 (MV) 50	Tension (TENS) (LBF) 0 1000	H. Res. Invaded Zone Resistivity (RXO8) 0.2 (OHMM) 2000	Density Correction (HDRA) −0.05 (G/C3) 0.45
Bit Size (BS) 6 (IN) 16	Stuck Stretch (STIT) 0 (F) 50	HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 2000	HiRes TNPH (HTNP) 0.45 (V/V) −0.15
HILT Caliper (HCAL) 6 (IN) 16	Cable Drag From STIA to STIT	HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 2000	H. Res. Formation Density (RHO8) 1.95 (G/C3) 2.95
Gamma Ray (EHGR) 0 (GAPI) 200	Tool/Tot. Drag From D3T to STIA	HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 2000	
Washout From BS to HCAL	H. Res. Density Standoff (DSO8) 2.5 (IN) 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 2000	
Undergauge From HCAL to BS	H. Res. Resistivity Standoff (RSO8) 2.5 (IN) 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 2000	
	Calibrated Downhole Force (CDF) (LBF) 0 1000	HRLT Mud Resistivity (RM_HRLT) 0.02 (OHMM) 200	

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	SPE−A: Extended Spontaneous Potential − A		
SPNV	SP Next Value	0	MV
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	95.1643	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	RXO8	
PROCMSO	Mechanical Standoff Fin Size	2	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
SHT	Surface Hole Temperature	20	DEGC
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	YES	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	25	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e−005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e−005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD ARS Activation Correction	OFF	

NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
CMRT−B: Combinable Magnetic Resonance Tool − B			
ACQ_METHOD_OPT	Acquisition Method Option	SEQ	
AECS	Auto Electronic Calibration Switch	On	
AFS	Auto Frequency Switch	On	
B0_TEMP_COEF	Exponential Coef. for Static B from Temp.	−0.000399888	
BFV_MIN	Minimum BFV	0.02	M3M3
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
CMRP_POLC_MAX	Polar. Correct. Maximum to Trigger Insufficient Wait Time Flag	0.015	M3M3
CMR_FORM_H2O_SAL	Formation Water Salinity	−50000	PPM
CMR_HI_COR_SW	CMR Hydrogen Index Correction Switch	Off	
CMR_HR_OPT	CMR High Resolution Option	Off	
CMR_LOG_DIRECTION	Logging Direction	Up	
CMR_LOG_SPEED	Optimal CMR logging speed	182.88	M/HR
CMR_SIGNAL_PROC_SW	CMR Signal Processing Switch	On	
CMR_TEMP_MC	CMR Temperature during Master Calibration	25.2319	DEGC
CPMG_OPT	Option for CPMG Data	No	
DC_GAS	Diffusion Coefficient of Gas	8	E−4CM2/S
DDFL	Uphole Stacking	1	
DEPTH_CMR_SL	Depth for CMR Station Log	0	M
DESPIKE_OPT	Despiking Option	Off	
DE_ALPHA	Diffusion Editing Alpha Coefficient	0.84	
DE_BETA	Diffusion Editing Beta Coefficient	0	
DE_OPT	Diffusion Editing Option	Off	
DMRP_CAL_OPT	DMRP Calculation Option	60/40	
DMRP_OPT	DMRP Option	Off	
DP_OPT	Density Porosity Option	AUTO	
EPM_OPT	Enhanced Precision Mode Option	On	
FLUID_DENSITY	Density of Liquid Phase	1	G/C3
GAMMA_REG	Gamma Regularization − Depth Log	** V **	
GAMMA_REG_SL	Gamma Regularization − Station Log	** V **	
GAS_DENSITY	Density of Gas	0.3	G/C3
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GOR	Gas Oil Ratio	0	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HIFF	Hydrogen Index of Formation Fluid	1	
HI_GAS	Hydrogen Index of Gas	0.4	
HI_H2O	Hydrogen Index of Water	1	
HI_OBMF	Hydrogen Index of OBMF	1	
HI_OIL	Hydrogen Index of Oil	1	
HP_H0	0th Coefficient for Hall Probe	239.534	
HP_H1	1st Coefficient for Hall Probe	6.35651	
HP_H2	2nd Coefficient for Hall Probe	0	
HP_H3	3rd Coefficient for Hall Probe	0	
INV_MC_AMP	Inverse of Master Calibration Amplitude	0.0346734	
KBFV_OPT	KBFV Option	Off	
KECHO_HR_A	Scale Factor for High Resolution Permeability	1	
KECHO_HR_B	Sensitivity Factor for High Resolution Permeability	1	
KSDR_A	Multiplier for SDR Permeability	4	MD
KSDR_B	T2 Exponent for SDR Permeability	2	
KSDR_C	Porosity Exponent for SDR Permeability	4	
KTIM_A	Multiplier for Timur/Coates Permeability	1	MD
KTIM_B	Porosity Exponent for Timur/Coates Permeability	4	
KTIM_C	PHI Ratio Exponent for Timur/Coates Permeability	2	
LFST_SEARCH_FREQ	LFST Search Operating Frequency	2.182e+006	HZ
LOOP_MC	Calibration Loop during Master Calibration	1685.29	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MATRIX_DENSITY	Density of Formation Matrix	2.65	G/C3
MPHI_SW	Porosity Channel Selection for KBFV Computation	DPHZ	
MRF_B	Oil Diffusion/T2 Scaling Factor for Magnetic Resonance Fluid Technique	1	
NCOMP	Number of Components − Depth Log	30	
NCOMP_OIL	Number of Oil Components	14	
NCOMP_SL	Number of Components − Station Log	30	
NECH_V	Number of Echo Amplitudes per CPMG	** V **	
NMR_FLUID_MODEL	Fluid Model for Magnetic Resonance Fluid Typing	WATER	
NSTACK	Number of Stacks Down−Hole	3	
NWT	Number of Wait Times	2	
OBM	Oil Based Mud	Water	
PHI_FOR_BADF	Porosity Threshold to Trigger Bad Hole Flag	0.4	M3M3
POLC_SW	Polarization Correction Switch	On	

PT_V	Polarization Times	** V ** S	
Q_SWITCH_ON_TIME	Duration of Q−Switch ON State	10	US
RINGING_COUNT	Number of Ringing Data Samples	100	
RPTN_V	Repetition Number for each Wait Time	** V **	
RSV_WSUM_MUD	R (Residual) Square Value of Window Sum Fit for Mud	** V **	
SEND_ECHO_SW	Send Echo Switch	On	
SHT	Surface Hole Temperature	20	DEGC
SLUINT	Station Logging Update Interval	1	S
SPOILER_COUNT	Number of Spoiler Pulses	8	
SPOILER_WIDTH	Spoiler pulse width	26	
T180	Time Width for 180 degree Pulse	27.2	US
T1T2R_IN	T1/T2 Ratio	2	
T1T2R_MAX	T1/T2 Ratio − Maximum	3	
T1T2R_MIN	T1/T2 Ratio − Minimum	1	
T1T2R_OIL_IN	T1/T2 Ratio for oil − Input	1	
T1_GAS	T1 of Gas	4	S
T1_OBMF	T1 of OBMF	1.8	S
T2C1	T2 Cutoff 1	1	MS
T2C2	T2 Cutoff 2	3	MS
T2C3	T2 Cutoff 3	10	MS
T2C4	T2 Cutoff 4	33	MS
T2C5	T2 Cutoff 5	100	MS
T2C6	T2 Cutoff 6	300	MS
T2C7	T2 Cutoff 7	1000	MS
T2CUT	T2 Cutoff	33	MS
T2MF	T2 Mud Filtrate	50000	MS
T2_DISTRIBUTION_V	T2 Distribution Vector	** V **	
T2_FOR_BADF	T2 Threshold to Trigger Bad Hole Flag	10	MS
T2_MAX	T2 Maximum	3000	MS
T2_MAX_OIL	Maximum T2 for Oil	1590	MS
T2_MIN	T2 Minimum	0.3	MS
T2_MIN_OIL	Minimum T2 for Oil	14	MS
T90	Time Width for 90 degree Pulse	16.4	US
TCP	Time between 90X, 180Y Pulses	100	US
TCP_DIFF	TCP Difference (TCP1 − TCP2)	−8.8	US
TCP_V	Array of TCP's	** V ** US	
TDEL	Difference between Start of Echo and TCP	18	US
TEMP_SL	Station Logging Temperature	25	DEGC
VIS_OBMF	Viscosity of OBMF	0.857535	CP
WT_V	Acquisition Wait Times	** V ** S	
X_DC_WATER	Scale Factor for Diffusion Coefficient of Water	1	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	117	DEGC
FCD	Future Casing (Outer) Diameter	6.625	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth − Driller	3545.10	M
TDL	Total Depth − Logger	3418.30	M
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	26300.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	43.50	LB/F
DFD	Drilling Fluid Density	9.40	LB/G
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	24.60	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.1738	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3418.3	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

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OP System Version: 12C0−301

MCM

SPE−A	12C0−301	HRLT−B	12C0−301
HILTH−FTB	12C0−301	CMRT−B	12C0−301
DTC−H	12C0−301		

Input DLIS Files

Input DLIS Files

02−Dec−2004 12:10

Output DLIS Files

DEFAULT	HRLA_TLD_MCFL_CNL_020PUP	FN:19	PRODUCER	02−Dec−2004 15:14

Schlumberger

Repeat Analysis (1:200)

MAXIS Field Log

Company: Origin Energy Resources Ltd. **Well: Trefoil−1**

Input DLIS Files

				02−Dec−2004 12:09		
DEFAULT	HRLA_TLD_MCFL_CNL_020PUP	FN:19	PRODUCER	02−Dec−2004 15:14	3416.4 M	2414.3 M

Output DLIS Files

DEFAULT	HRLA_TLD_MCFL_CNL_027PUP	FN:26	PRODUCER	02−Dec−2004 16:33	3010.1 M	2909.0 M

Integrated Hole/Cement Volume Summary

Hole Volume = 3.52 M3

Cement Volume = 1.28 M3 (assuming 6.63 IN casing O.D.)

Computed from 3010.1 M to 2909.2 M using data channel(s) HCAL

OP System Version: 12C0−301

MCM

SPE−A	12C0−301	HRLT−B	12C0−301
HILTH−FTB	12C0−301	CMRT−B	12C0−301
DTC−H	12C0−301		

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 10 F3

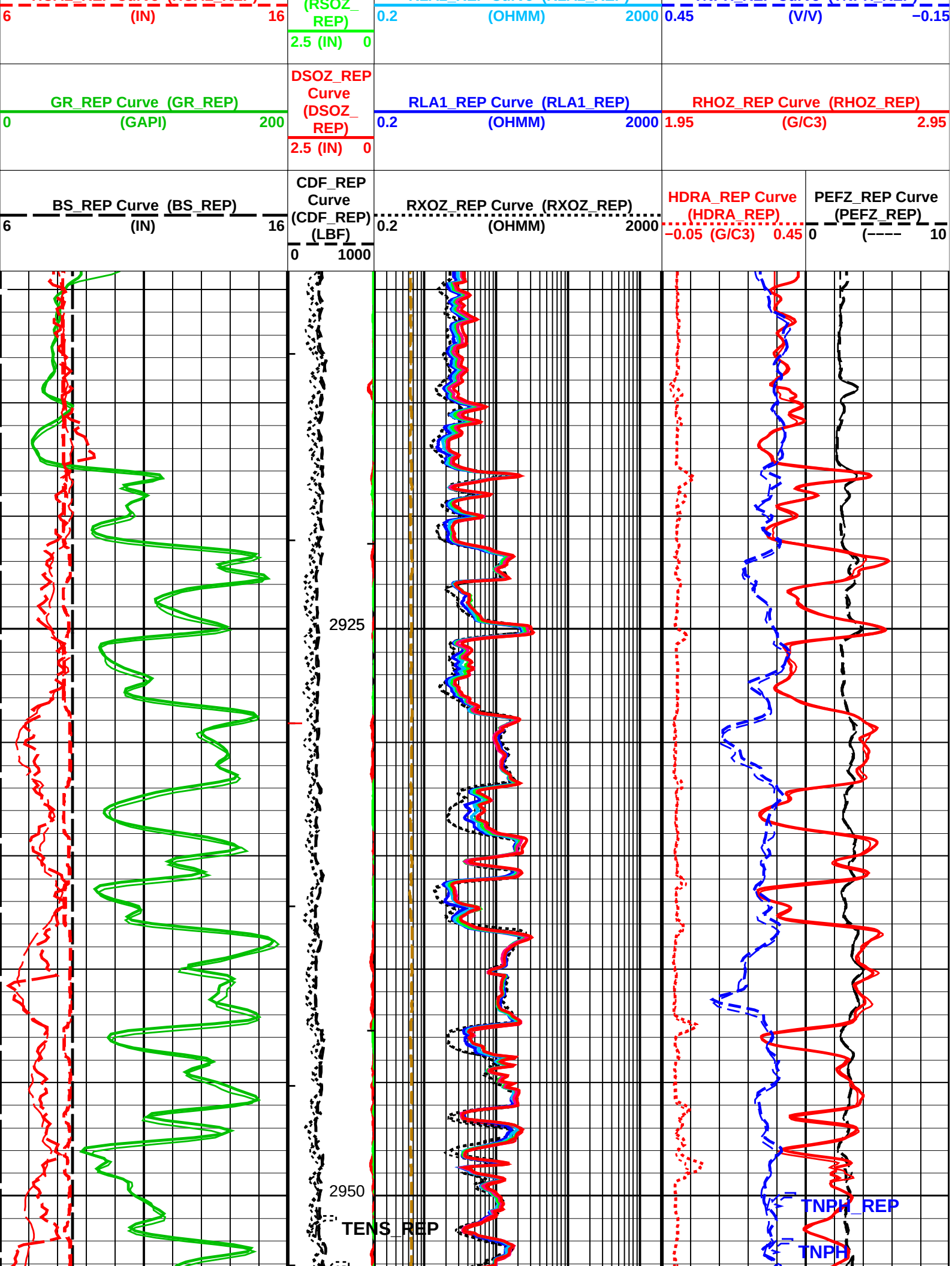
Integrated Hole Volume Major Pip Every 100 F3

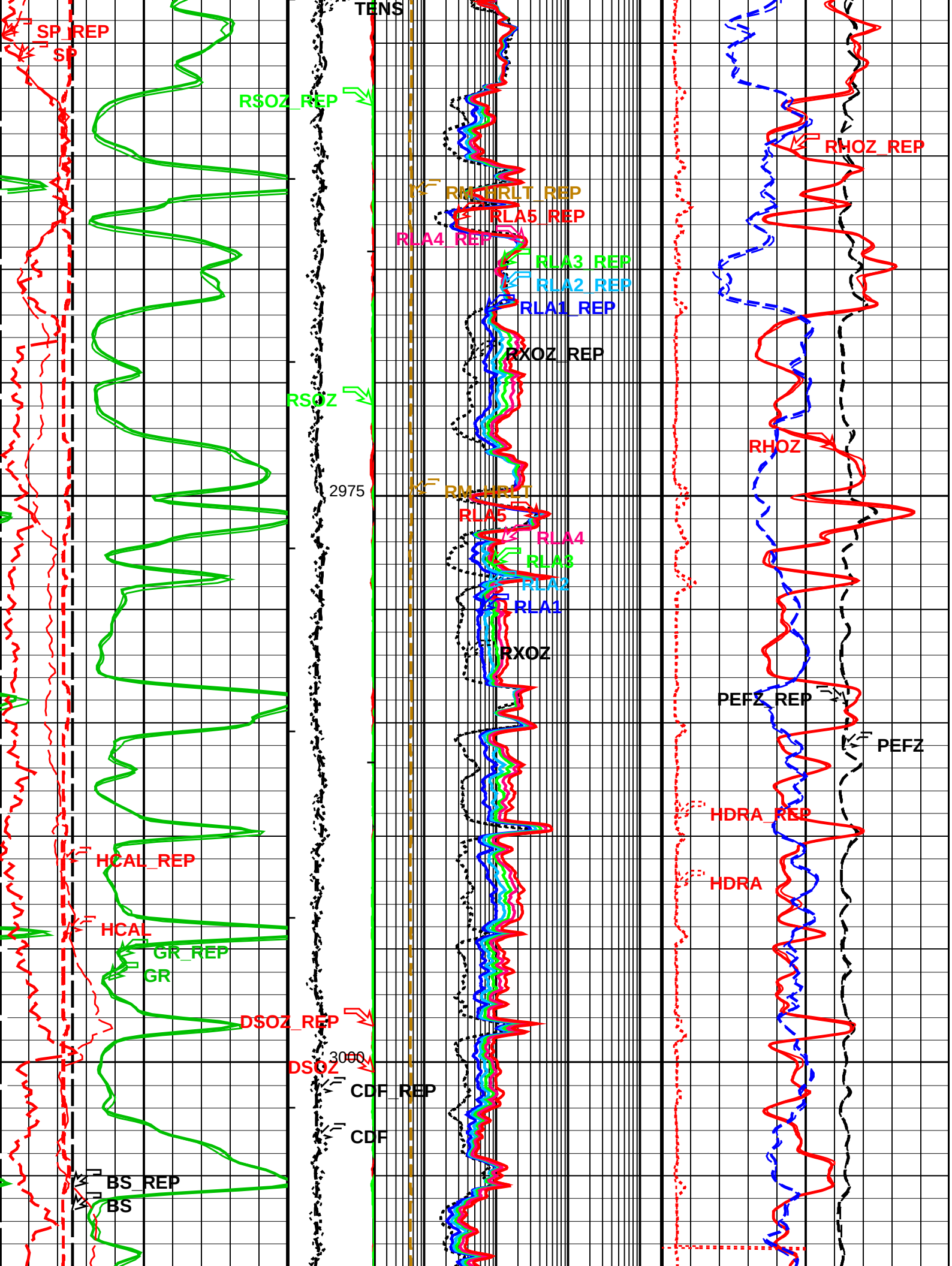
Integrated Cement Volume Minor Pip Every 10 F3

Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

		RM_HRLT_REP Curve (RM_HRLT_REP) 0.02 (OHMM) 200 RLA5_REP Curve (RLA5_REP) 0.2 (OHMM) 2000 RLA4_REP Curve (RLA4_REP) 0.2 (OHMM) 2000	
SP_REP Curve (SP_REP) −50 (MV) 50	TENS_REP Curve (TENS_REP) (LBF) 0 1000	RLA3_REP Curve (RLA3_REP) 0.2 (OHMM) 2000	
HCAL_REP Curve (HCAL_REP)	RSOZ_REP Curve	RLA2_REP Curve (RLA2_REP)	TNPH_REP Curve (TNPH_REP)


6 (IN) 16
(RSOZ_ REP)
2.5 (IN) 0
0.2 (OHMM) 2000
0.45 (V/V) −0.15
GR_REP Curve (GR_REP)
0 (GAPI) 200
DSOZ_REP Curve (DSOZ_ REP)
2.5 (IN) 0
RLA1_REP Curve (RLA1_REP)
0.2 (OHMM) 2000
RHOZ_REP Curve (RHOZ_REP)
1.95 (G/C3) 2.95
BS_REP Curve (BS_REP)
6 (IN) 16
CDF_REP Curve (CDF_REP) (LBF)
0 1000
RXOZ_REP Curve (RXOZ_REP)
0.2 (OHMM) 2000
HDRA_REP Curve (HDRA_REP)
−0.05 (G/C3) 0.45
PEFZ_REP Curve (PEFZ_REP)
0 (---- 10
2925
2950
TENS_REP
TNPH_REP
TNPH


TENS
SP_REP
SP
RSOZ_REP
RHOZ_REP
RM_HRLT_REP
RLA5_REP
RLA4_REP
RLA3_REP
RLA2_REP
RLA1_REP
RXOZ_REP
RSOZ
RHOZ
2975
RM_HRLT
RLA5
RLA4
RLA3
RLA2
RLA1
RXOZ
PEFZ_REP
PEFZ
HDRA_REP
HDRA
HCAL_REP
HCAL
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GR
DSOZ_REP
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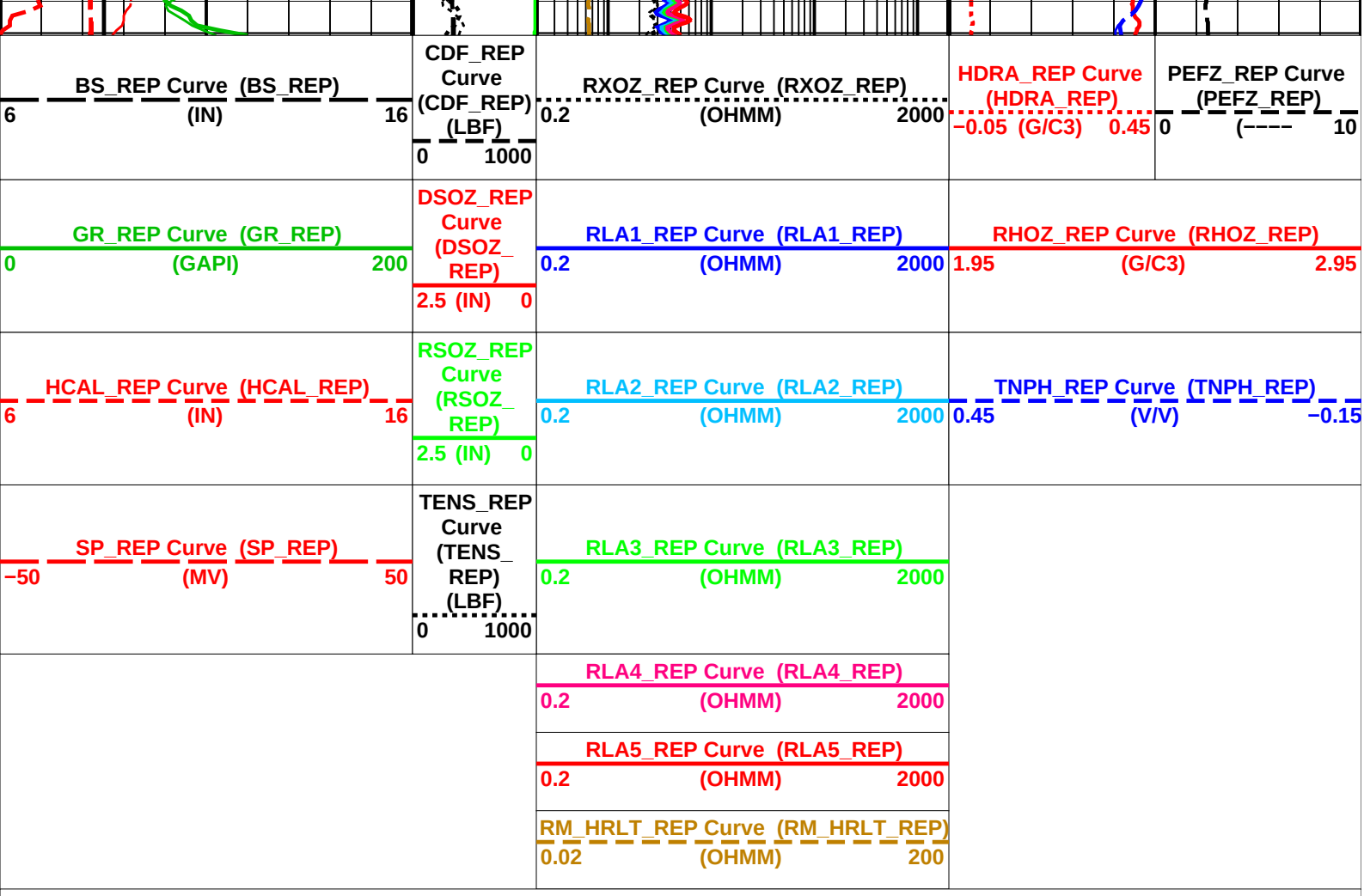
DSOZ
CDF_REP
CDF
BS_REP
BS



Parameters

DLIS Name	Description	Value	
	SPE−A: Extended Spontaneous Potential − A		
SPNV	SP Next Value	0	MV
	HRLT−B: High Resolution Laterolog Array − E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
KFAC_HRLT	HRLT K Factor Option	SONDE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro−Resistivity Selection	RXO8	
PROCMSO	Mechanical Standoff Fin Size	2	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
SHT	Surface Hole Temperature	20	DEGC
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	YES	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M

GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
CMRT−B: Combinable Magnetic Resonance Tool − B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
FCD	Future Casing (Outer) Diameter	6.625	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
TDL	Total Depth − Logger	3418.30	M
System and Miscellaneous			
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	26300.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	43.50	LB/F
DFD	Drilling Fluid Density	9.40	LB/G
DO	Depth Offset for Playback	2.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	24.60	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.1738	OHMM
TD	Total Depth	3418.3	M

Format: Combo_200_REP Vertical Scale: 1:200 Graphics File Created: 02−Dec−2004 16:33

OP System Version: 12C0−301

MCM

SPE−A	12C0−301	HRLT−B	12C0−301
HILTH−FTB	12C0−301	CMRT−B	12C0−301
DTC−H	12C0−301		

Input DLIS Files

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Output DLIS Files

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Schlumberger

Gamma Ray Casing Log (1:200)

Company: Origin Energy Resources Ltd. **Well: Trefoil−1**

Input DLIS Files

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Output DLIS Files

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OP System Version: 12C0−301

MCM

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DTC−H	12C0−301		

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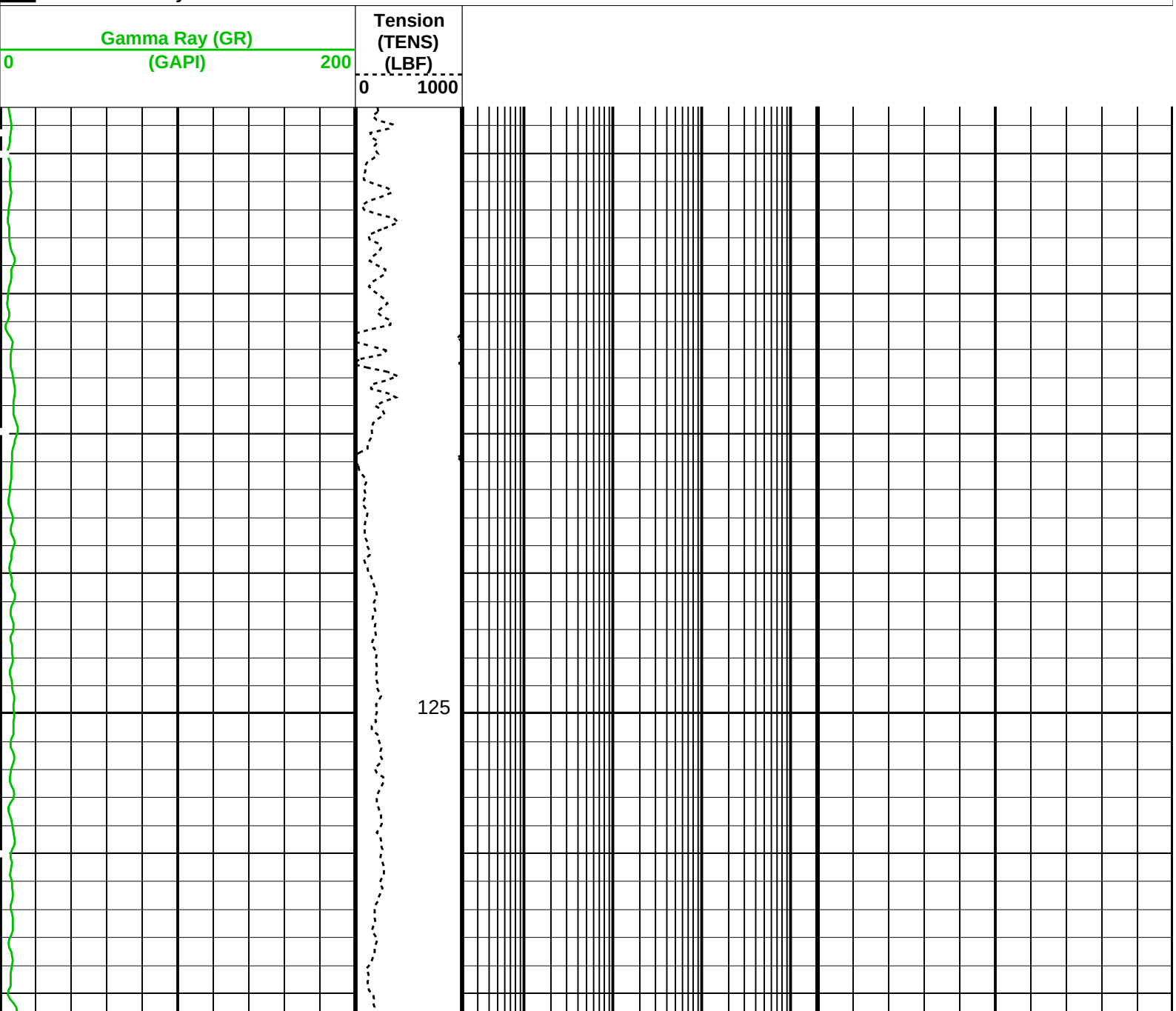

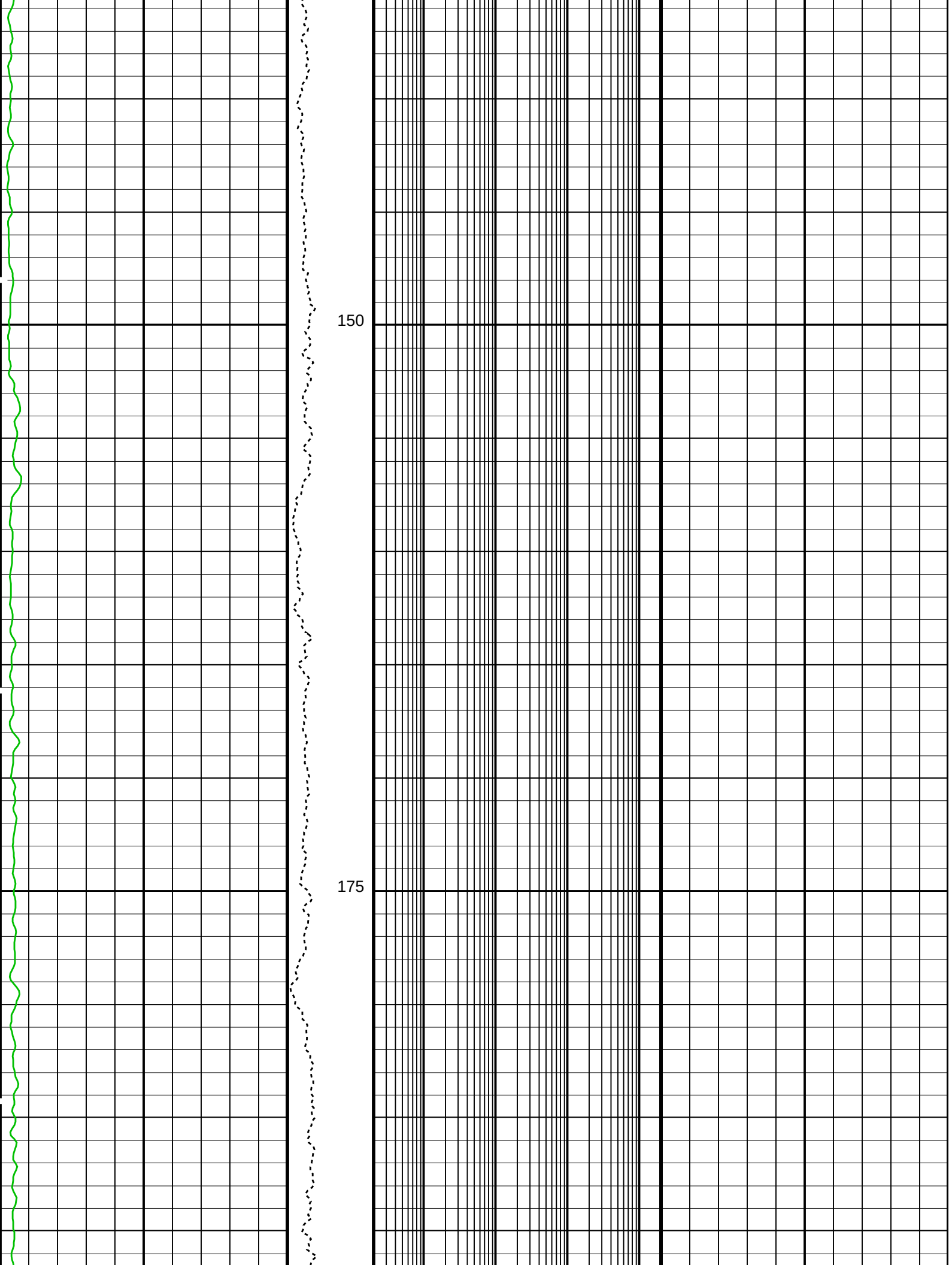
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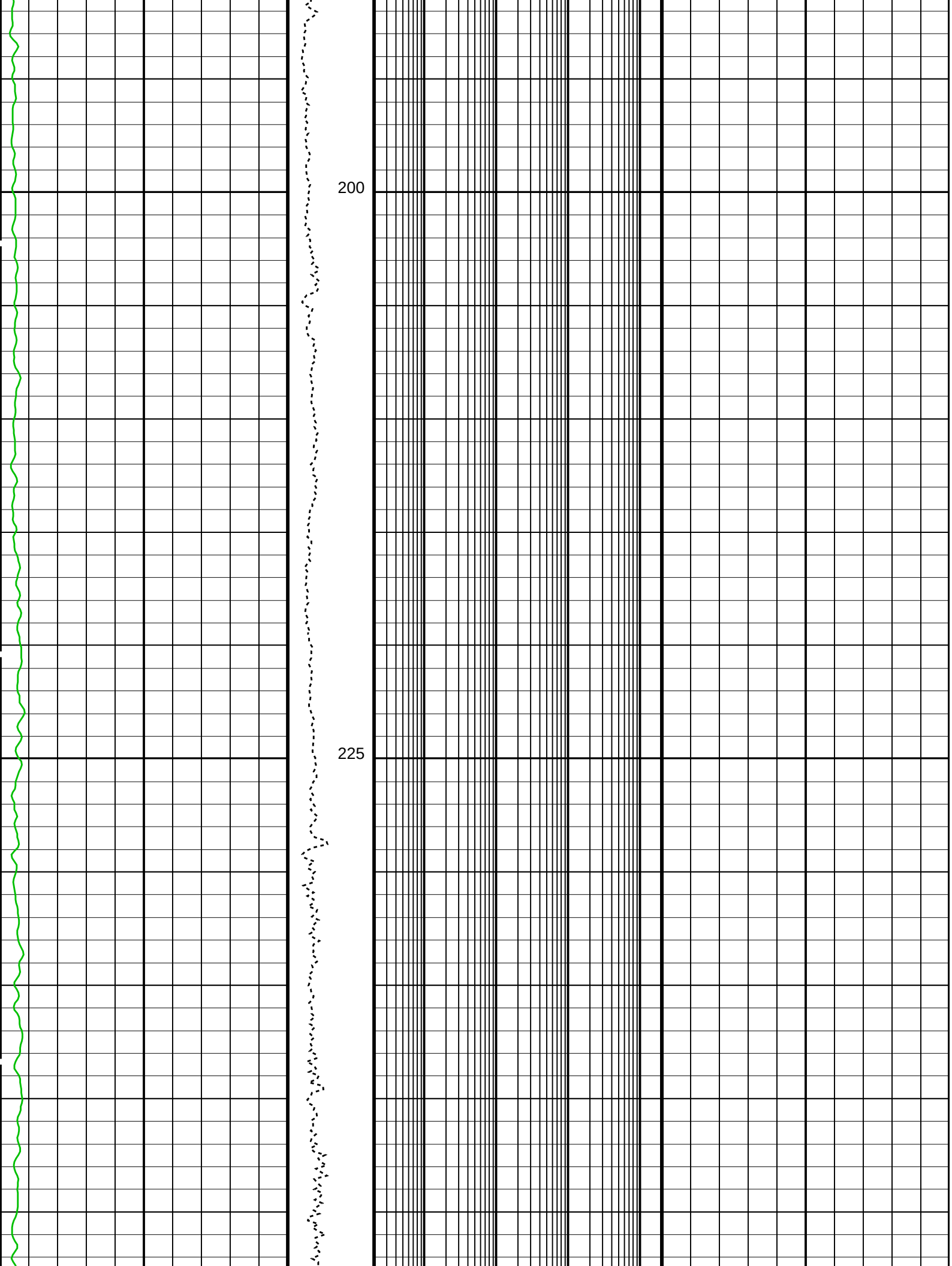
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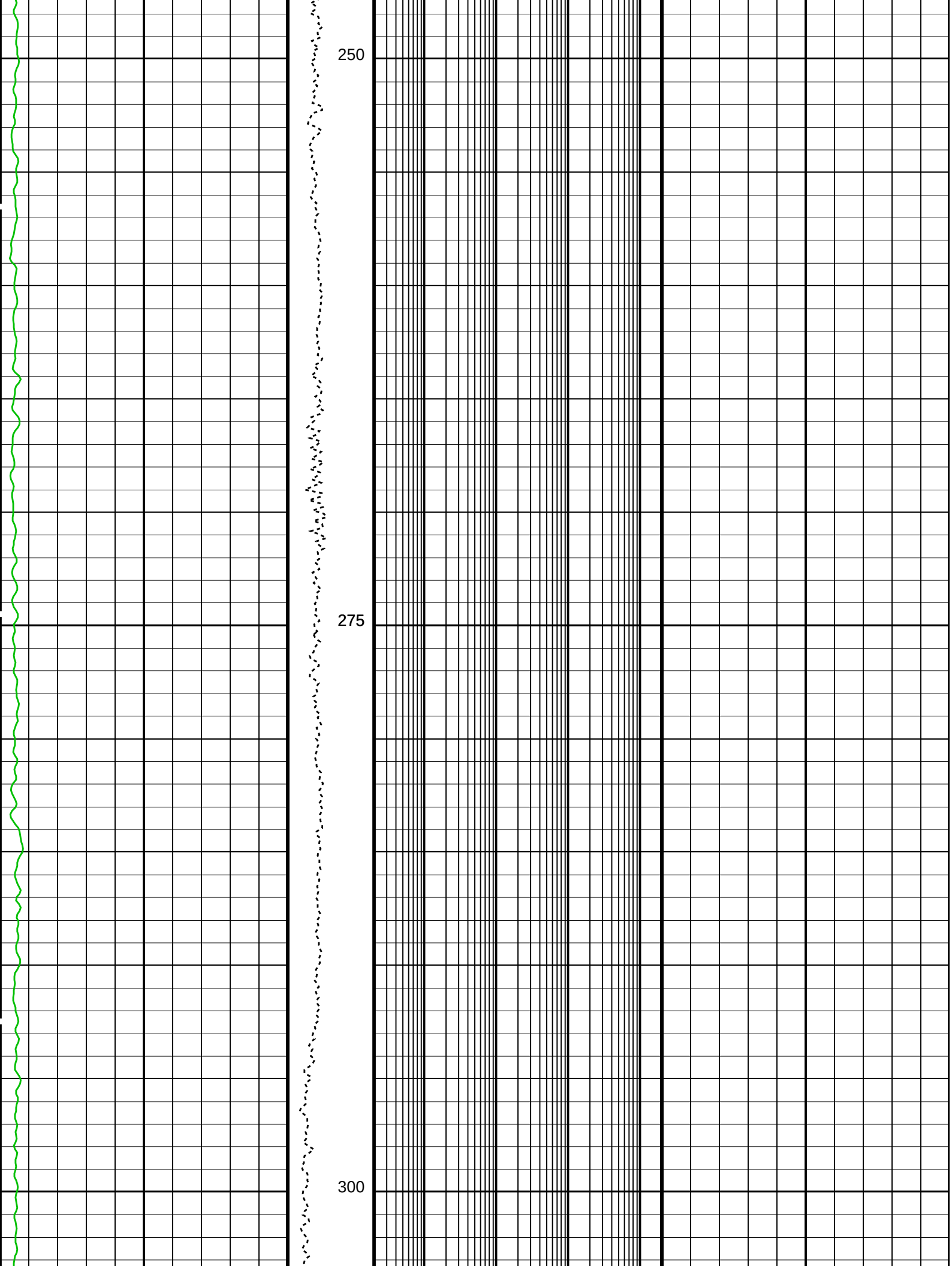
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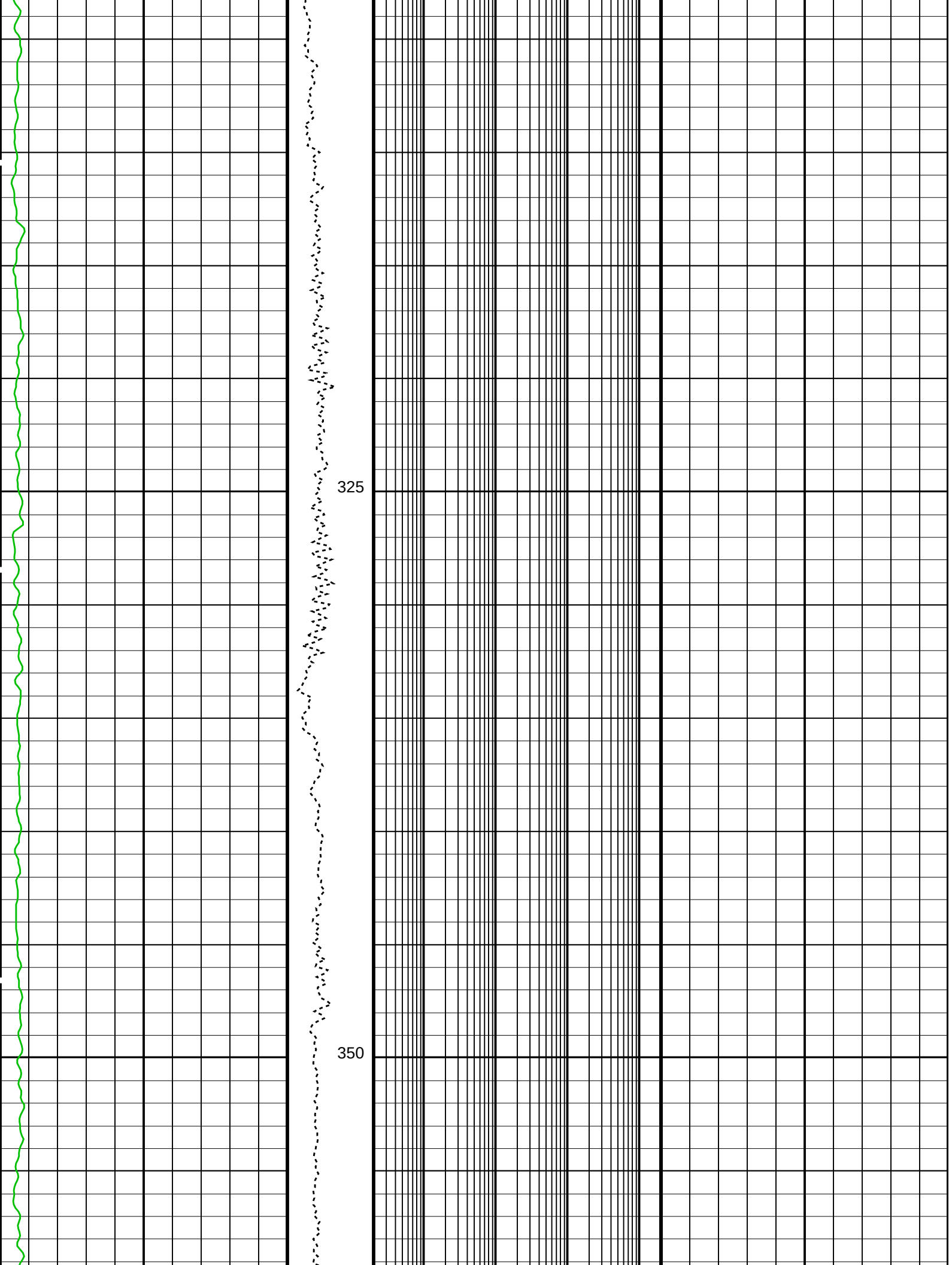
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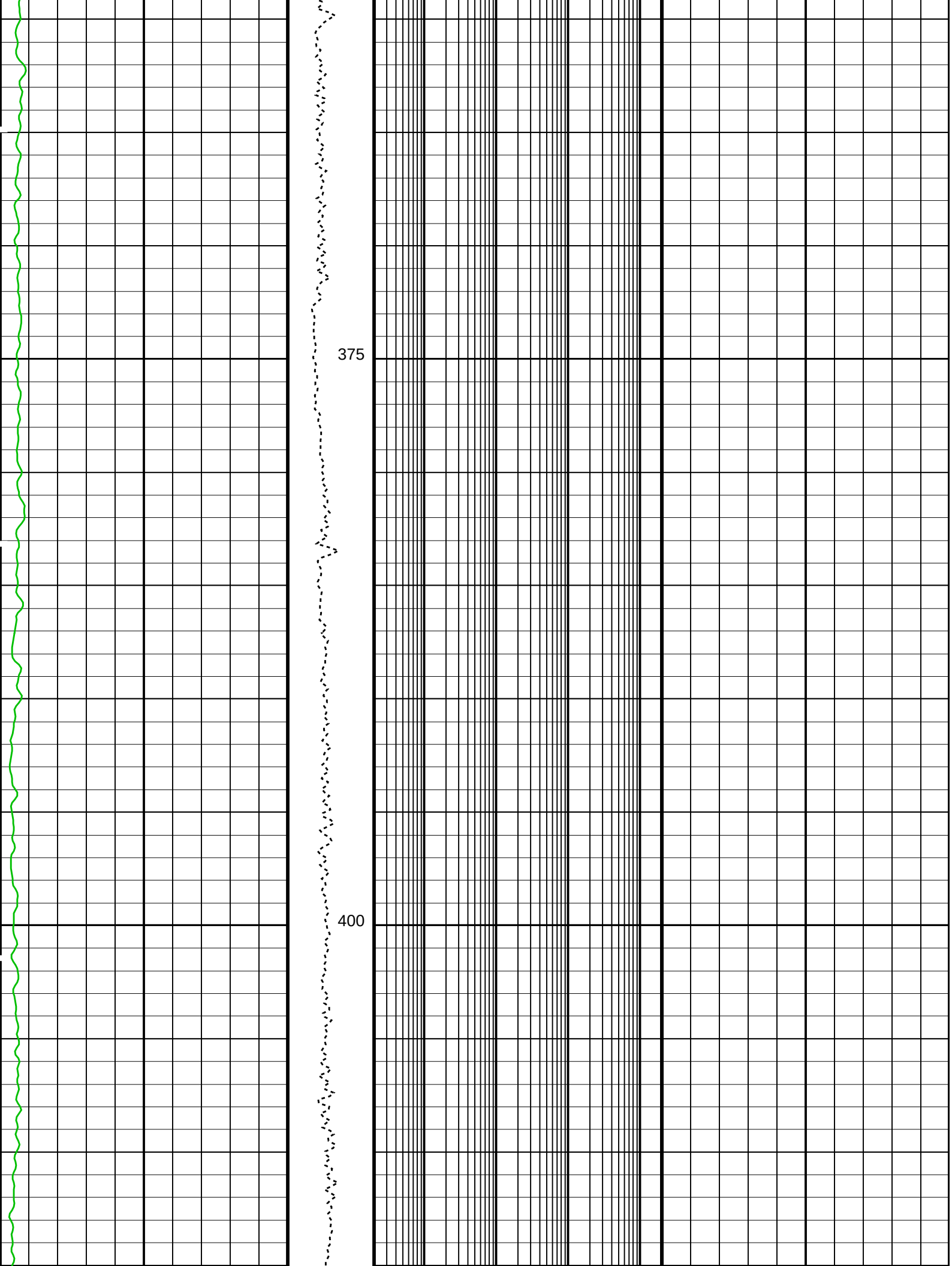
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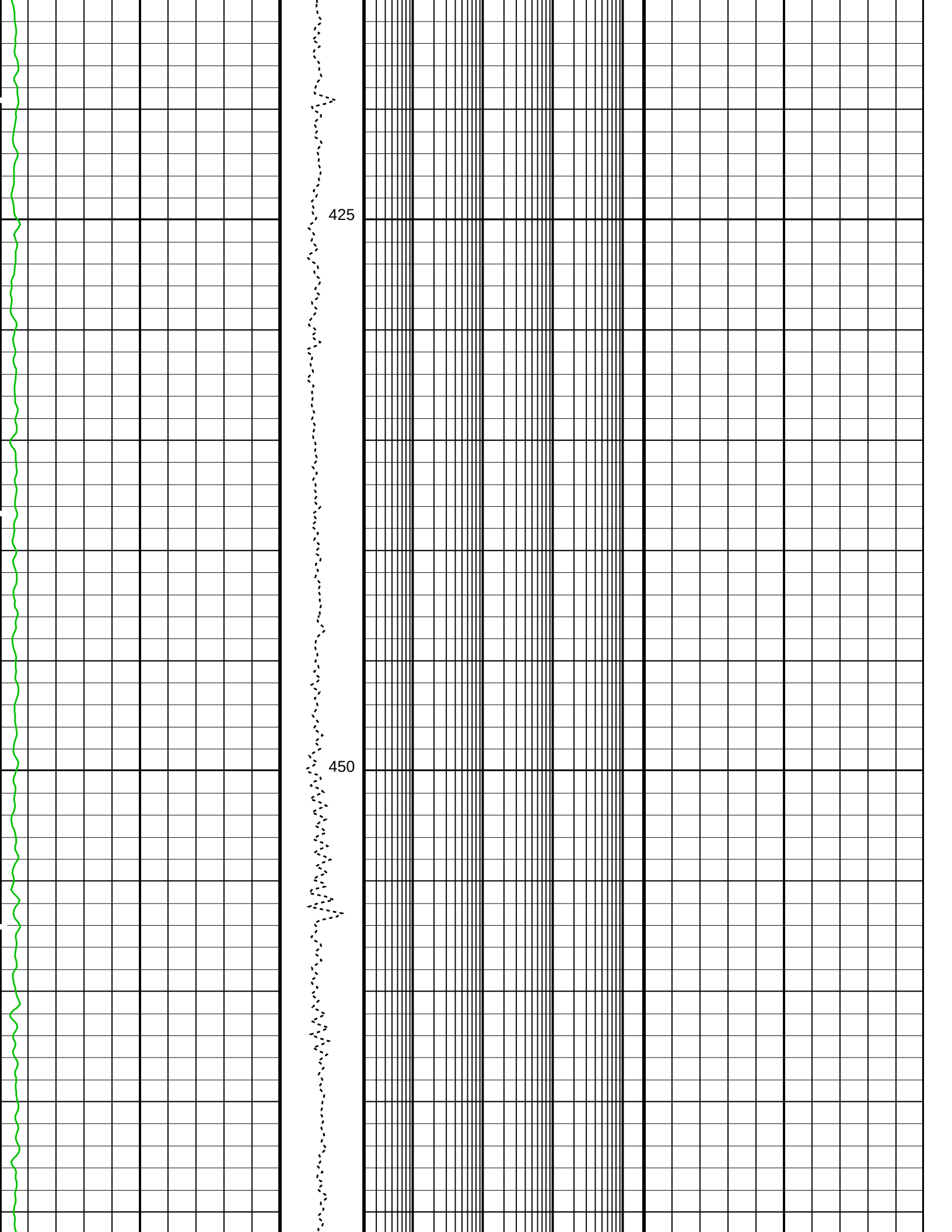
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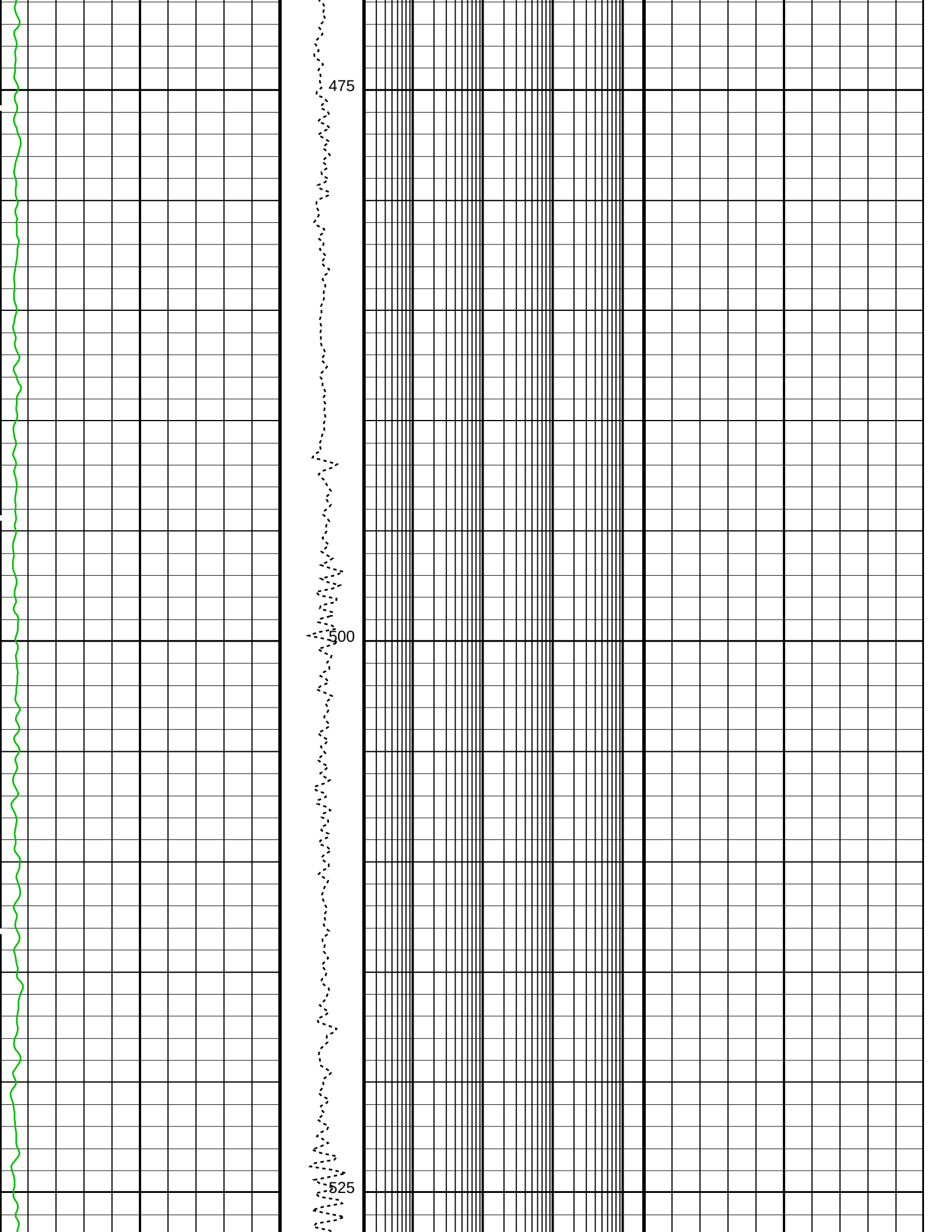
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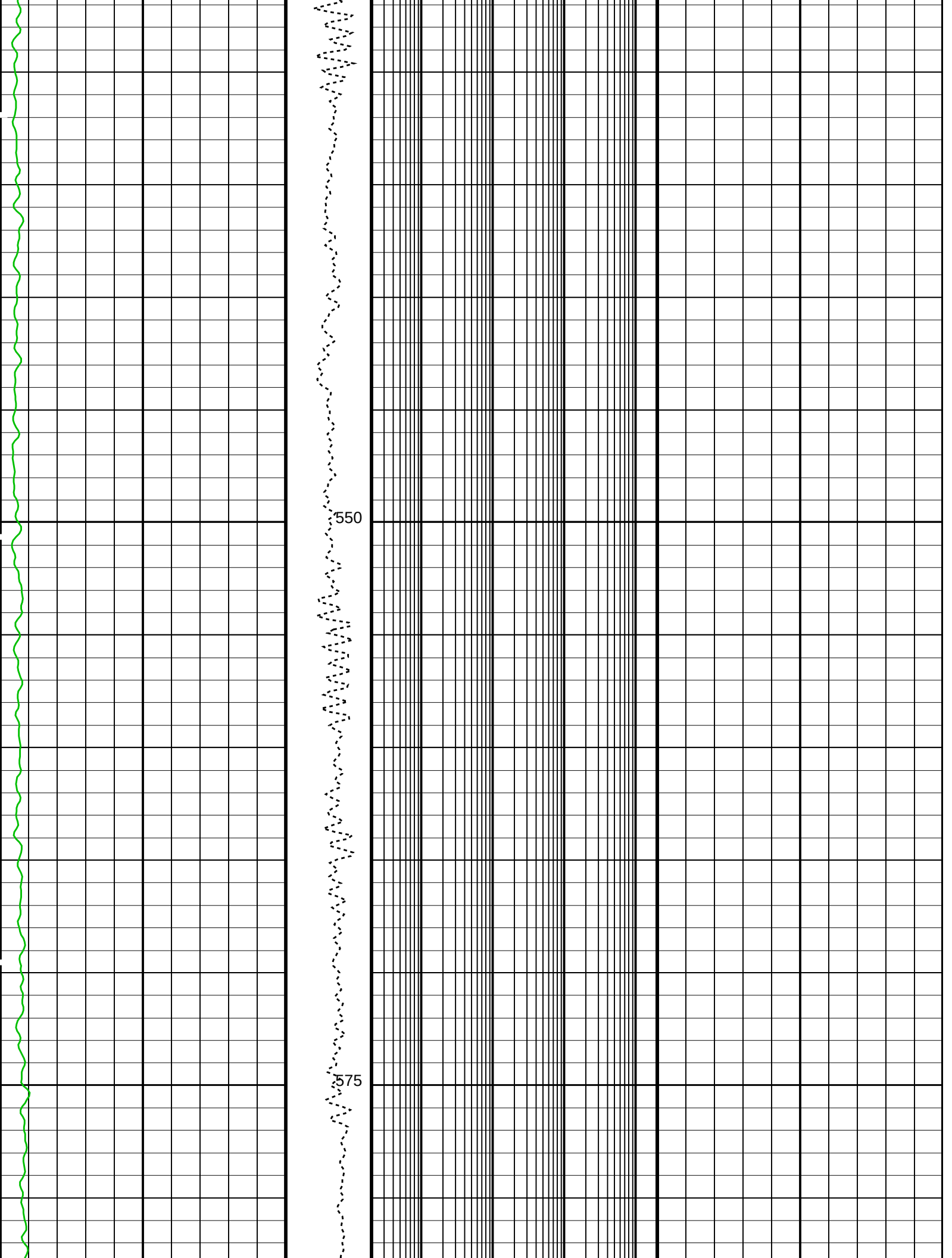
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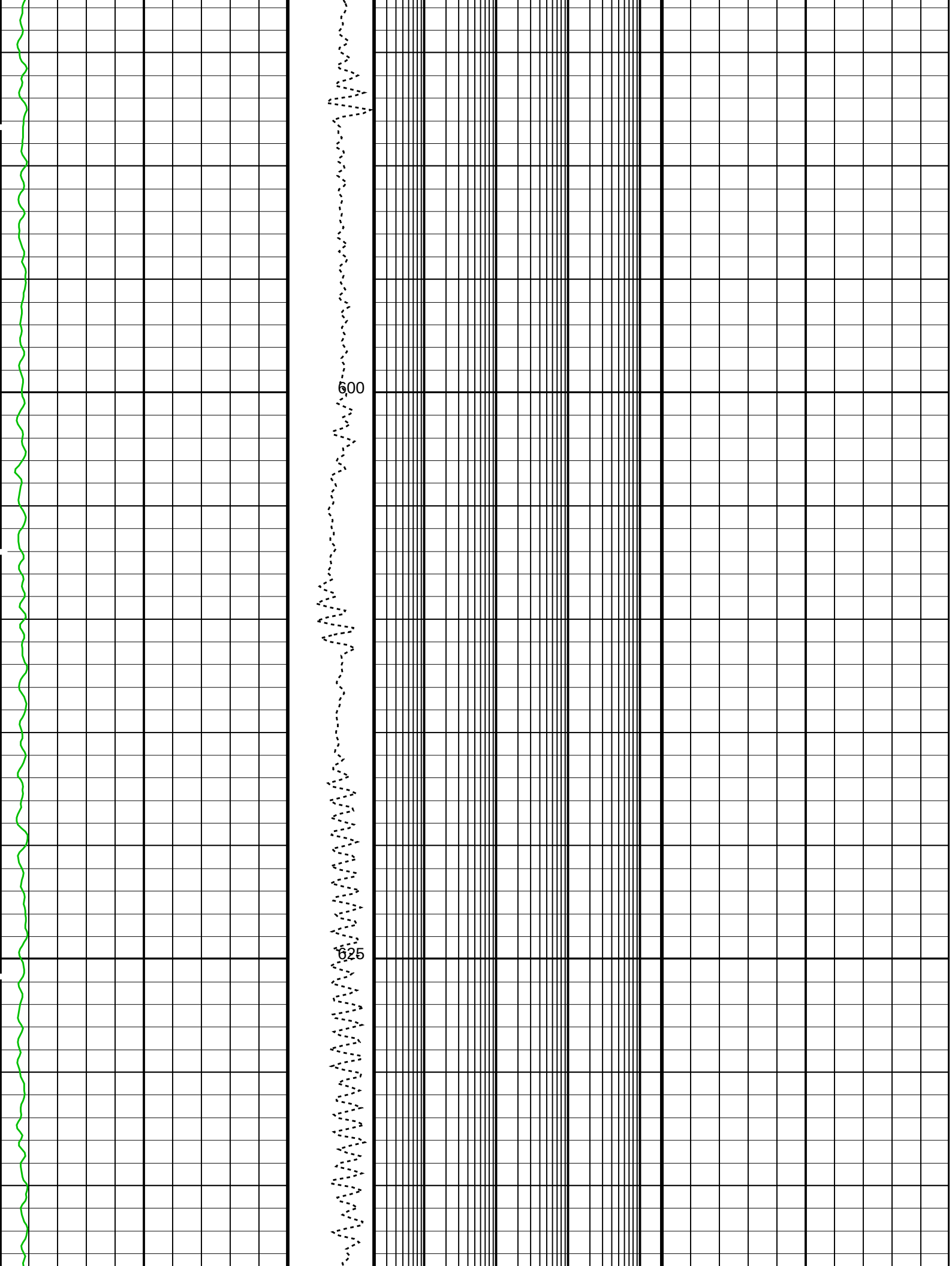
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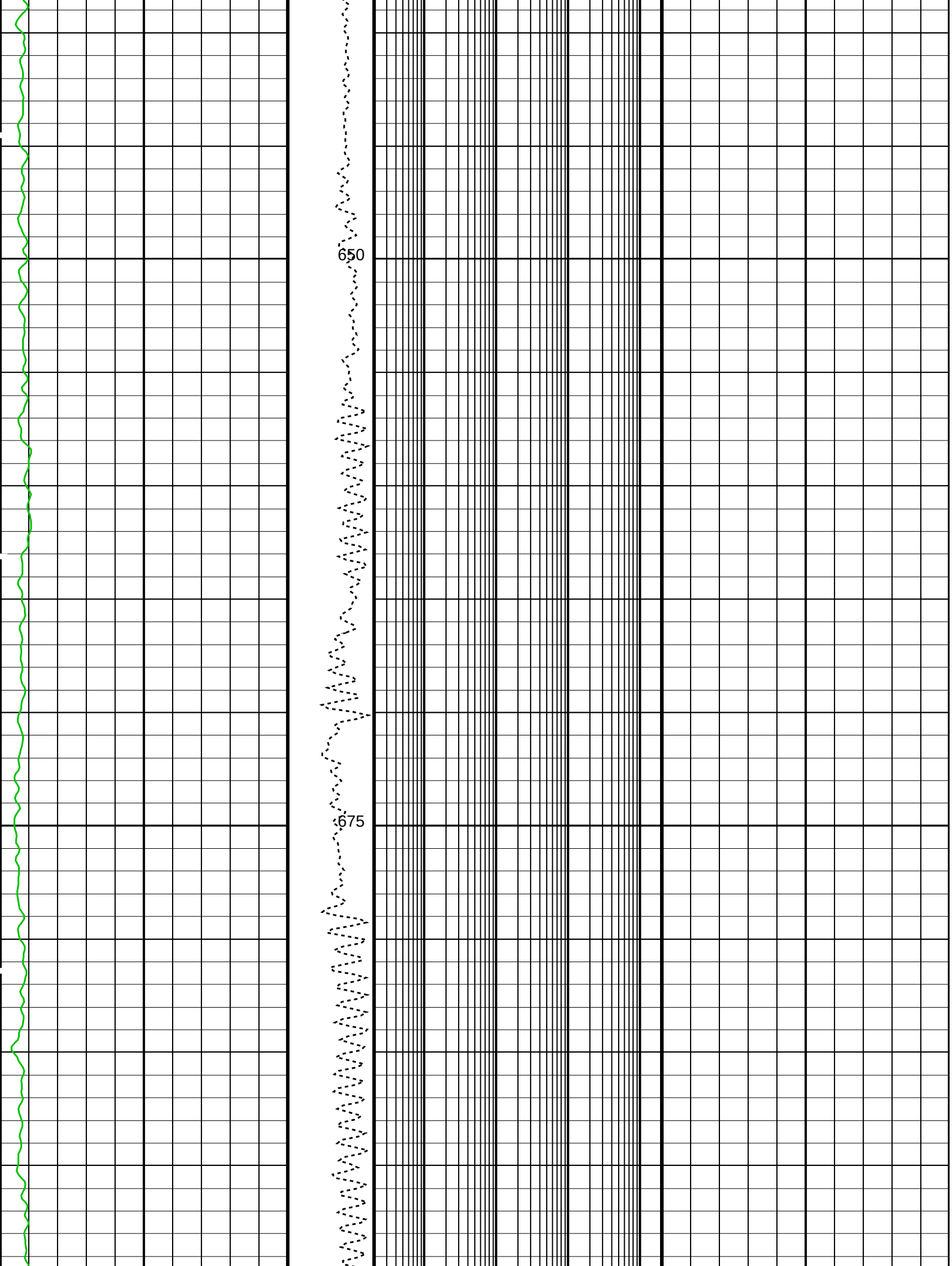
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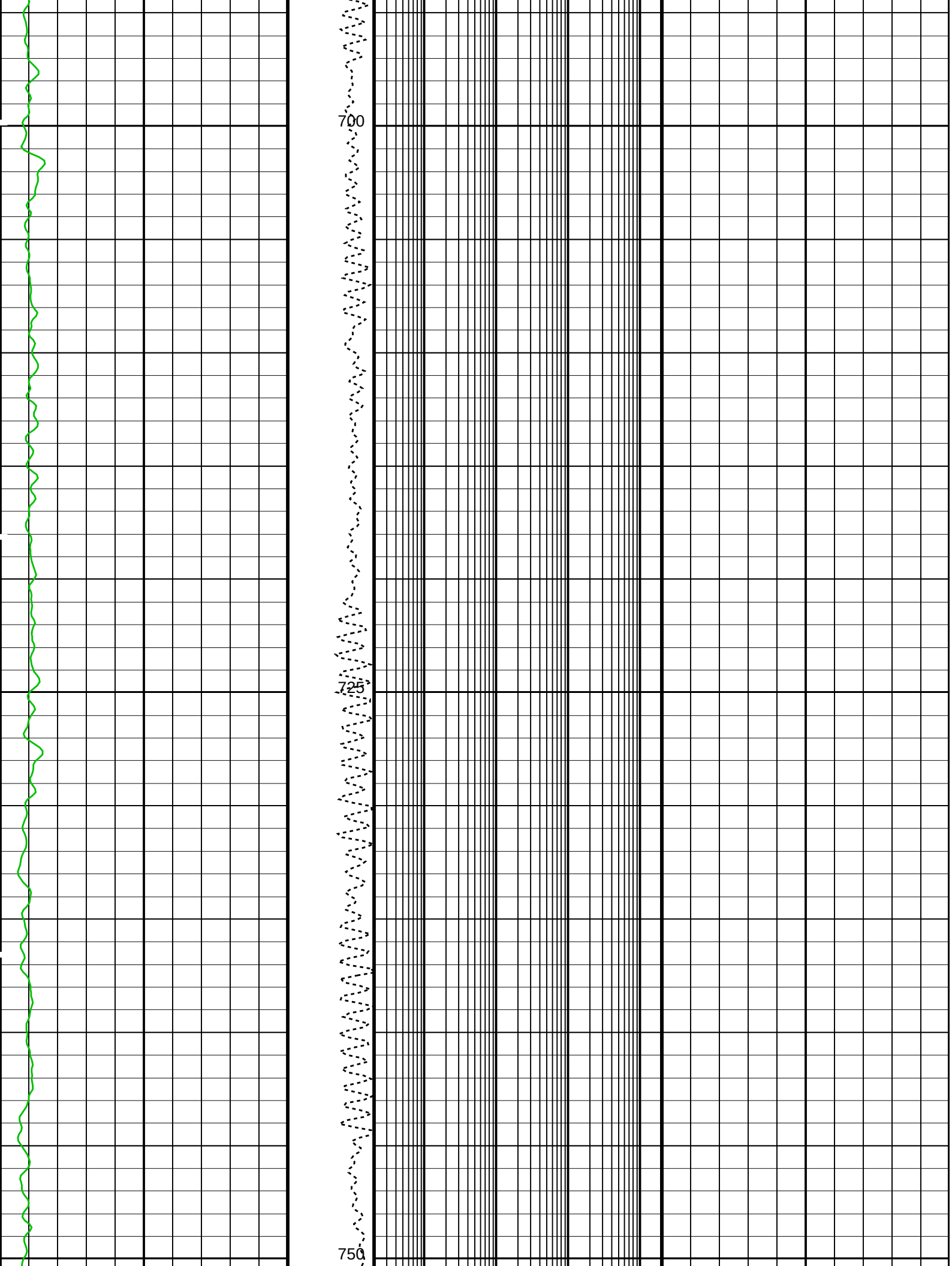
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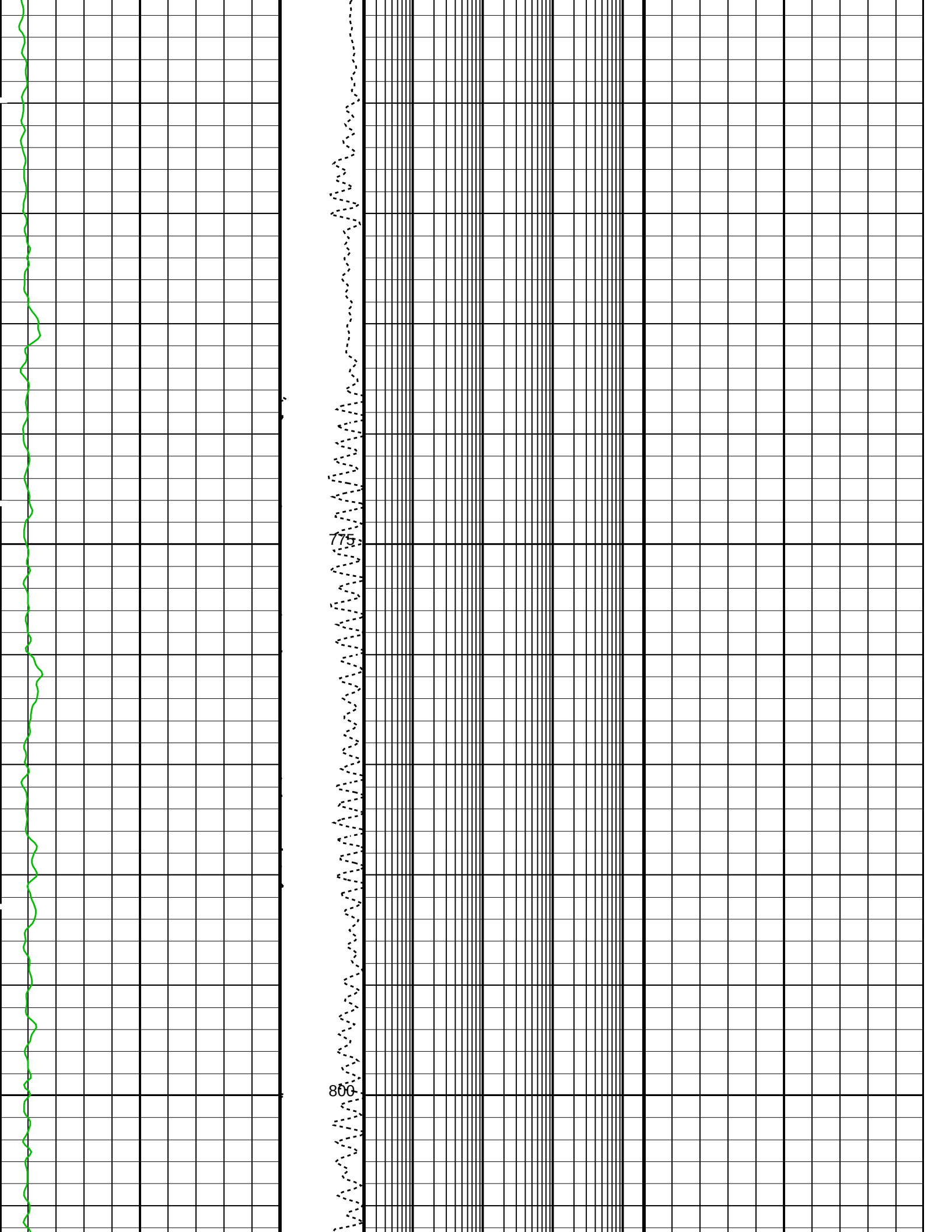
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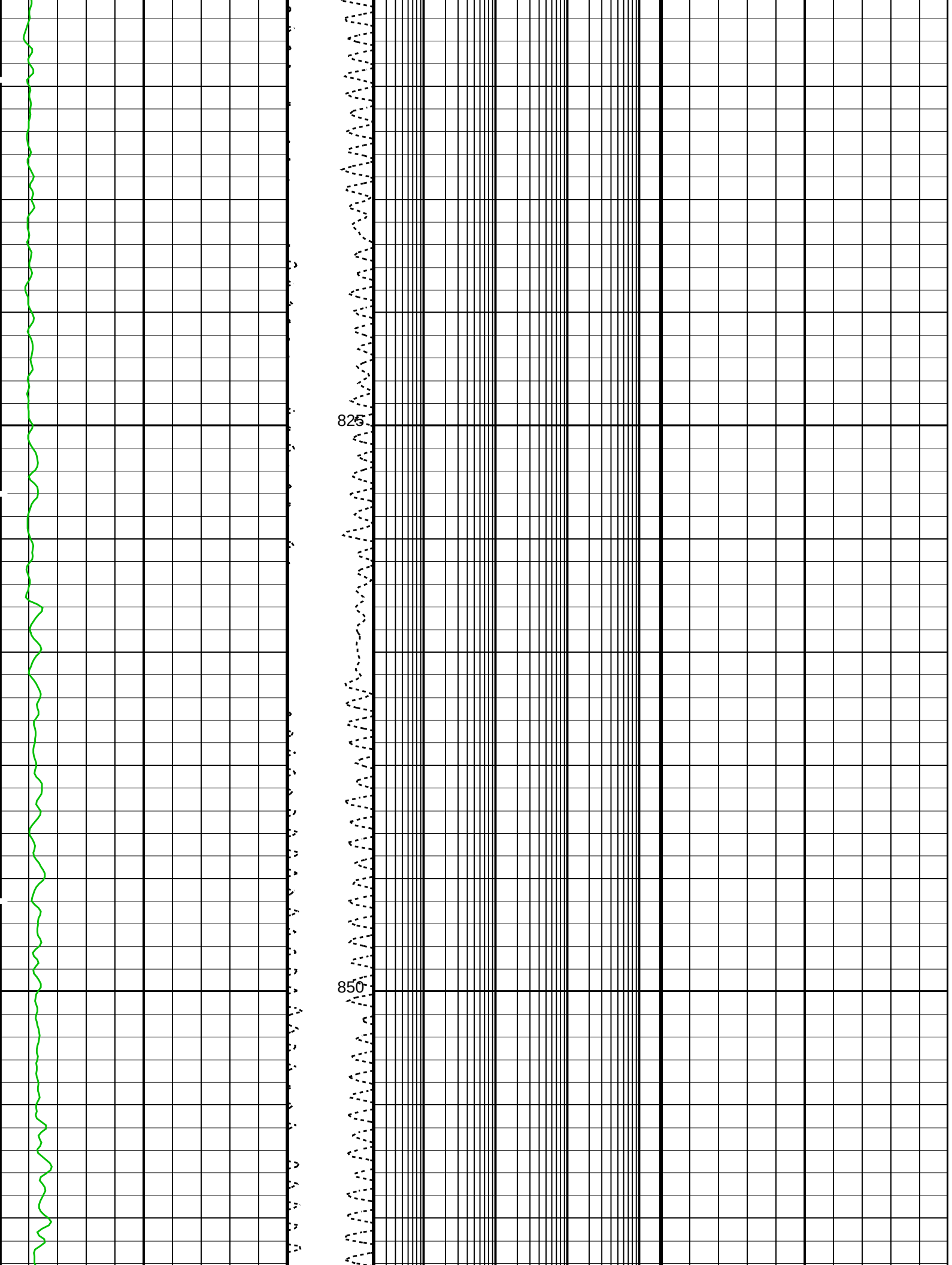
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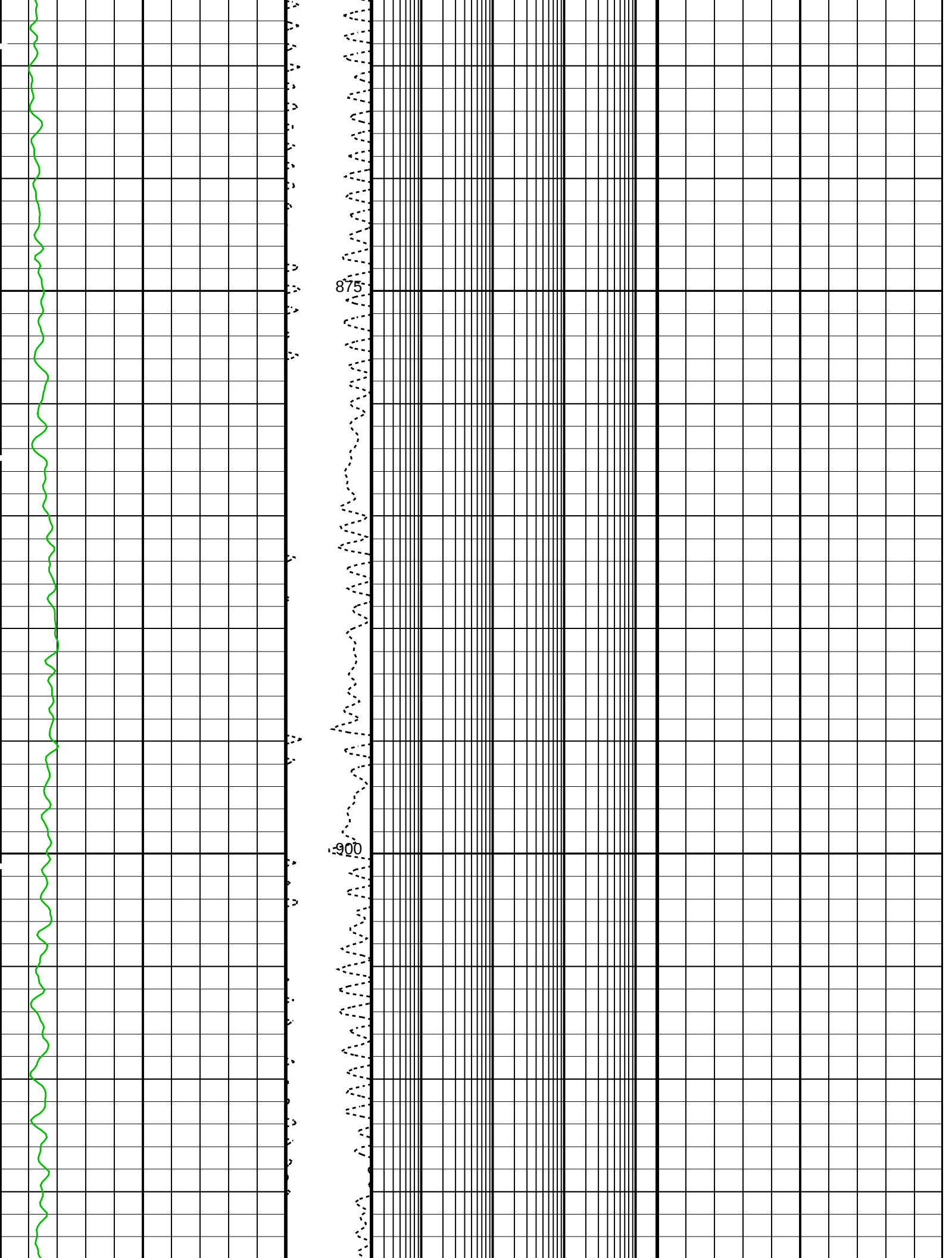
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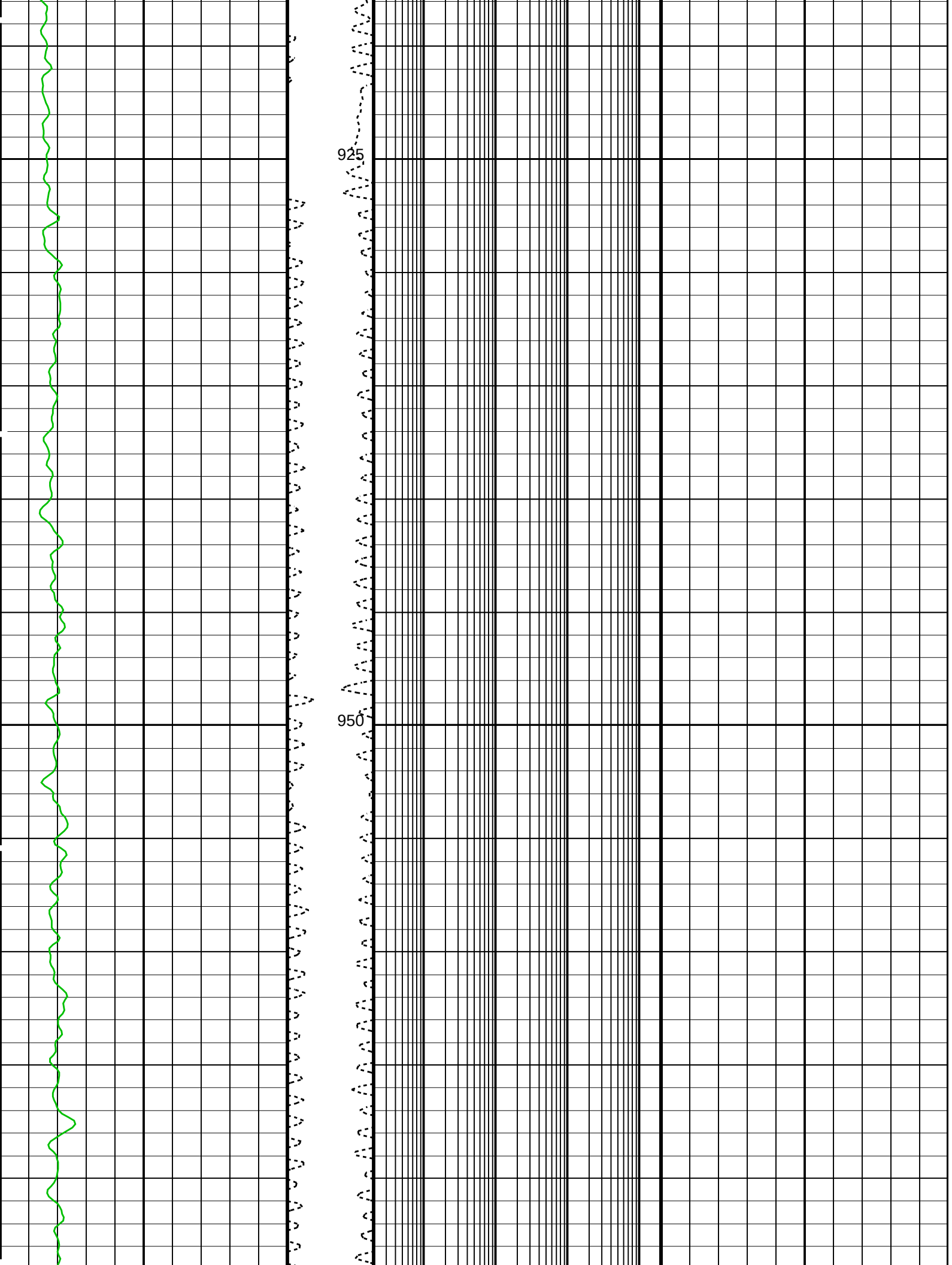
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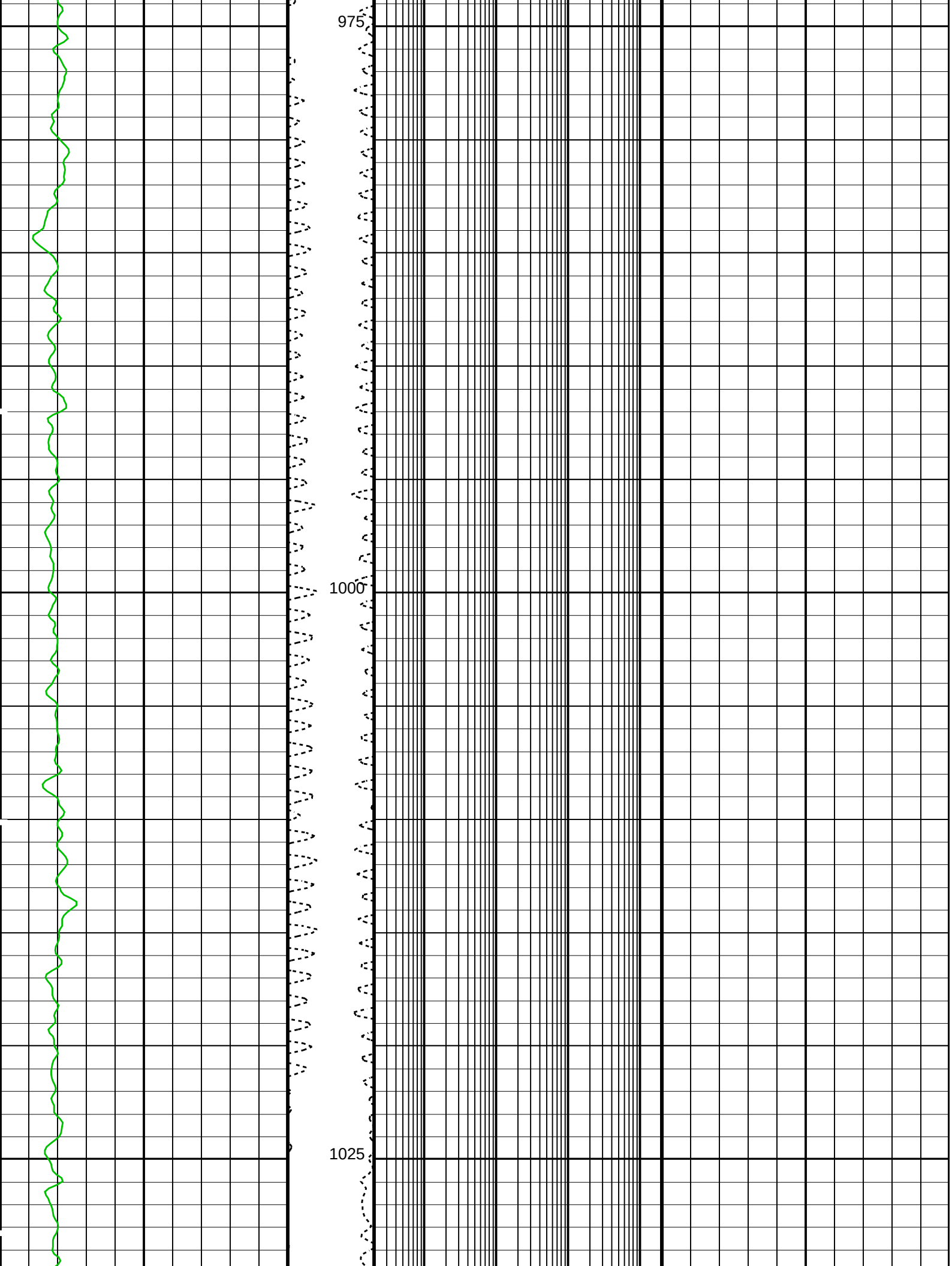
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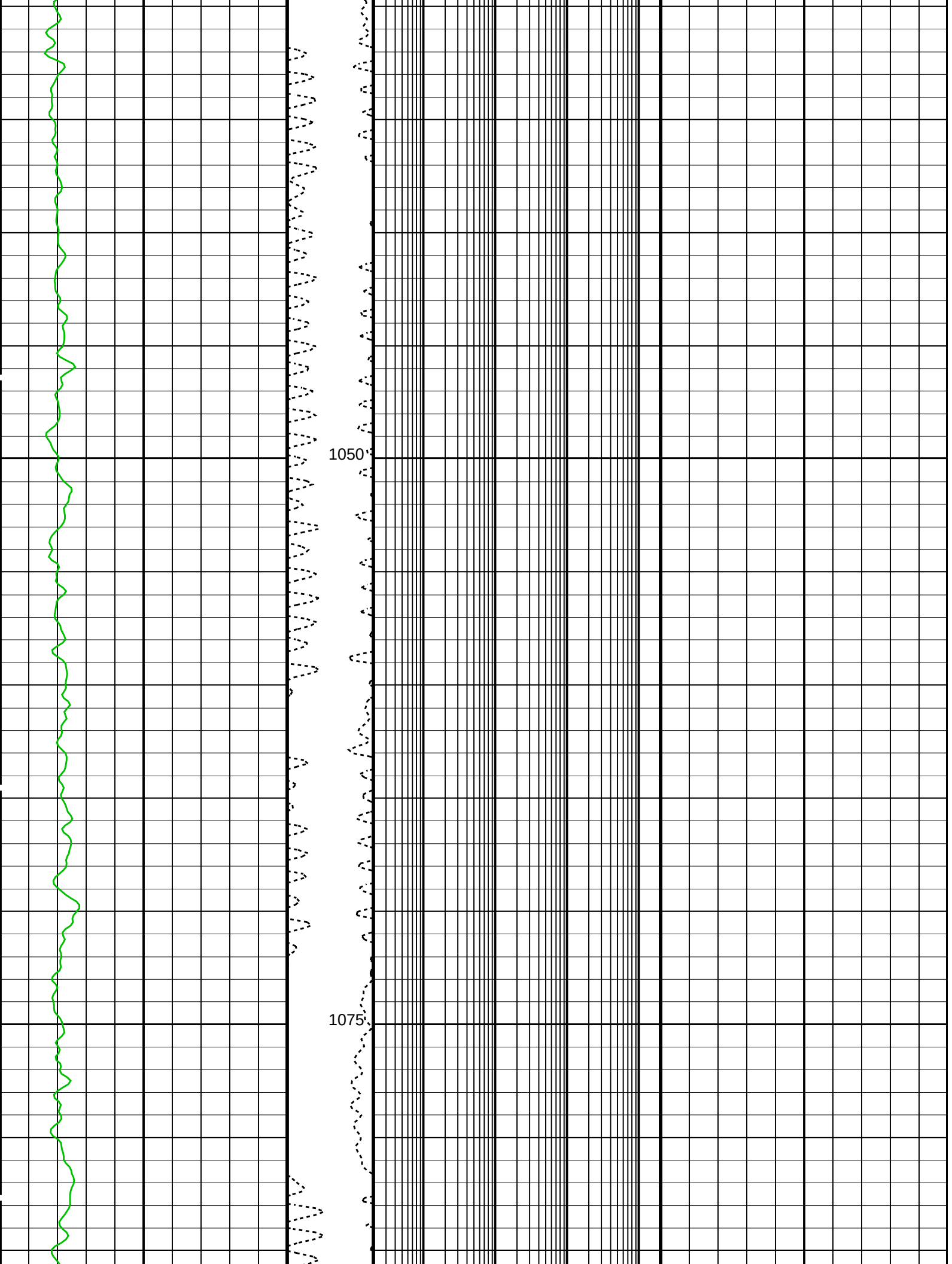
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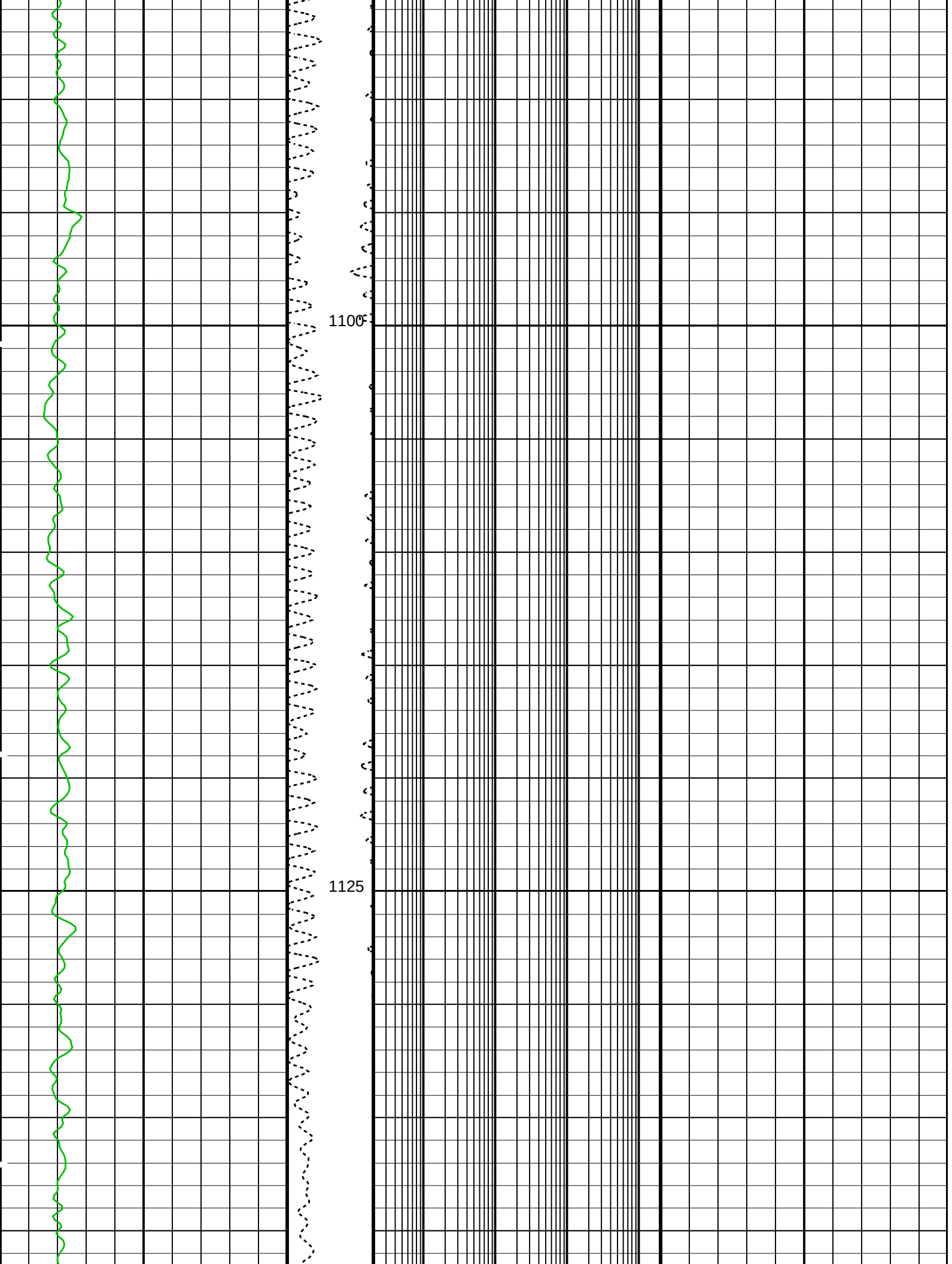
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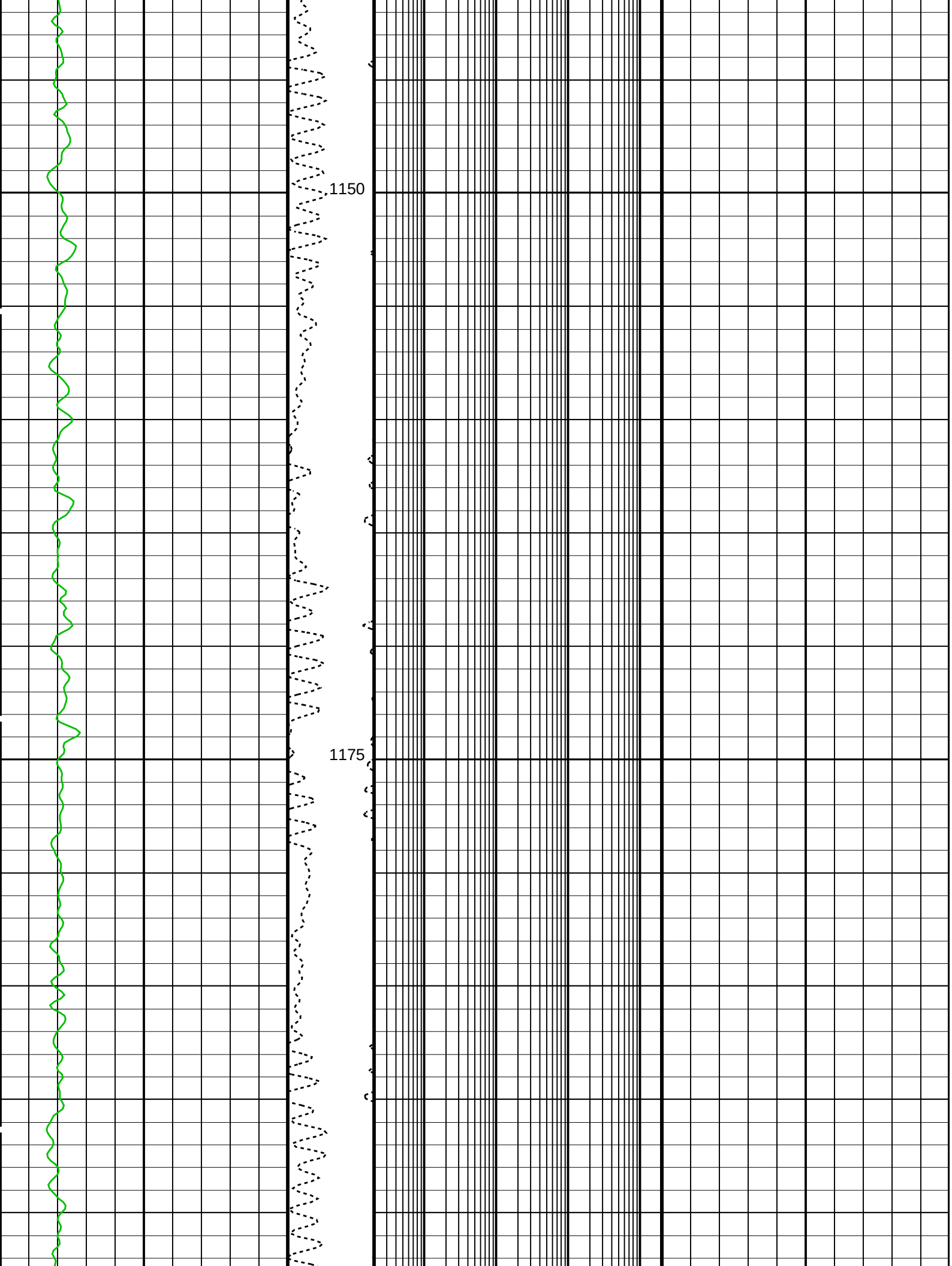
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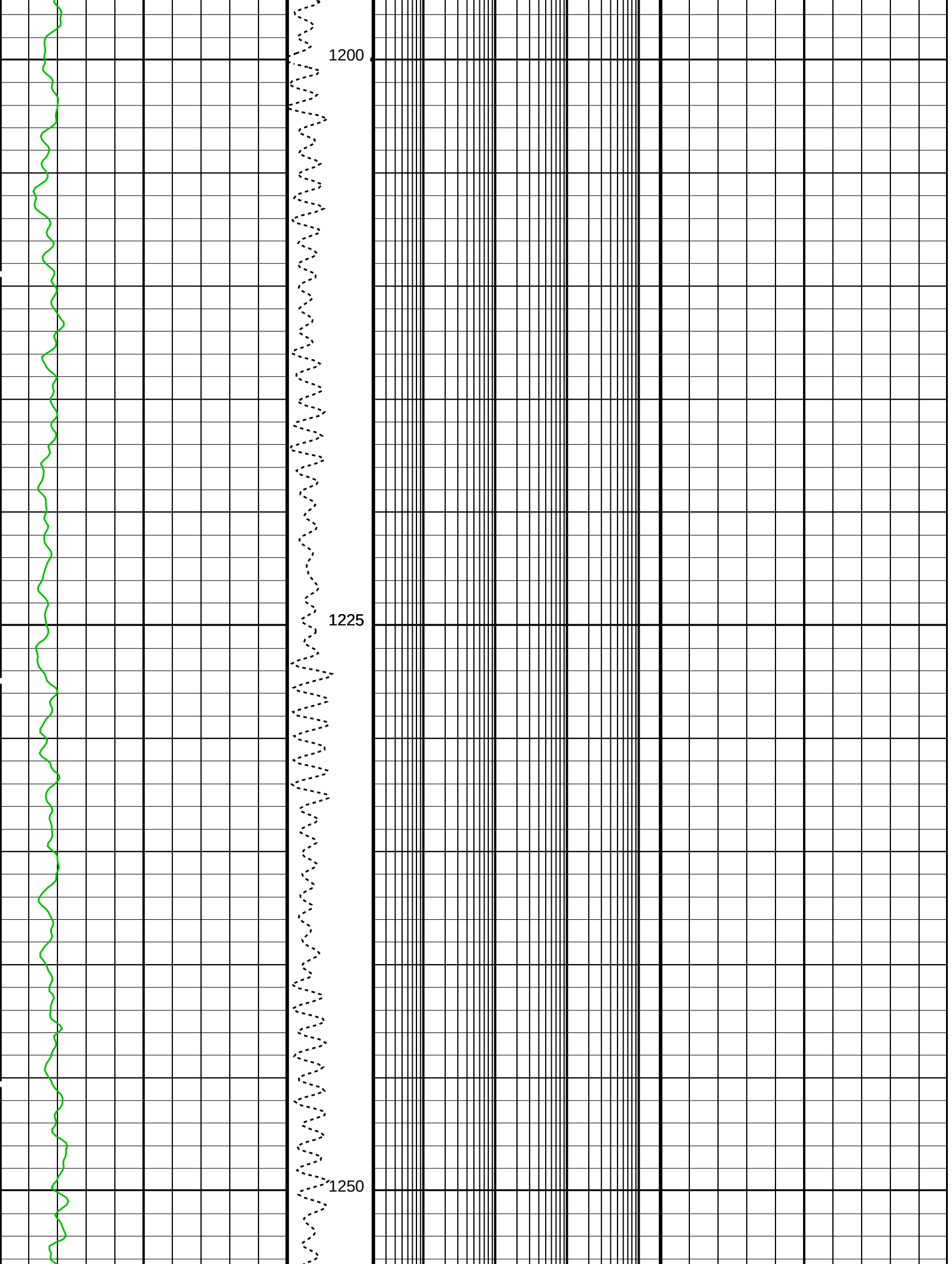
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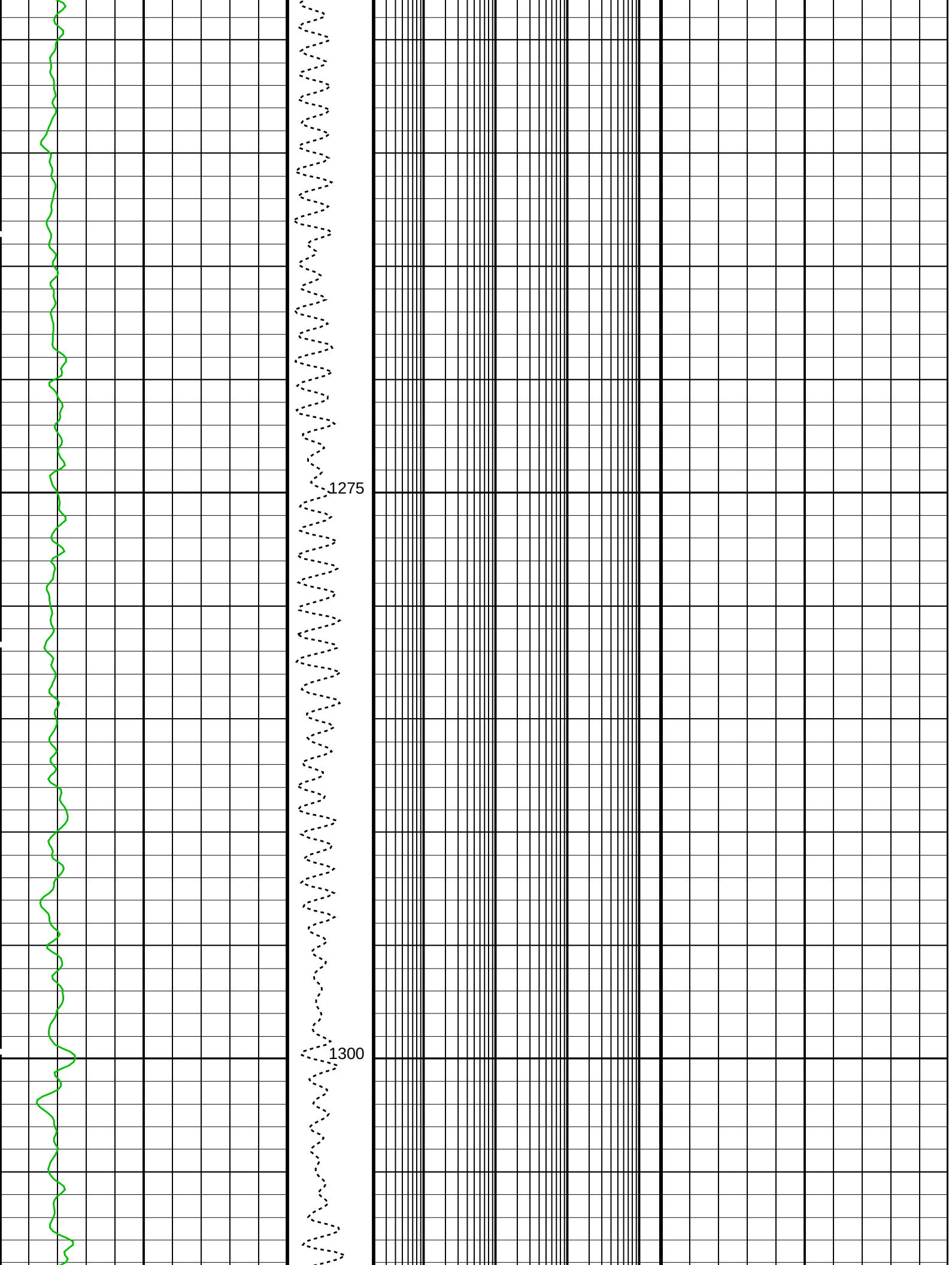
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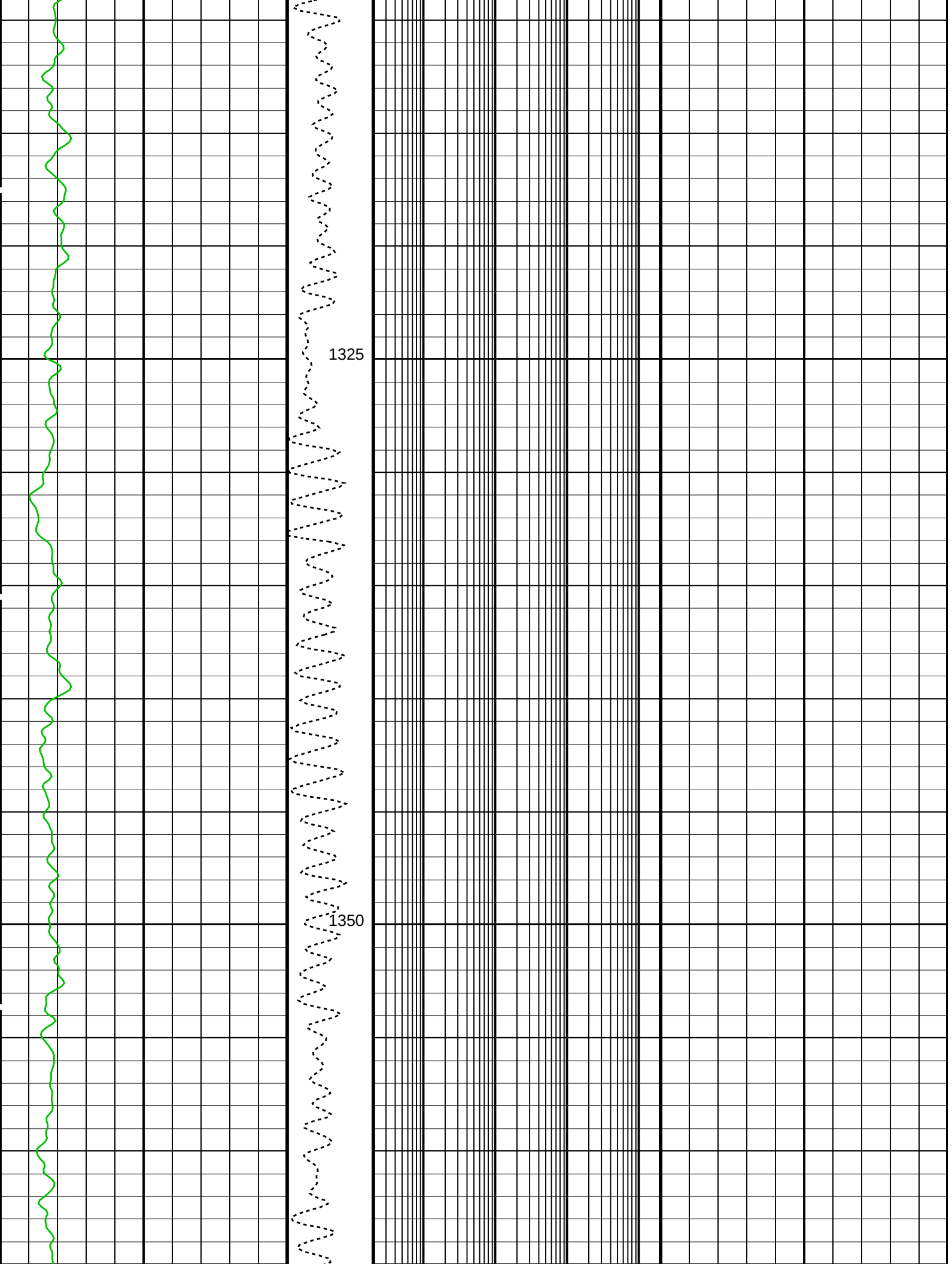
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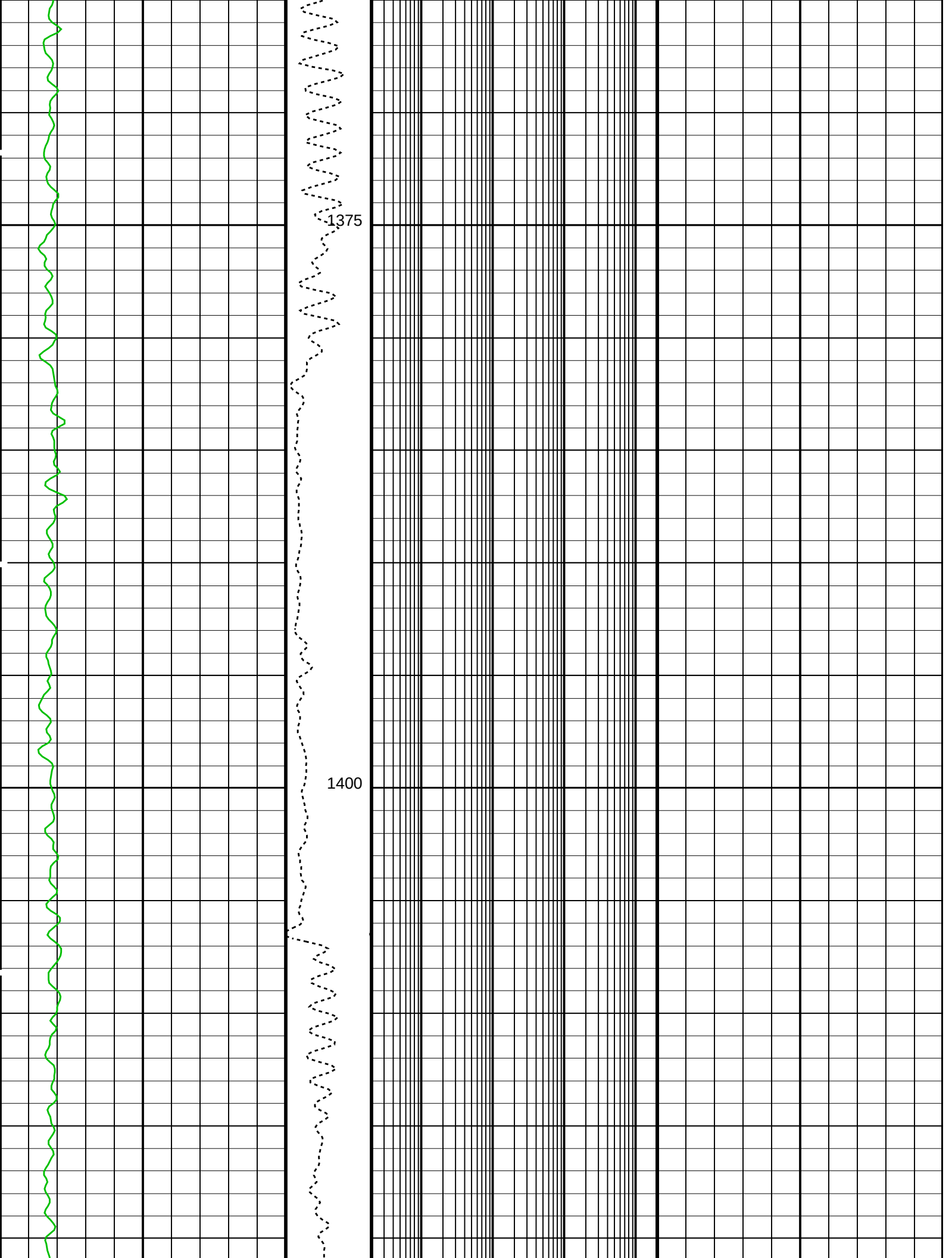
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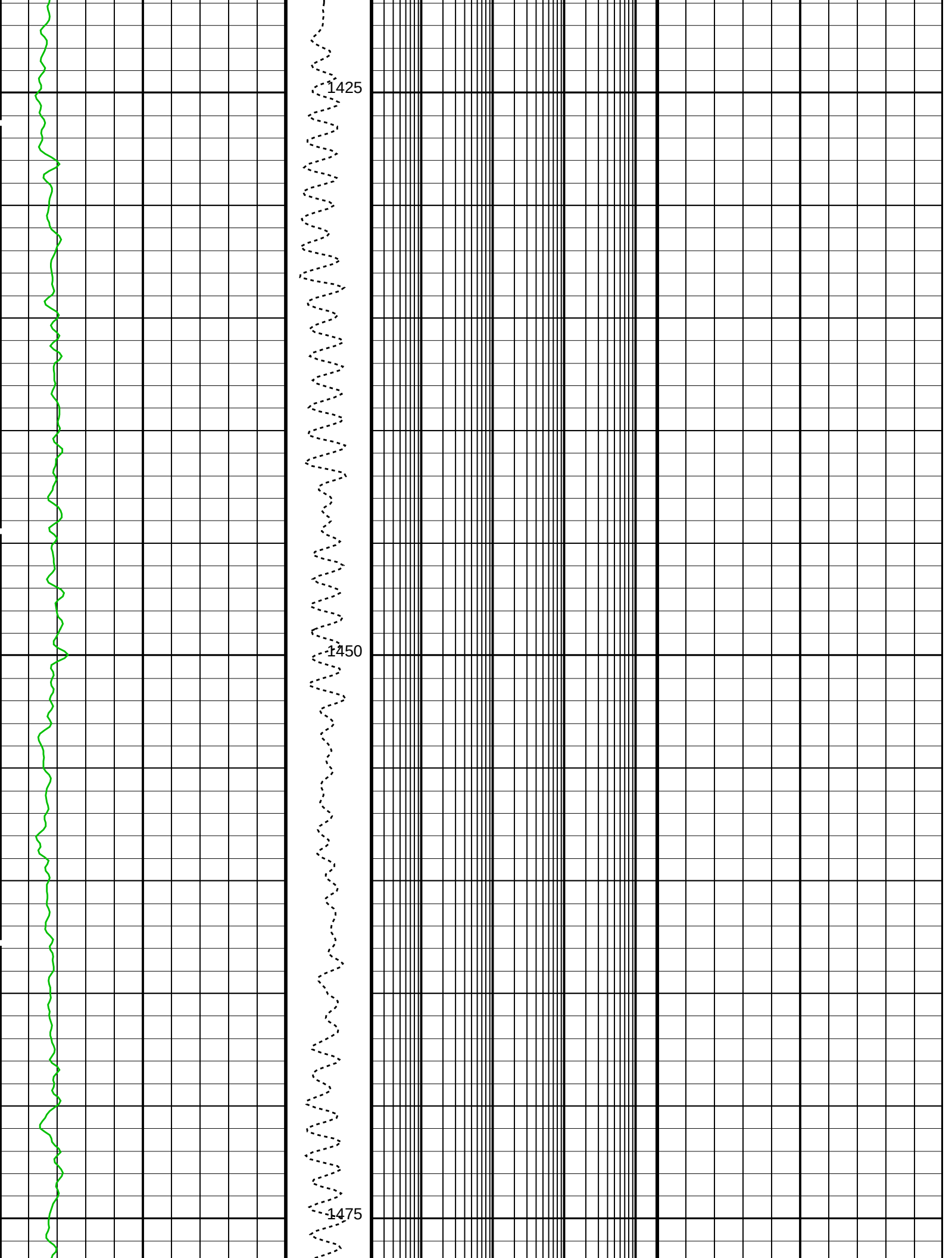
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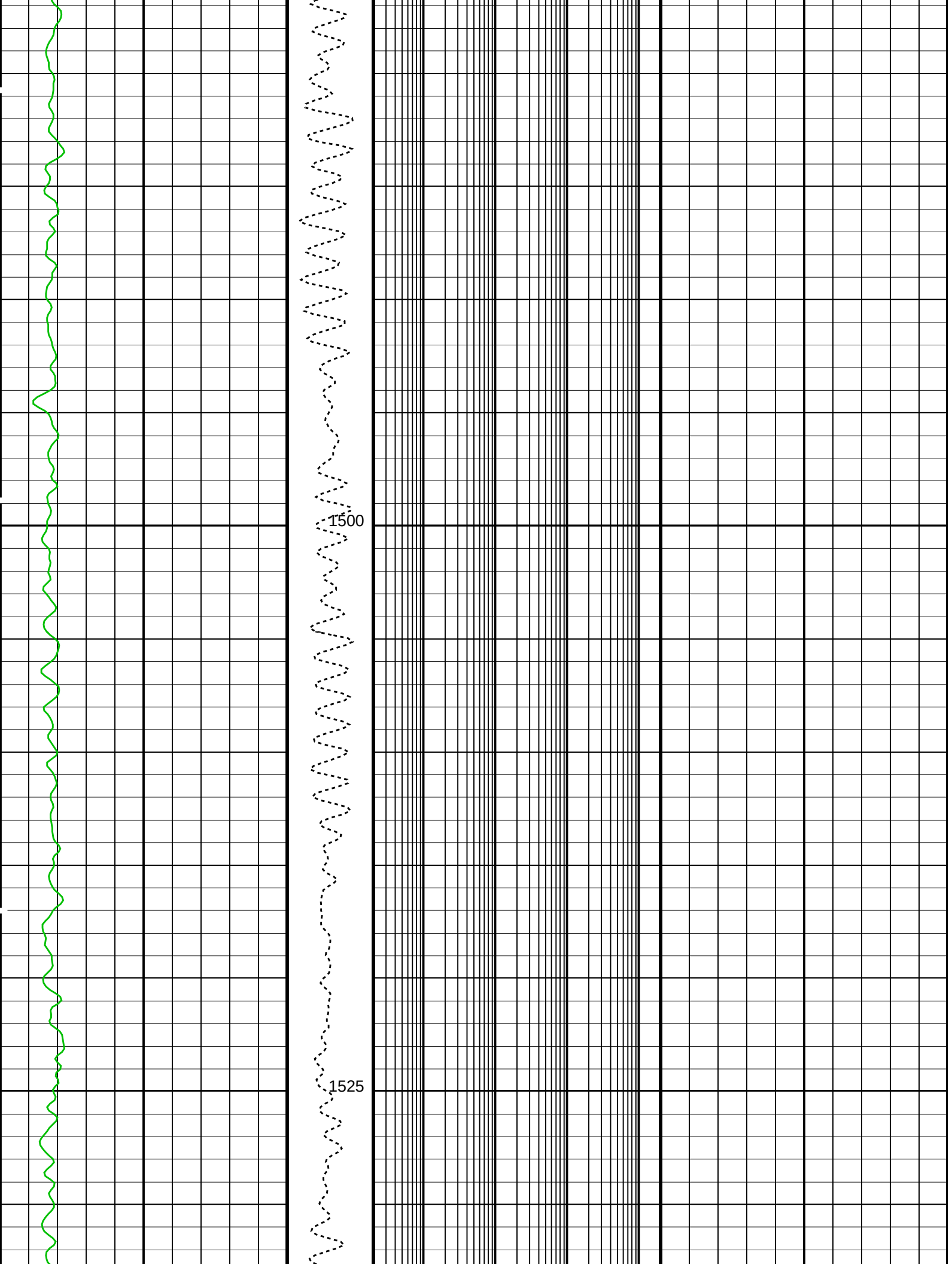
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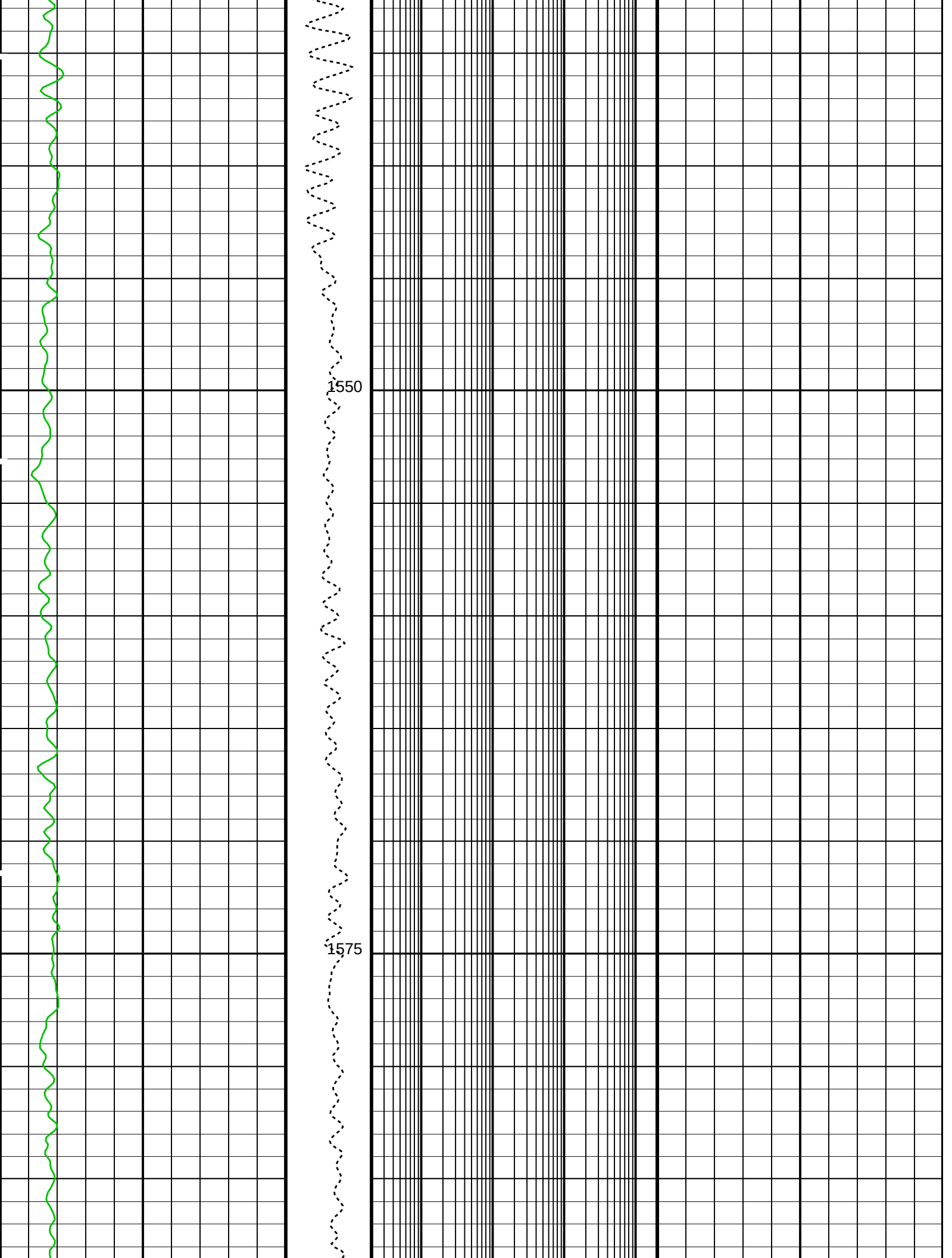
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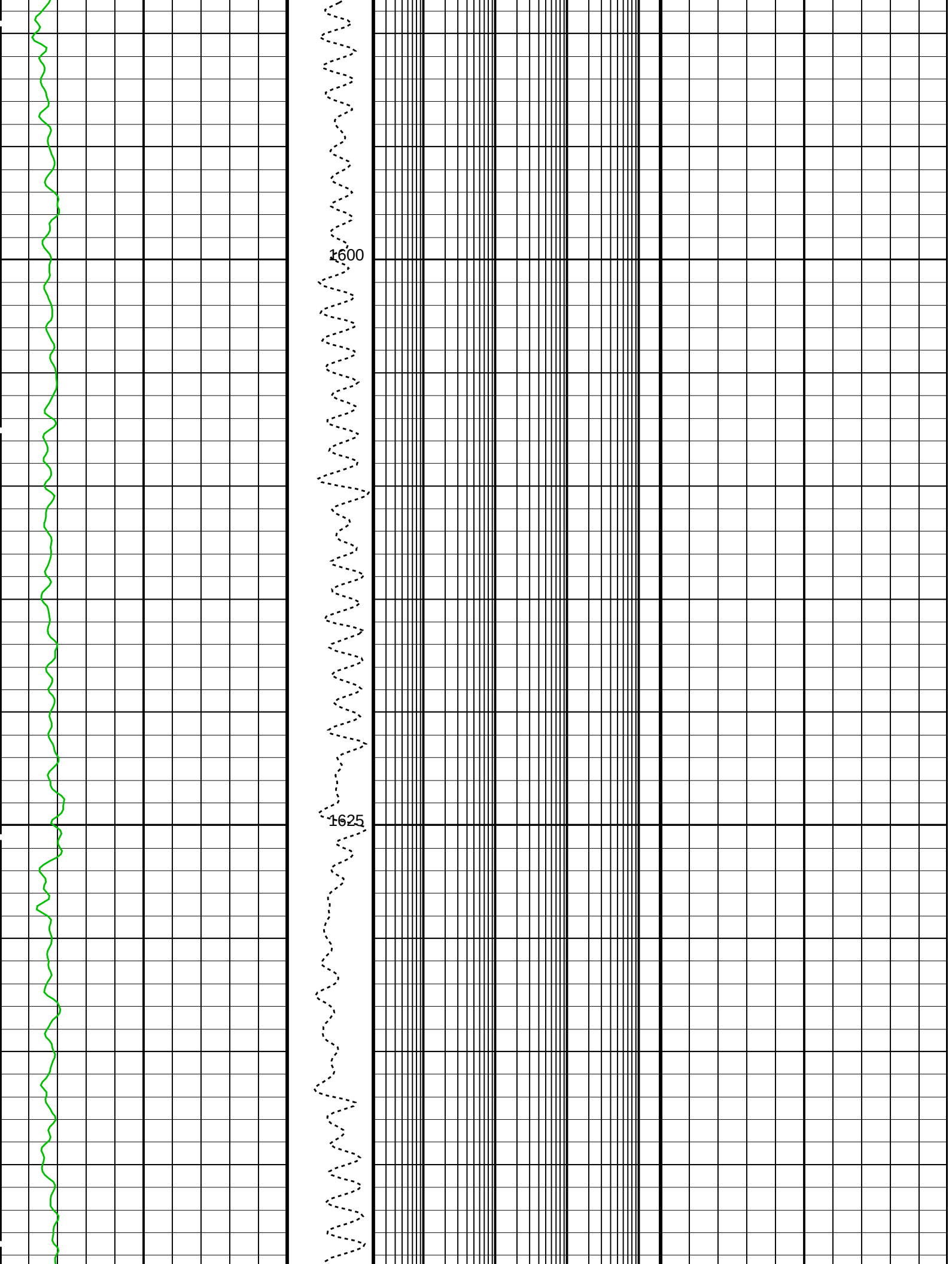
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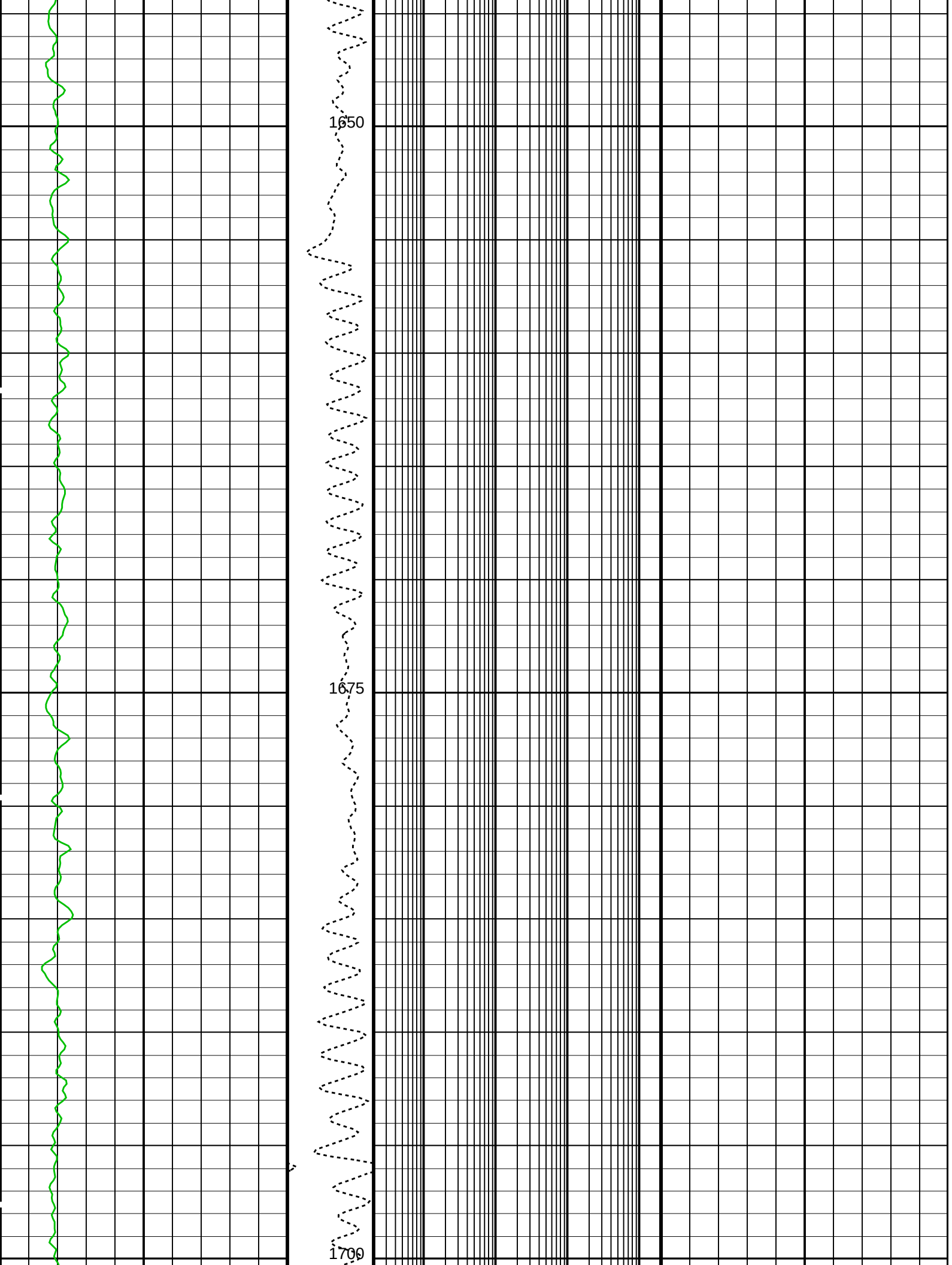
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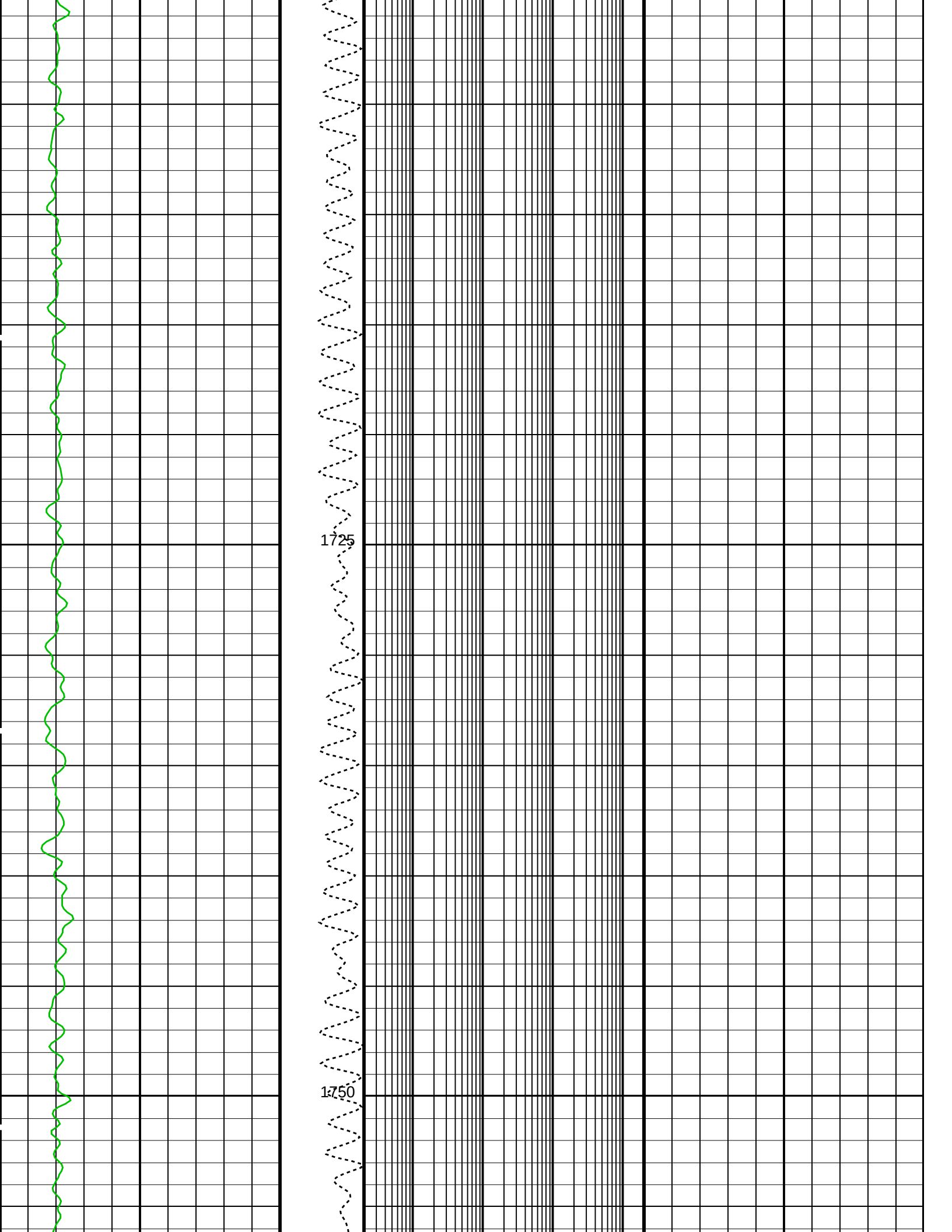
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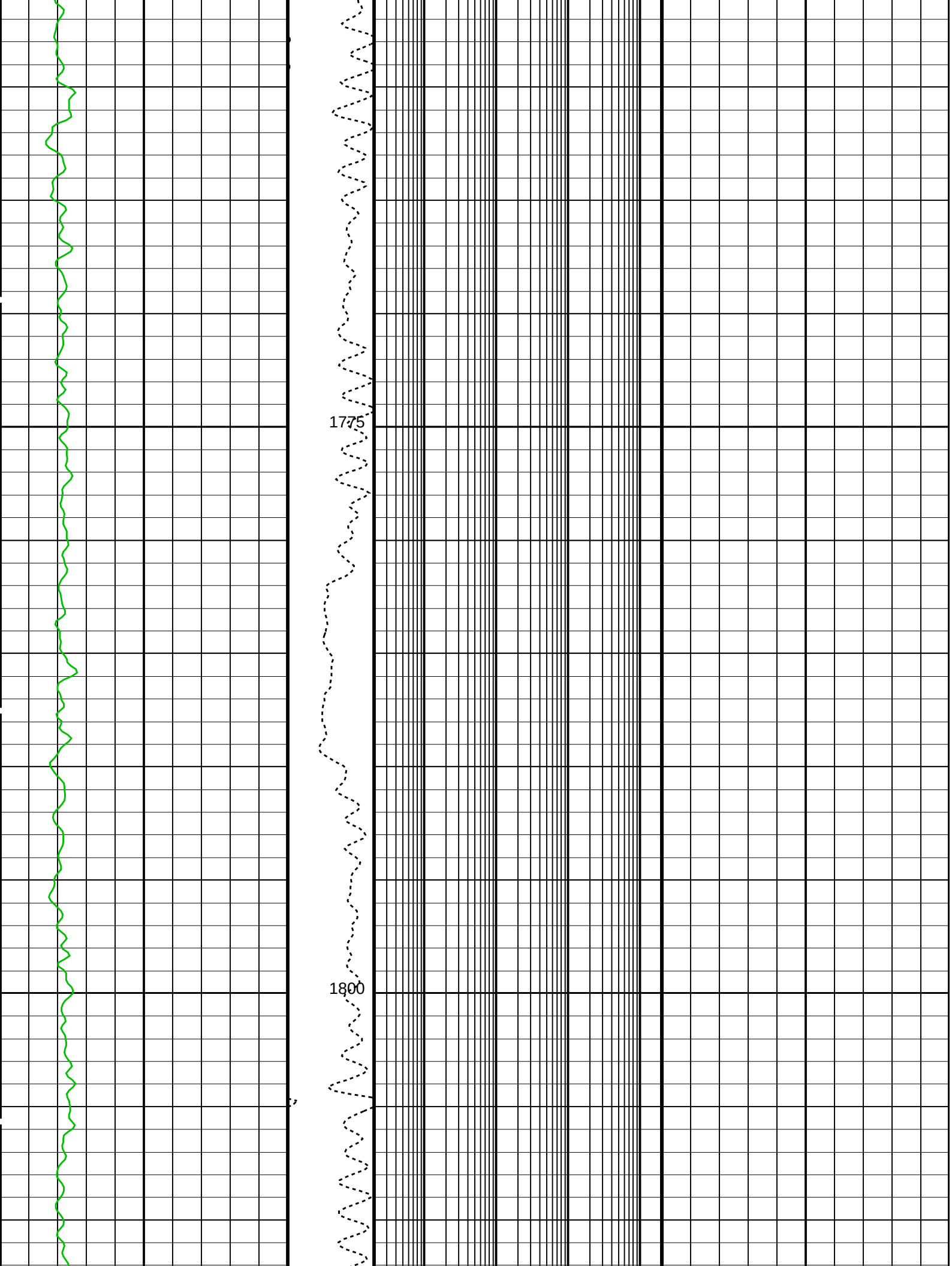
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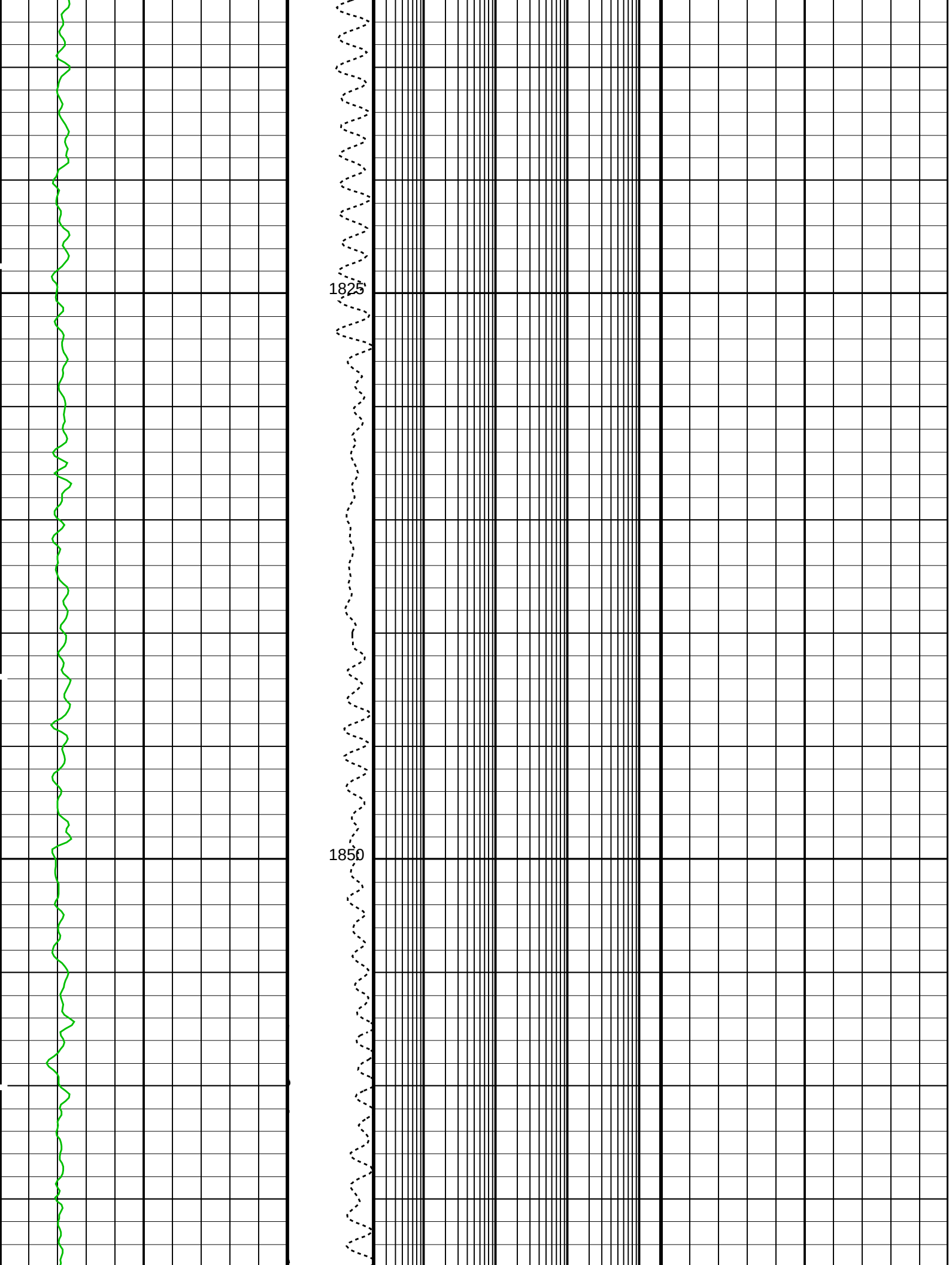
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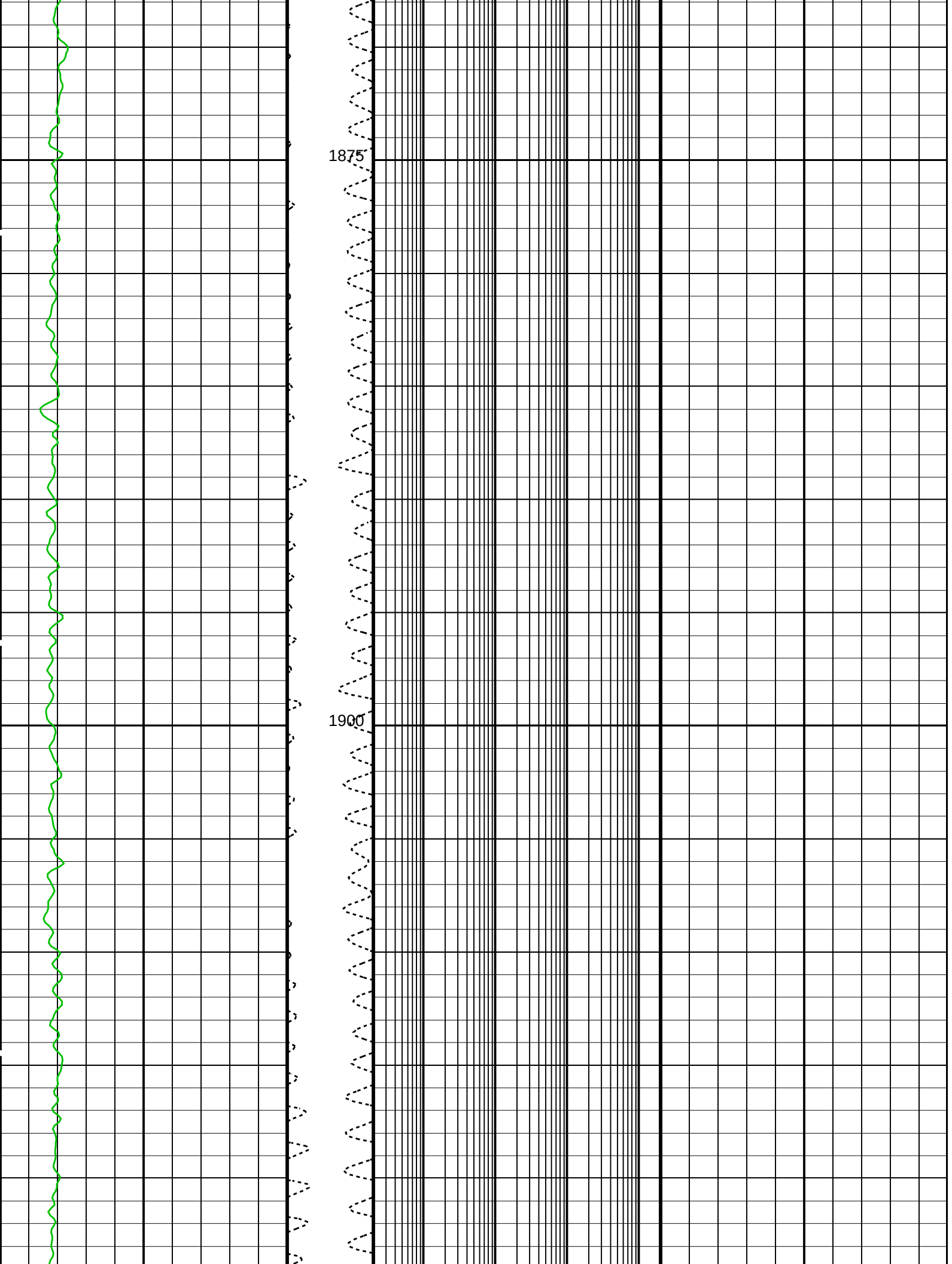
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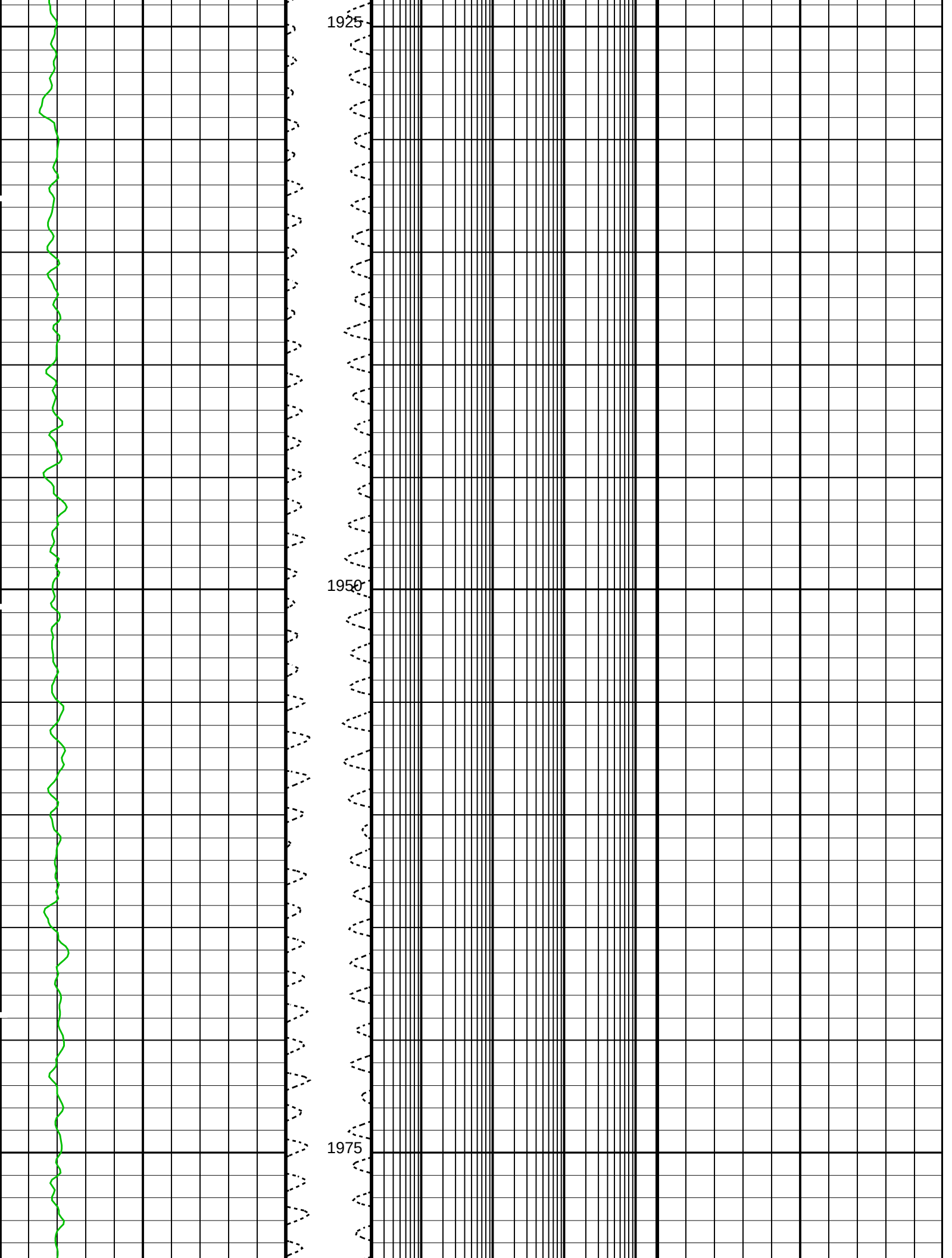
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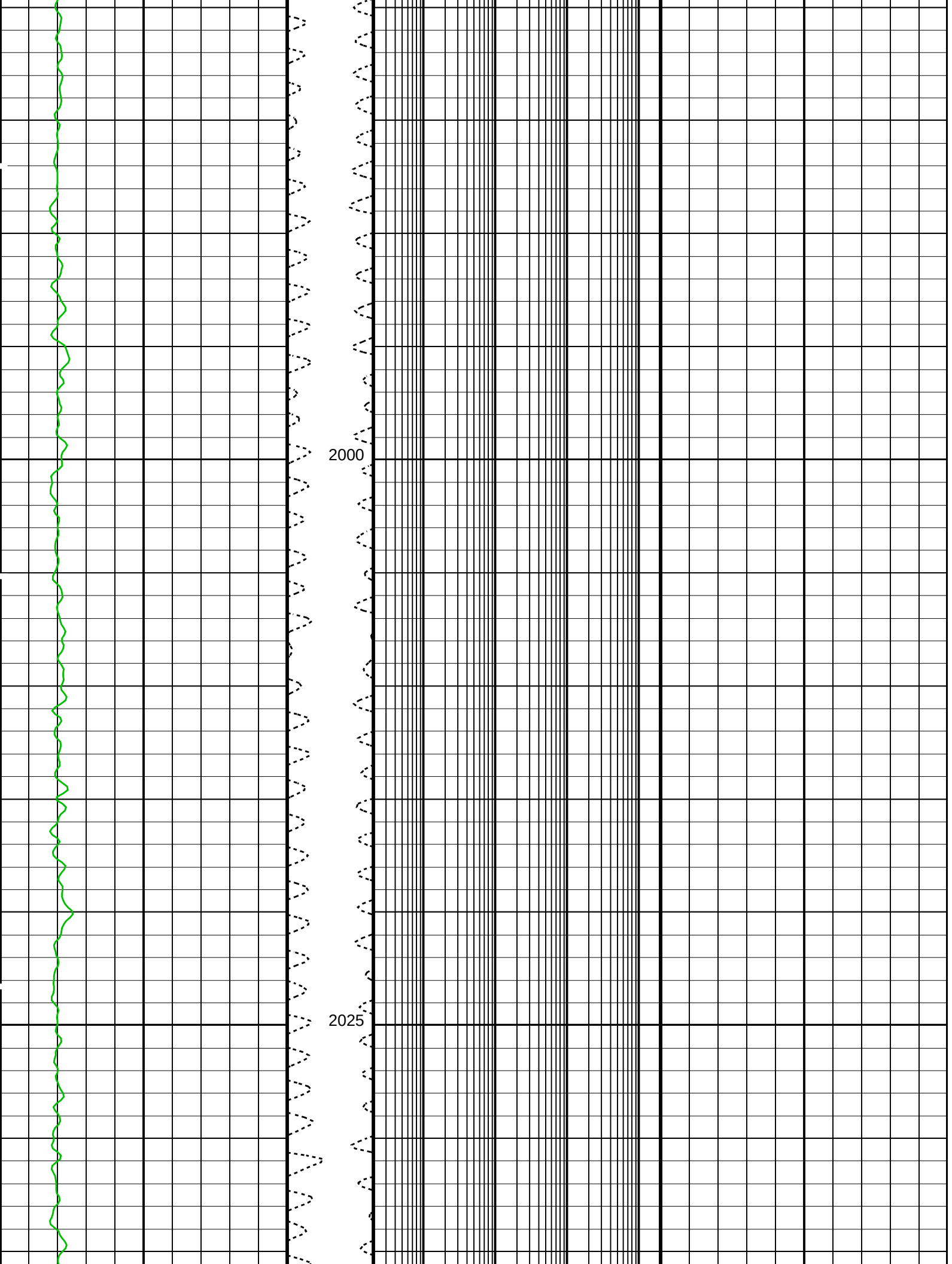
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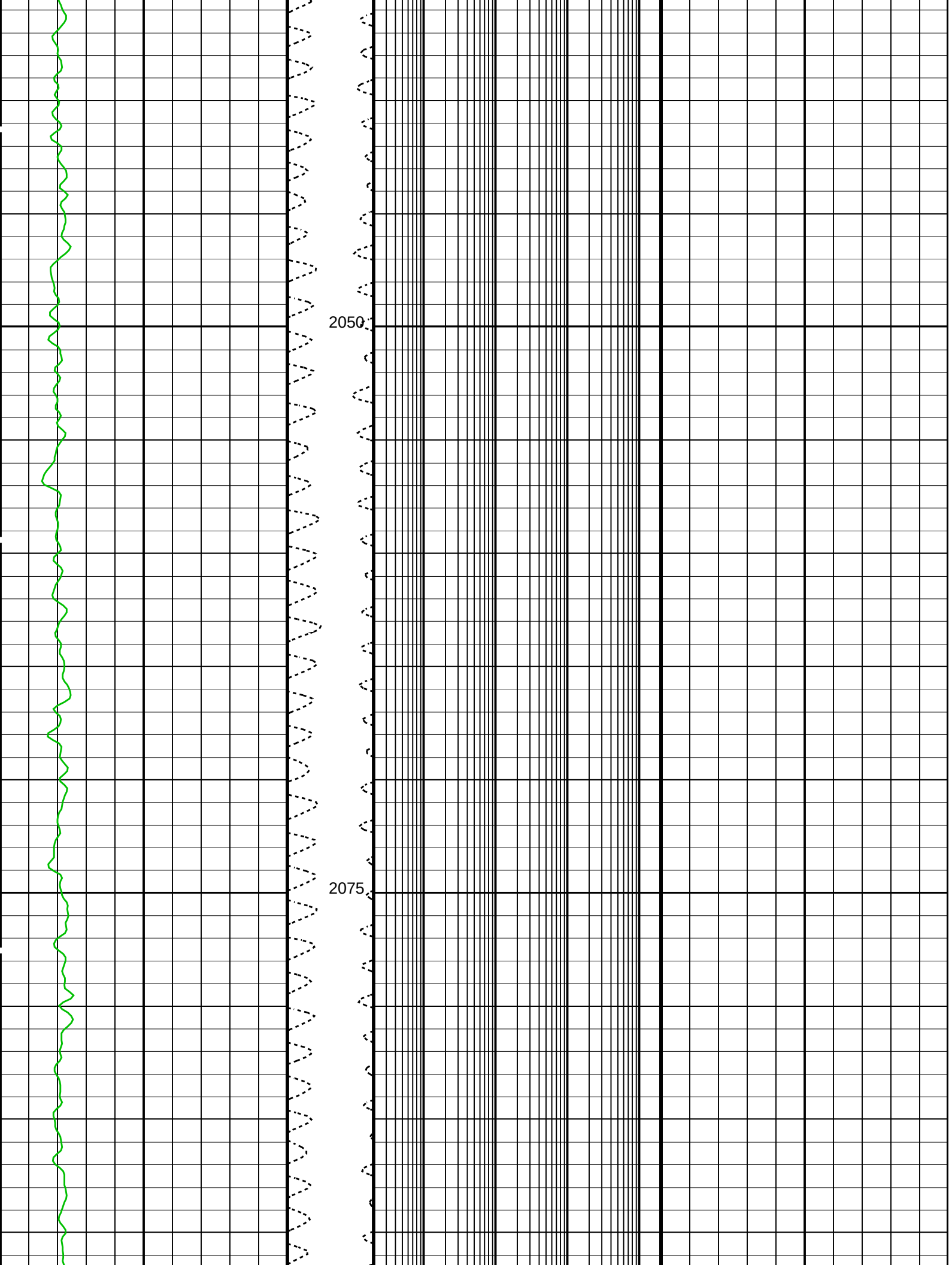
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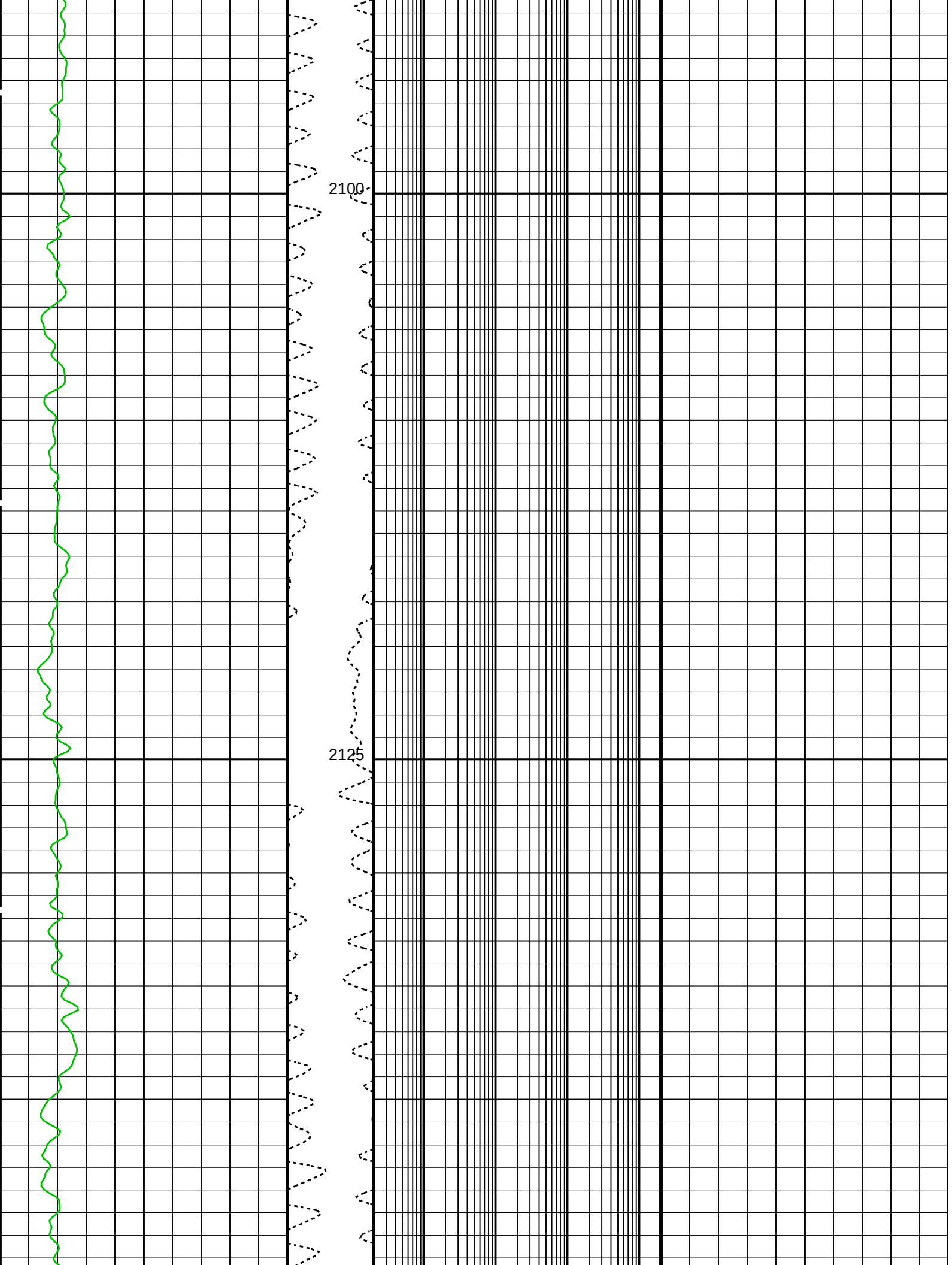
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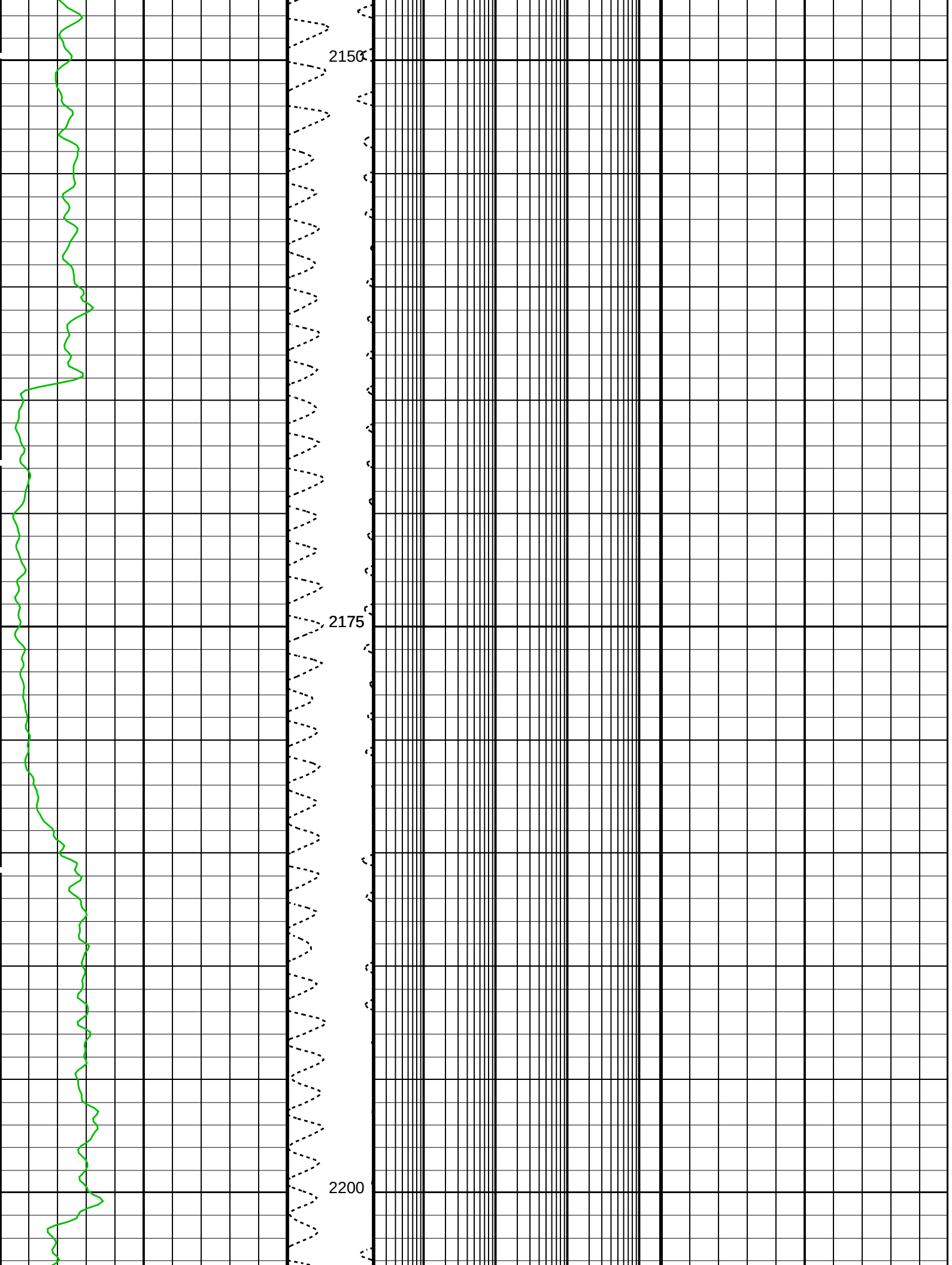
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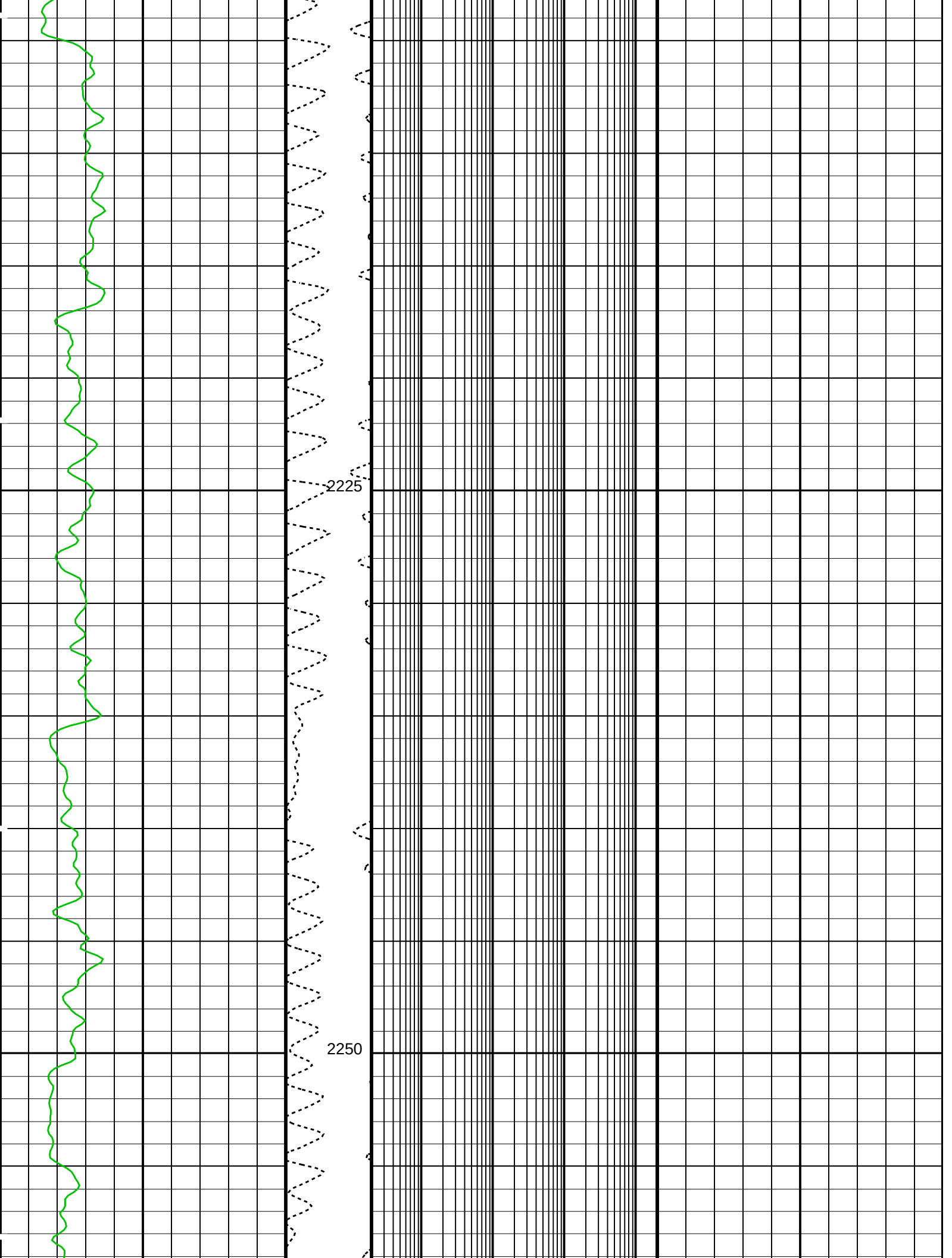
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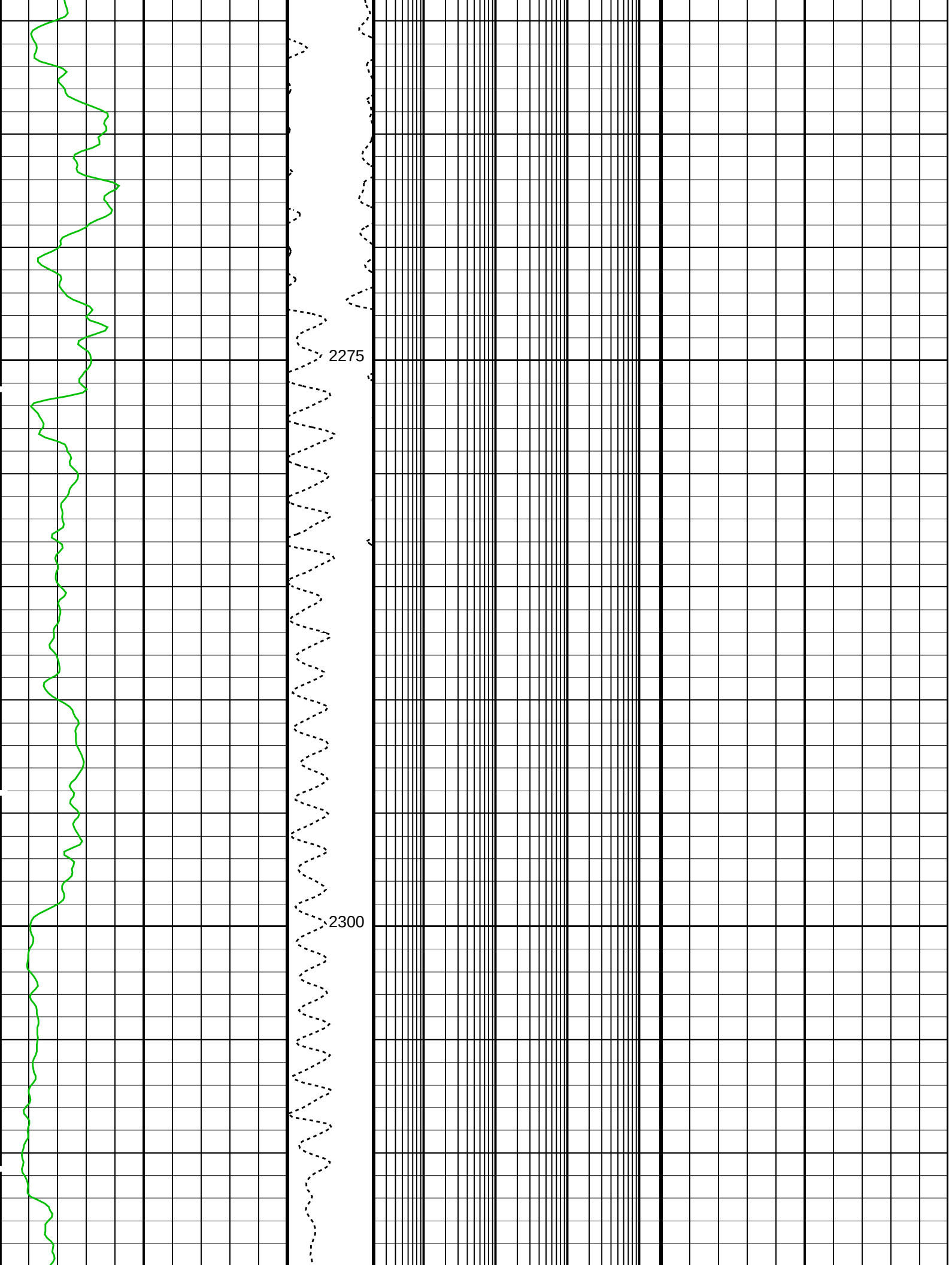
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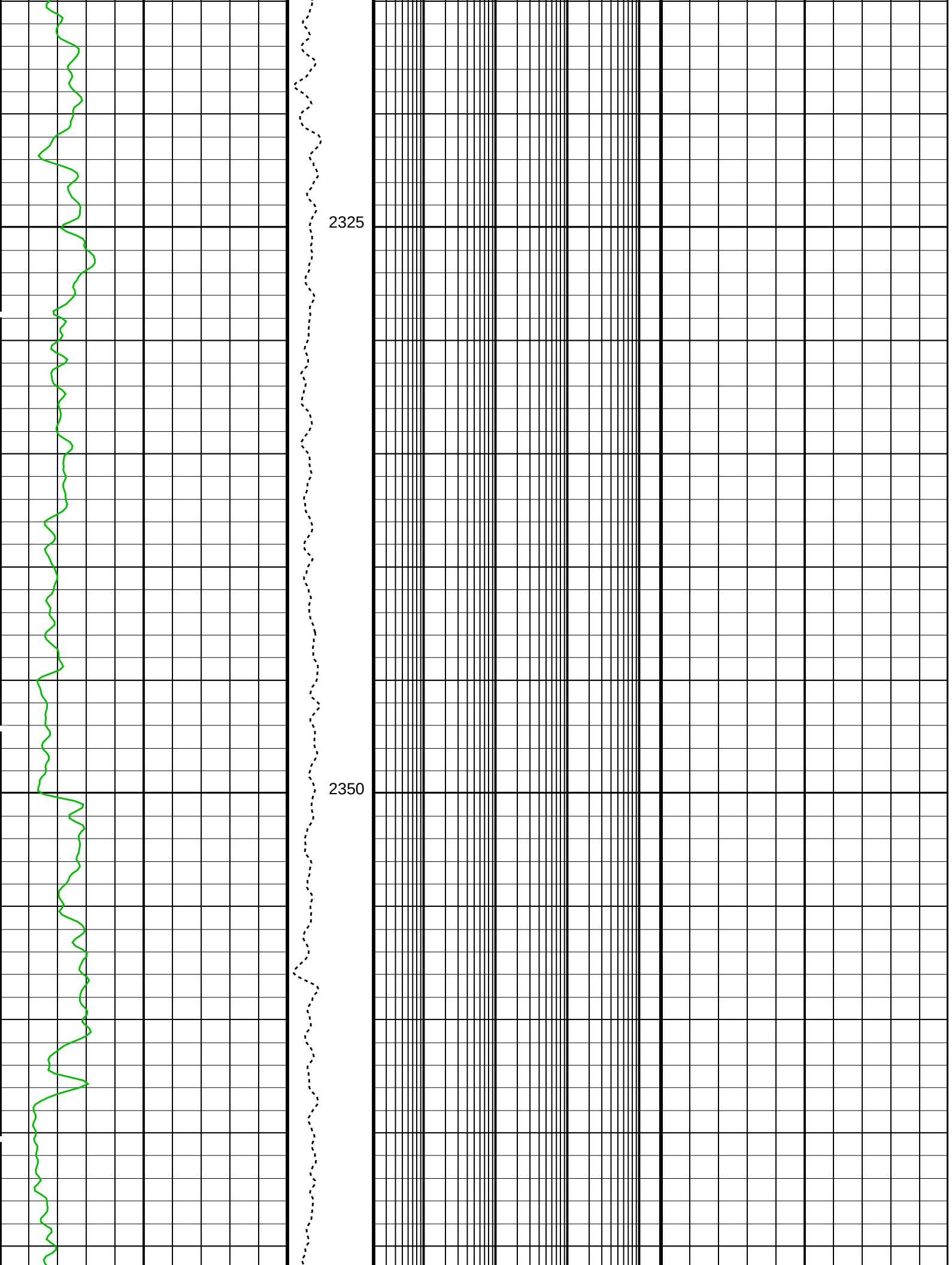
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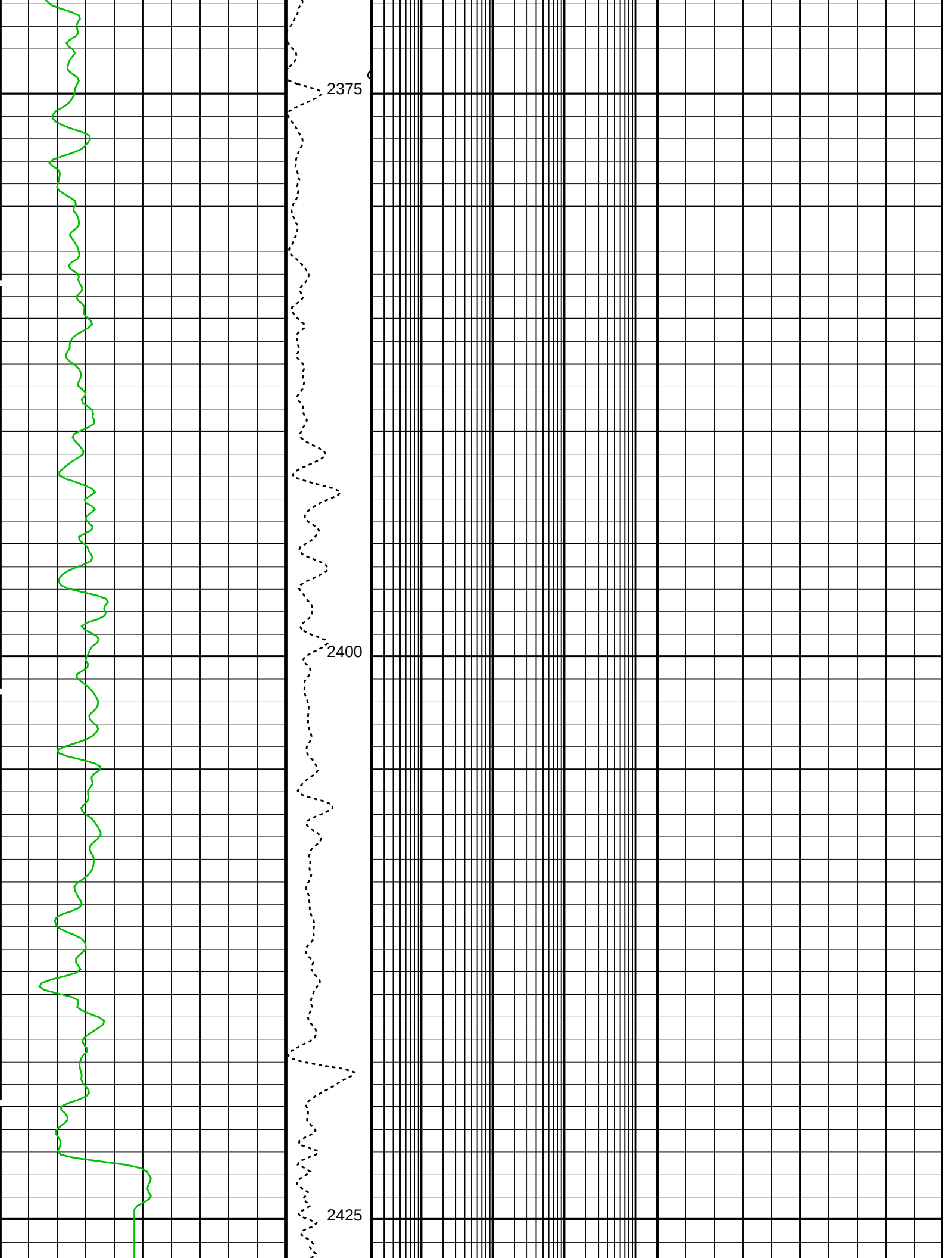
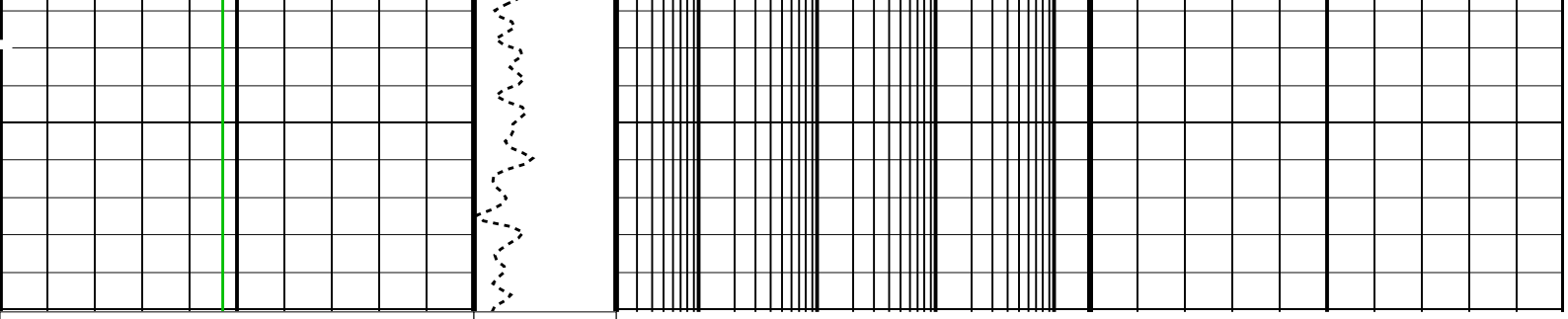

2375
2400
2425



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	System and Miscellaneous	
DO	Depth Offset for Playback	4.4 M
PP	Playback Processing	NORMAL

Format: GR_Casing_200 **Vertical Scale: 1:200** **Graphics File Created: 02−Dec−2004 18:10**

OP System Version: 12C0−301

MCM

SPE−A	12C0−301	HRLT−B	12C0−301
HILTH−FTB	12C0−301	CMRT−B	12C0−301
DTC−H	12C0−301		

Input DLIS Files

DEFAULT	HRLA_TLD_MCFL_CNL_021LUP	FN:33	PRODUCER	02−Dec−2004 11:23	2439.4 M	18.3 M

Output DLIS Files

DEFAULT	HRLA_TLD_MCFL_CNL_032PUP	FN:31	PRODUCER	02−Dec−2004 18:10

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01							
Before: 24−Nov−2004 13:13							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−318.7	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−328.4	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−329.7	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−327.3	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−319.2	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−322.8	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	331.1	N/A	N/A	9.681	UV

HRLT M0−M1 Voltage Plus − 7	0	N/A	−322.7	N/A	N/A	9.681	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT M12
Before: 24−Nov−2004 13:13

HRLT M1−M2 Voltage Plus − 0	0	N/A	1751	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1809	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1809	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1795	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1750	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1771	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1833	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 7	0	N/A	1781	N/A	N/A	53.42	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT M23
Before: 24−Nov−2004 13:13

HRLT M2−M3 Voltage Plus − 0	0	N/A	1738	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1804	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1807	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1797	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1747	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1769	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1816	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 7	0	N/A	1781	N/A	N/A	53.42	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V34
Before: 24−Nov−2004 13:13

HRLT A3−A4 Voltage Plus − 0	0	N/A	68600	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 1	0	N/A	70910	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	71350	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	71220	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	69230	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	70130	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−70340	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V45
Before: 24−Nov−2004 13:13

HRLT A4−A5 Voltage Plus − 0	0	N/A	68710	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	71110	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	71500	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	71390	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	69350	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	70240	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−70530	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V56
Before: 24−Nov−2004 13:13

HRLT A5−A6 Voltage Plus − 0	0	N/A	68840	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	71190	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	71600	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	71500	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	69480	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	70380	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−70600	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VTP
Before: 24−Nov−2004 13:13

HRLT Torpedo−M0 Voltage − 0	0	N/A	−68200	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−71260	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−71620	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−71470	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−69350	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 5	0	N/A	−70200	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	70650	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 7	0	N/A	−70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VBD
Before: 24−Nov−2004 13:13

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−68200	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−71210	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−71570	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−71440	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−69330	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−70190	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 6	0	N/A	70600	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 7	0	N/A	−70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT ISO
Before: 24−Nov−2004 13:13

HRLT Source Current Plus − 0	0	N/A	384.4	N/A	N/A	8.530	UA

HRLT Source Current Plus − 0	0	N/A	284.4	N/A	N/A	8.520	UA
HRLT Source Current Plus − 1	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 2	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 3	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 4	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 5	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 6	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 7	0	N/A	281.1	N/A	N/A	8.520	UA

High Resolution Laterolog Array − B Wellsite Calibration − HRLT MV
Before: 24−Nov−2004 13:13

HRLT Vertical Voltage Pl − 0	0	N/A	−320.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−324.5	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−324.3	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−319.7	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−308.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−327.0	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	340.7	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	N/A	N/A	9.681	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Stab Measurement Summary
Before: 22−Nov−2004 17:28

BS Window Ratio	0.7324	N/A	0.7368	N/A	N/A	N/A	
BS Window Sum	27590	N/A	27610	N/A	N/A	N/A	CPS
SS Window Ratio	0.4840	N/A	0.4865	N/A	N/A	N/A	
SS Window Sum	12010	N/A	11930	N/A	N/A	N/A	CPS
LS Window Ratio	0.2932	N/A	0.2995	N/A	N/A	N/A	
LS Window Sum	1398	N/A	1385	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Photo−multiplier High Voltages Calibrations
Before: 22−Nov−2004 17:28

BS PM High Voltage (Command)	1347	N/A	1296	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1422	N/A	1424	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1328	N/A	1320	N/A	N/A	N/A	V

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Crystal Quality Resolutions Calibration
Before: 22−Nov−2004 17:28

BS Crystal Resolution	11.70	N/A	11.22	N/A	N/A	N/A	%
SS Crystal Resolution	9.918	N/A	10.37	N/A	N/A	N/A	%
LS Crystal Resolution	8.926	N/A	8.872	N/A	N/A	N/A	%

High resolution Integrated Logging Tool−DTS Wellsite Calibration − MCFL Calibration
Before: 22−Nov−2004 17:45

Raw B0 Resistivity	3875	N/A	3882	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3828	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3827	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HILT Caliper Calibration
Before: 22−Nov−2004 17:45

HILT Caliper Zero Measurement	8.000	N/A	7.870	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	11.87	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration
Before: 22−Nov−2004 17:22

Gamma Ray Background	30.00	N/A	4.018	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkg)	178.4	N/A	178.4	N/A	N/A	16.22	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement
Master: 15−Nov−2004 23:24 Before: 22−Nov−2004 17:24

CNTC Background	25.96	25.96	26.73	N/A	N/A	3.894	CPS
CFTC Background	27.87	27.87	25.37	N/A	N/A	4.181	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration
Before: 24−Nov−2004 11:42

Z−Axis Acceleration	9.810	N/A	9.775	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool−DTS Master Calibration − Inversion results
Master: 15−Nov−2004 21:30

Rho Aluminum	2.596	2.603	−−	−−	−−	−−	G/C3
Rho Magnesium	1.686	1.684	−−	−−	−−	−−	G/C3
Pe Aluminum	2.570	2.558	−−	−−	−−	−−	
Pe Magnesium	2.650	2.630	−−	−−	−−	−−	

High resolution Integrated Logging Tool−DTS Master Calibration − Deviation Summary
Master: 15−Nov−2004 21:30

BS Average Deviation	0	0.5370	−−	−−	−−	−−	%
BS Max Deviation	0	1.364	−−	−−	−−	−−	%
SS Average Deviation	0	0.4926	−−	−−	−−	−−	%
SS Max Deviation	0	1.007	−−	−−	−−	−−	%
LS Average Deviation	0	0.8351	−−	−−	−−	−−	%
LS Max Deviation	0	1.655	−−	−−	−−	−−	%

Combinable Magnetic Resonance Tool − B Master Calibration − Calibration Fixture Measurement
Master: 24−Nov−2004 12:52

Tool Temperature MCAL	27.00	25.23	−−	−−	−−	−−	DEGC
LOOP Measurement MCAL	2300	1685	−−	−−	−−	−−	
Hall Probe B0 MCAL	52.00	52.67	−−	−−	−−	−−	MTES
Cal. Fixture Amplitude MCAL	37.50	28.84	−−	−−	−−	−−	

The GLS−VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :
NCT−B Water Temperature 15.6 DEGC.
Thermal Housing Size 3.378 IN.

High Resolution Laterolog Array − B / Equipment Identification

Primary Equipment:		
HRLT Sonde	HRLS − B	782
Auxiliary Equipment:		
HRLT lower Housing	HRLH − B	705
HRLT Lower Cartridge	HRLC − B	705
HRLT upper Housing	HRUH − B	705
HRLT Upper Cartridge	HRUC − B	705

High Resolution Laterolog Array − B Wellsite Calibration
HRLT M01

Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−318.7	−322.7	−274.3	−371.1
1	Before		−328.4	−322.7	−274.3	−371.1
2	Before		−329.7	−322.7	−274.3	−371.1
3	Before		−327.3	−322.7	−274.3	−371.1
4	Before		−319.2	−322.7	−274.3	−371.1
5	Before		−322.8	−322.7	−274.3	−371.1
6	Before		331.1	322.7	371.1	274.3
7	Before		−322.7	−322.7	−274.3	−371.1
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration
HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1751	1781	2048	1514
1	Before		1809	1781	2048	1514
2	Before		1809	1781	2048	1514
3	Before		1795	1781	2048	1514
4	Before		1750	1781	2048	1514
5	Before		1771	1781	2048	1514
6	Before		−1833	−1781	−1514	−2048
7	Before		1781	1781	2048	1514
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration
HRLT M23

Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1738	1781	2048	1514

0	Before		1738	1781	2048	1514
1	Before		1804	1781	2048	1514
2	Before		1807	1781	2048	1514
3	Before		1797	1781	2048	1514
4	Before		1747	1781	2048	1514
5	Before		1769	1781	2048	1514
6	Before		−1816	−1781	−1514	−2048
7	Before		1781	1781	2048	1514
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V34

Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68600	70000	80500	59500
1	Before		70910	70000	80500	59500
2	Before		71350	70000	80500	59500
3	Before		71220	70000	80500	59500
4	Before		69230	70000	80500	59500
5	Before		70130	70000	80500	59500
6	Before		−70340	−70000	−59500	−80500
7	Before		70000	70000	80500	59500
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68710	70000	80500	59500
1	Before		71110	70000	80500	59500
2	Before		71500	70000	80500	59500
3	Before		71390	70000	80500	59500
4	Before		69350	70000	80500	59500
5	Before		70240	70000	80500	59500
6	Before		−70530	−70000	−59500	−80500
7	Before		70000	70000	80500	59500
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68840	70000	80500	59500
1	Before		71190	70000	80500	59500
2	Before		71600	70000	80500	59500
3	Before		71500	70000	80500	59500
4	Before		69480	70000	80500	59500
5	Before		70380	70000	80500	59500
6	Before		−70600	−70000	−59500	−80500
7	Before					

7	Before		70000	70000	80500	59500
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT_VTP

Idx	Phase	HRLT Torpedo−M0 Voltage Plus_UV	Value	Nominal	Maximum	Minimum
0	Before		−68200	−70000	−59500	−80500
1	Before		−71260	−70000	−59500	−80500
2	Before		−71620	−70000	−59500	−80500
3	Before		−71470	−70000	−59500	−80500
4	Before		−69350	−70000	−59500	−80500
5	Before		−70200	−70000	−59500	−80500
6	Before		70650	70000	80500	59500
7	Before		−70000	−70000	−59500	−80500
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT_VBD

Idx	Phase	HRLT Bridle#9−M0 Voltage Plus_UV	Value	Nominal	Maximum	Minimum
0	Before		−68200	−70000	−59500	−80500
1	Before		−71210	−70000	−59500	−80500
2	Before		−71570	−70000	−59500	−80500
3	Before		−71440	−70000	−59500	−80500
4	Before		−69330	−70000	−59500	−80500
5	Before		−70190	−70000	−59500	−80500
6	Before		70600	70000	80500	59500
7	Before		−70000	−70000	−59500	−80500
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT_ISO

Idx	Phase	HRLT Source Current Plus_UA	Value	Nominal	Maximum	Minimum
0	Before		284.4	284.0	326.6	241.4
1	Before		281.1	281.1	323.3	238.9
2	Before		281.1	281.1	323.3	238.9
3	Before		281.1	281.1	323.3	238.9
4	Before		281.1	281.1	323.3	238.9
5	Before		281.1	281.1	323.3	238.9
6	Before		281.1	281.1	323.3	238.9
7	Before		281.1	281.1	323.3	238.9
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High Resolution Laterolog Array − B Wellsite Calibration

HRLT_MV

Idx	Phase	HRLT Vertical Voltage Plus_UV	Value	Nominal	Maximum	Minimum
0	Before		−320.8	−322.7	−274.3	−371.1
1	Before		−324.5	−322.7	−274.3	−371.1

2	Before		−324.3	−322.7	−274.3	−371.1
3	Before		−319.7	−322.7	−274.3	−371.1
4	Before		−308.6	−322.7	−274.3	−371.1
5	Before		−327.0	−322.7	−274.3	−371.1
6	Before		340.7	322.7	371.1	274.3
7	Before		−322.7	−322.7	−274.3	−371.1
		(Minimum) (Nominal) (Maximum)				

Before: 24−Nov−2004 13:13

High resolution Integrated Logging Tool−DTS / Equipment Identification

Primary Equipment:

HILT high−Resolution Mechanical Sonde	HRMS − H	3736
HILT Rxo Gamma−ray Device	HRGD − H	3737
HILT Nuclear Back−Scatter Detector	HILT − H	
HILT Nuclear Short−Spacing Detector	HILT − H	
HILT Nuclear Long−Spacing Detector	HILT − H	
Micro Cylindrically Focused Log Device	MCFL − H	
GR Logging Source	GLS − VJ	2957
HILT High Res. Control Cartridge	HRCC − H	3724

Auxiliary Equipment:

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Stab Measurement Summary

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.7368	Before		0.4865	Before		0.2995
	0.6958 (Minimum) 0.7324 (Nominal) 0.7690 (Maximum)			0.4598 (Minimum) 0.4840 (Nominal) 0.5082 (Maximum)			0.2785 (Minimum) 0.2932 (Nominal) 0.3079 (Maximum)	
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		27610	Before		11930	Before		1385
	26210 (Minimum) 27590 (Nominal) 28970 (Maximum)			11410 (Minimum) 12010 (Nominal) 12610 (Maximum)			1328 (Minimum) 1398 (Nominal) 1468 (Maximum)	

Before: 22−Nov−2004 17:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Photo−multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		1296	Before		1424	Before		1320
	1247 (Minimum) 1347 (Nominal) 1447 (Maximum)			1322 (Minimum) 1422 (Nominal) 1522 (Maximum)			1228 (Minimum) 1328 (Nominal) 1428 (Maximum)	

Before: 22−Nov−2004 17:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before		11.22	Before		10.37	Before		8.872
	10.70 (Minimum) 11.70 (Nominal) 12.70 (Maximum)			8.918 (Minimum) 9.918 (Nominal) 10.92 (Maximum)			7.926 (Minimum) 8.926 (Nominal) 9.926 (Maximum)	

Before: 22−Nov−2004 17:28

High resolution Integrated Logging Tool−DTS Wellsite Calibration

MCFL Calibration

Phase	Raw B0 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity OHMM	Value
Before		3882	Before		3828	Before		3827
	3565 (Minimum) 3875 (Nominal) 4185 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)	

Before: 22−Nov−2004 17:45

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value

Phase	HLT Caliper Zero Measurement IN	Value	Phase	HLT Caliper Plus Measurement IN	Value
Before		7.870	Before		11.87
	6.000 (Minimum) 8.000 (Nominal) 10.00 (Maximum)			9.000 (Minimum) 12.00 (Nominal) 15.00 (Maximum)	

Before: 22−Nov−2004 17:45

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig − Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		4.018	Before		178.4	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			162.2 (Minimum) 178.4 (Nominal) 194.7 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 22−Nov−2004 17:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		25.96	Master		27.87
Before		26.73	Before		25.37
	5.000 (Minimum) 25.96 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 27.87 (Nominal) 40.00 (Maximum)	

Master: 15−Nov−2004 23:24 Before: 22−Nov−2004 17:24

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Accelerometer Calibration

Phase	Z−Axis Acceleration M/S2	Value
Before		9.775
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 24−Nov−2004 11:42

High resolution Integrated Logging Tool−DTS Master Calibration

Inversion results

Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
Master		2.603	Master		1.684
	2.586 (Minimum) 2.596 (Nominal) 2.606 (Maximum)			1.676 (Minimum) 1.686 (Nominal) 1.696 (Maximum)	
Phase	Pe Aluminum	Value	Phase	Pe Magnesium	Value
Master		2.558	Master		2.630
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)			2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 15−Nov−2004 21:30

High resolution Integrated Logging Tool−DTS Master Calibration

Deviation Summary

Phase	BS Average Deviation %	Value	Phase	SS Average Deviation %	Value	Phase	LS Average Deviation %	Value
Master		0.5370	Master		0.4926	Master		0.8351
	−0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			−1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			−1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	
Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		1.364	Master		1.007	Master		1.655
	−1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			−2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			−3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 15−Nov−2004 21:30

Combinable Magnetic Resonance Tool − B / Equipment Identification

Primary Equipment:

CMR−B Sonde	CMRS − BA	92
CMR Cartridge	CMRC − BA	87

Auxiliary Equipment:

Combinable Magnetic Resonance Tool − B Master Calibration

Calibration Fixture Measurement

Phase	Tool Temperature MCAL DEGC	Value
Master		25.23
	10.00 (Minimum) 27.00 (Nominal) 44.00 (Maximum)	

Phase	LOOP Measurement MCAL	Value
Master		1685
	1500 (Minimum) 2300 (Nominal) 2900 (Maximum)	

Phase	Hall Probe B0 MCAL MTES	Value
Master		52.67
	50.00 (Minimum) 52.00 (Nominal) 55.00 (Maximum)	

Phase	Cal. Fixture Amplitude MCAL	Value
Master		28.84
	25.00 (Minimum) 37.50 (Nominal) 50.00 (Maximum)	

Master: 24−Nov−2004 12:52

Company: **Origin Energy Resources Ltd.**

Schlumberger

Well: **Trefoil−1**
Field: **Trefoil**
Rig: **ENSCO 102**
Country: **Australia**

SP−HRLA−PEX−CMR−C
Nuclear−Resistivity Print
1:200 Scale