Q-Borehole Survey Report

Schlumberger

Survey type:	Checkshot Survey
Company:	Origin Energy Resources Ltd
Well:	Rockhopper-1
Field:	Rockhopper
Country:	Australia
Run:	Suite 3 Run 2 & 3
Date:	4-Jan-2010

Recorded by: O. Mazharullah/P. Guzman

Witnessed by: D. Archer/B. Richards

1 Introduction

A borehole seismic survey was recorded in Suite 3 Run 2 and 3 of the deviated exploration well Rockhopper-1 on 4 Jan 10. This survey included rig source checkshot measurements from 294.1m MD to 2614.6m MD. The data was acquired using 4 levels VSIT-C (15.12 m spacing) downhole tool with a clustered airgun source deployed from the rig.

There were runs performed. The first run was held up at 2450m. The tool was pulled out of hole and additional weights were added. No data was acquired in the first run, except for QC shots on the way down. The second run was held up at 2700m. The planned VSP survey was cancelled due to tools being held up and being unable to reach TD. A checkshot survey was completed instead, as per client request.

2 Data Acquisition

The clustered airgun (3 x 150 cu. Inch G-Gun) was deployed with 51m fixed offset from the well head with an azimuth of 48 deg. The guns were submerged 5m below the surface of the water using a buoy. The source was hung using the starboard crane. The detail of the source set-up is explained in the source information pages.

TRISOR-OFS gun controller was used for auto-tuning the cluster gun. One Calibrated Near-Field hydrophones was recorded at 1.25 m below the center of the cluster gun. This report includes the QC plots such as tuning errors, gun pressure and gun depth from the gun controller.

A minimum of 3 good shots was recorded for check-shot survey.

The reference log (PEX-HRLA-SP-GR dated 28 Dec 09) was used for the depth correlation. GR log was recorded simultaneously during the borehole seismic survey. Depth offset 1m (shallower) of the main survey was observed. This report includes original GR log with the cable speed curve.

3 Transit Time Measurement

The measured transit time corresponds to an arrivals time recorded by the downhole sensors. TRISOR Gun controller fires a gun at Time-Zero, when the downhole signals starts recording. First break-time picking is applied on the transformed geophone data using an inflection point tangent algorithm.

4 Transit Time Correction to Datum

The correction of the survey geometry and a static shift were applied to the stack data in order to obtain vertical travel time. The downhole receiver positions were corrected using well directional survey. A surface velocity of 1520 m/sec was used for static correction.

Depth vs Vertical time (OWT and TWT) listing is presented after the correction of tide (average [tide] m) and depth offset ([offset] m) done by the data processing center (Perth / Australia). The travel time where the early casing noise distracts a time-picking is corrected by examining the H1(X), H2 (Y) and HMX signal. Seismic Reference Datum is taken from LAT.

Well Information

Company	**Origin Energy Resources Ltd**
Well	**Rockhopper-1**
Field	**Rockhopper**
Country	Australia
State	TAS
Logging Date	4-Jan-2010
Run Number	Suite 3 Run 6 & 7
Service Order	
Well Head (Latitude)	39* 47' 34.18" S
Well Head (Longitude)	145* 26' 21.47" E
Well Head (X Coordinate)	366374.0938 UTM
Well Head (Y Coordinate)	5594071.5000 UTM
Total Depth - Driller	3522.0 m
Total Depth - Logger	
Maximum Hole Deviation	43.5 deg
Azimuth of Maximum Deviation	
Program Version	17C0-154
Bit Size	8.500 in
Recorded by	O. Mazharullah/P. Guzman
Witnessed by	D. Archer/B. Richards

Elevation Information

Permanent Datum	LAT
Elevation Permanent Datum	0.0 m
Above Permanent Datum	26.0 m
Drilling Measured From	DF
Derrick Floor	26.0 m
Ground Level	-74.3 m
Kelly Bush	
Log Measured From	DF
Elevation Log Zero	26.0 m

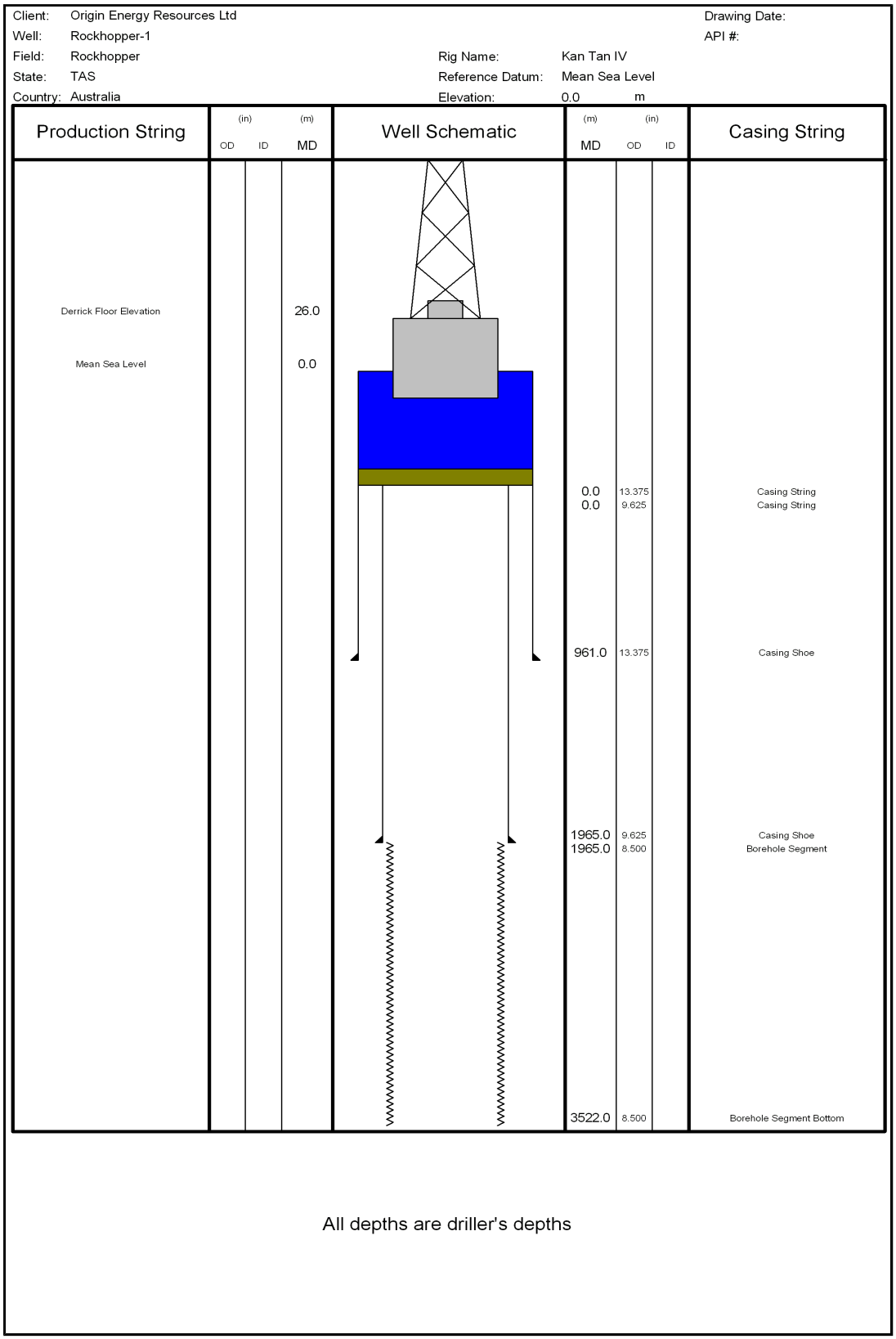
Depth Corrected Information

Water Velocity	1524.0 m/s
Seismic Reference Datum	0.0 m

Remarks

- Rockhopper-1 is a deviated exploration well located in T/18P in the Bass Basin.
- Toolstring run as per toolsketch.
- Deviation data taken from directional drillers.
- MRT is 114degC taken from the logging head thermometers.
- Log was depth correlated to PEX-HRLA-SP-GR log dated 28-Dec-09

Well Sketch


Client: Origin Energy Resources Ltd
Drawing Date:
Well: Rockhopper-1
API #:
Field: Rockhopper
Rig Name: Kan Tan IV
State: TAS
Reference Datum: Mean Sea Level
Country: Australia
Elevation: 0.0 m
Production String
(in) (m)
OD ID MD
Well Schematic
(m) (in)
MD OD ID
Casing String
Derrick Floor Elevation 26.0
Mean Sea Level 0.0
0.0 13.375 Casing String
0.0 9.625 Casing String
961.0 13.375 Casing Shoe
1965.0 9.625 Casing Shoe
1965.0 8.500 Borehole Segment
3522.0 8.500 Borehole Segment Bottom
All depths are driller's depths

MD (m)	Inclination (deg)	Azimuth (deg)	TVD (m)
100.3	0	0	100.3
242.36	0.22	278.1	242.36
327.42	0.34	318.42	327.42
356.38	0.16	310.14	356.38
414.83	0.43	334.58	414.83
502.13	0.25	356.62	502.13
559.33	0.33	356.35	559.33
645.93	0.22	77.08	645.92
733.4	0.1	264.51	733.39
819.33	0.13	204.11	819.32
907.2	0.22	337.4	907.19
956.77	0.15	112.45	956.76
980.35	0	258.48	980.34
1009.96	0.2	60.48	1009.95
1039.18	0.22	57.43	1039.17
1068.02	0.25	56.38	1068.01
1096.69	0.09	334.71	1096.68
1125.2	0.25	23.41	1125.19
1153.52	0.31	18.55	1153.51
1182.12	0.26	64.52	1182.11
1210.69	0.31	28.33	1210.68
1239.34	0.36	49.88	1239.33
1298.15	0.4	29.51	1298.14
1327.53	0.39	32.18	1327.52
1356.77	0.31	47.29	1356.76
1385.6	0.44	56.1	1385.59
1412.81	0.48	46.3	1412.8
1441.66	0.57	57.51	1441.64
1470.69	0.57	43.73	1470.67
1499.95	0.59	47.75	1499.93
1529.47	0.61	56.99	1529.45
1558.73	0.62	46.69	1558.71
1587.9	0.64	49.02	1587.88
1616.89	0.68	52.55	1616.86
1645.39	0.64	67.47	1645.36
1673.84	0.66	56.91	1673.81
1702.24	0.67	57.55	1702.21
1759.92	0.72	70.24	1759.88
1789.63	0.84	75.16	1789.59
1848.62	0.8	79	1848.58
1876.78	0.9	76.63	1876.73
1905.3	0.76	78.61	1905.25
1934.76	0.91	50.85	1934.71
1951.76	0.68	51.65	1951.7

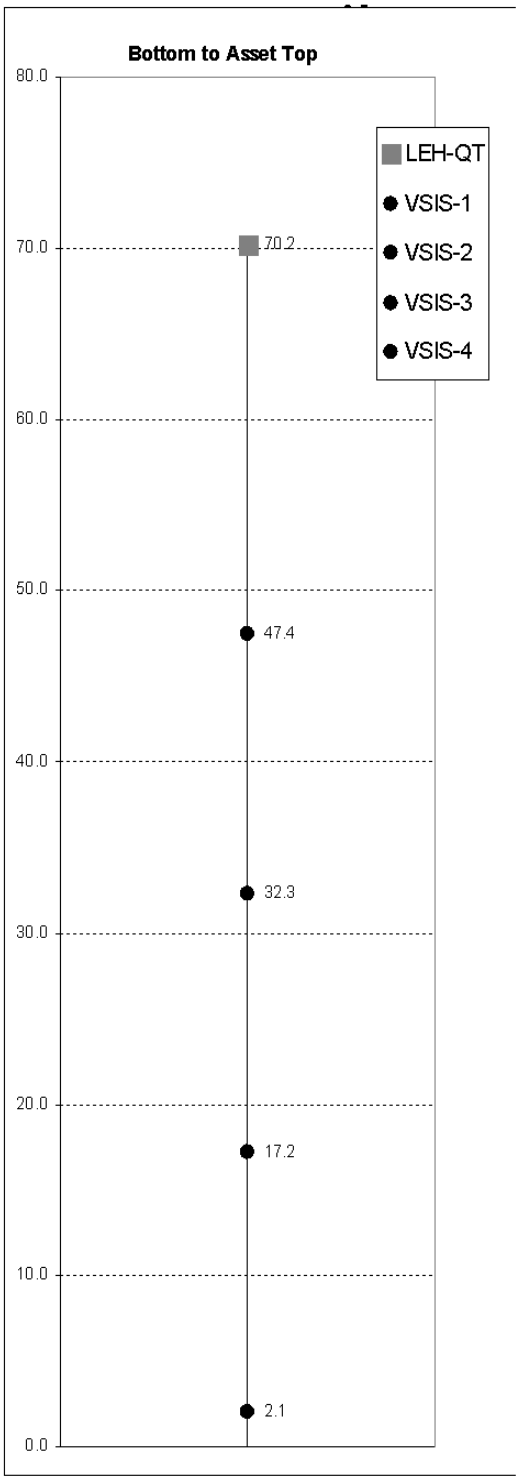
MD (m)	Inclination (deg)	Azimuth (deg)	TVD (m)
1968.42	0.69	57.75	1968.36
1992.64	3.64	23.88	1992.56
2006.9	4.8	20.69	2006.79
2047.71	7.43	22.9	2047.36
2076.22	10.04	18.43	2075.54
2104.97	12.8	14.68	2103.71
2134.78	14.54	10.5	2132.68
2164.31	17.43	9.42	2161.06
2193.36	20.51	7.83	2188.53
2250.02	26.59	5.77	2240.45
2278.27	29.06	6.68	2265.43
2307.32	31.7	6.12	2290.49
2336.99	34.05	2.98	2315.41
2366.57	36.34	359.97	2339.58
2395.13	37.77	356.94	2362.37
2423.37	39.84	355.17	2384.38
2452.17	42.32	354.45	2406.08
2481.68	43.11	354.88	2427.77
2511.39	42.92	354.47	2449.49
2540.16	43.1	354.54	2470.53
2568.35	43.01	353.48	2491.12
2596.31	42.88	354.12	2511.59
2683.98	42.76	356.3	2575.64
2712.3	43.19	356.38	2596.36
2741.97	43.47	355.92	2617.94
2770.22	42.94	356.2	2638.53
2799.07	43.15	356.27	2659.62
2828.79	42.74	355.82	2681.37
2857.71	43.48	356.21	2702.49
2886.29	43.02	355.19	2723.3
2914.35	43.18	355.63	2743.79
2942.96	43	355.89	2764.69
2972.3	43.13	356.1	2786.12
3031.32	43.35	358.13	2829.12
3059.74	43.12	357.42	2849.82
3116.75	42.91	356.52	2891.51
3175.85	42.94	355.93	2934.78
3232.85	42.61	354.97	2976.62
3261.4	42.02	354.71	2997.73
3290.95	42.18	356.09	3019.66
3348.87	42.01	356.27	3062.64
3377.12	41.91	356.1	3083.64
3494.2	41.35	357.89	3171.05
3522	41.35	357.89	3191.91

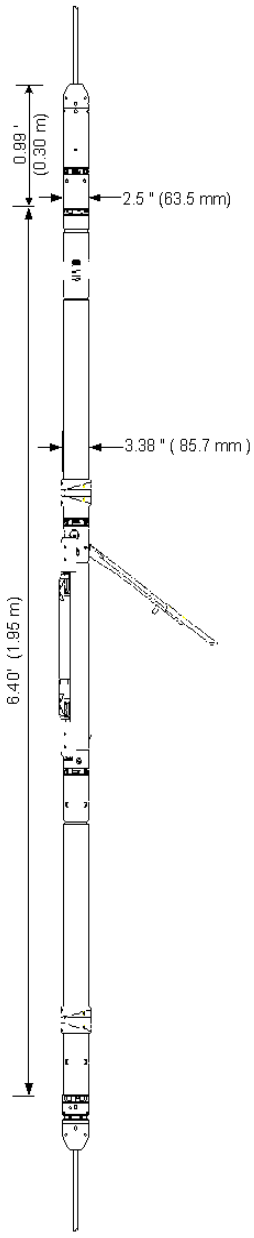
Downhole Equipment Information

Tool Type	VSIT
Surface Equipment	TRISOR-OFS
Combined Tool	EDTC-B #8202
Number of Shuttles	4
Nominal Receiver Spacing	15.12 m
Gimbaled (Y/N)	No
Downhole Geophone Type	GAC-D 3-axis orthogonal
Sensitivity	0.5 V/G 3%
Natural Frequency	20 Hz
Damping Factor	N/A
DC Resistance	1500 Ohms 3% @25 degC
Measurement Specification	
Dynamic range	> 105 dB at 36 dB
Distortion	< -90 dB
Analog Low-Cut filter	0.3 Hz, -6 dB/Oct
Digital Low-Cut filter	None
DC Offset removal	Averaging by surface software
Digital High-Cut filter	Linear phase at down hole
Pass band ripple	+- 0.01 dB
Stop band attenuation	< -130 dB
Bandwidth	80% of Nyquist frequency
Test Signal harmonic distortion	< -110 dB
Tool SN	
VSPC-BA	8104
VSCC-BB	8104
VSII-AB	8596
Receiver #1 (VSIS-CA)	8413
VSII-AB	8439
Receiver #2 (VSIS-CA)	8229
VSII-AB	8331
Receiver #3 (VSIS-CA)	8413
VSII-AB	8595
Receiver #4 (VSIS-CA)	8480
VSIA	

Tool Sketch

	meter
LEH-QT	0.89
EDTC-B	1.98
AH199	0.31
VSPC-BA	3.22
VSCC-BB	3.18
VSII-1	13.17
VSIS-1	1.95
VSII-2	13.17
VSIS-2	1.95
VSII-3	13.17
VSIS-3	1.95
VSII-4	13.17
VSIS-4	1.95
VSIA	0.10
TOTAL	**70.16**





Operation Time Summary

DATE	Time Start	Time Taken hh :mm	OPERATION
4-Jan-10	5:30	01:30	Rig Up VSI
	7:00	00:30	Hang guns into water. Surface checks
	7:30	03:35	RIH @ 6,000 ft/hr
	11:05	00:55	Correlations
	12:00	01:30	RIH for checkshots
	13:30	00:35	Unable to descend through 2450m. POOH to add more weight
	14:05	01:25	Place additional weights onto toolstring
	15:30	00:10	Surface checks of toolstring
	15:40	01:20	RIH @ 6,000 ft/hr
	17:00	00:45	Correlations
	17:45	02:15	Try to go down
	20:00	02:30	Held up at 2700m. Start checkshot survey
	22:30	00:30	Last checkshot survey @ 280.03m.
	23:00	01:00	POOH and rig down
	0:00	00:00	Seismic complete
		18:30	**HRS –TOTAL OPERATING TIME**

Remarks:

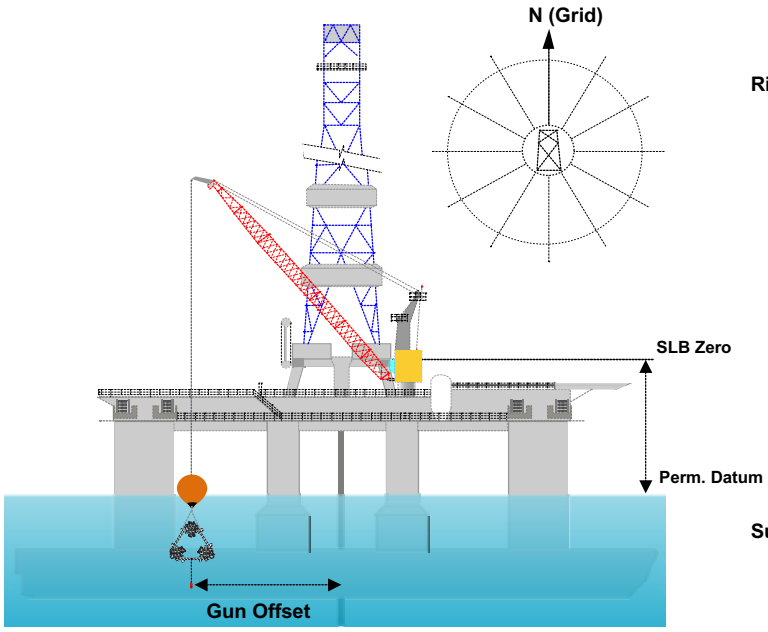
Borehole Seismic Source Information

Engineer: Omar Mazharullah/Wichien Nimmolrat/Patricia Monserrat Jara Guzman
Well Name: Rockhopper-1 **Date:** 04-Jan-2010
Rig: Kan Tan IV

<Geometrical Coordinates> **Longitude:** 145 26' 21.47" E **Latitude:** 39 47' 34.818" S
<UTM Coordinates> **Easting:** 336,374.124 E **Northing:** 5,594,071.5 N

Permanent Datum: LAT
Log Measured From: DF **Elev.** 26.0 **Unit :** m

SRD (Seismic Reference Datum): LAT **Elev.** 0.0 **from SLB zero:** 26.0 (SRDS)
Water Depth: 74.3



RIG Heading: 318.0 deg
Rig Crane used: ☐ Port side ☑ Starboard side
Rig Crane azimuth (from Rig Heading): 90.0 deg

Gun Azimuth (Grid North): 48.0 deg (GAZI)

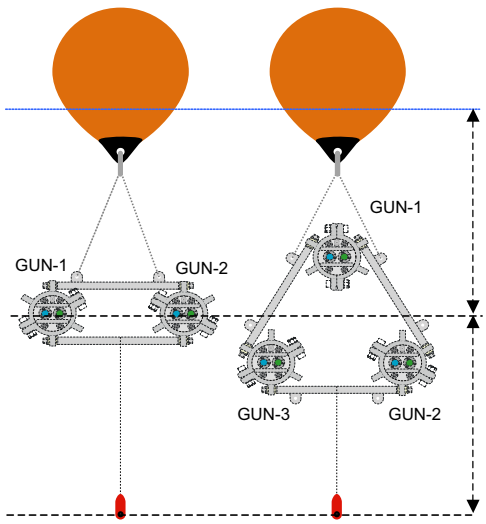
Hy1 Azimuth (Grid North): 48.0 deg
Hy2 Azimuth (Grid North): 48.0 deg
Hy3 Azimuth (Grid North): deg

Gun Offset: 51.0 (GOFF)

Hydrophone-1 Offset: 51.0
Hydrophone-2 Offset: 51.0
Hydrophone-3 Offset:

Surface Velocity: 1524 m/s (SVEL)

Cluster Gun Type:
☐ WSGC-P90 ☑ WSGC-T90



Gun Type:
☑ WSG-G150 (G-Gun 150cu.inch)
☐ WSG-G250 (G-Gun 250cu.inch)

GUN-1 sn: 773101
GUN-2 sn: 451182
GUN-3 sn: 451105

Gun Depth from Local Tide 5.0
Gun Depth from SLB 31.0 (GDSZ)

Hydrophone 1 Type: MP-24L3 (10Hz)
Hydrophone 2 Type: MP-24L3 (10Hz)
Hydrophone 3 Type: none

Hy 1 Depth from Gun	Hy 1 Depth from LT	Hy 1 Depth from SLB zero
1.3	6.3	32.3
Hy 2 Depth from Gun	**Hy 2 Depth from LT**	**Hy 2 Depth from SLB zero**
0.0	5.0	31.0
Hy 3 Depth from Gun	**Hy 3 Depth from LT**	**Hy 3 Depth from SLB zero**

Air Gun Firing Pressure: 1800 psi
Accumulator Pressure (Inlet pressure): 2400 psi

Source of Air supply: Rig Supply
Air Controller (Regulator) Type: WAP-SS01 **sn:** V180001

Sea Condition

Sea Condition: Moderate
Low Tide Level: 0.2
High Tide Level: 2.8
Tide Table available: ☑ Yes ☐ No

Wave Height: 0.0
at 22:00 04/Jan/10
at 03:00 04/Jan/10

Main survey started at 20:00 04/Jan/10
ended at 22:50 04/Jan/10

HSE

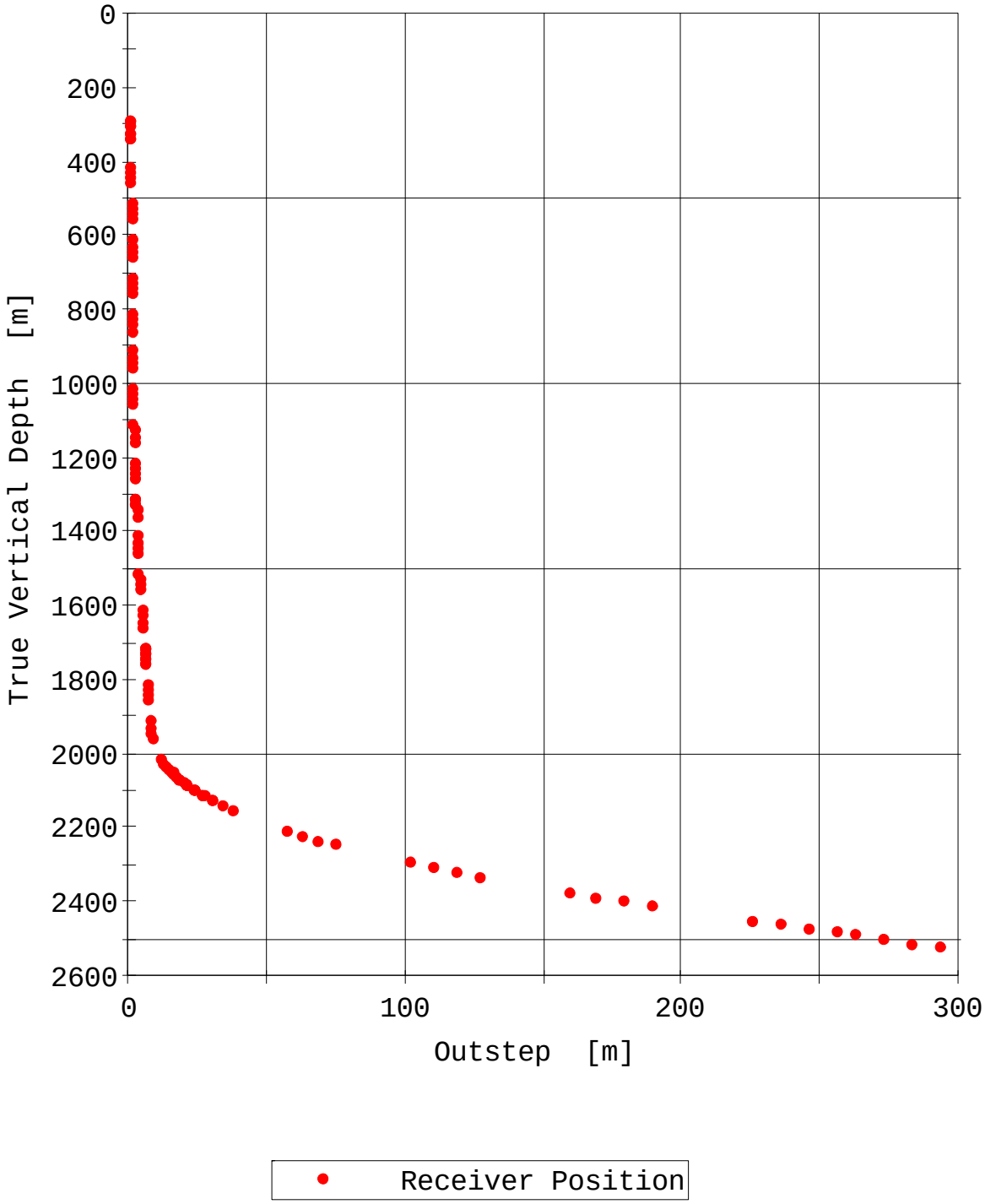
Safe Distance: 500.0

Observation of Marine Mammals
Marine Mammals sighted in 30 minutes before the survey ☑ Yes ☐ No
Soft-Start implemented: ☑ Yes ☐ No

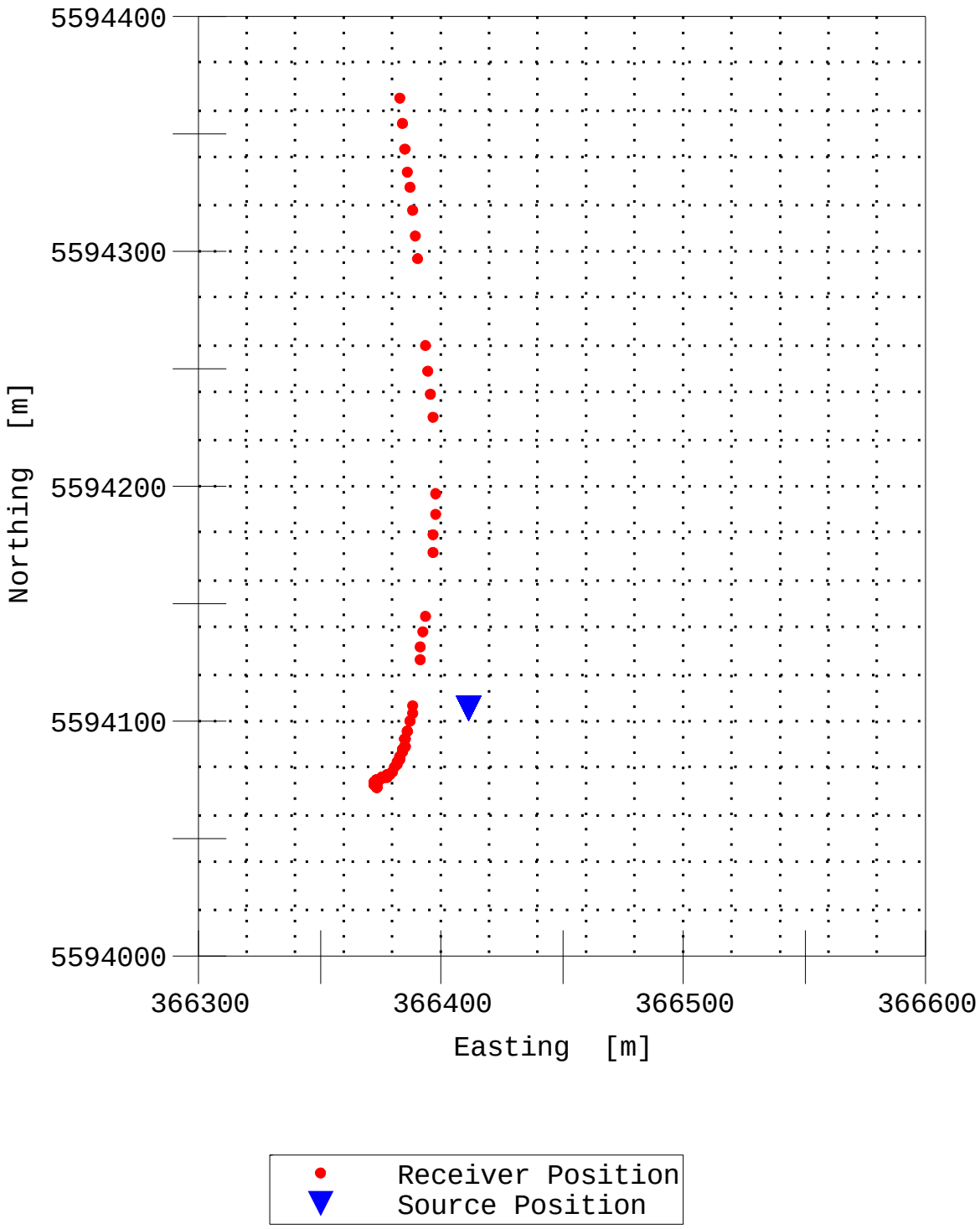
General Information

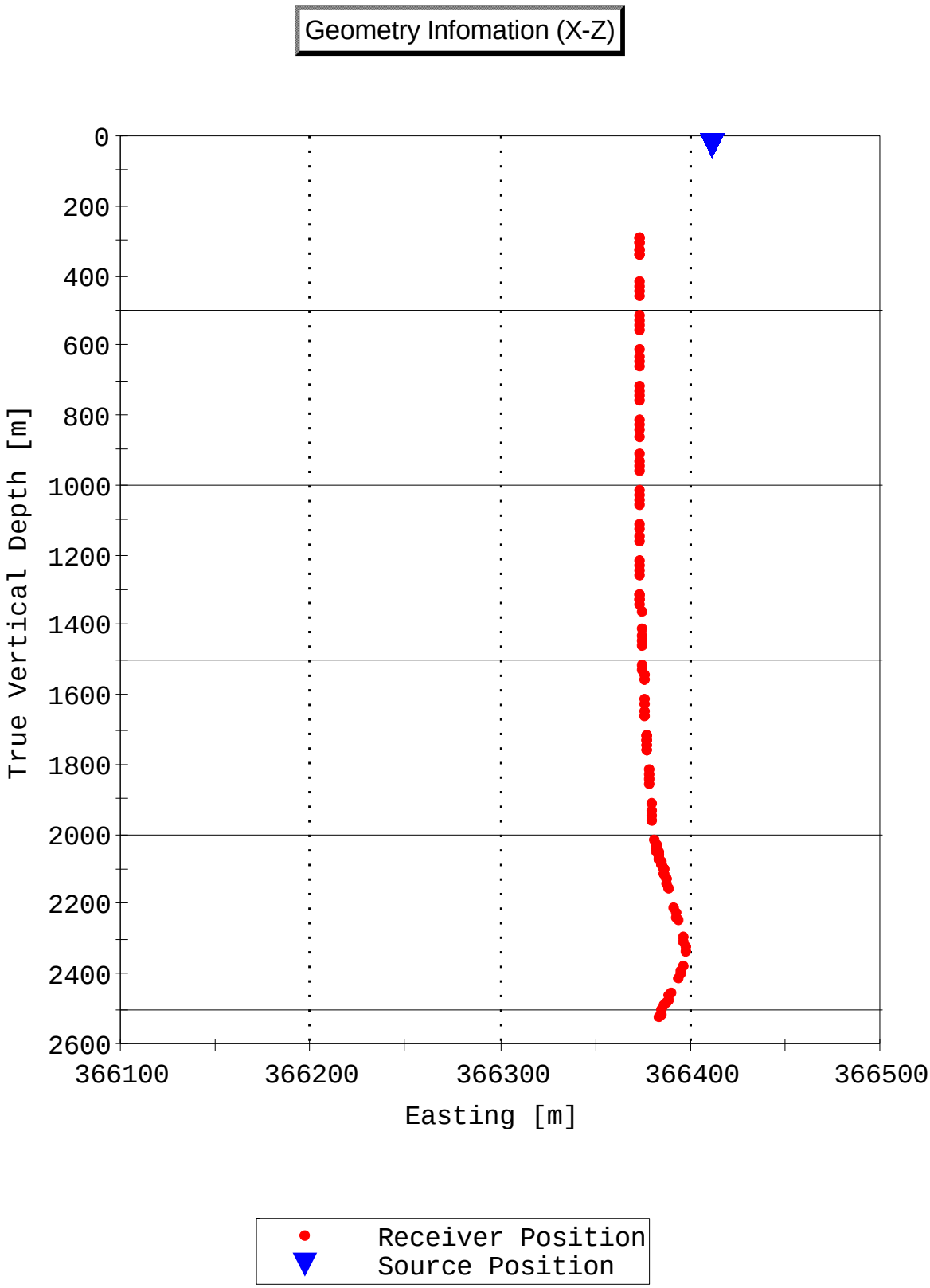
Survey Type	Zero Offset VSP
Surface Recording Length	1024.0 ms
Suface Sampling Rate	0.25 ms
Downhole Recording Length	5000.0 ms
Downhole Sampling Rate	1.0 ms
Top of Survey	294.1 m
Bottom of Survey	2614.6 m
Number of Shots	98
Number of Downhole Traces	392
Number of Downhole Traces used for Processing	369

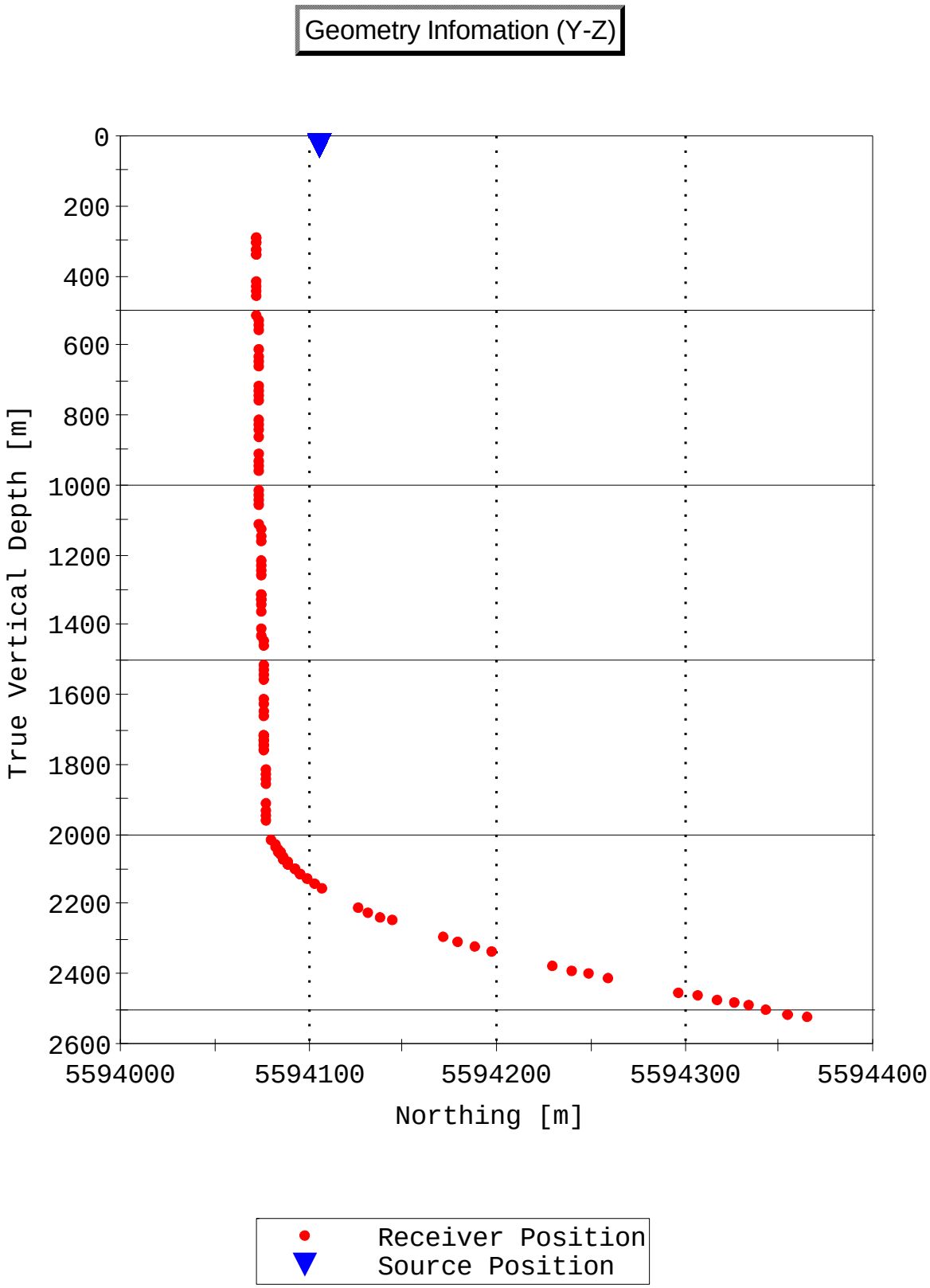
Well Profile

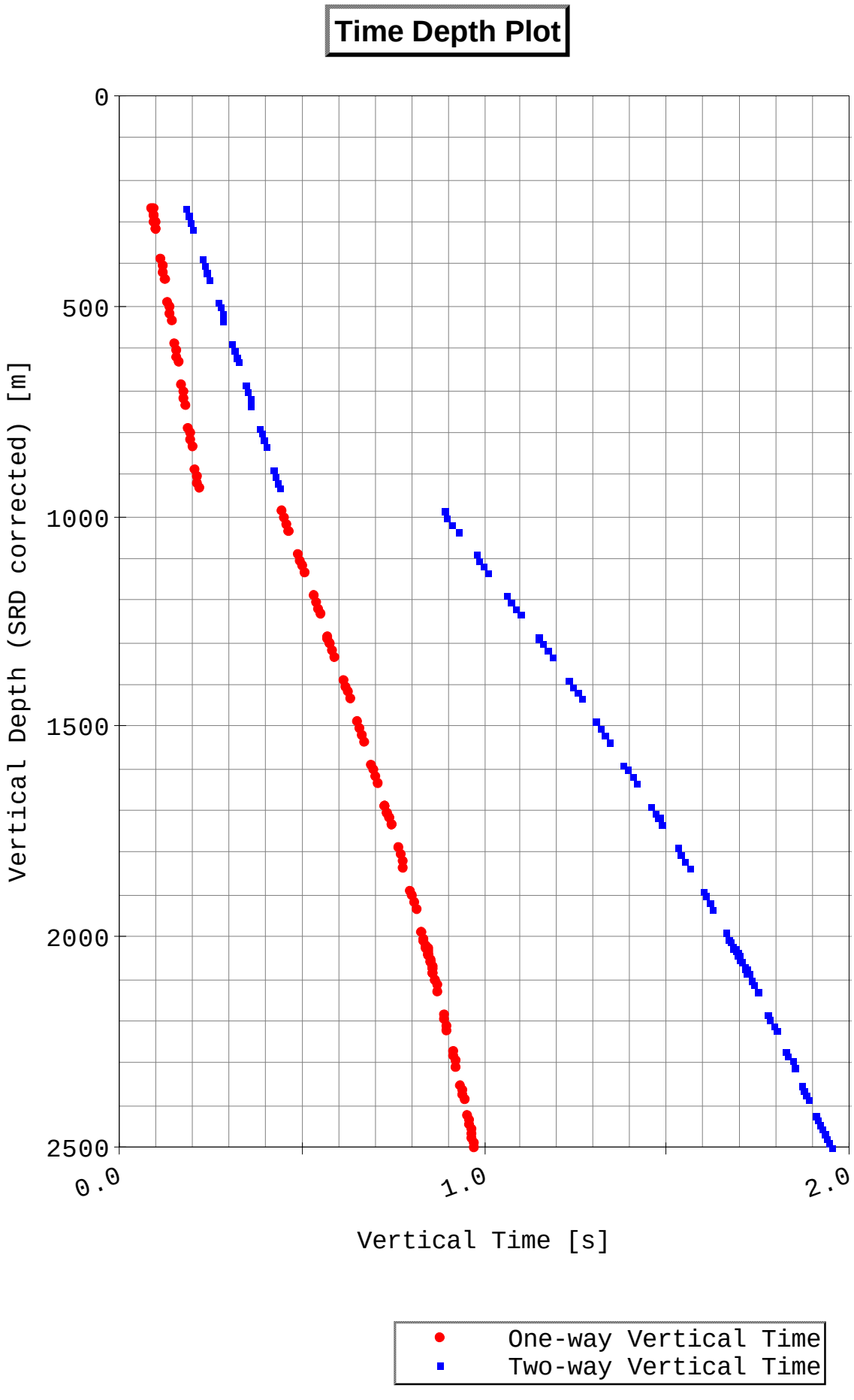


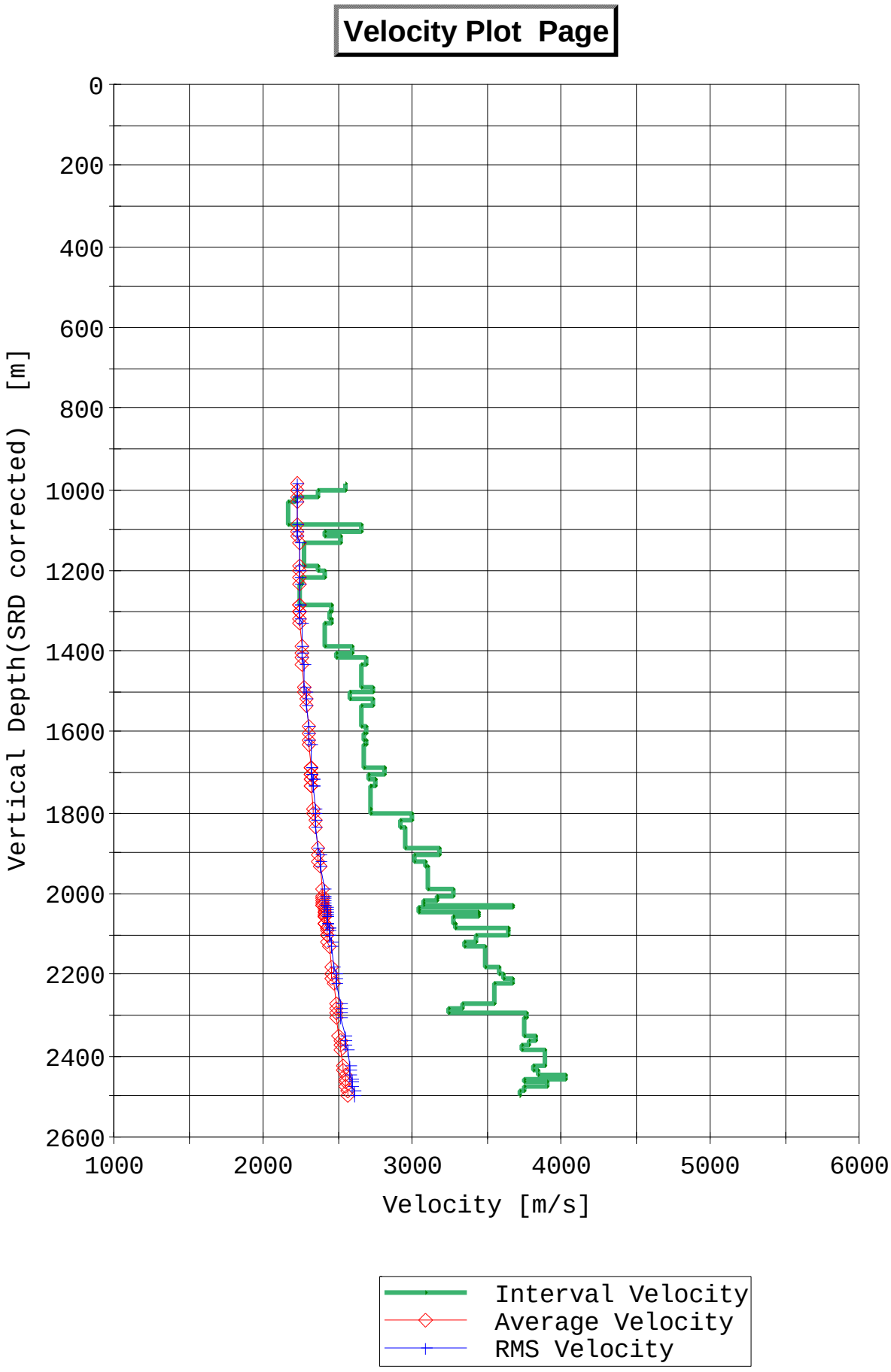
Geometry Infomation (X-Y)




Geometry Infomation (X-Z)
True Vertical Depth [m]
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
366100
366200
366300
366400
366500
Easting [m]
Receiver Position
Source Position


Geometry Infomation (Y-Z)
True Vertical Depth [m]
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
5594000
5594100
5594200
5594300
5594400
Northing [m]
Receiver Position
Source Position


Time Depth Plot
0
500
1000
1500
2000
2500
Vertical Depth (SRD corrected) [m]
0.0
1.0
2.0
Vertical Time [s]
One-way Vertical Time
Two-way Vertical Time


Velocity Plot Page
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
Vertical Depth(SRD corrected) [m]
1000
2000
3000
4000
5000
6000
Velocity [m/s]
Interval Velocity
Average Velocity
RMS Velocity

Stack Summary Listing (1/5) from VSI_005_Rockhopper 1_geo_wavefield_z.ldf

Stack Number	Measured Depth [m]	TVD from SRD [m]	Measured Travel Time [s]	One-way Vertical Time [s]	Two-way Vertical Time [s]	Interval Velocity [m/s]	Average Velocity [m/s]	RMS Velocity [m/s]
		0		0	0			
40	294.1	268.1	0.0898	0.0904	0.1809			
11	294.2	268.2	0.0907	0.0913	0.1826			
40	309.3	283.3	0.0925	0.0932	0.1864			
11	309.3	283.3	0.0936	0.0943	0.1887			
40	324.4	298.4	0.0955	0.0963	0.1927			
11	324.4	298.4	0.0968	0.0976	0.1951			
40	339.5	313.5	0.0986	0.0996	0.1991			
11	339.5	313.5	0.0997	0.1006	0.2013			
39	414.1	388.1	0.1131	0.1143	0.2286			
39	429.2	403.2	0.1160	0.1173	0.2346			
39	444.3	418.3	0.1189	0.1203	0.2405			
39	459.5	433.4	0.1219	0.1233	0.2466			
38	514.1	488.1	0.1321	0.1336	0.2672			
38	529.2	503.2	0.1350	0.1366	0.2732			
38	544.3	518.3	0.1380	0.1396	0.2791			
38	559.5	533.5	0.1409	0.1425	0.2850			
37	614.1	588.1	0.1513	0.1530	0.3060			
37	629.3	603.3	0.1540	0.1557	0.3115			
37	644.4	618.4	0.1570	0.1587	0.3175			
37	659.5	633.5	0.1599	0.1616	0.3233			
36	714.1	688.1	0.1698	0.1716	0.3432			
36	729.3	703.2	0.1728	0.1746	0.3492			
36	744.4	718.4	0.1756	0.1774	0.3548			
36	759.5	733.5	0.1782	0.1800	0.3600			
35	814.1	788.1	0.1891	0.1909	0.3818			
35	829.2	803.2	0.1919	0.1938	0.3875			
35	844.3	818.3	0.1948	0.1967	0.3934			
35	859.5	833.5	0.1977	0.1996	0.3992			
34	914.1	888.1	0.2080	0.2099	0.4199			
34	929.3	903.3	0.2109	0.2128	0.4255			
34	944.4	918.4	0.2137	0.2156	0.4312			

Stack Summary Listing (2/5) from VSI_005_Rockhopper 1_geo_wavefield_z.ldf

Stack Number	Measured Depth [m]	TVD from SRD [m]	Measured Travel Time [s]	One-way Vertical Time [s]	Two-way Vertical Time [s]	Interval Velocity [m/s]	Average Velocity [m/s]	RMS Velocity [m/s]
34	959.5	933.5	0.2161	0.2180	0.4360			
33	1014.1	988.1	0.4420	0.4436	0.8873		2227.3	2227.3
						2559.9		
33	1029.3	1003.3	0.4479	0.4495	0.8991		2231.7	2232.0
						2373.5		
33	1044.4	1018.4	0.4542	0.4559	0.9118		2233.7	2234.1
						2216.6		
33	1059.5	1033.5	0.4611	0.4627	0.9255		2233.4	2233.8
						2168.1		
32	1114.1	1088.1	0.4862	0.4879	0.9759		2230.1	2230.5
						2660.1		
32	1129.2	1103.2	0.4919	0.4936	0.9872		2235.0	2235.9
						2408.0		
32	1144.4	1118.3	0.4982	0.4999	0.9998		2237.2	2238.1
						2528.6		
32	1159.5	1133.5	0.5041	0.5059	1.0117		2240.6	2241.8
						2280.2		
31	1214.1	1188.1	0.5281	0.5298	1.0597		2242.4	2243.5
						2370.1		
31	1229.2	1203.2	0.5344	0.5362	1.0724		2243.9	2245.1
						2418.3		
31	1244.4	1218.3	0.5407	0.5425	1.0849		2246.0	2247.2
						2256.5		
31	1259.5	1233.5	0.5474	0.5492	1.0983		2246.1	2247.3
						2246.0		
30	1314.1	1288.1	0.5717	0.5735	1.1470		2246.1	2247.2
						2463.5		
2	1314.2	1288.2	0.5708	0.5726	1.1452		2246.1	2247.2
						2463.5		
30	1329.3	1303.2	0.5778	0.5796	1.1593		2248.4	2249.6
						2440.1		
2	1329.3	1303.3	0.5769	0.5788	1.1575		2248.4	2249.6
						2440.1		
30	1344.4	1318.4	0.5840	0.5858	1.1717		2250.4	2251.7
						2465.9		
30	1359.5	1333.5	0.5901	0.5920	1.1839		2252.6	2254.0
						2411.1		
29	1414.1	1388.1	0.6128	0.6146	1.2292		2258.5	2260.0
						2605.1		
29	1429.2	1403.2	0.6186	0.6204	1.2409		2261.7	2263.5
						2494.6		
29	1444.4	1418.4	0.6246	0.6265	1.2530		2264.0	2265.8
						2689.4		
29	1459.5	1433.5	0.6302	0.6321	1.2642		2267.8	2270.0
						2656.4		
28	1514.1	1488.1	0.6508	0.6527	1.3054		2280.0	2283.1
						2742.1		
28	1529.3	1503.2	0.6563	0.6582	1.3164		2283.9	2287.4
						2584.3		
28	1544.4	1518.4	0.6621	0.6640	1.3281		2286.5	2290.1
						2738.6		
28	1559.5	1533.5	0.6677	0.6696	1.3391		2290.3	2294.2
						2662.9		
27	1614.0	1588.0	0.6881	0.6900	1.3801		2301.3	2306.0
						2685.2		
27	1629.1	1603.1	0.6937	0.6957	1.3913		2304.4	2309.3
						2674.8		
27	1644.3	1618.2	0.6994	0.7013	1.4027		2307.4	2312.5
						2691.7		
27	1659.4	1633.4	0.7050	0.7069	1.4139		2310.5	2315.7
						2676.3		
26	1714.1	1688.1	0.7254	0.7274	1.4548		2320.7	2326.6
						2812.0		

Stack Summary Listing (3/5) from VSI_005_Rockhopper 1_geo_wavefield_z.ldf

Stack Number	Measured Depth [m]	TVD from SRD [m]	Measured Travel Time [s]	One-way Vertical Time [s]	Two-way Vertical Time [s]	Interval Velocity [m/s]	Average Velocity [m/s]	RMS Velocity [m/s]
5	1714.2	1688.1	0.7251	0.7271	1.4542		2320.7	2326.6
						2812.0		
3	1714.2	1688.1	0.7249	0.7269	1.4537		2320.7	2326.6
						2812.0		
26	1729.2	1703.2	0.7308	0.7328	1.4655		2324.3	2330.6
						2703.9		
3	1729.3	1703.3	0.7304	0.7324	1.4647		2324.3	2330.6
						2703.9		
5	1729.3	1703.3	0.7307	0.7327	1.4654		2324.3	2330.6
						2703.9		
26	1744.3	1718.3	0.7364	0.7384	1.4767		2327.2	2333.6
						2754.4		
5	1744.4	1718.4	0.7362	0.7382	1.4764		2327.2	2333.6
						2754.4		
26	1759.5	1733.4	0.7419	0.7438	1.4877		2330.4	2337.0
						2728.0		
5	1759.5	1733.5	0.7418	0.7438	1.4875		2330.4	2337.0
						2728.0		
25	1814.1	1788.1	0.7619	0.7639	1.5278		2340.8	2348.1
						2715.8		
25	1829.2	1803.2	0.7674	0.7694	1.5389		2343.5	2351.0
						2993.2		
25	1844.4	1818.3	0.7725	0.7745	1.5490		2347.7	2355.7
						2923.8		
25	1859.5	1833.4	0.7777	0.7797	1.5593		2351.6	2359.9
						2961.2		
24	1914.1	1888.1	0.7961	0.7981	1.5962		2365.7	2375.5
						3180.7		
24	1929.2	1903.2	0.8008	0.8029	1.6057		2370.5	2381.1
						3019.3		
24	1944.4	1918.3	0.8058	0.8079	1.6157		2374.5	2385.6
						3098.2		
24	1959.5	1933.4	0.8107	0.8128	1.6255		2378.9	2390.5
						3114.5		
23	2014.1	1988.0	0.8282	0.8303	1.6605		2394.4	2408.0
						3269.4		
23	2029.2	2003.0	0.8328	0.8349	1.6697		2399.2	2413.6
						3162.0		
6	2034.7	2008.4	0.8340	0.8361	1.6722		2399.2	2413.6
						3162.0		
23	2044.4	2018.0	0.8375	0.8396	1.6792		2403.5	2418.5
						3072.0		
6	2049.8	2023.4	0.8387	0.8408	1.6815		2403.5	2418.5
						3072.0		
22	2054.2	2027.7	0.8407	0.8428	1.6856		2406.0	2421.3
						3669.5		
13	2054.9	2028.5	0.8419	0.8440	1.6880		2406.0	2421.3
						3669.5		
23	2059.5	2033.0	0.8421	0.8442	1.6884		2408.2	2424.0
						3052.1		
6	2064.9	2038.4	0.8433	0.8454	1.6909		2408.2	2424.0
						3052.1		
22	2069.3	2042.7	0.8453	0.8474	1.6948		2410.6	2426.6
						3438.6		
13	2070.0	2043.4	0.8466	0.8487	1.6974		2410.6	2426.6
						3438.6		
21	2070.1	2043.5	0.8458	0.8479	1.6958		2410.6	2426.6
						3438.6		
6	2080.0	2053.3	0.8477	0.8498	1.6997		2410.6	2426.6
						3438.6		
20	2084.1	2057.3	0.8495	0.8516	1.7033		2415.7	2432.7
						3283.5		
22	2084.4	2057.5	0.8505	0.8527	1.7053		2415.7	2432.7
						3283.5		

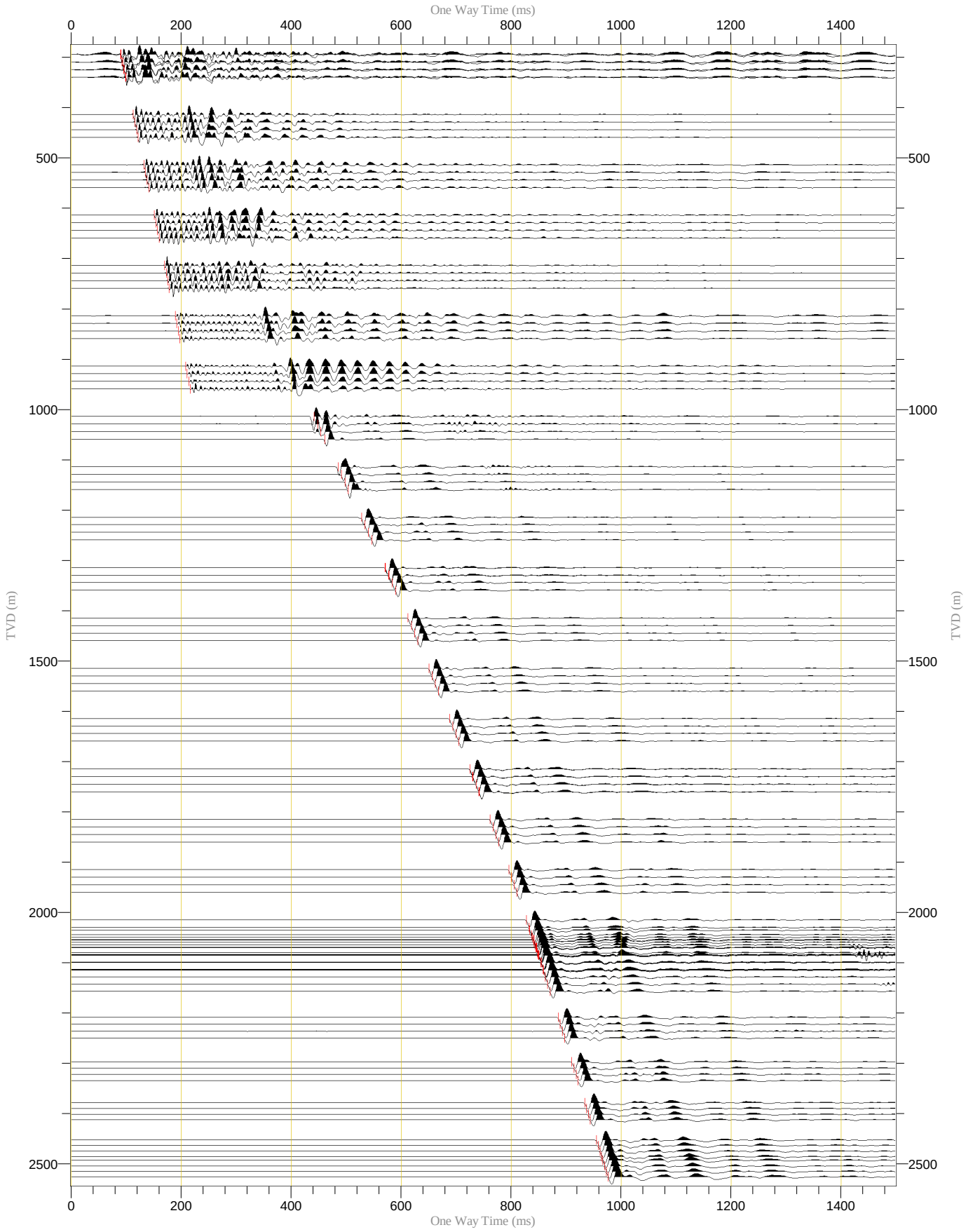
Stack Summary Listing (4/5) from VSI_005_Rockhopper 1_geo_wavefield_z.ldf

Stack Number	Measured Depth [m]	TVD from SRD [m]	Measured Travel Time [s]	One-way Vertical Time [s]	Two-way Vertical Time [s]	Interval Velocity [m/s]	Average Velocity [m/s]	RMS Velocity [m/s]
13	2085.1	2058.3	0.8510	0.8531	1.7062		2415.7	2432.7
						3283.5		
21	2085.2	2058.4	0.8501	0.8523	1.7045		2415.7	2432.7
						3283.5		
20	2099.2	2072.1	0.8540	0.8561	1.7123		2420.3	2438.0
						3289.4		
22	2099.5	2072.4	0.8544	0.8566	1.7131		2420.3	2438.0
						3289.4		
13	2100.2	2073.1	0.8555	0.8577	1.7154		2420.3	2438.0
						3289.4		
21	2100.4	2073.2	0.8545	0.8566	1.7133		2420.3	2438.0
						3289.4		
19	2114.1	2086.6	0.8584	0.8606	1.7211		2424.7	2443.1
						3644.9		
20	2114.4	2086.8	0.8583	0.8604	1.7208		2424.7	2443.1
						3644.9		
21	2115.5	2087.9	0.8587	0.8608	1.7216		2424.7	2443.1
						3644.9		
19	2129.2	2101.3	0.8626	0.8648	1.7296		2424.7	2443.1
						3644.9		
20	2129.5	2101.5	0.8625	0.8646	1.7293		2430.5	2450.2
						3435.7		
19	2144.4	2115.9	0.8667	0.8688	1.7377		2435.3	2455.8
						3356.0		
19	2159.5	2130.4	0.8710	0.8732	1.7463		2439.9	2461.1
						3486.9		
18	2214.1	2181.6	0.8857	0.8878	1.7756		2457.2	2481.5
						3585.5		
18	2229.2	2195.4	0.8896	0.8917	1.7834		2462.1	2487.4
						3609.9		
18	2244.4	2209.3	0.8934	0.8955	1.7910		2467.0	2493.2
						3674.6		
18	2259.5	2222.8	0.8971	0.8992	1.7984		2472.0	2499.2
						3548.0		
17	2314.1	2270.2	0.9108	0.9126	1.8251		2487.7	2517.7
						3330.8		
17	2329.2	2282.9	0.9147	0.9164	1.8328		2491.2	2521.7
						3242.1		
17	2344.4	2295.4	0.9186	0.9202	1.8405		2494.4	2525.1
						3761.7		
17	2359.5	2307.8	0.9220	0.9235	1.8471		2498.9	2530.6
						3753.1		
16	2414.1	2351.2	0.9342	0.9351	1.8702		2514.4	2549.3
						3825.1		
16	2429.2	2362.8	0.9374	0.9381	1.8763		2518.6	2554.4
						3787.3		
16	2444.4	2374.2	0.9407	0.9411	1.8823		2522.7	2559.3
						3736.5		
16	2459.5	2385.5	0.9439	0.9442	1.8883		2526.6	2563.9
						3899.9		
15	2514.1	2425.5	0.9552	0.9544	1.9088		2541.3	2582.0
						3819.4		
15	2529.2	2436.5	0.9584	0.9573	1.9146		2545.2	2586.6
						3846.6		
15	2544.3	2447.6	0.9616	0.9602	1.9204		2549.1	2591.3
						4031.3		
15	2559.4	2458.6	0.9646	0.9629	1.9258		2553.3	2596.5
						3757.6		
14	2569.2	2465.8	0.9668	0.9648	1.9296		2555.7	2599.3
						3900.2		
14	2584.4	2476.8	0.9699	0.9677	1.9353		2559.6	2604.1
						3758.3		
14	2599.5	2487.9	0.9733	0.9706	1.9412		2563.3	2608.4
						3722.2		

Stack Summary Listing (5/5) from VSI_005_Rockhopper 1_geo_wavefield_z.ldf

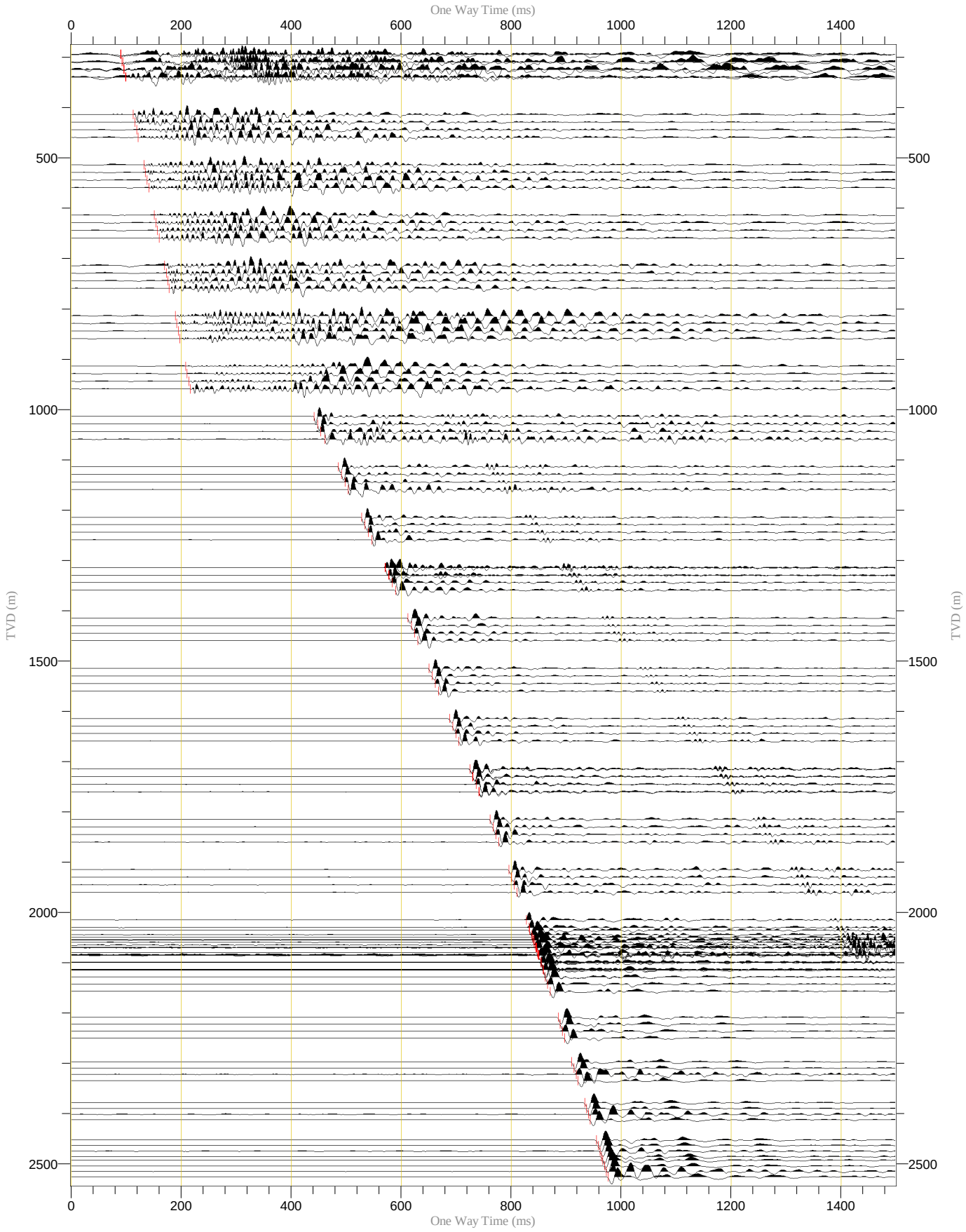
Stack Number	Measured Depth [m]	TVD from SRD [m]	Measured Travel Time [s]	One-way Vertical Time [s]	Two-way Vertical Time [s]	Interval Velocity [m/s]	Average Velocity [m/s]	RMS Velocity [m/s]
14	2614.6	2499.0	0.9766	0.9736	1.9471		2566.8	2612.5

Raw Stack (Z)	Normalization Trace by Trace (100%) Polarity Normal One Way Time (ms) Scaling 10.4 cm/sec, 1/10540	



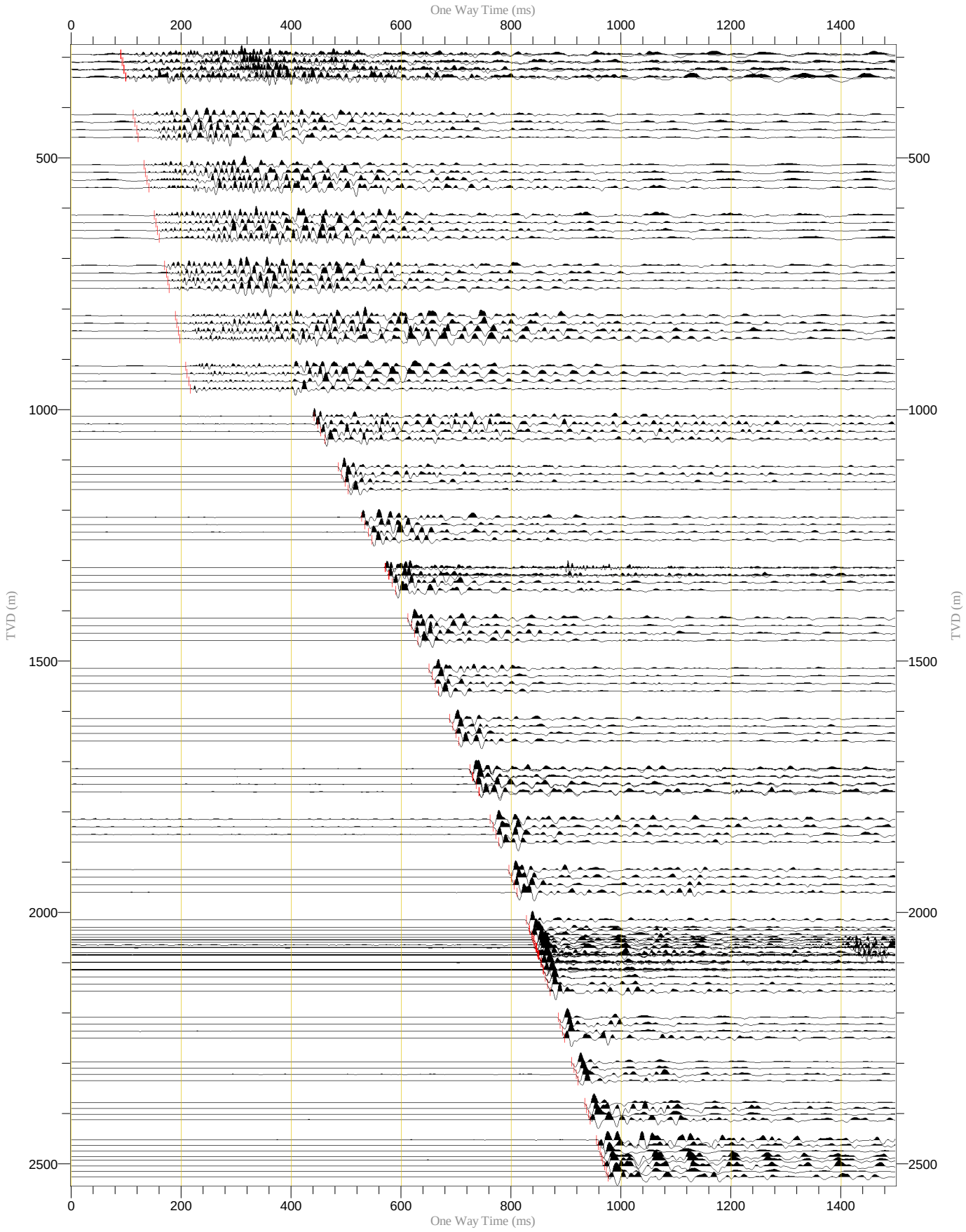
Schlumberger

Raw Stack (X)	Normalization Trace by Trace (100%) Polarity Normal One Way Time (ms) Scaling 10.4 cm/sec, 1/10540	

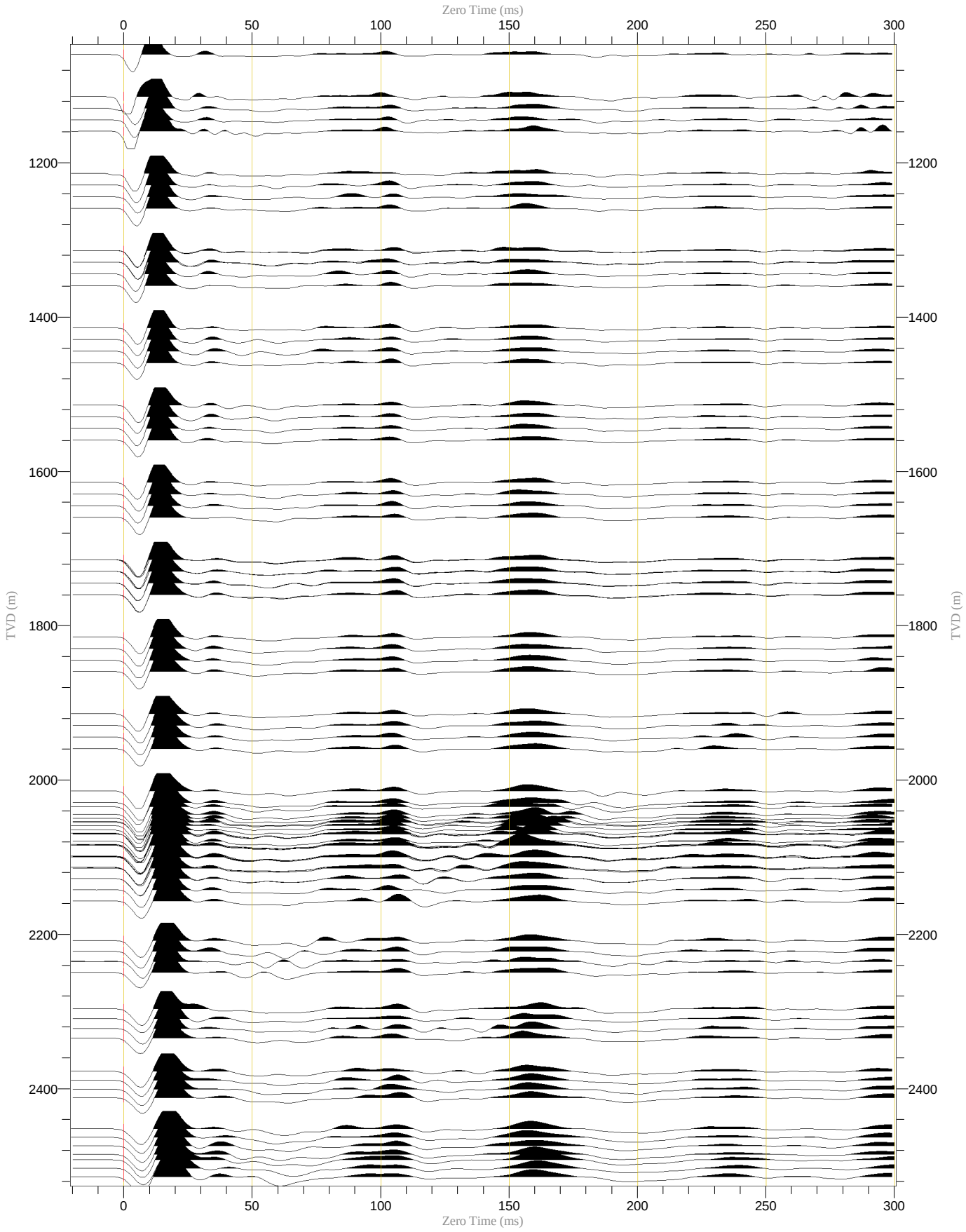


Schlumberger

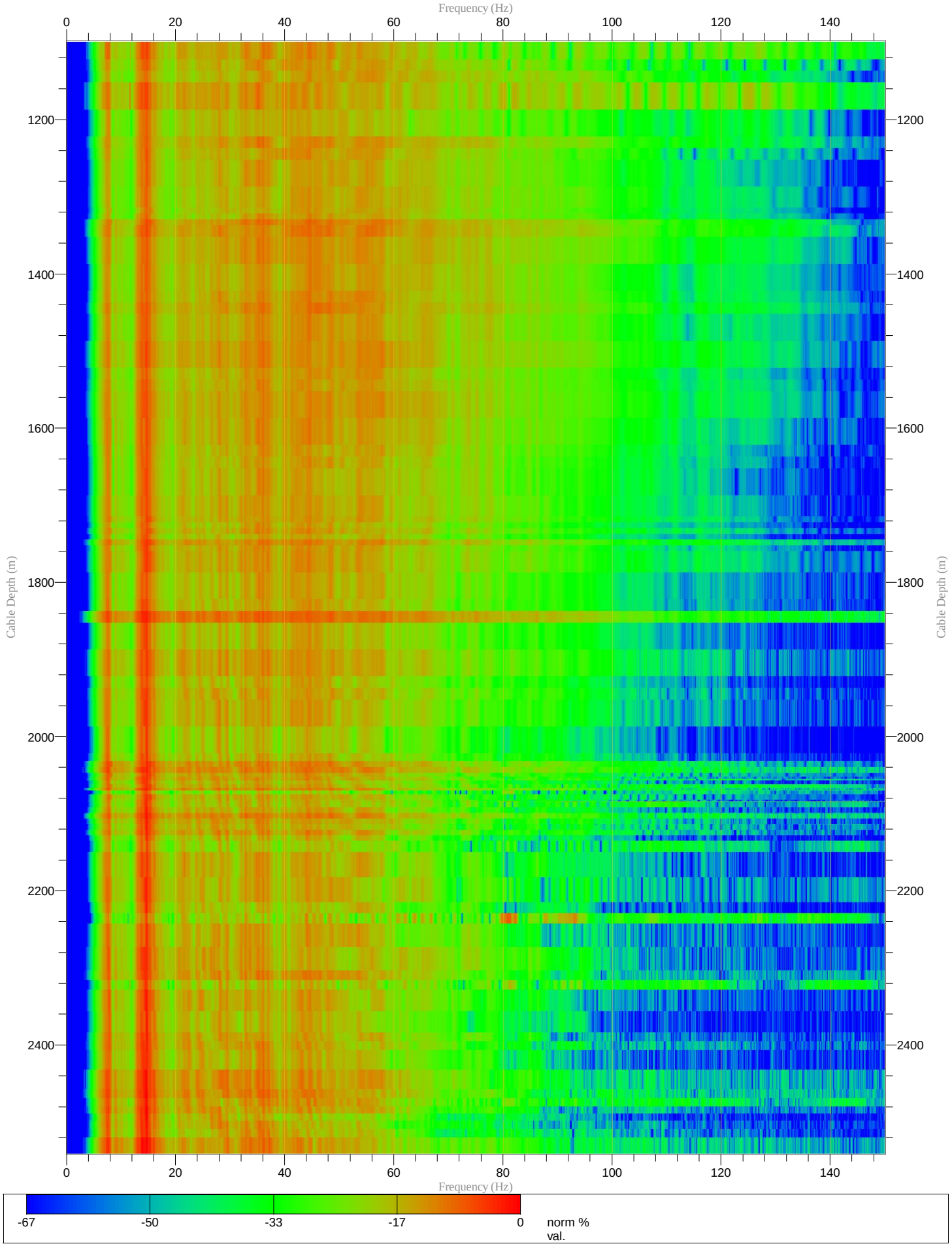
Raw Stack (Y)	Normalization Trace by Trace (100%) Polarity Normal One Way Time (ms) Scaling 10.4 cm/sec, 1/10540	



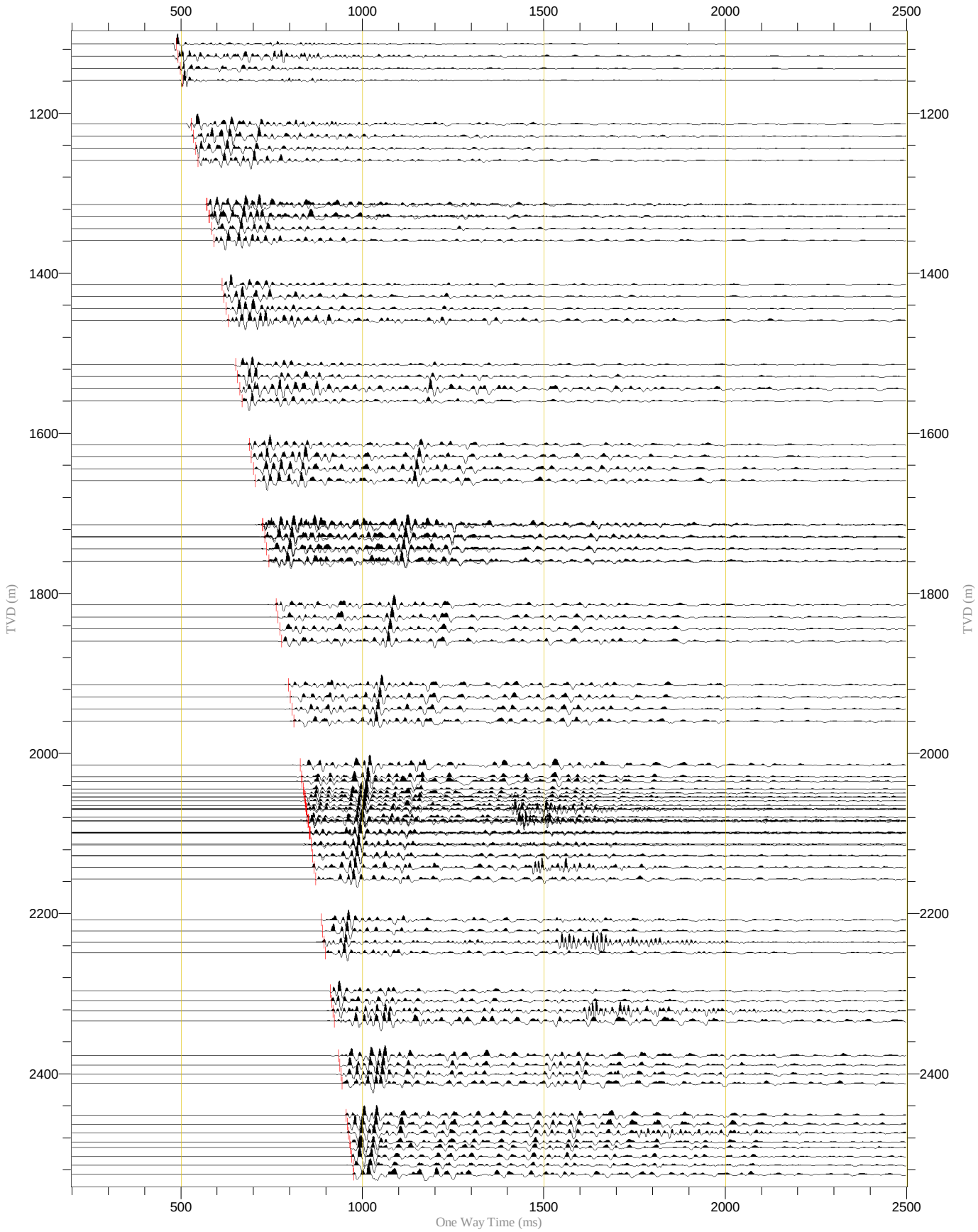
Raw Stack (Z) (Magnified)	Normalization Trace by Trace (250%) Polarity Normal Zero Time (ms) Scaling 48.5 cm/sec, 1/6870	



VSP Raw Stack (Z) FZ Apply FZ	Normalization Trace by Trace (100%) Polarity Normal Frequency (Hz) Scaling 0.1 cm/Hz, 1/6150



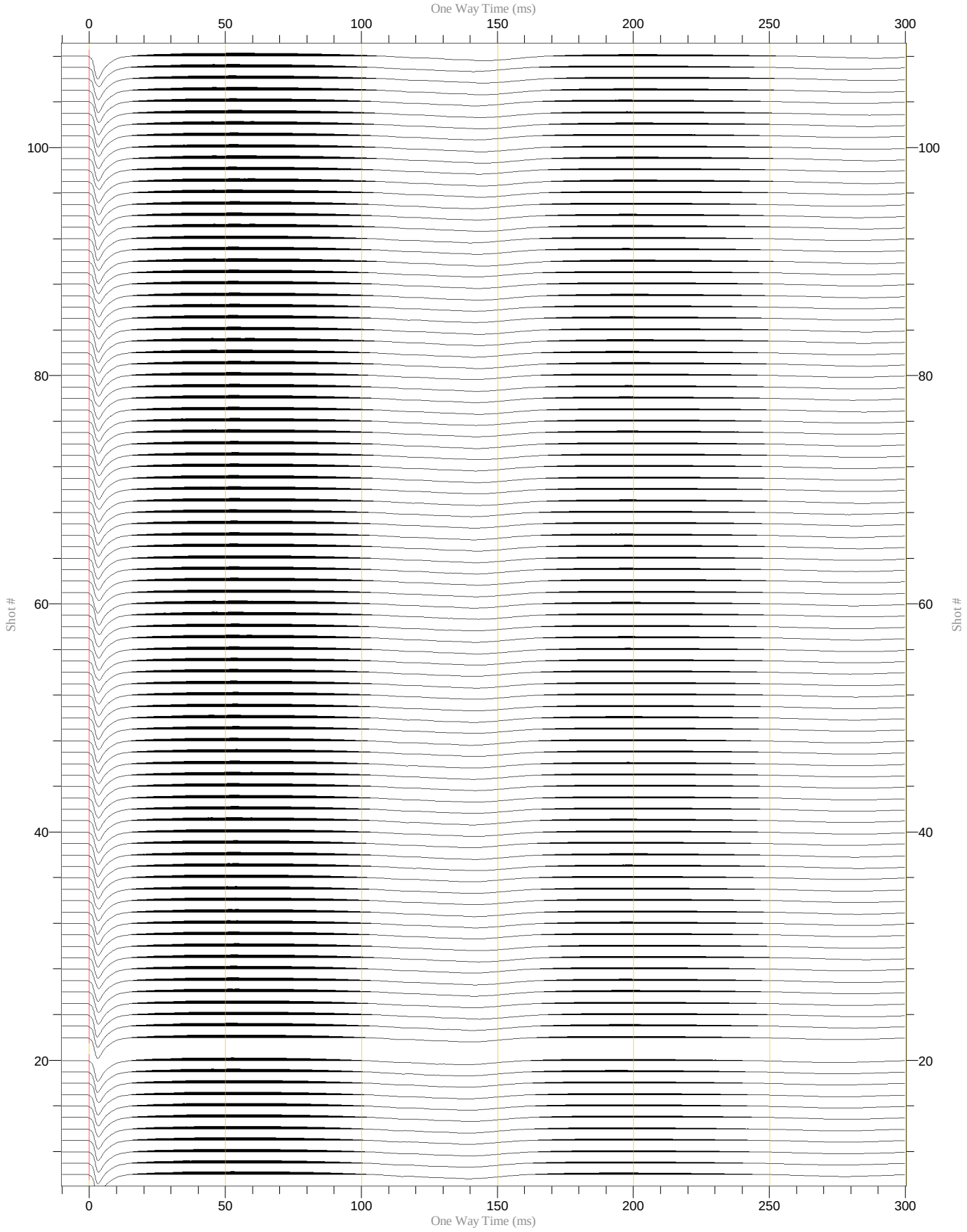
VSP Upgoing BPF 3.0 - 110.0Hz 9 Traces	Normalization Trace by Trace (82%) Polarity Normal One Way Time (ms) Scaling 6.8 cm/sec, 1/6710



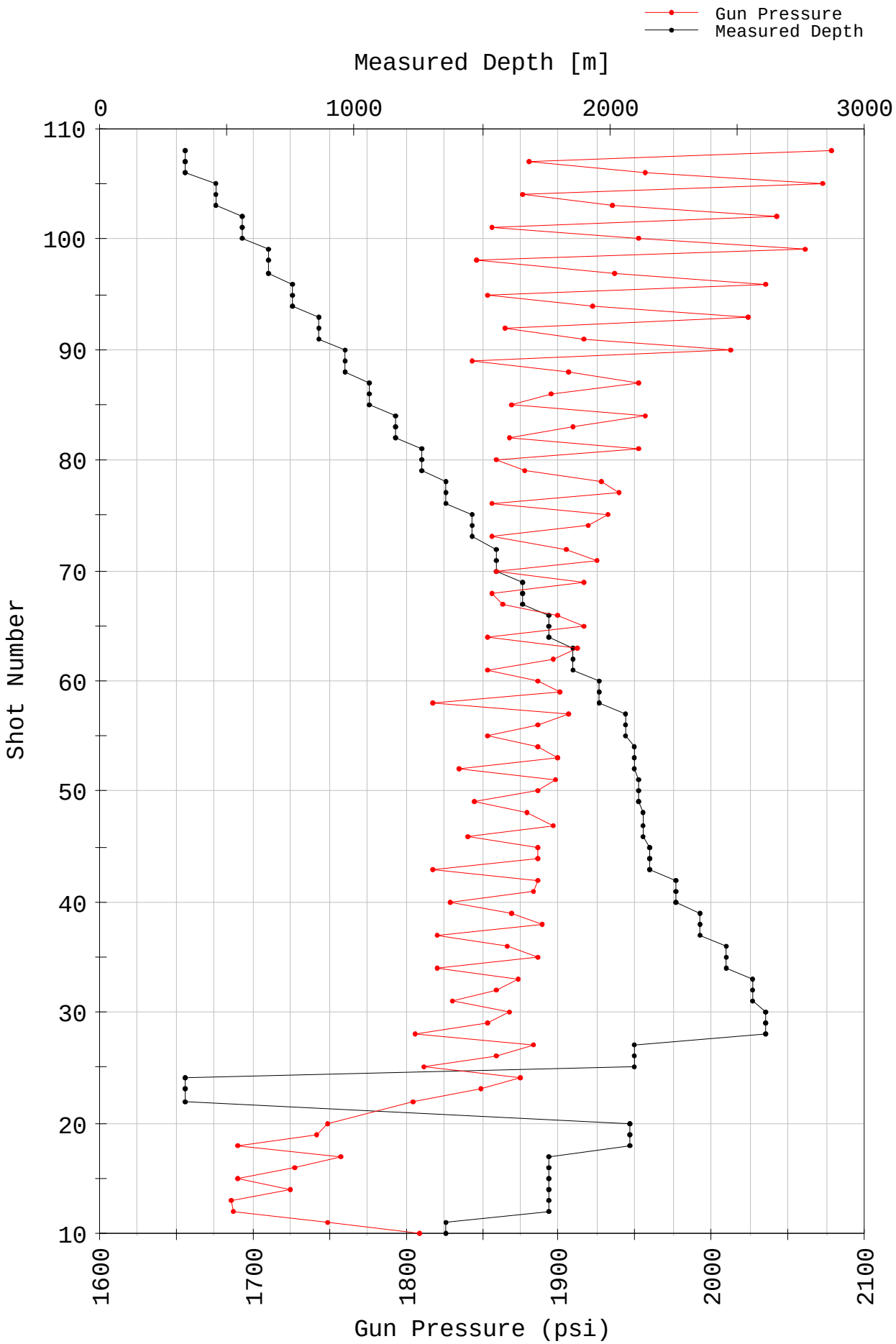
========== Source Signature QC Report ==========

Rockhopper-1

Source Sensor Signature	Normalization Largest Trace in Gather (200%) Polarity Normal One Way Time (ms) Scaling 51.26 cm/sec, 4.65/cm	

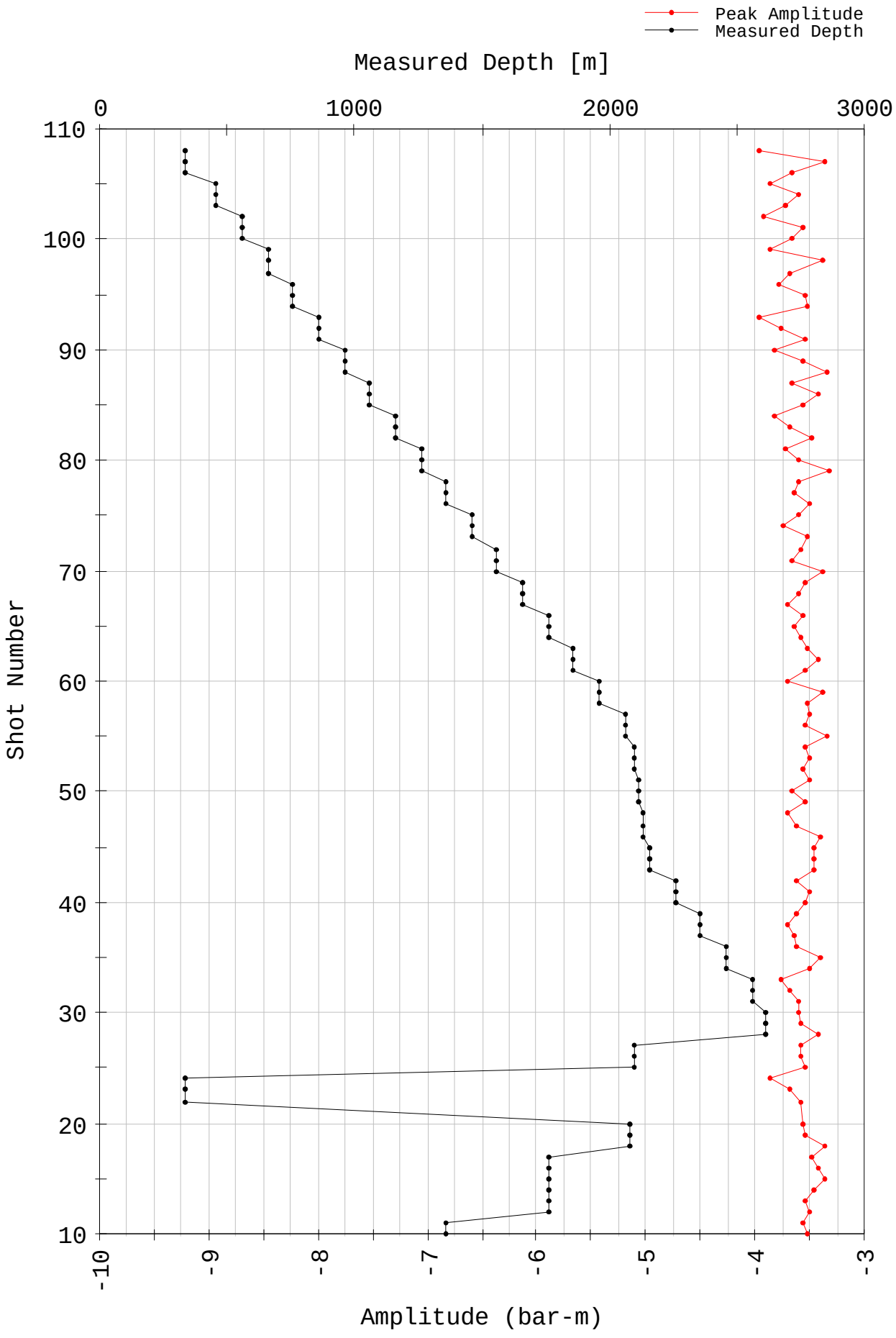


TrisorOFS Gun Pressure

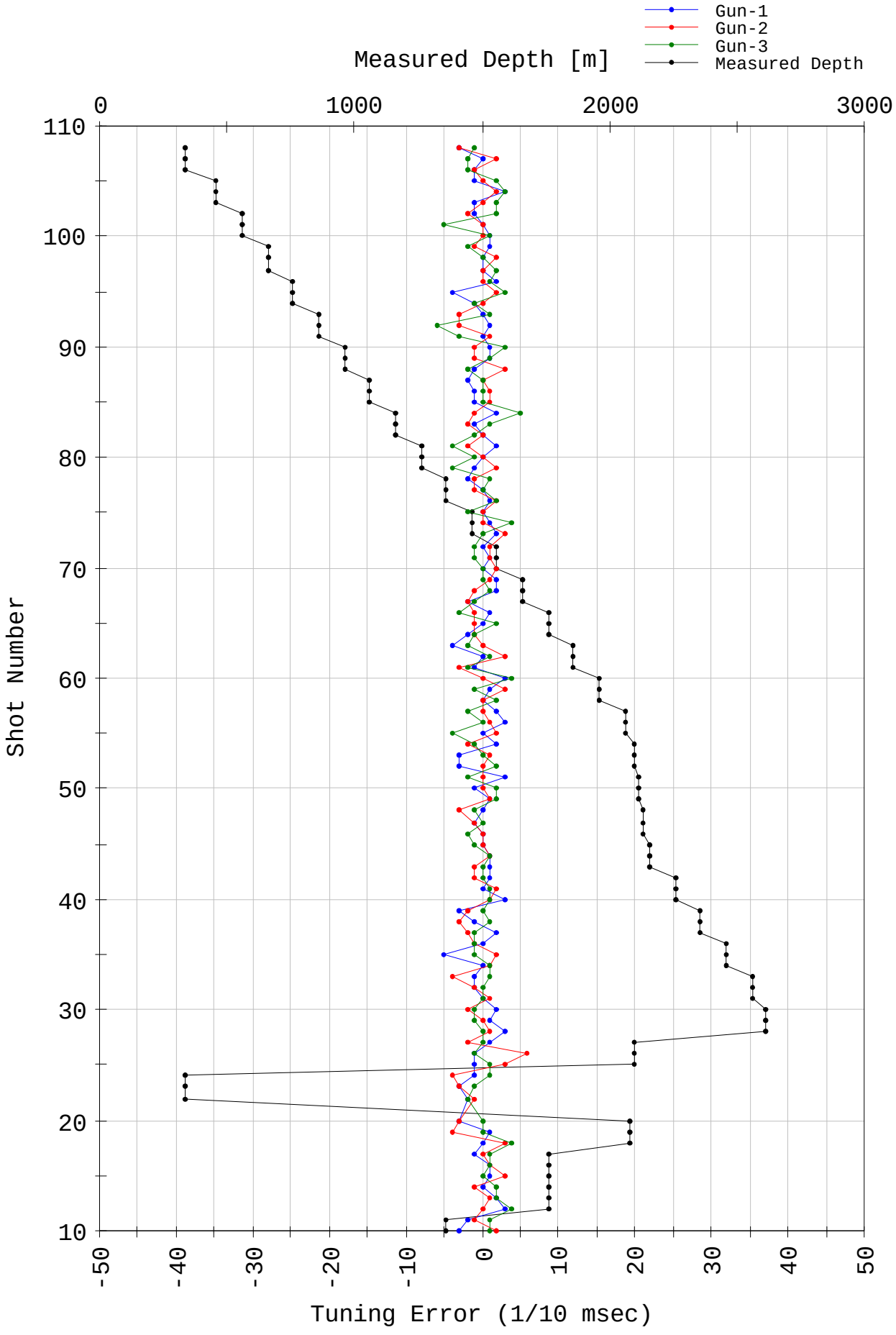


Schlumberger

TrisorOFS Peak Amplitude

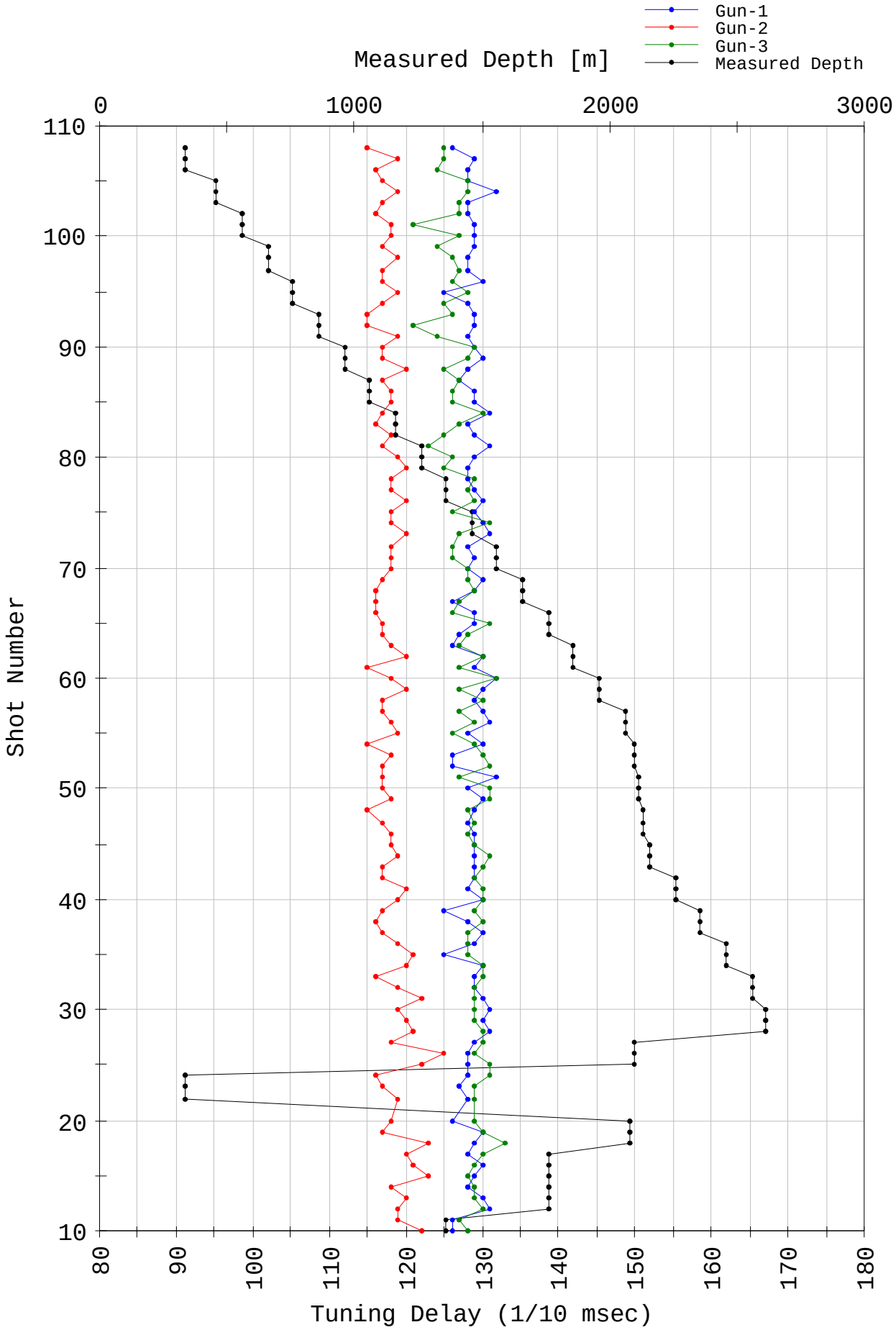


TrisorOFS Gun Tuning Error



Schlumberger

TrisorOFS Gun Tuning Delay



Schlumberger

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Amplitude QC Report

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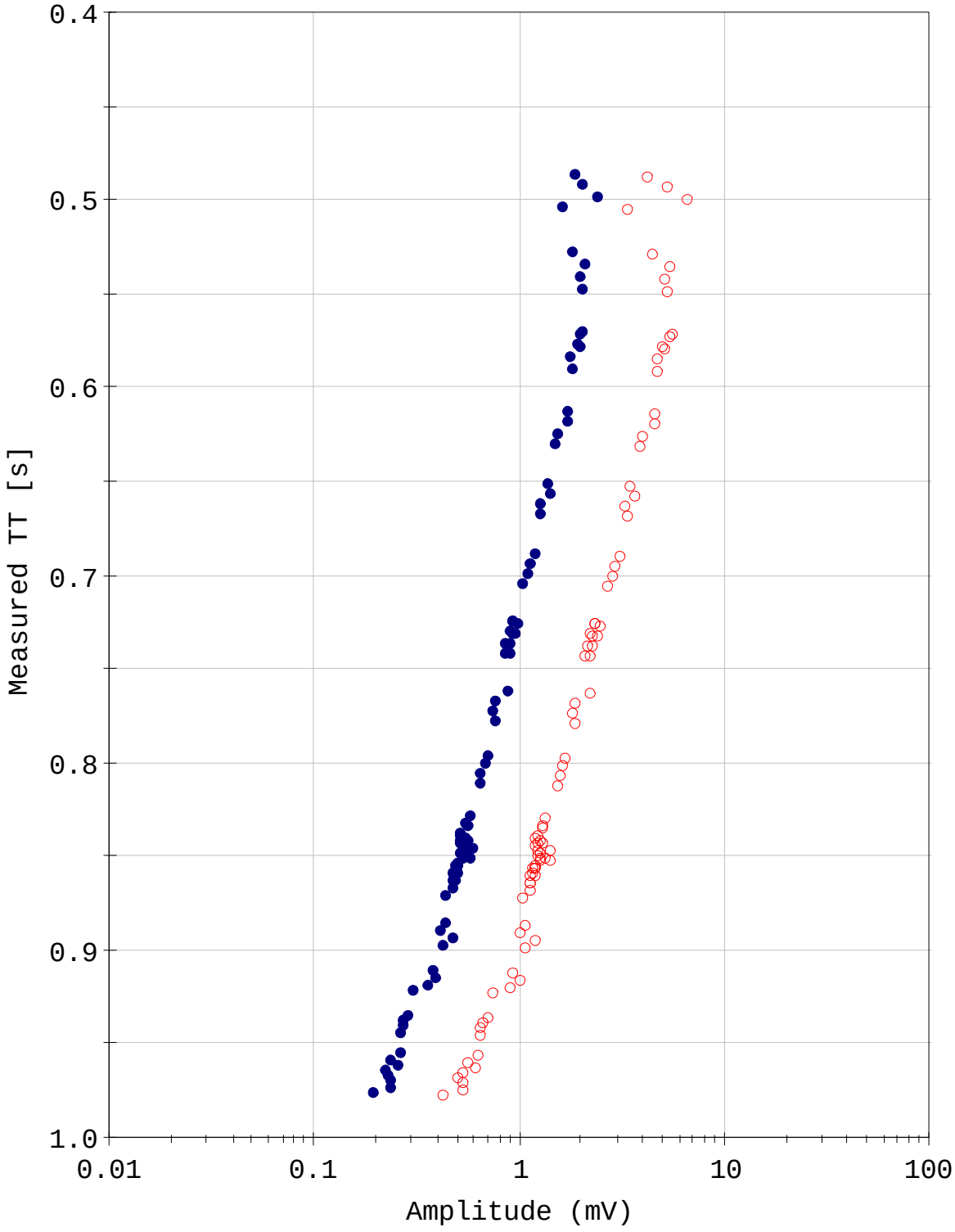
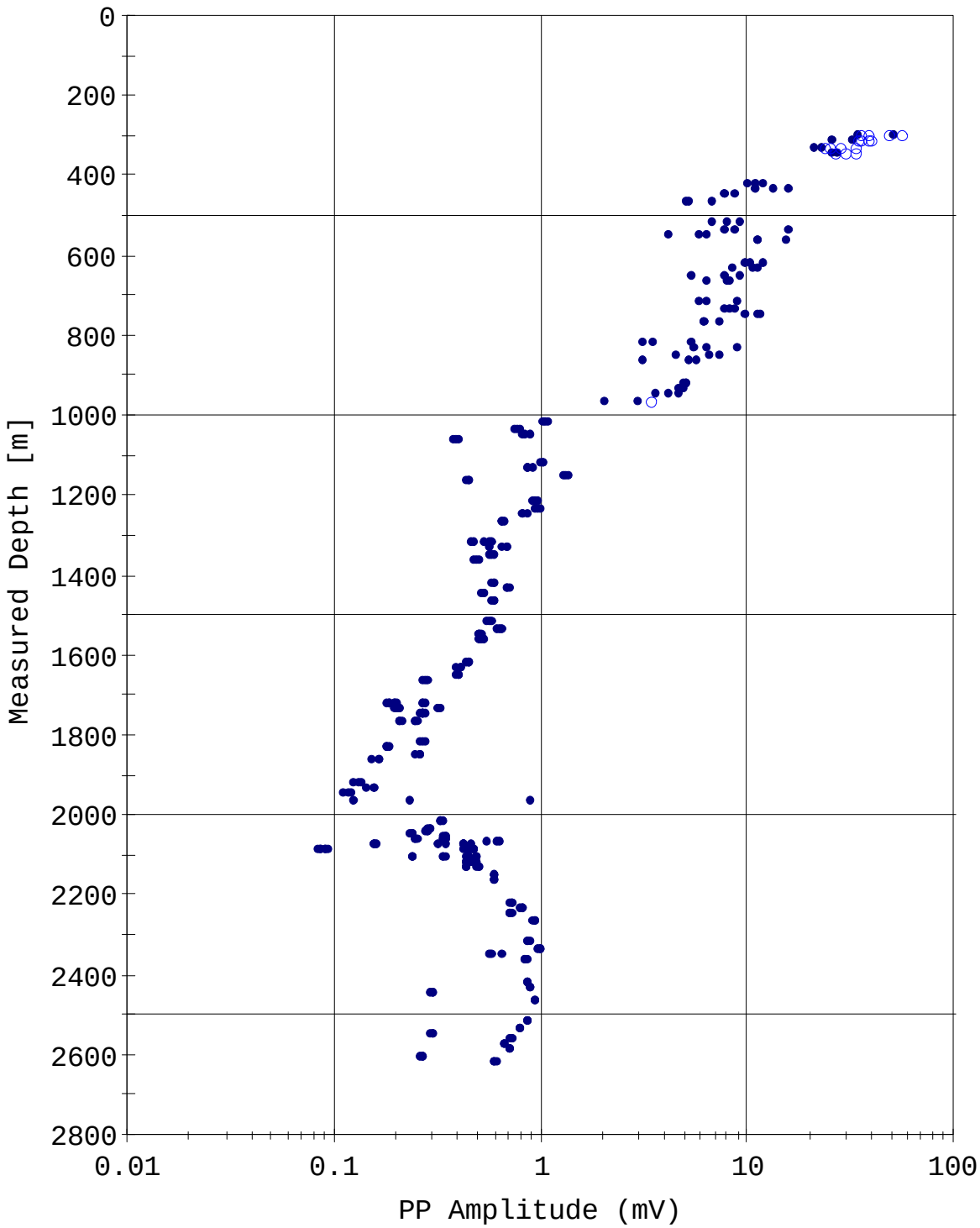
Rockhopper-1

RMS amplitude Plot



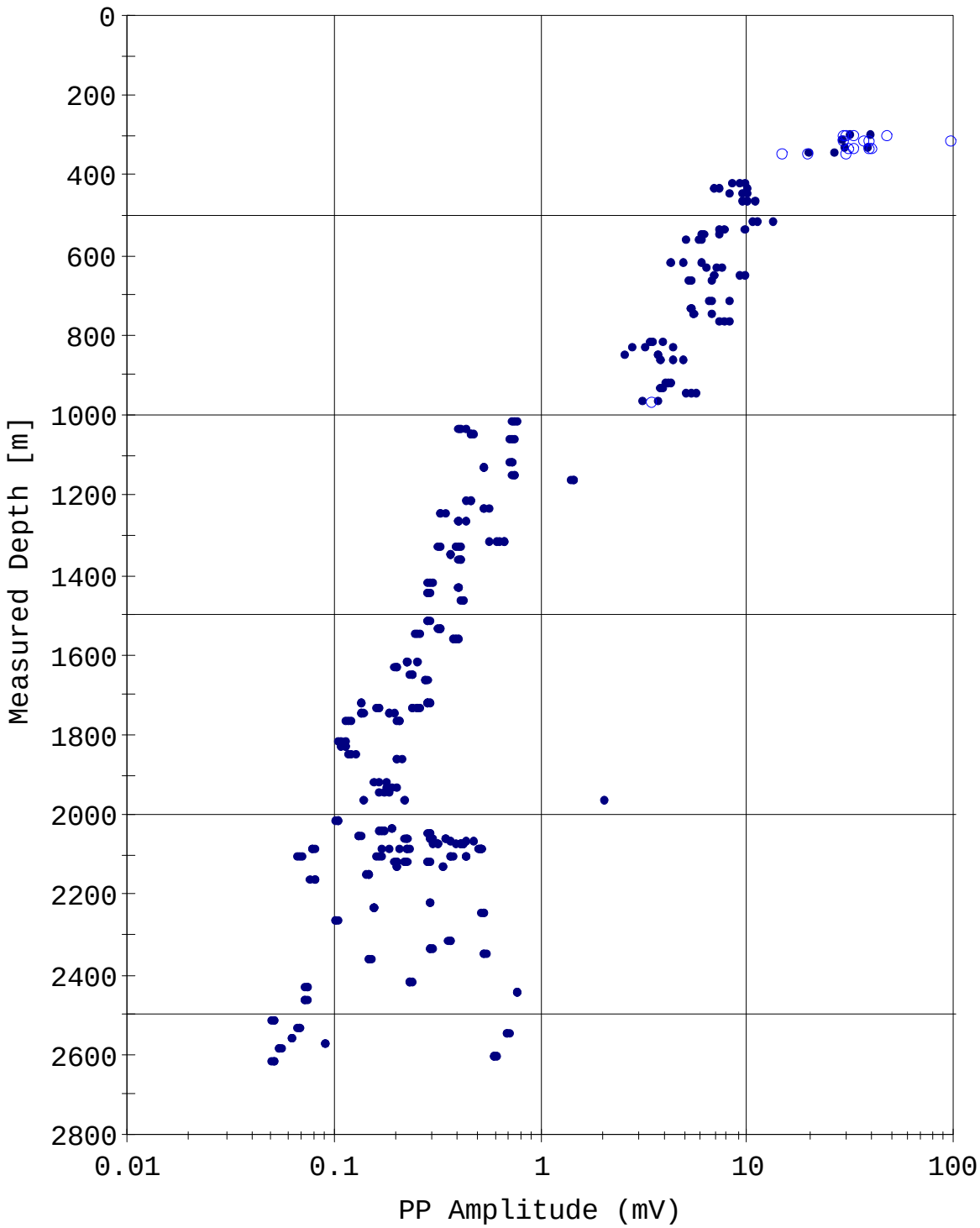
Schlumberger

Peak To Peak Plot (X)



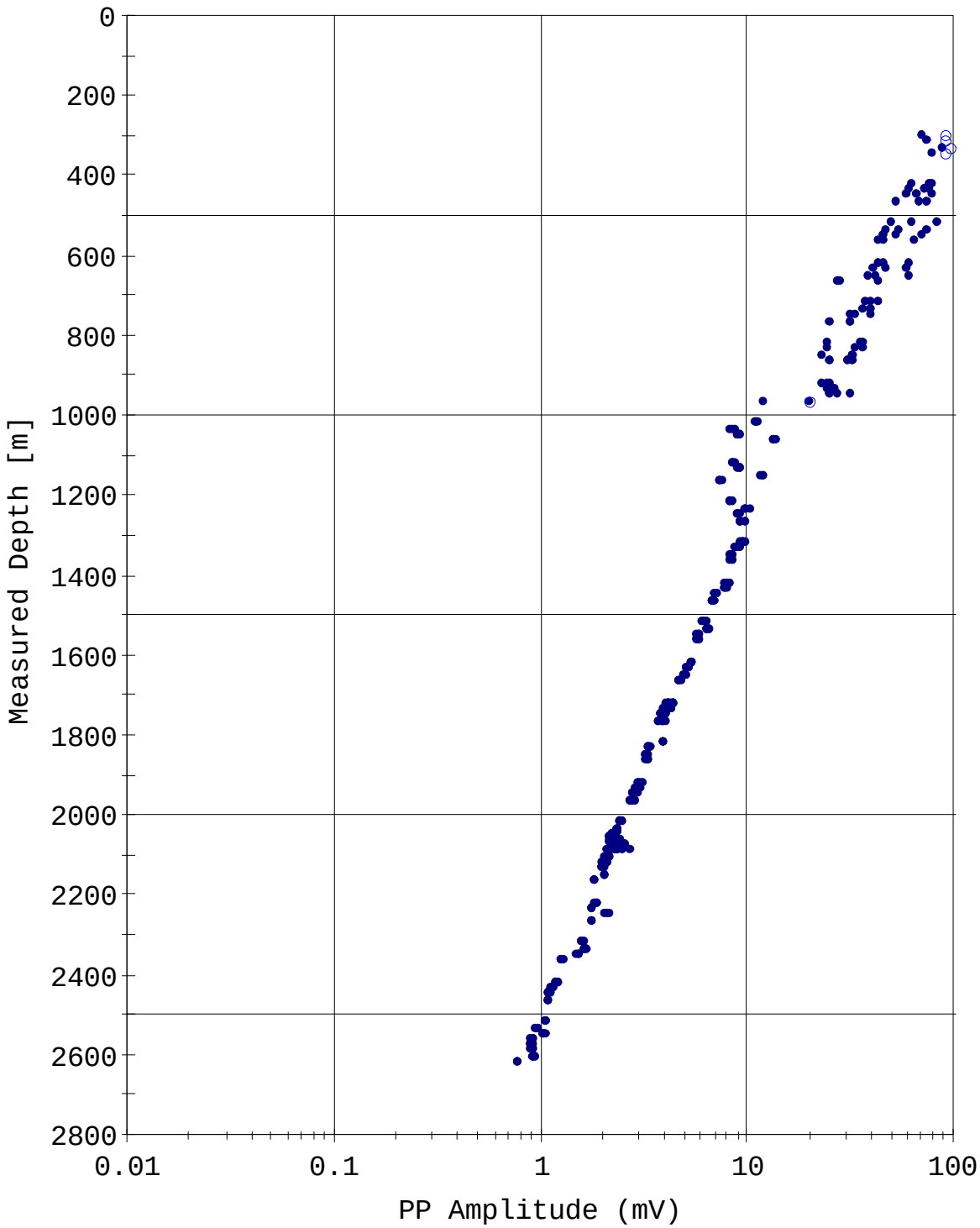
Schlumberger

Peak To Peak Plot (Y)



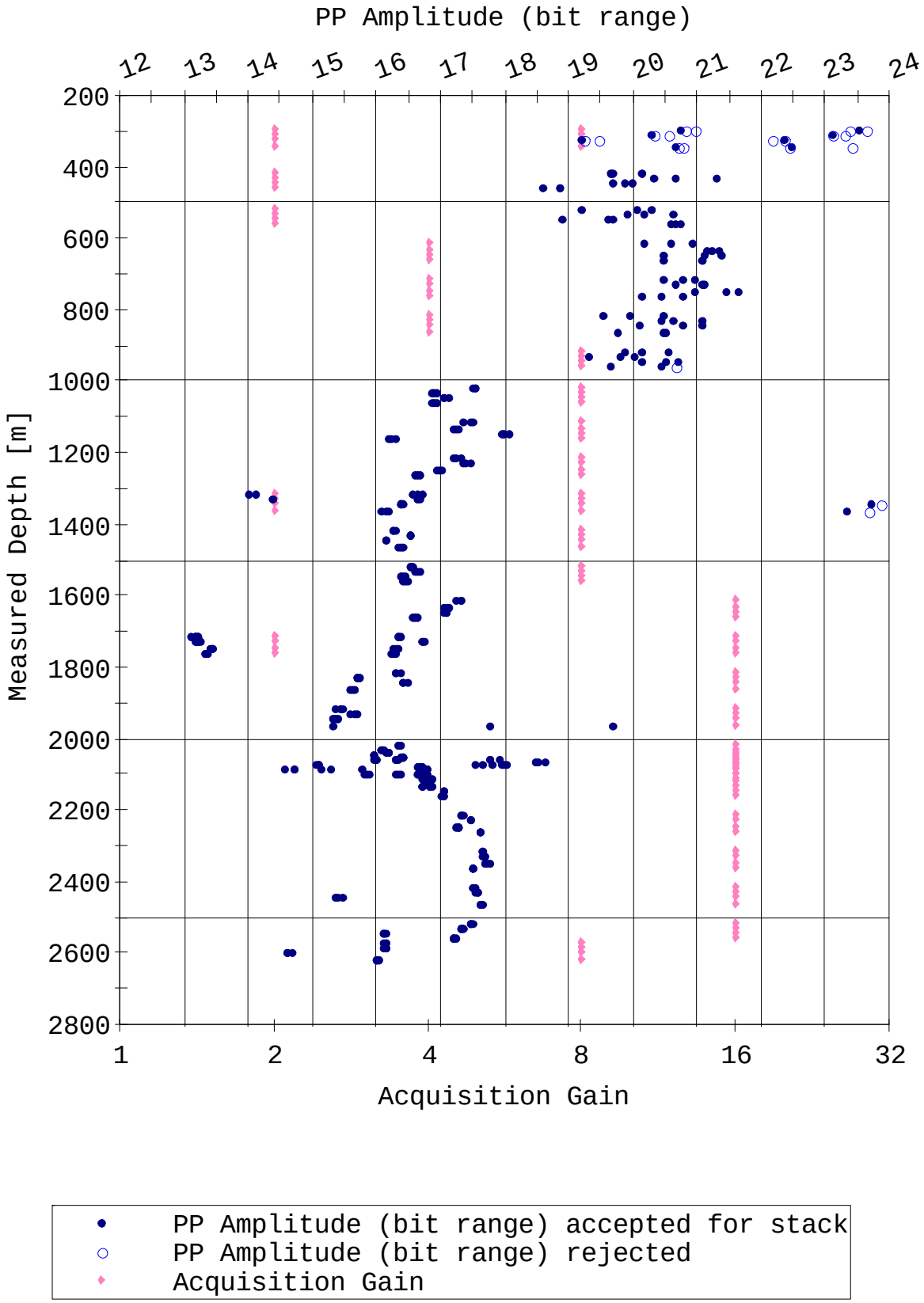
Schlumberger

Peak To Peak Plot (Z)

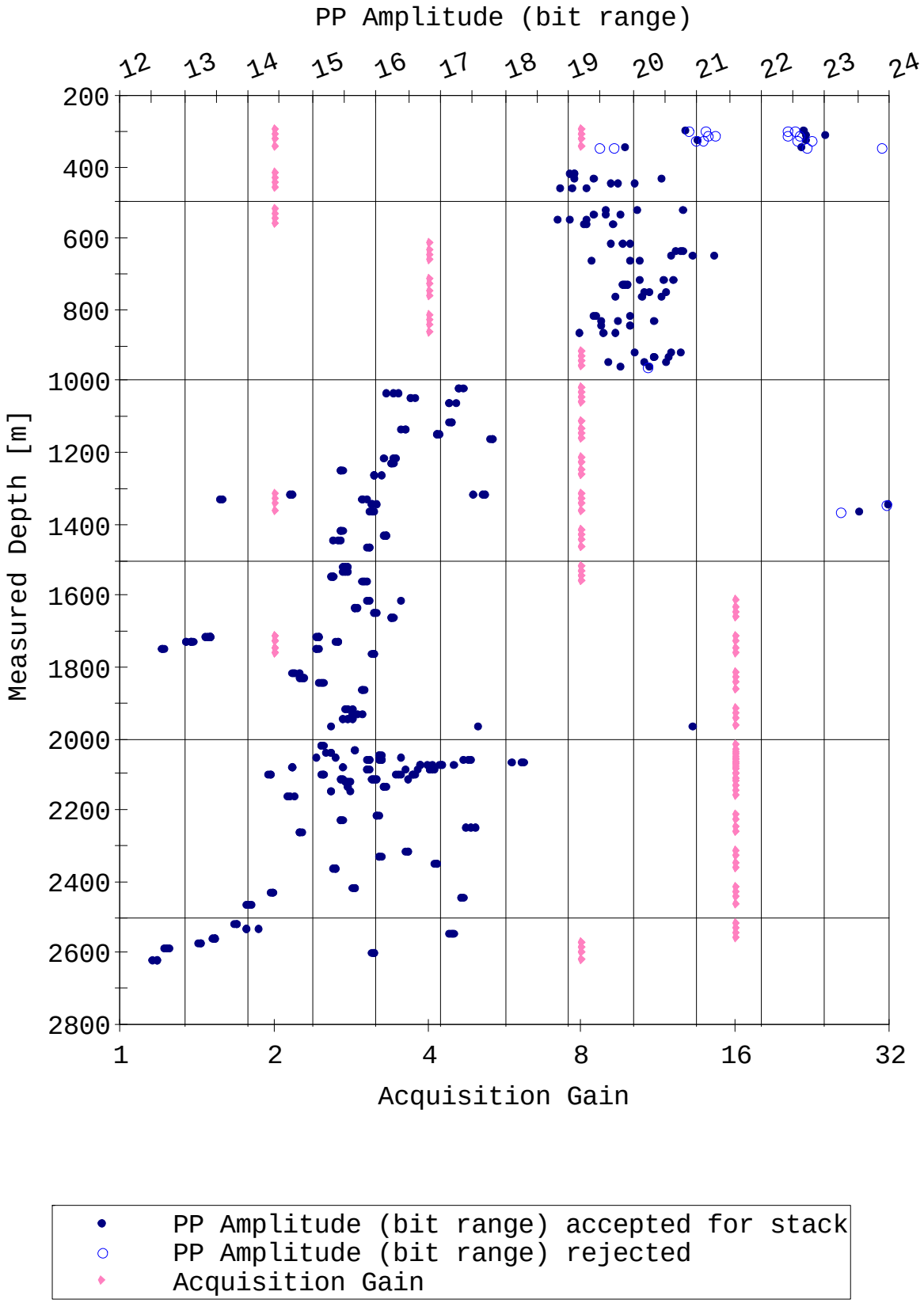


Schlumberger

Amplitude QC Plot (X)

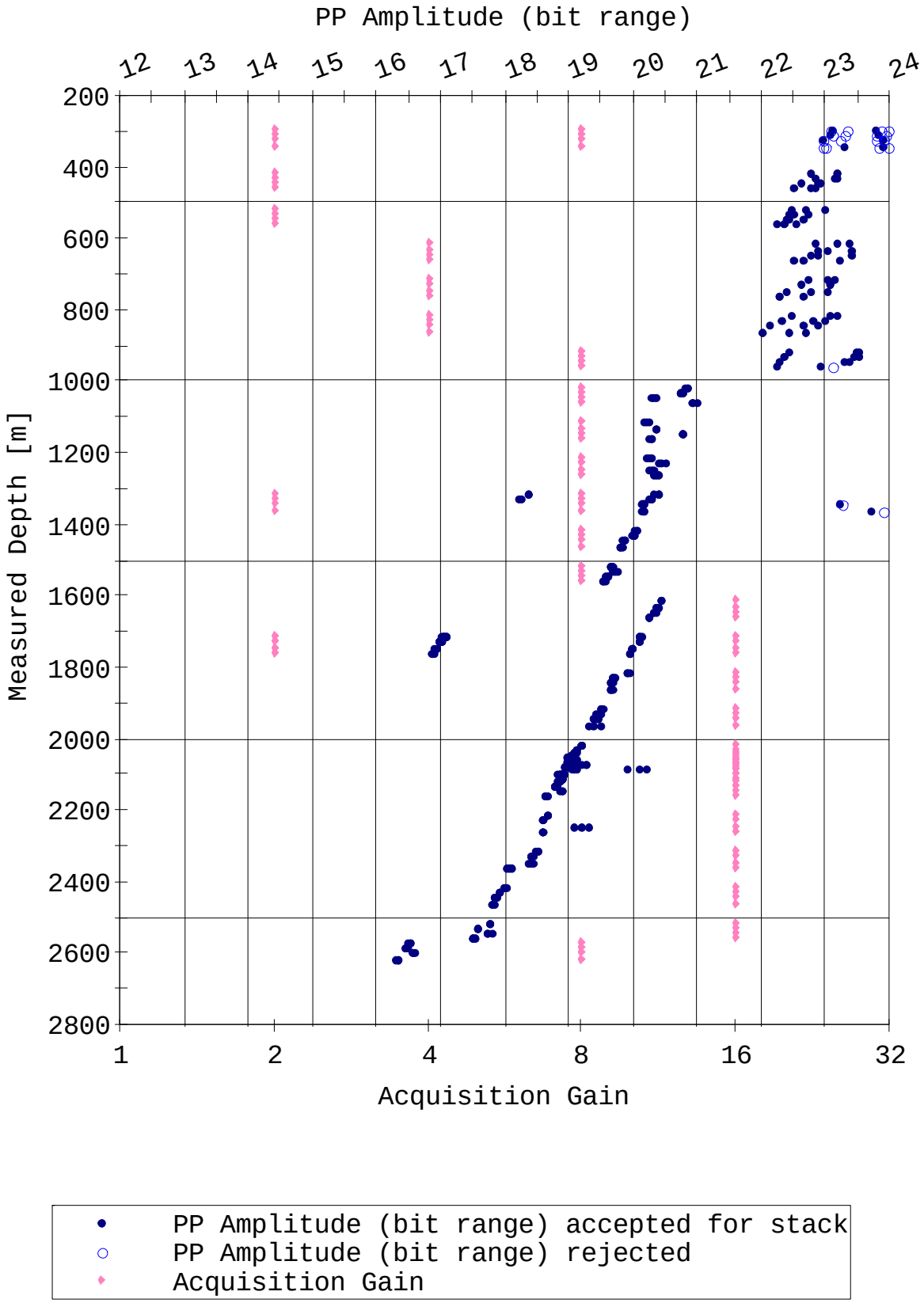


Amplitude QC Plot (Y)



Schlumberger

Amplitude QC Plot (Z)



Schlumberger

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Shot and Observer Report

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Rockhopper-1

Shot Summary Listing (1/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
294.1	1	40	114.3	9.6	878.7	24, 107
294.2	1	11	-12.8	9.5	878.0	24, 107
309.3	2	40	13.6	9.3	843.5	24, 107
309.3	2	11	27.6	9.3	830.4	24, 107
324.4	3	40	-11.8	9.5	956.0	24, 107
324.4	3	11	-95.6	9.5	953.9	24, 107
339.5	4	40	11.4	9.4	815.5	108
339.5	4	11	-159.3	9.4	799.0	24
414.1	1	39	114.2	9.5	865.0	103, 104, 105
429.2	2	39	13.4	9.3	825.2	103, 104, 105
444.3	3	39	-16.6	9.5	948.5	103, 104, 105
459.5	4	39	11.0	9.4	805.7	103, 104, 105
514.1	1	38	123.0	9.5	859.8	100, 101, 102
529.2	2	38	13.3	9.3	856.9	100, 101, 102
544.3	3	38	-22.0	9.5	946.4	100, 101, 102
559.5	4	38	10.7	9.4	798.5	100, 101, 102
614.1	1	37	129.3	9.5	845.5	97, 98, 99
629.3	2	37	12.7	9.3	841.0	97, 98, 99
644.4	3	37	-37.4	9.5	930.6	97, 98, 99
659.5	4	37	10.7	9.4	776.4	97, 98, 99
714.1	1	36	134.4	9.5	851.3	94, 95, 96
729.3	2	36	12.4	9.3	832.9	94, 95, 96
744.4	3	36	-83.1	9.5	919.4	94, 95, 96
759.5	4	36	10.5	9.3	775.3	94, 95, 96
814.1	1	35	134.2	9.5	853.5	91, 92, 93
829.2	2	35	12.3	9.3	838.4	91, 92, 93
844.3	3	35	-96.7	9.5	909.8	91, 92, 93
859.5	4	35	10.3	9.4	766.0	91, 92, 93
914.1	1	34	137.9	9.5	837.6	88, 89, 90
929.3	2	34	12.3	9.3	819.9	88, 89, 90

Shot Summary Listing (2/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
944.4	3	34	-108.2	9.5	906.0	88, 89, 90
959.5	4	34	13.6	9.3	759.9	88, 89
1014.1	1	33	147.5	9.6	832.0	85, 86, 87
1029.3	2	33	12.0	9.3	796.9	85, 86, 87
1044.4	3	33	-114.1	9.5	903.0	85, 86, 87
1059.5	4	33	15.4	9.4	741.6	85, 86, 87
1114.1	1	32	149.3	9.5	829.1	82, 83, 84
1129.2	2	32	12.2	9.4	812.0	82, 83, 84
1144.4	3	32	-114.1	9.5	898.6	82, 83, 84
1159.5	4	32	14.9	9.4	730.5	82, 83, 84
1214.1	1	31	156.7	9.5	814.7	79, 80, 81
1229.2	2	31	12.3	9.4	798.8	79, 80, 81
1244.4	3	31	-114.2	9.4	895.6	79, 80, 81
1259.5	4	31	14.5	9.4	729.0	79, 80, 81
1314.1	1	30	156.6	9.5	803.2	10, 11, 76, 77, 78
1314.2	1	2	-169.8	9.5	796.8	10, 11, 76, 77, 78
1329.3	2	30	12.5	9.4	787.3	10, 11, 76, 77, 78
1329.3	2	2	52.8	9.2	754.0	10, 11, 76, 77, 78
1344.4	3	30	-119.0	9.4	863.1	11, 76, 77, 78
1359.5	4	30	19.7	9.4	706.8	76, 77, 78
1414.1	1	29	156.6	9.5	795.9	73, 74, 75
1429.2	2	29	12.5	9.4	780.9	73, 74, 75
1444.4	3	29	-119.0	9.5	886.4	73, 74, 75
1459.5	4	29	21.4	9.4	707.7	73, 74, 75
1514.1	1	28	156.5	9.6	784.5	70, 71, 72
1529.3	2	28	12.6	9.4	772.9	70, 71, 72
1544.4	3	28	-119.0	9.4	856.5	70, 71, 72
1559.5	4	28	20.6	9.4	695.5	70, 71, 72
1614.0	1	27	156.5	9.5	769.1	67, 68, 69
1629.1	2	27	13.4	9.3	761.7	67, 68, 69

Shot Summary Listing (3/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
1644.3	3	27	-119.0	9.4	852.4	67, 68, 69
1659.4	4	27	19.2	9.4	680.1	67, 68, 69
1714.1	1	26	156.6	9.5	763.5	12, 13, 14, 15, 16, 17, 64, 65, 66
1714.2	1	5	-176.0	9.4	771.1	12, 13, 14, 15, 16, 17, 64, 65, 66
1714.2	1	3	-176.0	9.4	782.1	12, 13, 14, 15, 16, 17, 64, 65, 66
1729.2	2	26	17.1	9.3	752.8	12, 13, 14, 15, 16, 17, 64, 65, 66
1729.3	2	3	35.1	9.3	748.9	12, 13, 14, 15, 16, 17, 64, 65, 66
1729.3	2	5	19.3	9.3	768.1	12, 13, 14, 15, 16, 17, 64, 65, 66
1744.3	3	26	-119.0	9.4	848.6	13, 15, 16, 17, 64, 65, 66
1744.4	3	5	-26.7	9.4	814.3	13, 15, 16, 17, 64, 65, 66
1759.5	4	26	21.7	9.4	672.0	64, 65, 66
1759.5	4	5	39.5	9.4	691.5	13, 15, 16, 17
1814.1	1	25	156.7	9.5	761.3	61, 62, 63
1829.2	2	25	18.9	9.3	749.6	61, 62, 63
1844.4	3	25	-119.0	9.5	839.0	61, 62, 63
1859.5	4	25	28.3	9.4	662.4	61, 62, 63
1914.1	1	24	156.7	9.5	749.2	58, 59, 60
1929.2	2	24	19.3	9.3	734.0	58, 59, 60
1944.4	3	24	-119.6	9.3	825.7	58, 59, 60
1959.5	4	24	27.2	9.3	661.9	58, 59, 60
2014.1	1	23	162.6	10.5	731.1	55, 56, 57
2029.2	2	23	121.4	10.1	736.2	55, 56, 57
2034.7	1	6	59.9	9.0	687.5	18, 19, 20
2044.4	3	23	-127.8	9.0	821.4	55, 56, 57
2049.8	2	6	35.1	9.9	726.5	18, 19, 20
2054.2	1	22	-170.6	10.1	723.8	52, 53, 54
2054.9	1	13	26.3	8.5	726.2	25, 26, 27
2059.5	4	23	53.5	9.2	638.4	55, 56, 57
2064.9	3	6	-138.1	9.4	832.9	18, 19, 20
2069.3	2	22	86.6	9.3	733.7	52, 53, 54

Shot Summary Listing (4/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2070.0	2	13	13.4	8.0	689.2	25, 26, 27, 49, 50, 51
2070.1	1	21	74.7	9.5	745.3	25, 26, 27, 49, 50, 51
2080.0	4	6	11.2	9.1	582.8	18, 19, 20
2084.1	1	20	43.0	9.3	728.4	46, 47, 48, 52, 53, 54
2084.4	3	22	-129.3	9.1	833.9	46, 47, 48, 52, 53, 54
2085.1	3	13	153.8	9.2	798.1	25, 26, 27, 49, 50, 51
2085.2	2	21	77.4	9.1	728.1	25, 26, 27, 49, 50, 51
2099.2	2	20	42.3	9.1	711.1	46, 47, 48
2099.5	4	22	33.0	9.5	624.8	25, 26, 27, 49, 50, 51, 52, 53, 54
2100.2	4	13	-24.3	9.4	608.1	25, 26, 27, 49, 50, 51, 52, 53, 54
2100.4	3	21	-124.4	9.3	823.8	25, 26, 27, 49, 50, 51, 52, 53, 54
2114.1	1	19	29.8	9.3	708.9	43, 44, 45, 46, 47, 48
2114.4	3	20	-159.9	9.2	828.2	43, 44, 45, 46, 47, 48
2115.5	4	21	34.7	9.1	620.1	49, 50, 51
2129.2	2	19	22.0	9.0	713.6	43, 44, 45, 46, 47, 48
2129.5	4	20	6.8	9.2	598.1	43, 44, 45, 46, 47, 48
2144.4	3	19	171.0	9.2	829.1	43, 44, 45
2159.5	4	19	4.2	9.4	609.1	43, 44, 45
2214.1	1	18	12.4	9.2	706.3	40, 41, 42
2229.2	2	18	7.9	9.0	703.4	40, 41, 42
2244.4	3	18	165.7	9.0	793.4	40, 41, 42
2259.5	4	18	0.9	9.1	594.0	40, 41, 42
2314.1	1	17	26.2	9.4	719.8	37, 38, 39
2329.2	2	17	12.6	9.1	680.4	37, 38, 39
2344.4	3	17	155.1	8.3	820.3	37, 38, 39
2359.5	4	17	9.6	9.1	575.7	37, 38, 39
2414.1	1	16	14.3	9.3	706.9	34, 35, 36
2429.2	2	16	-1.1	9.2	638.2	34, 35, 36
2444.4	3	16	118.6	8.1	789.1	34, 35, 36
2459.5	4	16	-1.2	9.4	583.2	34, 35, 36

Shot Summary Listing (5/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2514.1	1	15	8.7	9.7	664.9	31, 32, 33
2529.2	2	15	1.8	8.9	660.1	31, 32, 33
2544.3	3	15	99.4	8.3	815.5	31, 32, 33
2559.4	4	15	-0.6	9.0	551.4	31, 32, 33
2569.2	1	14	8.2	9.7	651.2	28, 29, 30
2584.4	2	14	-1.9	9.2	583.2	28, 29, 30
2599.5	3	14	116.6	7.9	786.7	28, 29, 30
2614.6	4	14	3.0	9.4	574.2	28, 29, 30

Observer's Note (1/2)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
59.5	05:41:11	NOTO	1		Rockhopper 1	
59.5	05:48:35	NOTO	2		Rockhopper 1	
59.5	05:49:11	NOTO	3		Rockhopper 1	
59.5	05:53:07	NOTO	4		Rockhopper 1	
59.5	05:53:43	NOTO	5		Rockhopper 1	
59.5	05:54:15	NOTO	6		Rockhopper 1	
59.5	05:54:54	NOTO	7		Rockhopper 1	
59.5	05:56:46	NOTO	8		Rockhopper 1	
59.5	05:57:11	NOTO	9		Rockhopper 1	
1359.6	06:12:36	SHOT	10	2	Rockhopper 1	
1359.6	06:16:00	SHOT	11	2	Rockhopper 1	
1759.5	06:52:52	SHOT	12	3	Rockhopper 1	
1759.5	07:02:38	SHOT	13	3	Rockhopper 1	
1759.5	07:04:38	SHOT	14	3	Rockhopper 1	
1759.5	07:14:53	SHOT	15	5	Rockhopper 1	QC
1759.5	07:16:56	SHOT	16	5	Rockhopper 1	QC
1759.5	07:17:14	SHOT	17	5	Rockhopper 1	QC
2080.0	07:43:55	SHOT	18	6	Rockhopper 1	QC
2080.0	07:44:50	SHOT	19	6	Rockhopper 1	QC
2080.0	07:45:23	SHOT	20	6	Rockhopper 1	QC
2160.4	09:06:13	NOTO	21		Rockhopper 1	check surface pressure
339.5	12:44:15	SHOT	22	11	Rockhopper 1	surface
339.5	12:45:51	SHOT	23	11	Rockhopper 1	surface
339.5	12:46:28	SHOT	24	11	Rockhopper 1	surface
2100.2	14:22:11	SHOT	25	13	Rockhopper 1	checkshot
2100.2	14:22:51	SHOT	26	13	Rockhopper 1	checkshot
2100.2	14:23:09	SHOT	27	13	Rockhopper 1	checkshot
2614.6	16:20:02	SHOT	28	14	Rockhopper 1	Start checkshot up @ 2555m
2614.6	16:21:16	SHOT	29	14	Rockhopper 1	
2614.6	16:22:00	SHOT	30	14	Rockhopper 1	
2559.4	16:27:42	SHOT	31	15	Rockhopper 1	checkshot up @ 2500.m
2559.4	16:29:10	SHOT	32	15	Rockhopper 1	
2559.4	16:29:42	SHOT	33	15	Rockhopper 1	
2459.5	16:37:27	SHOT	34	16	Rockhopper	checkshot up @ 2400m

					1	
2459.5	16:37:45	SHOT	35	16	Rockhopper 1	
2459.5	16:38:03	SHOT	36	16	Rockhopper 1	
2359.5	16:45:36	SHOT	37	17	Rockhopper 1	checkshot up @ 2300m
2359.5	16:45:55	SHOT	38	17	Rockhopper 1	
2359.5	16:46:13	SHOT	39	17	Rockhopper 1	
2259.5	16:52:54	SHOT	40	18	Rockhopper 1	checkshot up @ 2200m
2259.5	16:53:19	SHOT	41	18	Rockhopper 1	
2259.5	16:53:37	SHOT	42	18	Rockhopper 1	
2159.5	17:01:19	SHOT	43	19	Rockhopper 1	checkshot up @ 2100m
2159.5	17:01:47	SHOT	44	19	Rockhopper 1	
2159.5	17:02:09	SHOT	45	19	Rockhopper 1	
2129.5	17:06:50	SHOT	46	20	Rockhopper 1	checkshot up @ 2070m (client request)
2129.5	17:07:11	SHOT	47	20	Rockhopper 1	
2129.5	17:07:33	SHOT	48	20	Rockhopper 1	
2115.5	17:12:21	SHOT	49	21	Rockhopper 1	checkshot up @ 2070m (client request)
2115.5	17:12:48	SHOT	50	21	Rockhopper 1	
2115.5	17:13:06	SHOT	51	21	Rockhopper 1	
2099.5	17:17:01	SHOT	52	22	Rockhopper 1	checkshot up @ 2040m (Initial checkshot)
2099.5	17:17:20	SHOT	53	22	Rockhopper 1	
2099.5	17:17:38	SHOT	54	22	Rockhopper 1	
2059.5	17:22:09	SHOT	55	23	Rockhopper 1	checkshot up @ 2000m
2059.5	17:22:52	SHOT	56	23	Rockhopper 1	
2059.5	17:23:11	SHOT	57	23	Rockhopper 1	
1959.5	17:36:16	SHOT	58	24	Rockhopper 1	checkshot up @ 1900m (Casing Shoe @ 1964.9m)
1959.5	17:36:36	SHOT	59	24	Rockhopper 1	
1959.5	17:37:18	SHOT	60	24	Rockhopper 1	
1859.5	17:43:44	SHOT	61	25	Rockhopper 1	checkshot up @ 1800m
1859.5	17:44:22	SHOT	62	25	Rockhopper 1	
1859.5	17:44:42	SHOT	63	25	Rockhopper 1	

Observer's Note (2/2)

Well depth [m]	Time	Shot Type	Shot#	Stack#	Source	Remarks
1759.5	17:49:26	SHOT	64	26	Rockhopper 1	checkshot up @ 1700m
1759.5	17:49:44	SHOT	65	26	Rockhopper 1	
1759.5	17:50:04	SHOT	66	26	Rockhopper 1	
1659.4	17:55:29	SHOT	67	27	Rockhopper 1	checkshot up @ 1600m
1659.4	17:55:47	SHOT	68	27	Rockhopper 1	
1659.4	17:56:05	SHOT	69	27	Rockhopper 1	
1559.5	18:02:03	SHOT	70	28	Rockhopper 1	checkshot up @ 1500m
1559.5	18:02:25	SHOT	71	28	Rockhopper 1	
1559.5	18:03:07	SHOT	72	28	Rockhopper 1	
1459.5	18:12:56	SHOT	73	29	Rockhopper 1	checkshot up @ 1400m
1459.5	18:13:31	SHOT	74	29	Rockhopper 1	
1459.5	18:13:49	SHOT	75	29	Rockhopper 1	
1359.5	18:20:19	SHOT	76	30	Rockhopper 1	
1359.5	18:20:40	SHOT	77	30	Rockhopper 1	
1359.5	18:20:59	SHOT	78	30	Rockhopper 1	
1259.5	18:28:08	SHOT	79	31	Rockhopper 1	checkshot up @ 1200m
1259.5	18:28:33	SHOT	80	31	Rockhopper 1	
1259.5	18:28:51	SHOT	81	31	Rockhopper 1	
1159.5	18:34:36	SHOT	82	32	Rockhopper 1	checkshot up @ 1100m
1159.5	18:35:15	SHOT	83	32	Rockhopper 1	
1159.5	18:35:33	SHOT	84	32	Rockhopper 1	
1059.5	18:42:25	SHOT	85	33	Rockhopper 1	checkshot up @ 1000m
1059.5	18:42:45	SHOT	86	33	Rockhopper 1	
1059.5	18:43:33	SHOT	87	33	Rockhopper 1	
959.5	18:49:20	SHOT	88	34	Rockhopper 1	checkshot up @ 900m
959.5	18:50:42	SHOT	89	34	Rockhopper 1	
959.5	18:51:00	SHOT	90	34	Rockhopper 1	
859.5	18:56:14	SHOT	91	35	Rockhopper 1	checkshot up @ 800m
859.5	18:56:38	SHOT	92	35	Rockhopper 1	
859.5	18:56:56	SHOT	93	35	Rockhopper 1	
759.5	19:02:41	SHOT	94	36	Rockhopper 1	checkshot up @ 700m
759.5	19:03:29	SHOT	95	36	Rockhopper 1	
759.5	19:03:47	SHOT	96	36	Rockhopper 1	
659.5	19:08:56	SHOT	97	37	Rockhopper	checkshot up @ 600m

					1	
659.5	19:10:18	SHOT	98	37	Rockhopper 1	
659.5	19:10:36	SHOT	99	37	Rockhopper 1	
559.5	19:16:02	SHOT	100	38	Rockhopper 1	checkshot up @ 500m
559.5	19:16:52	SHOT	101	38	Rockhopper 1	
559.5	19:17:11	SHOT	102	38	Rockhopper 1	
459.5	19:22:59	SHOT	103	39	Rockhopper 1	checkshot up @ 400m
459.5	19:23:17	SHOT	104	39	Rockhopper 1	
459.5	19:23:35	SHOT	105	39	Rockhopper 1	
339.5	19:29:08	SHOT	106	40	Rockhopper 1	checkshot up @ 280m
339.5	19:29:26	SHOT	107	40	Rockhopper 1	
339.5	19:29:45	SHOT	108	40	Rockhopper 1	

========== Tool Evaluation Test Report ==========

Rockhopper-1

VSI Seismic Evaluation Report

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GR Correlation Report

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Rockhopper-1

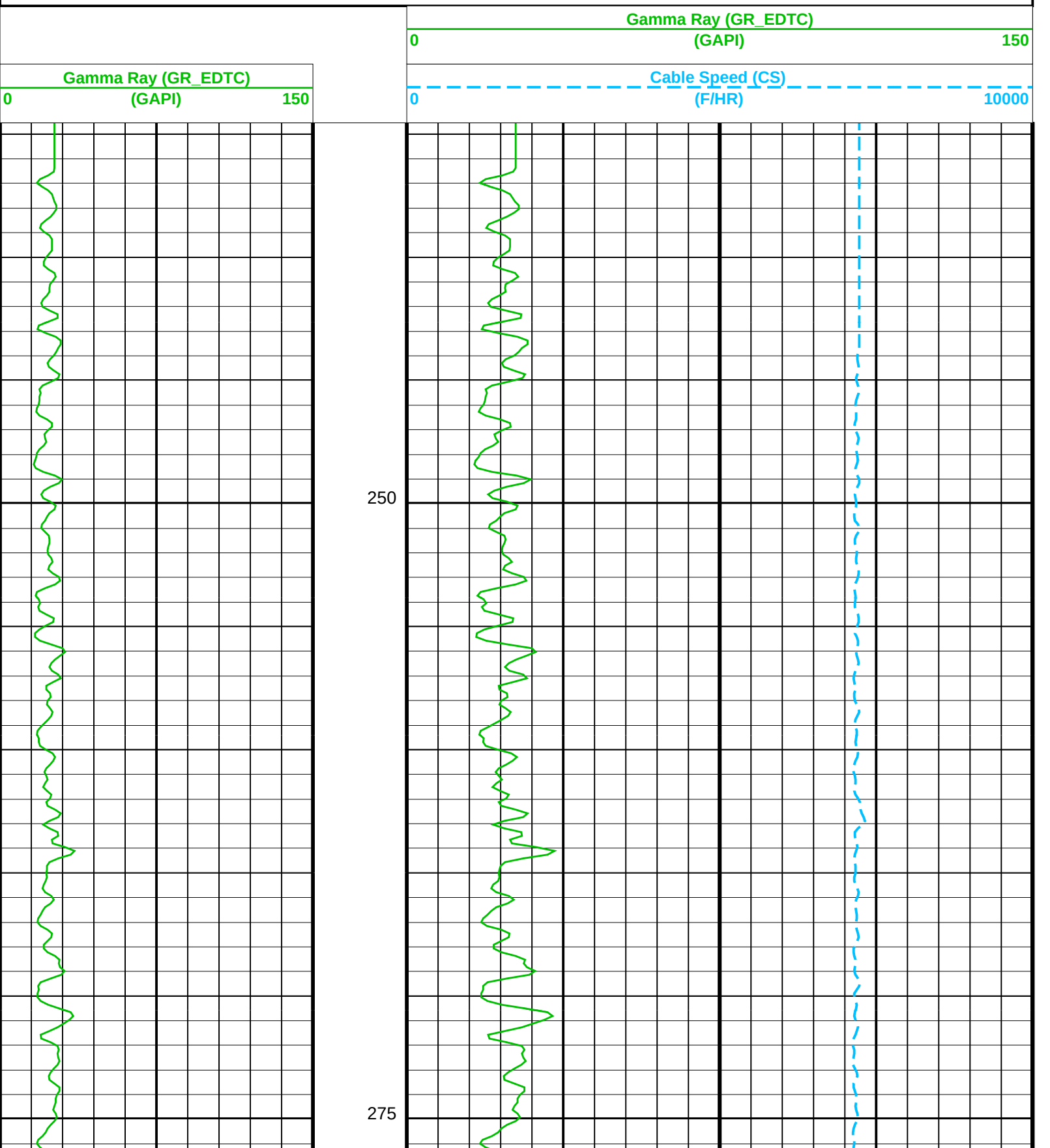
Company: Origin Energy Resources Ltd | Well: Rockhopper−1

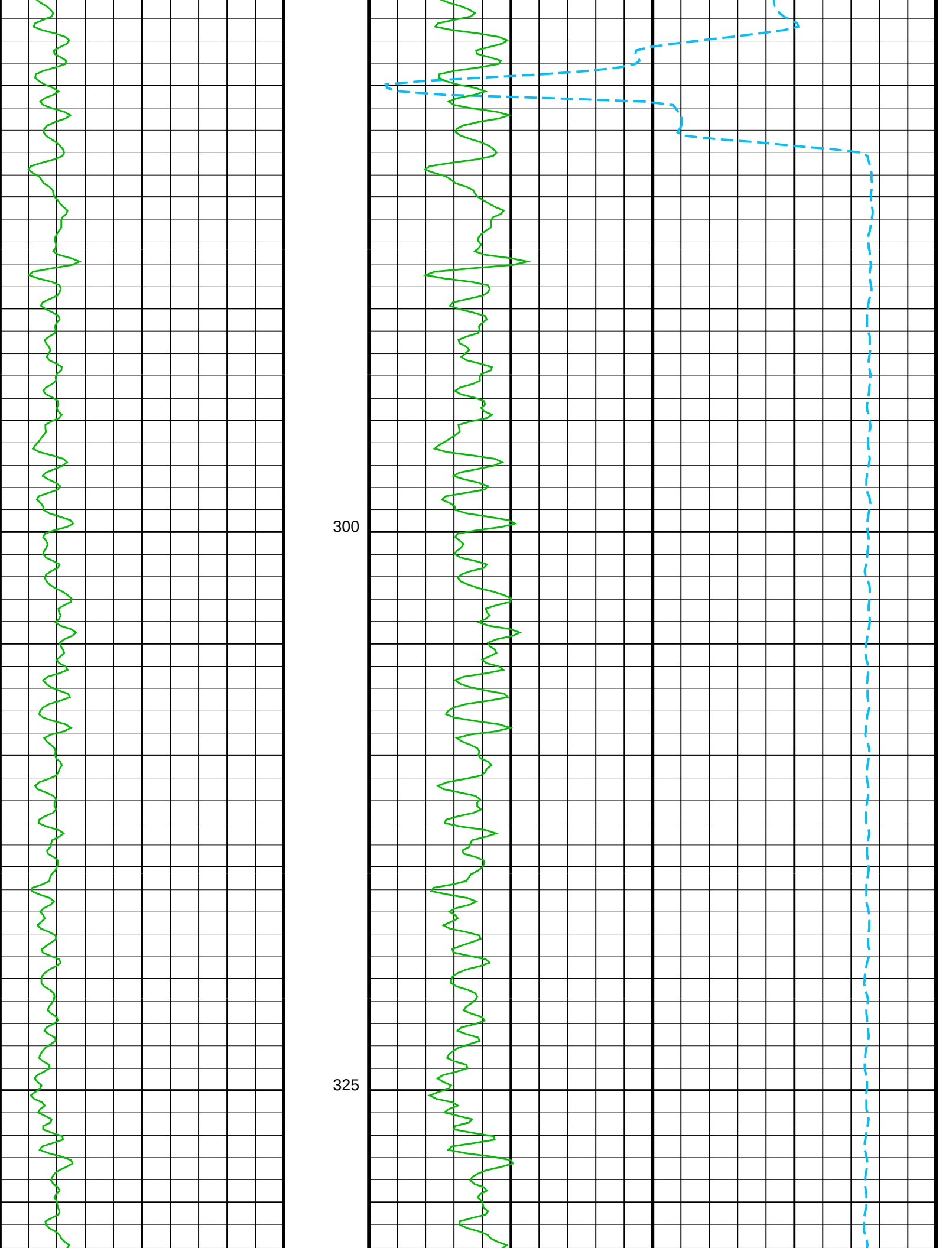
Output DLIS Files

DEFAULT VSIT_010LUP FN:8 PRODUCER 04−Jan−2010 19:15 2559.9 M 234.5 M

OP System Version: 17C0−154

VSIT−C 17C0−154 EDTC−B SKK−3882−EDTCB

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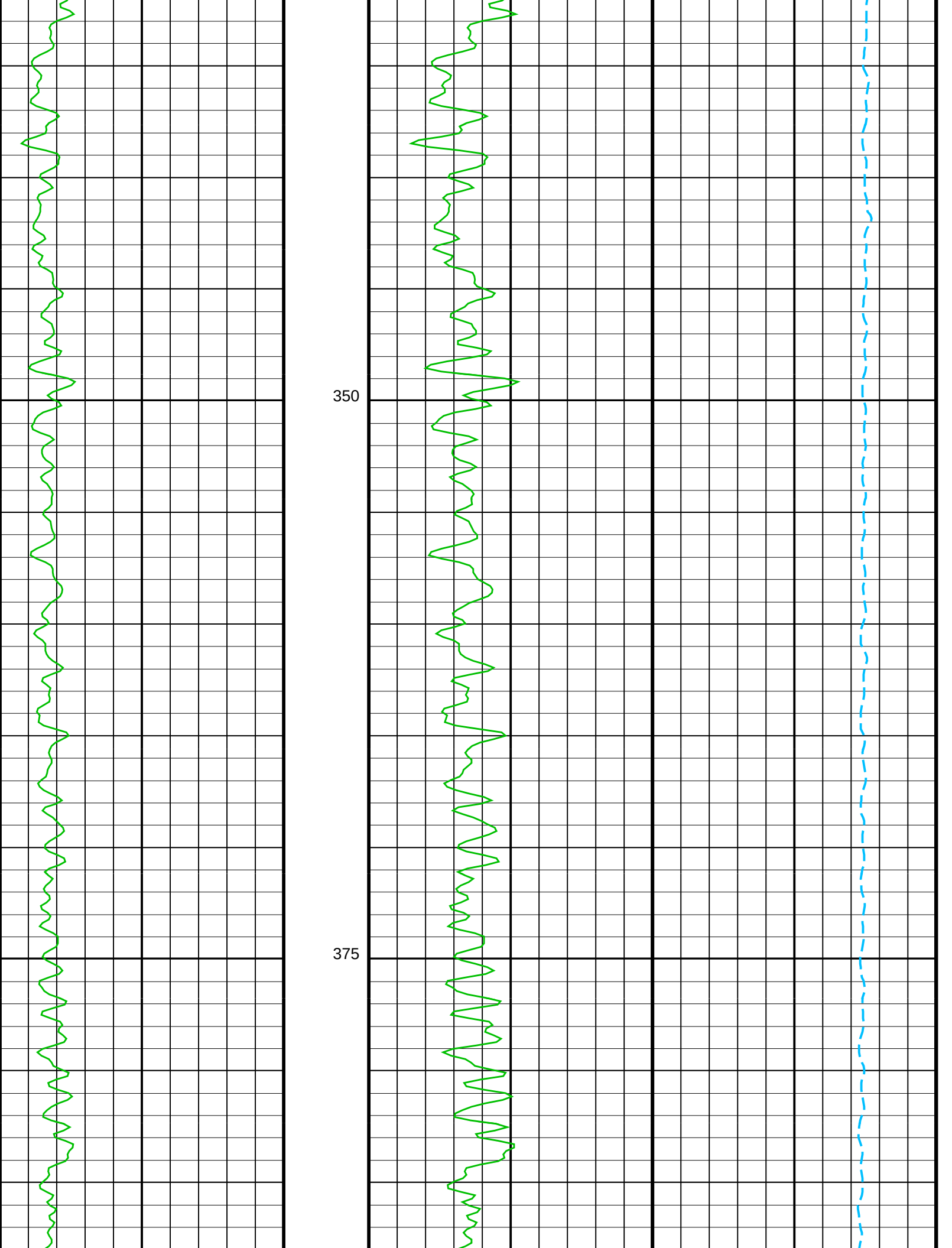
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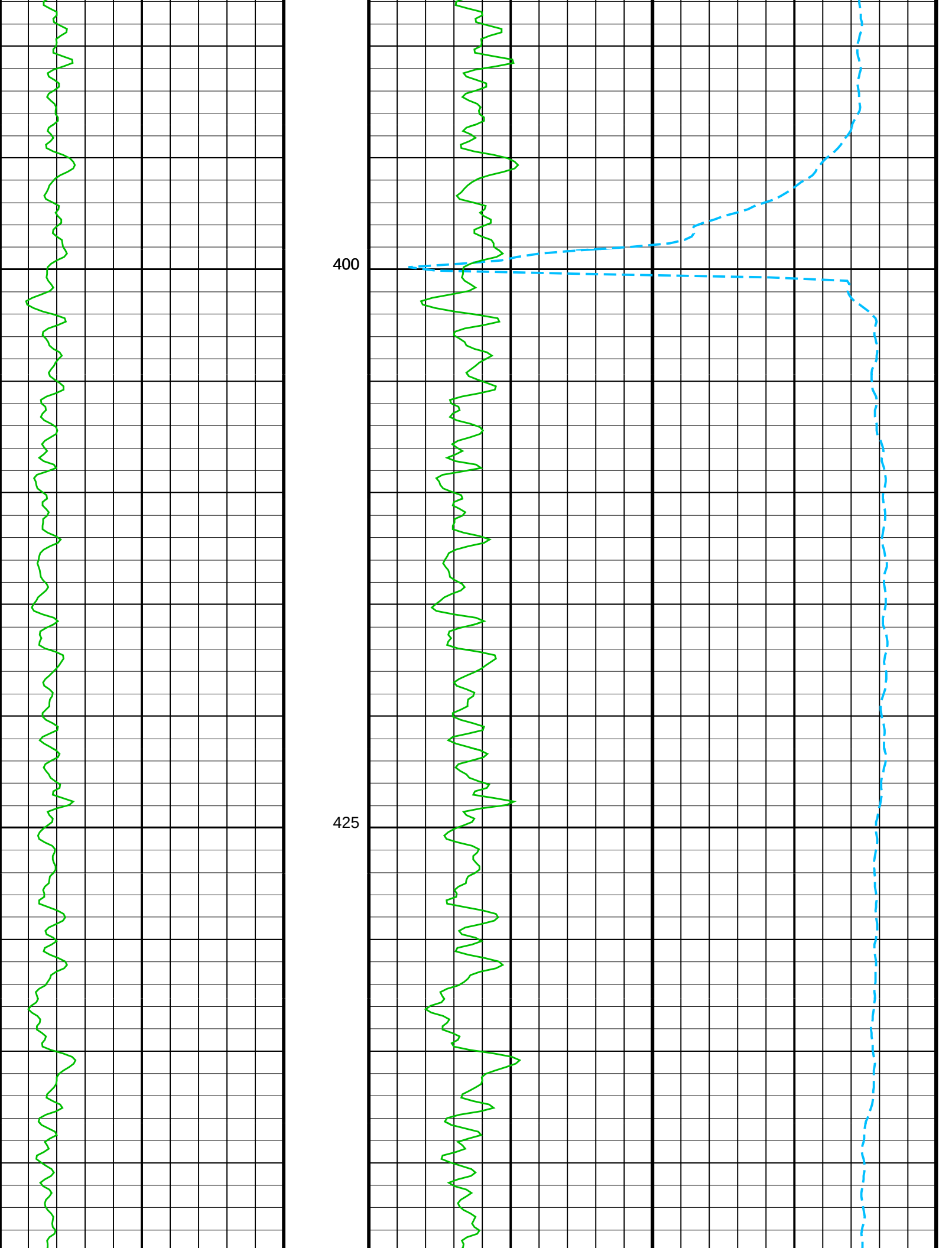
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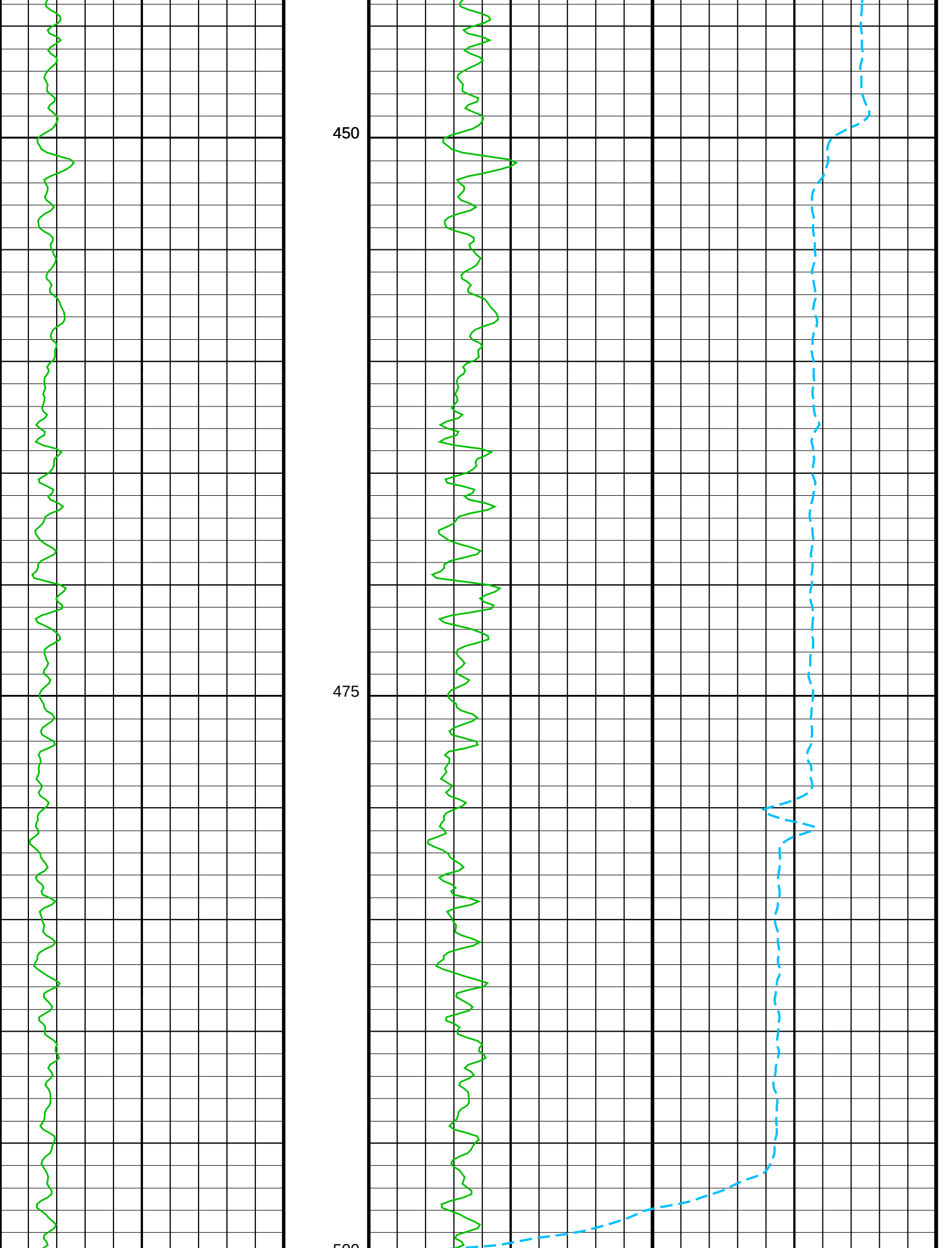
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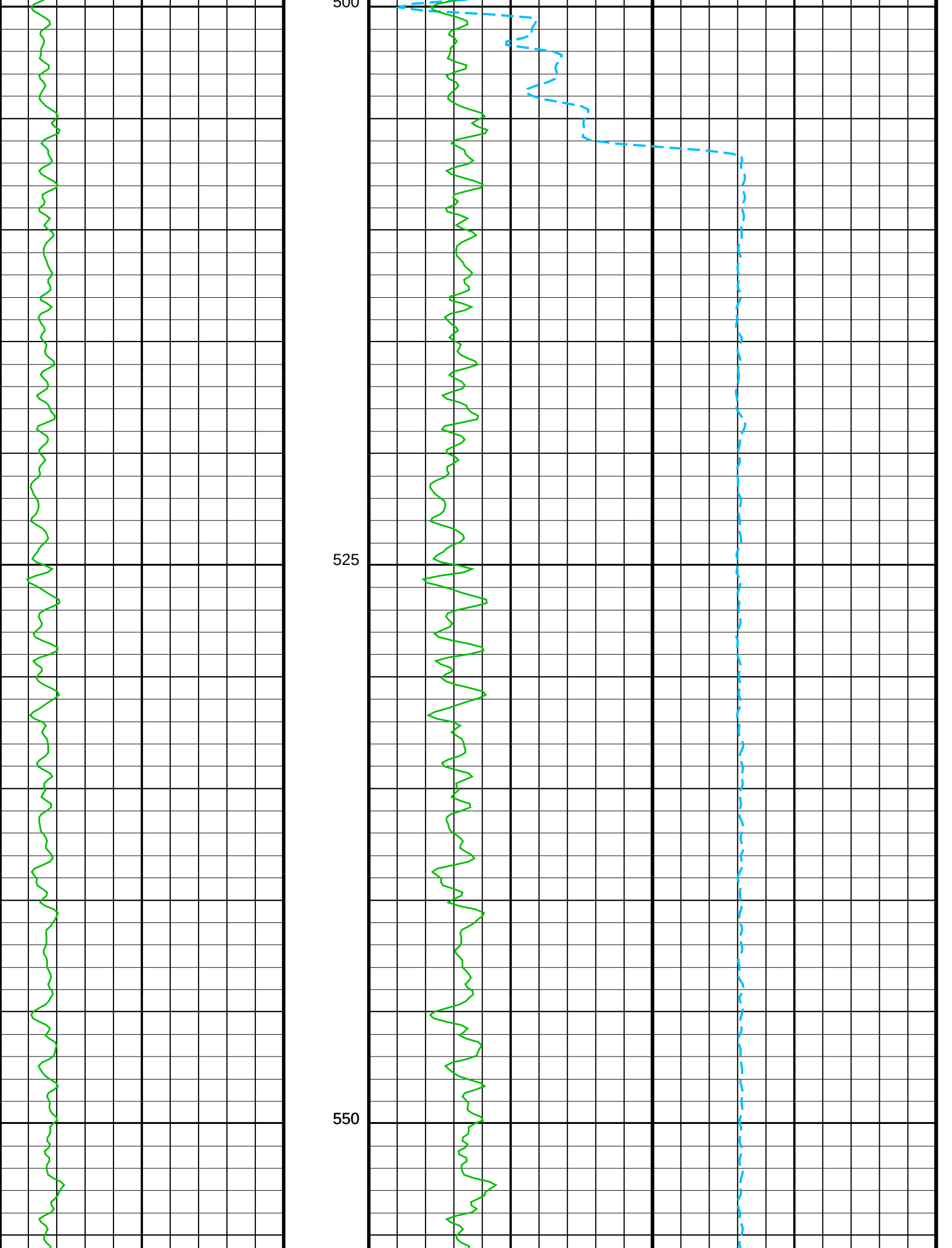
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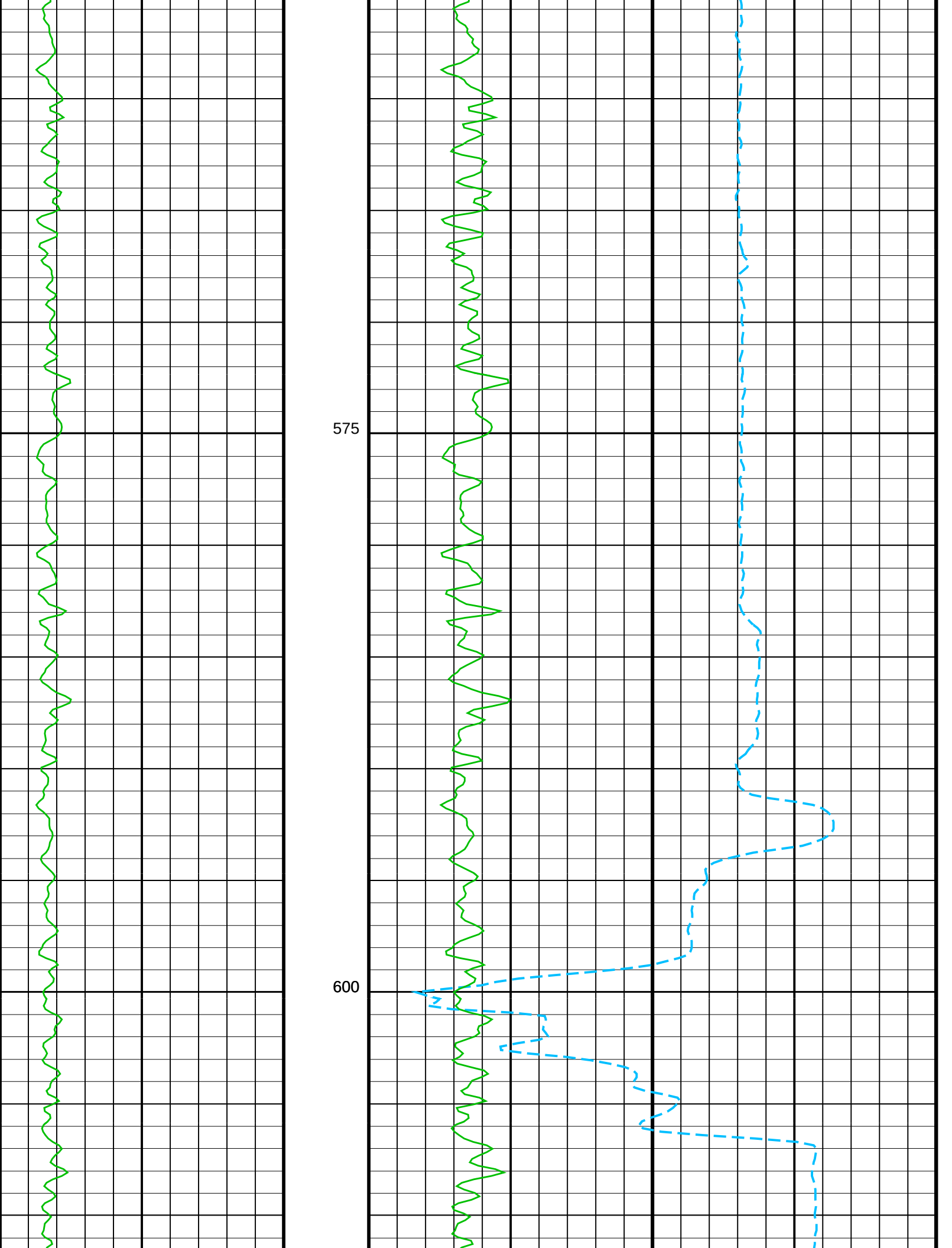
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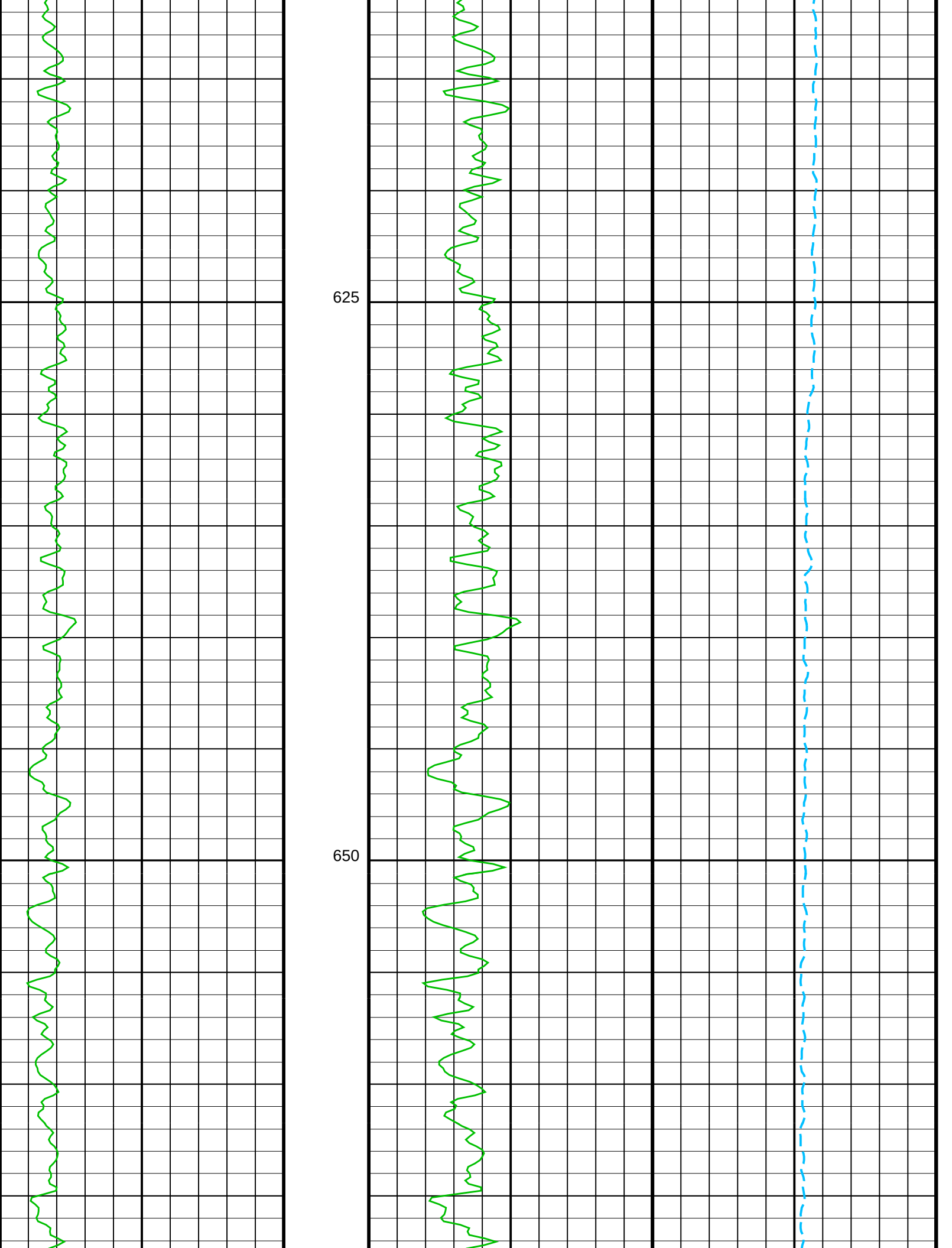
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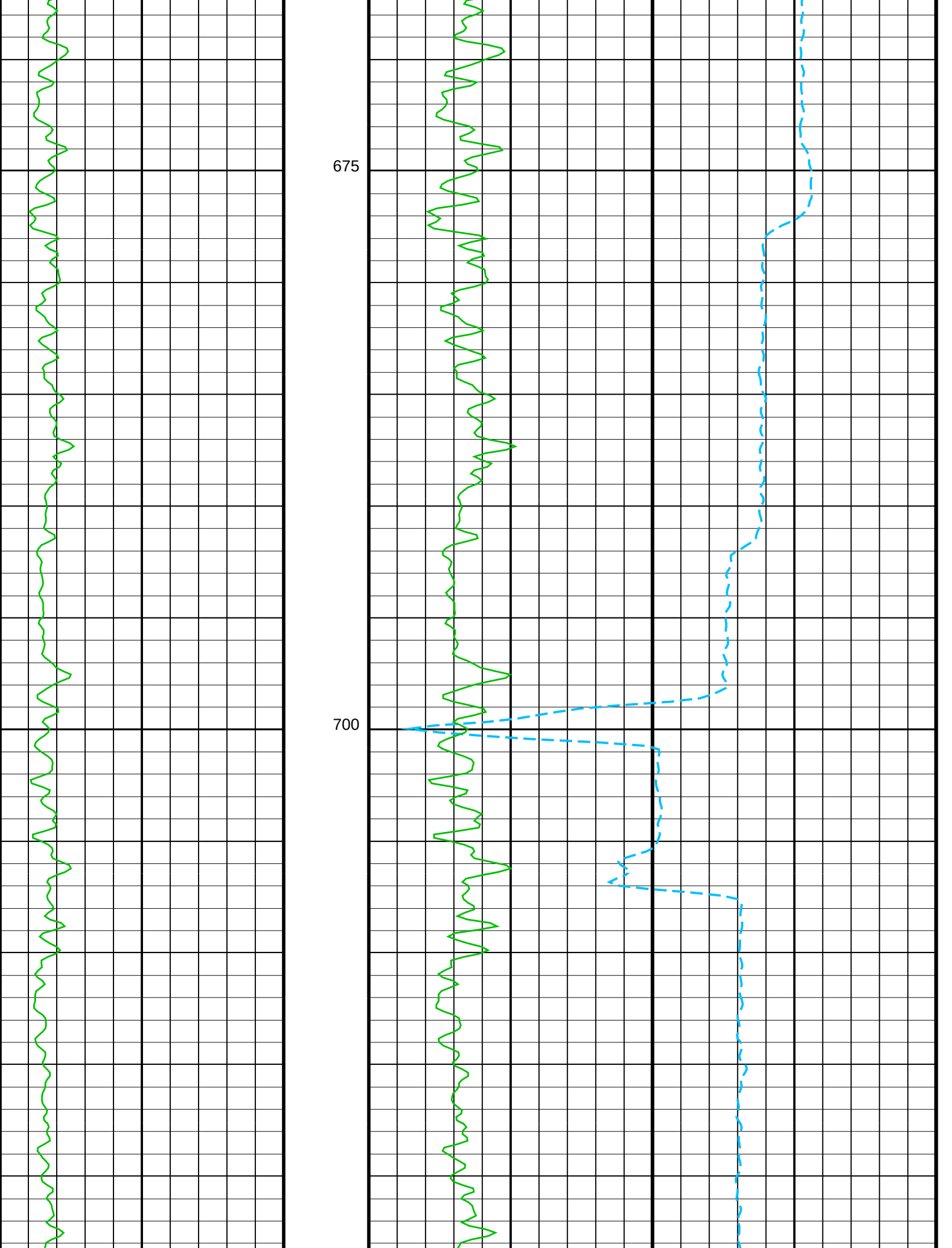
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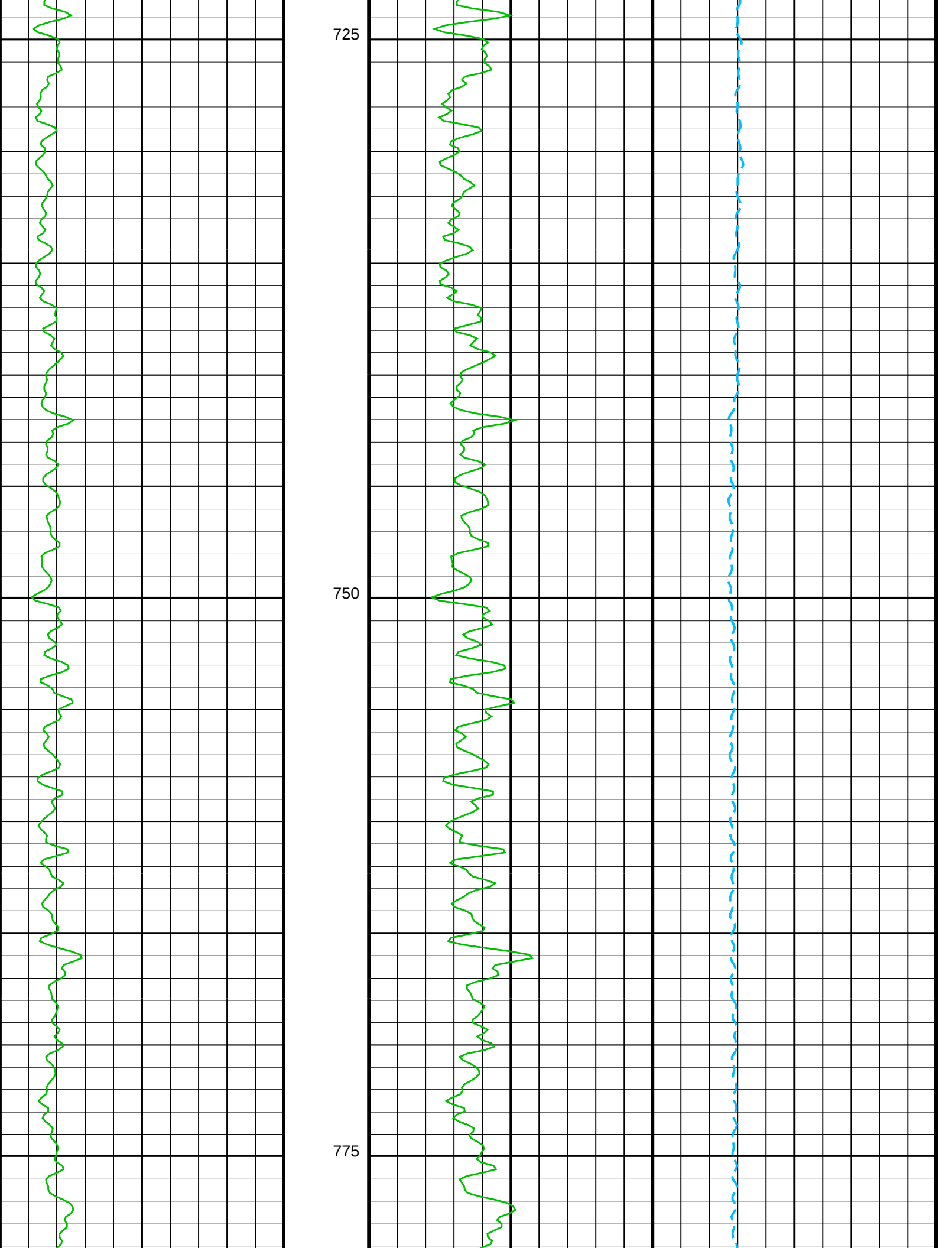
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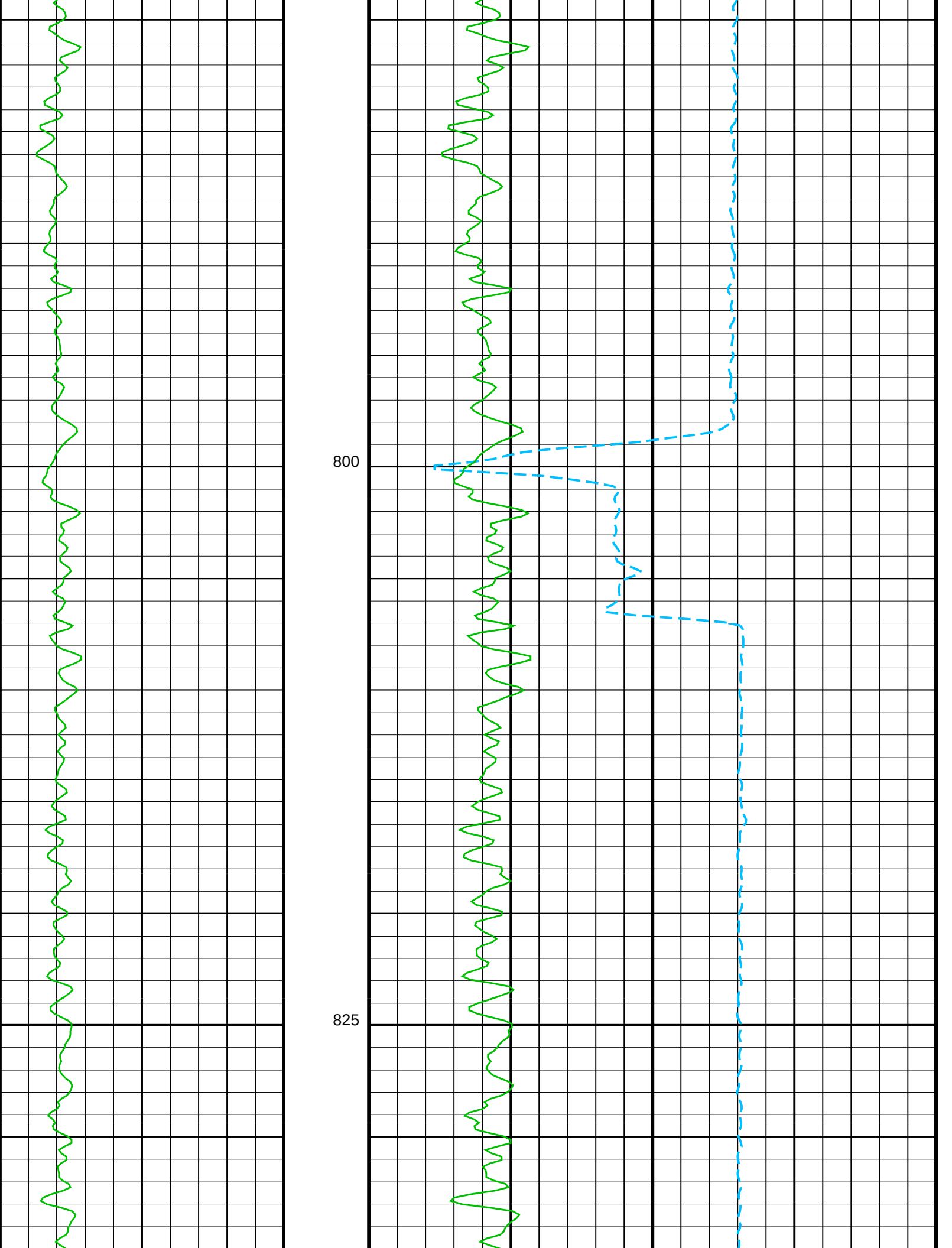
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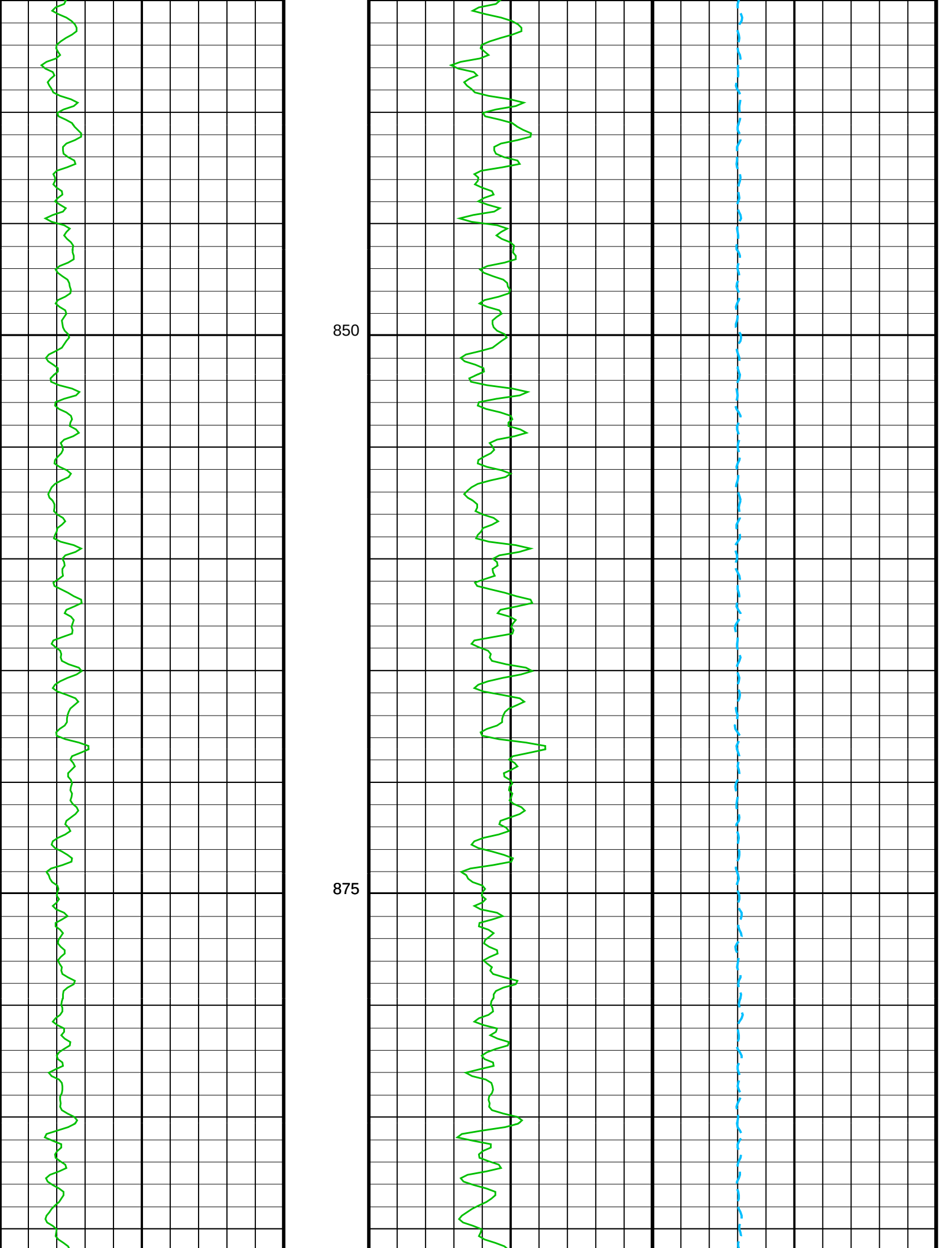
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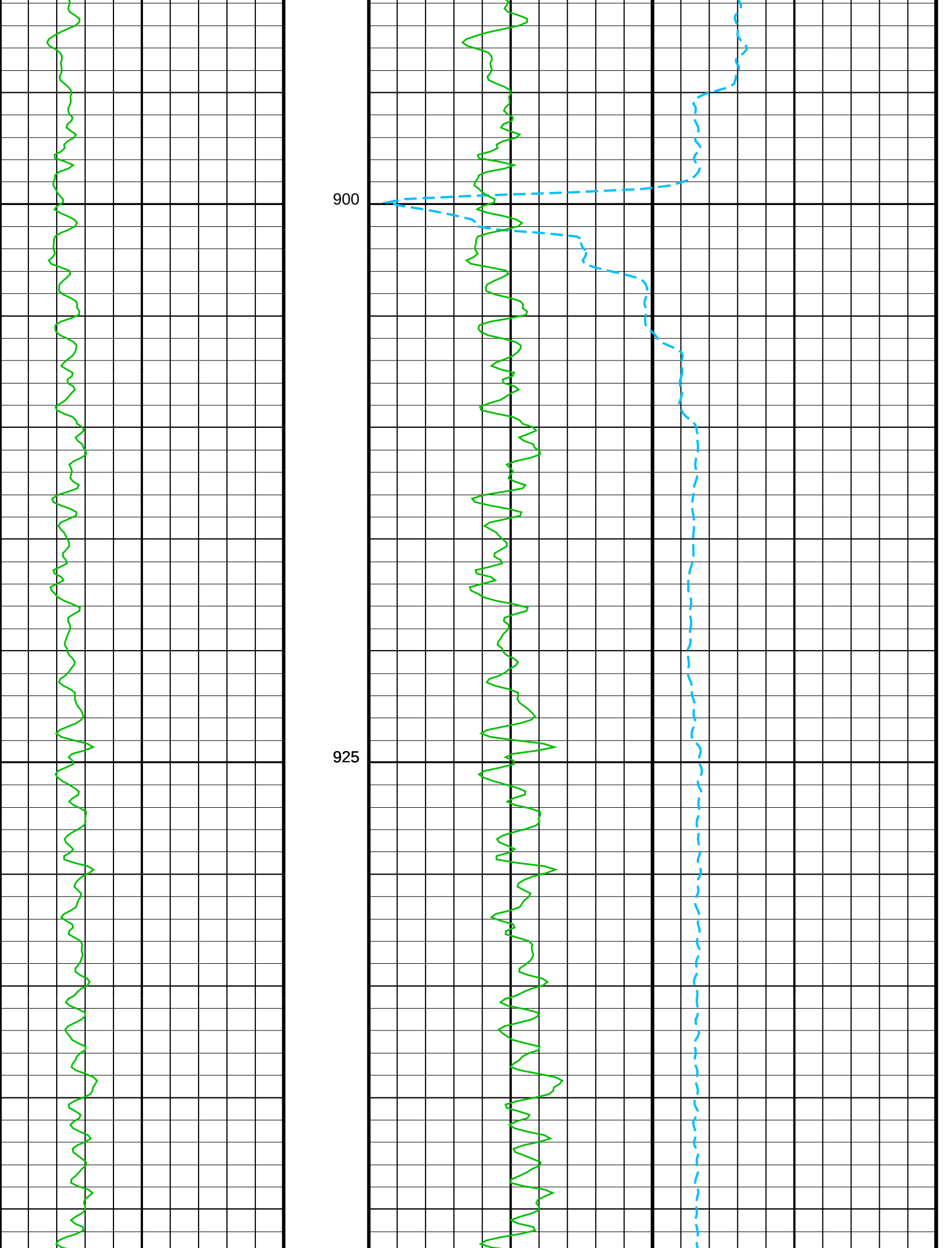
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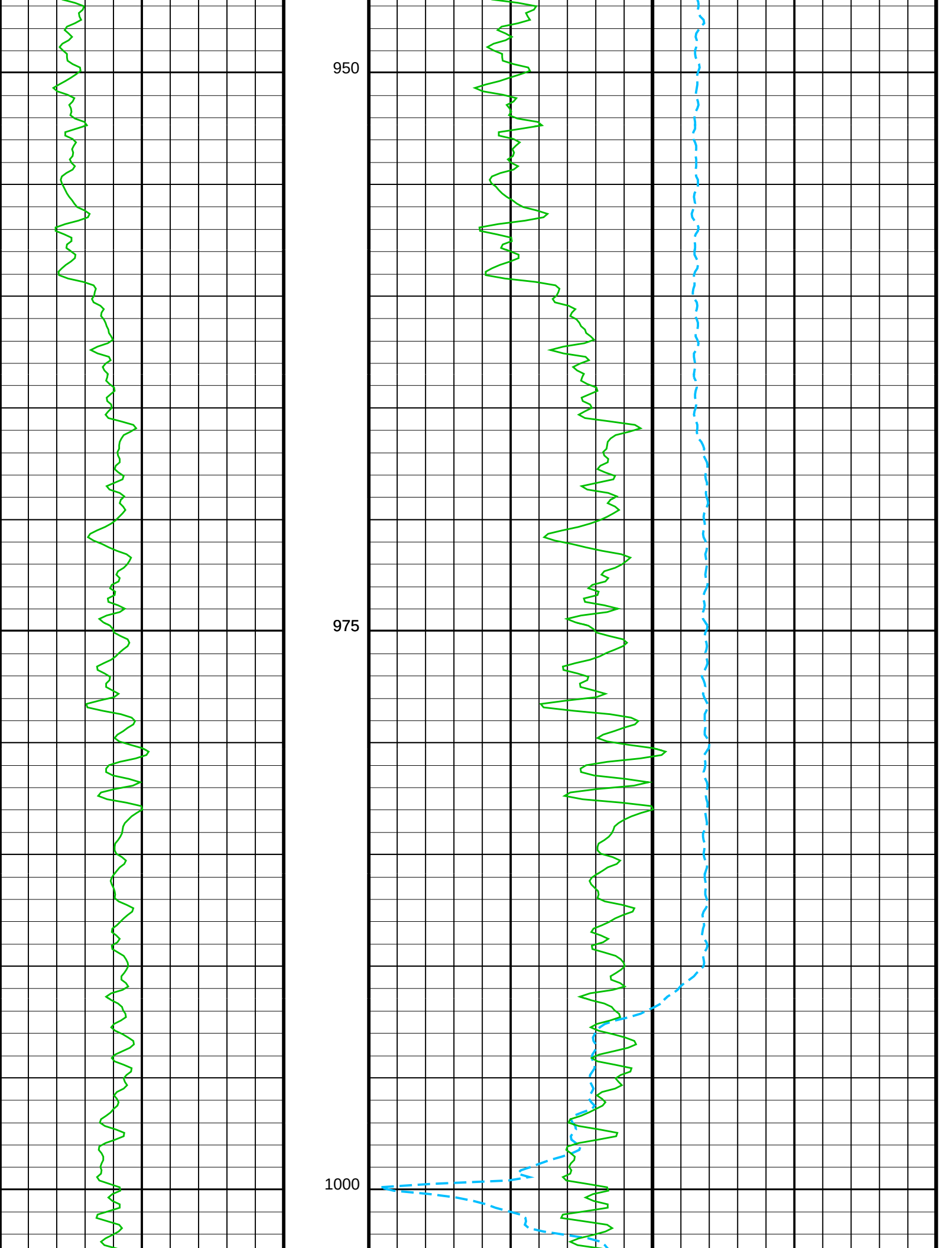
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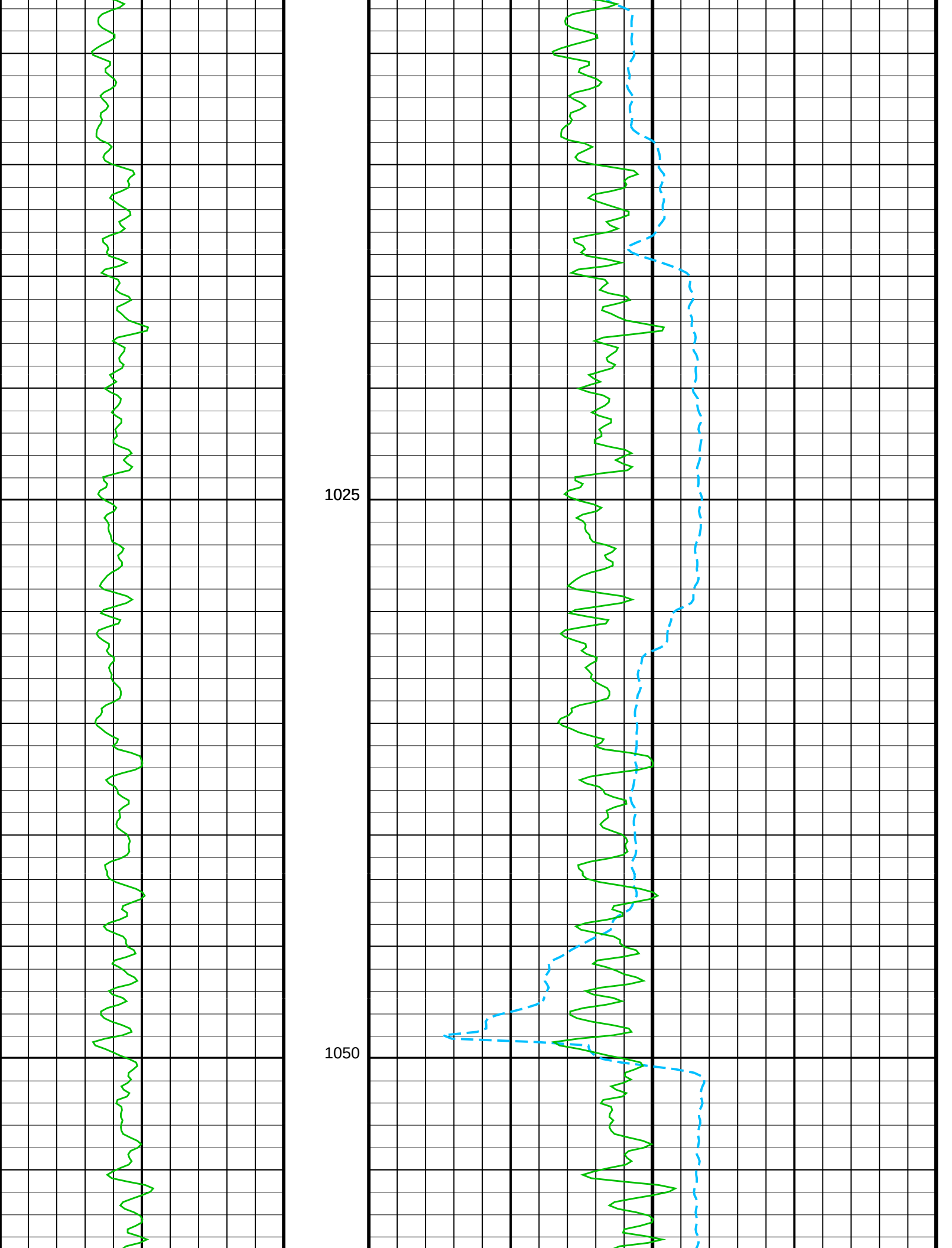
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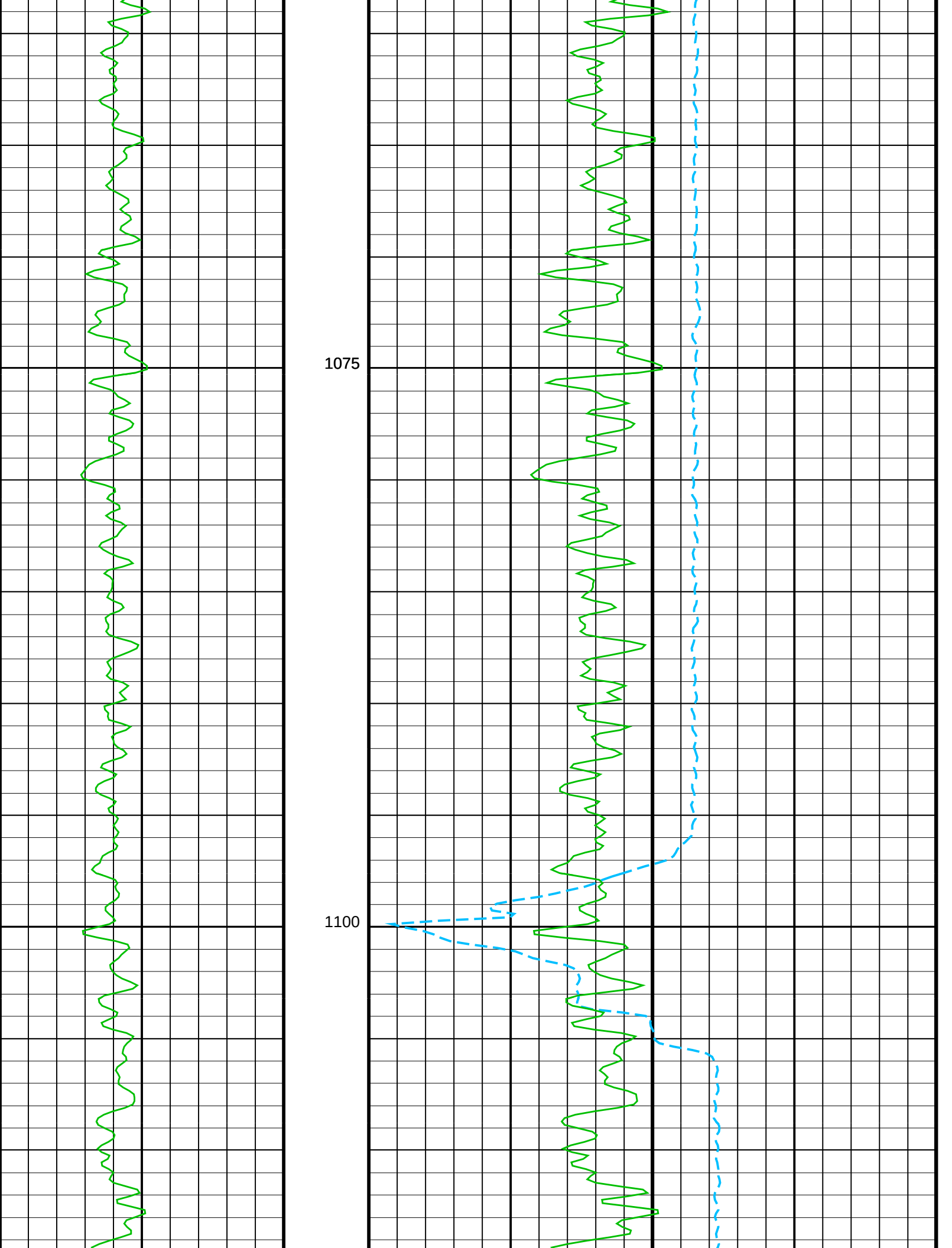
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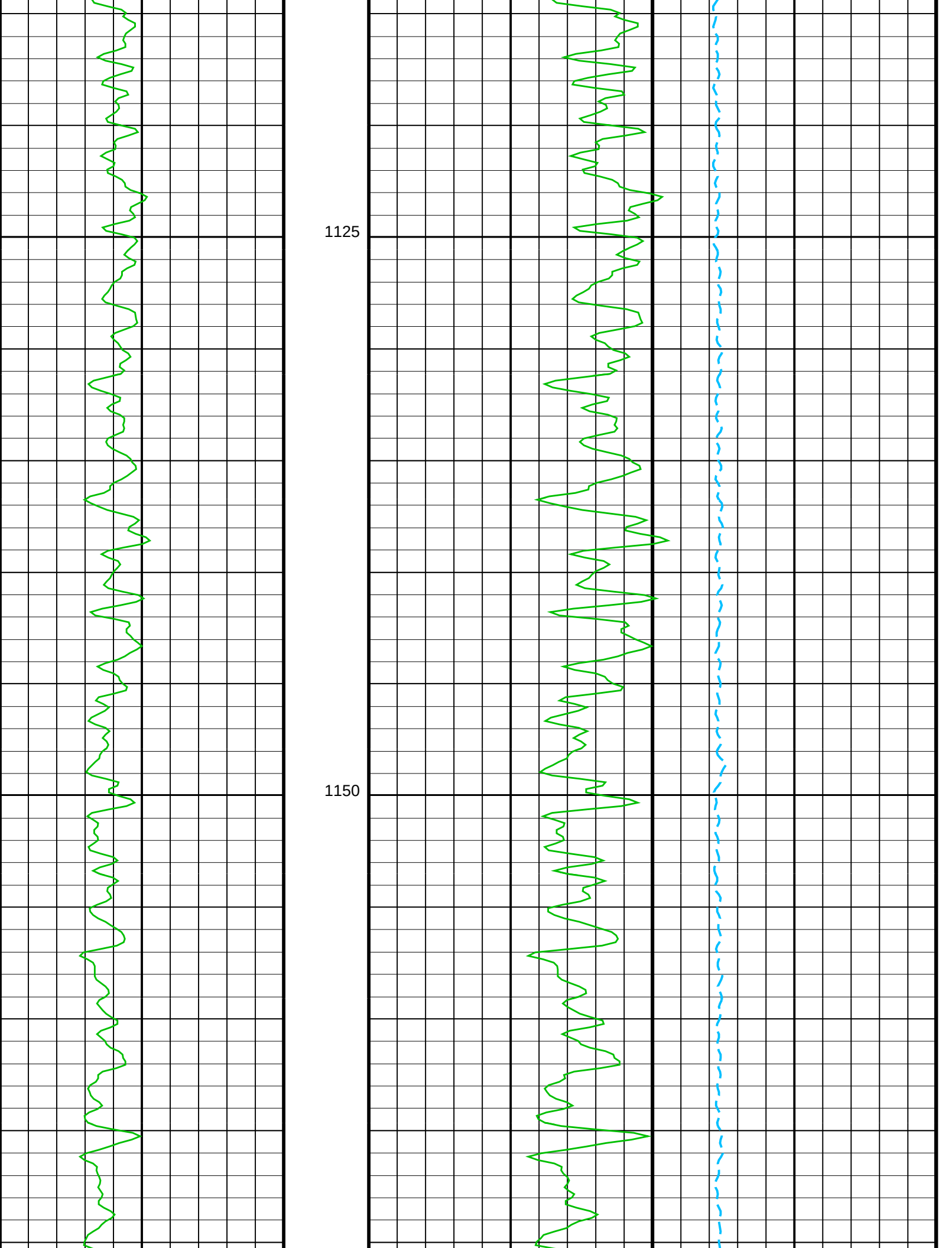
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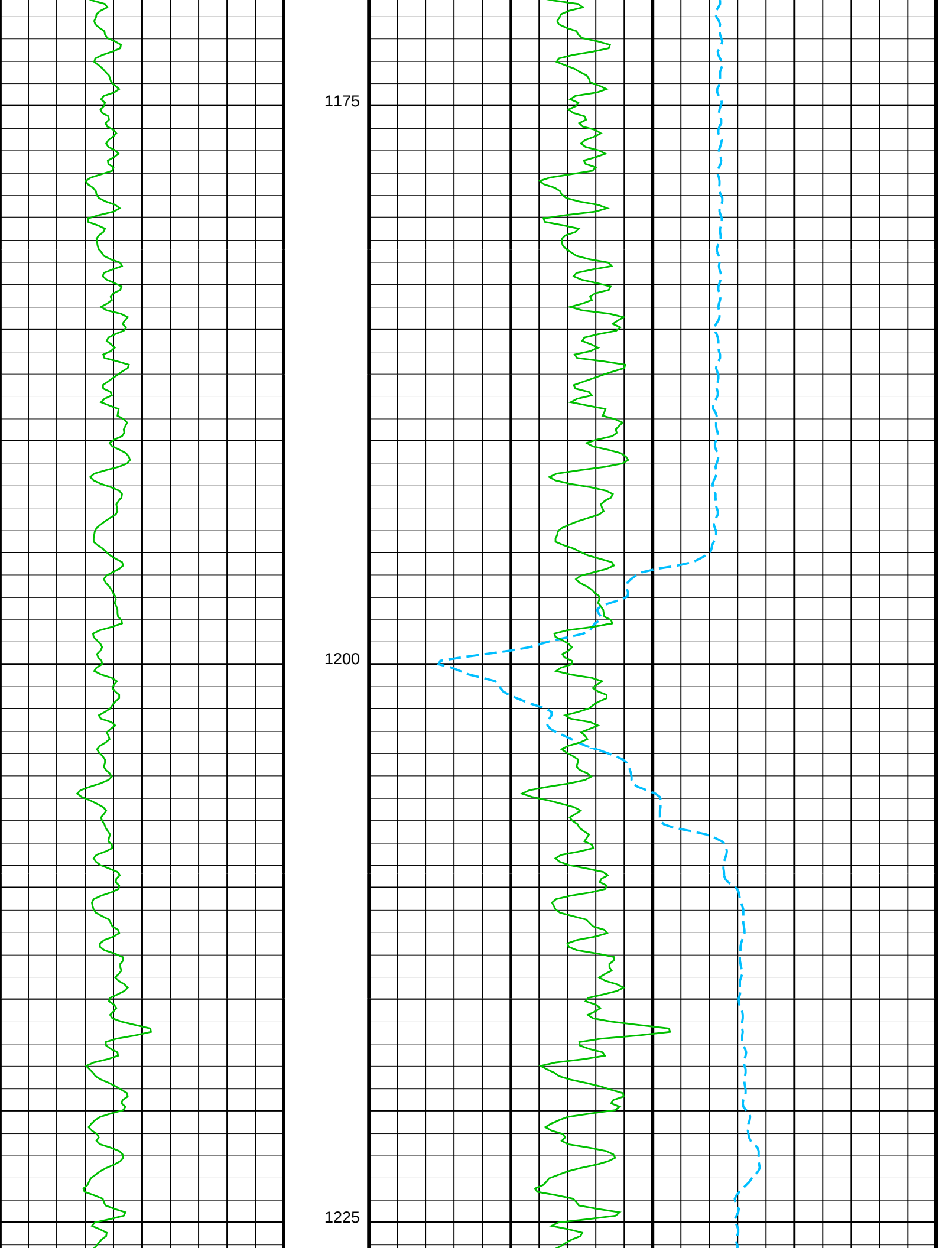
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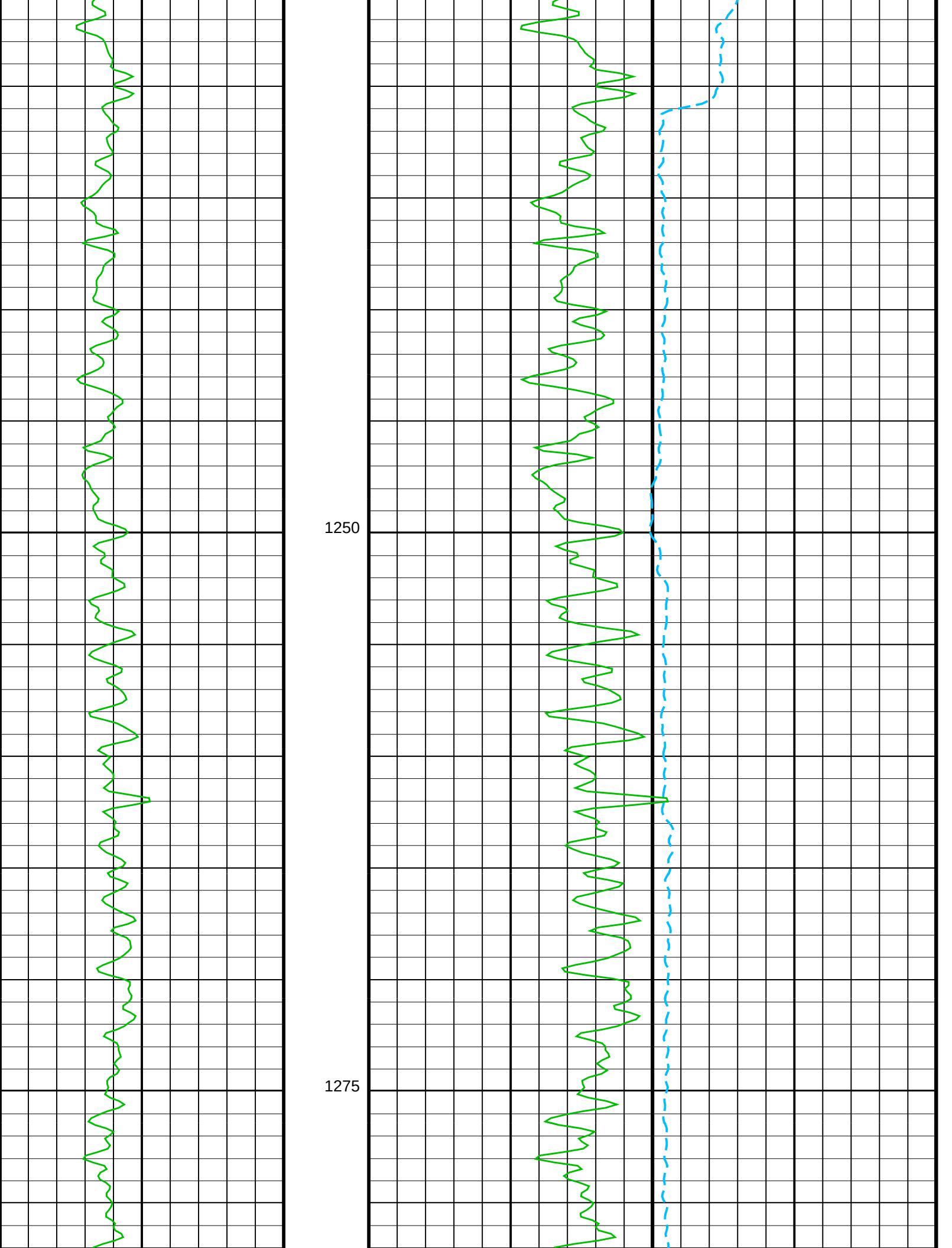
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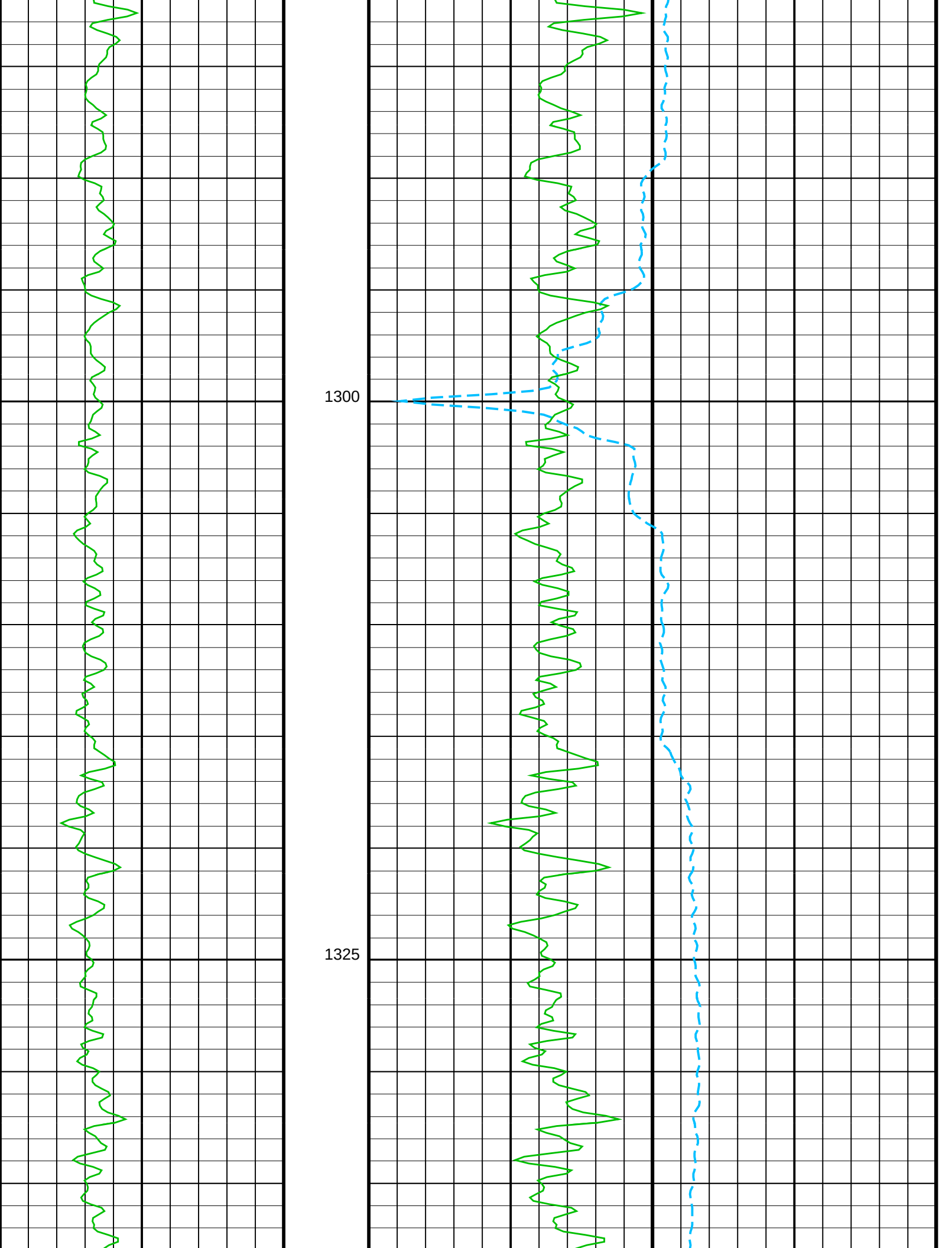
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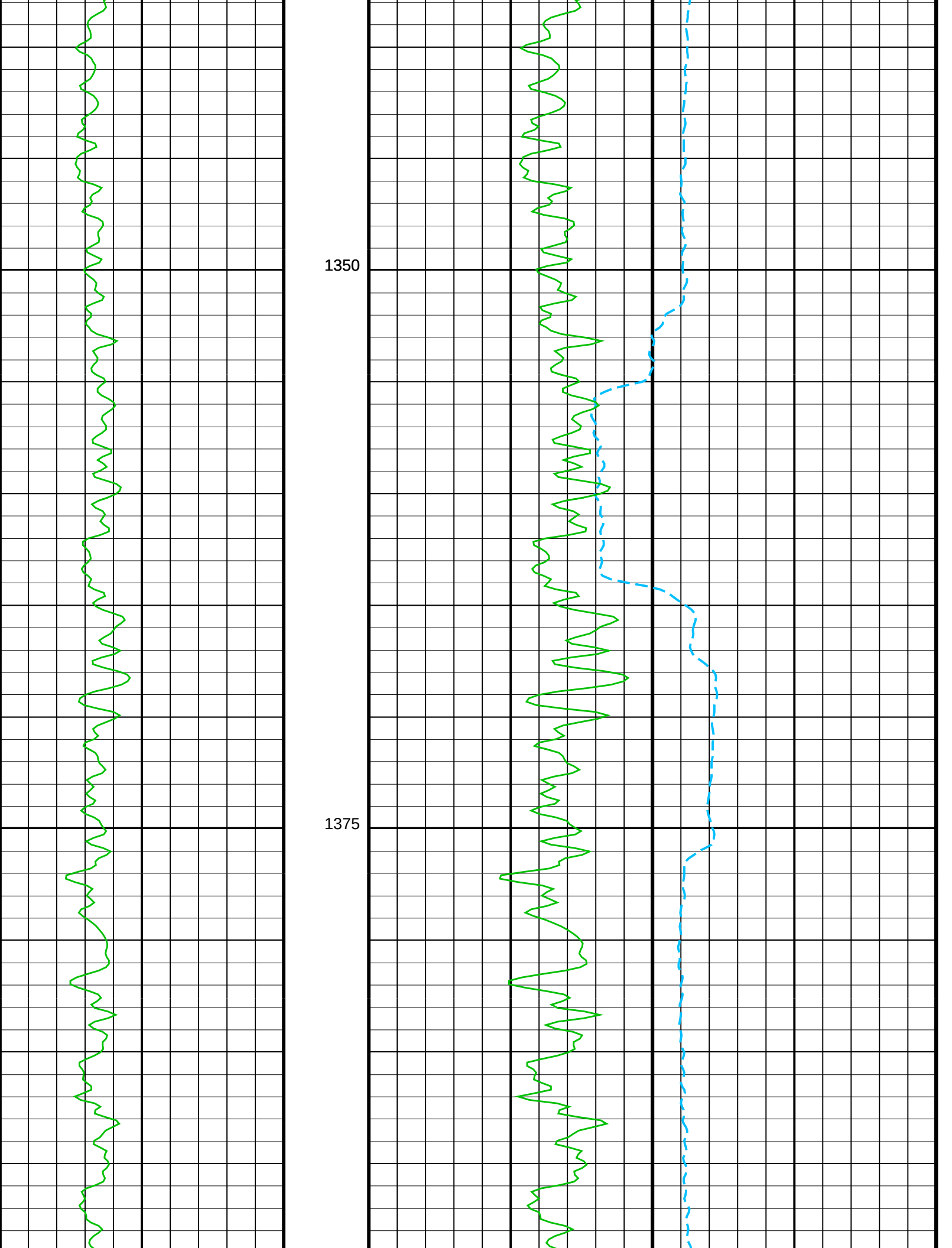
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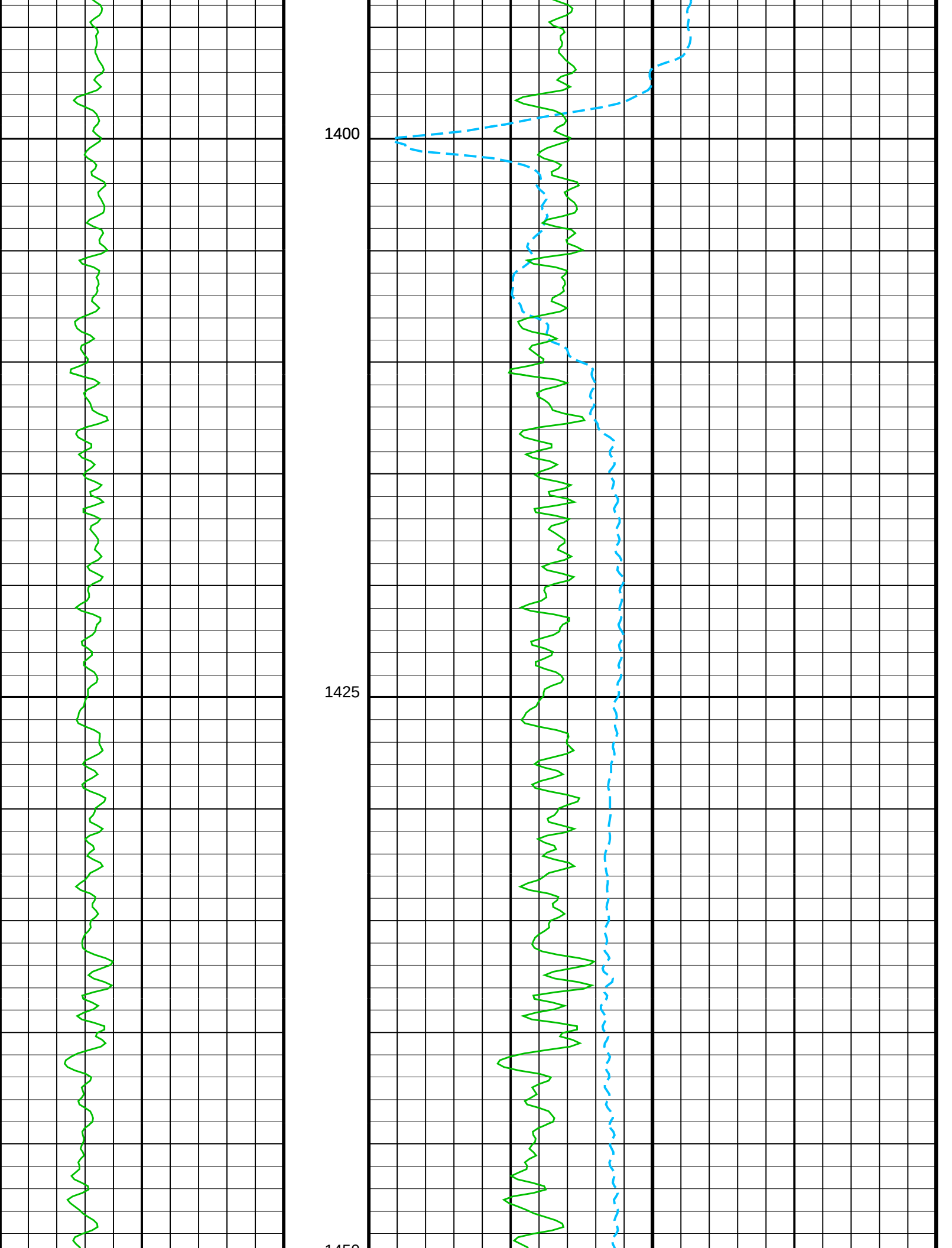
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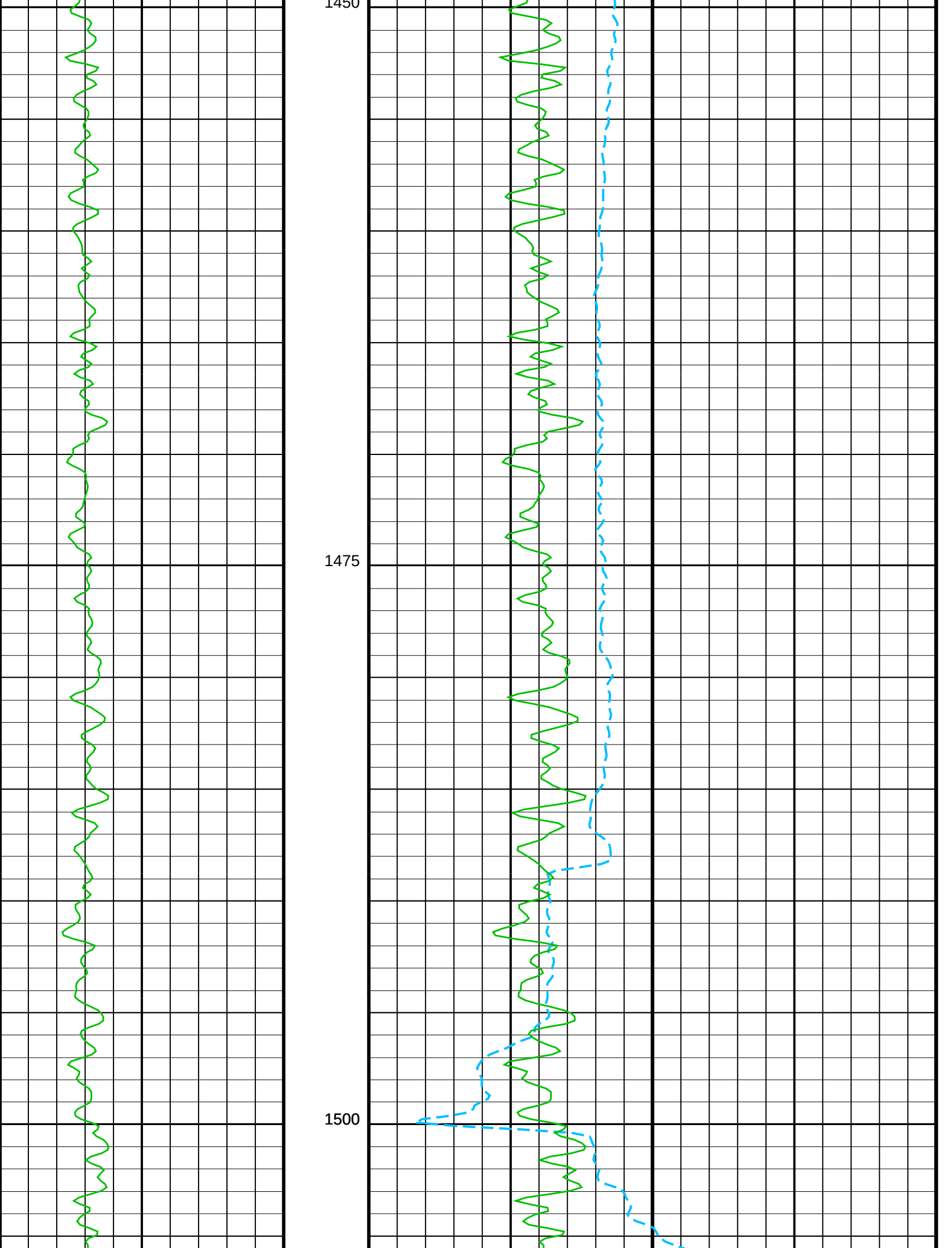
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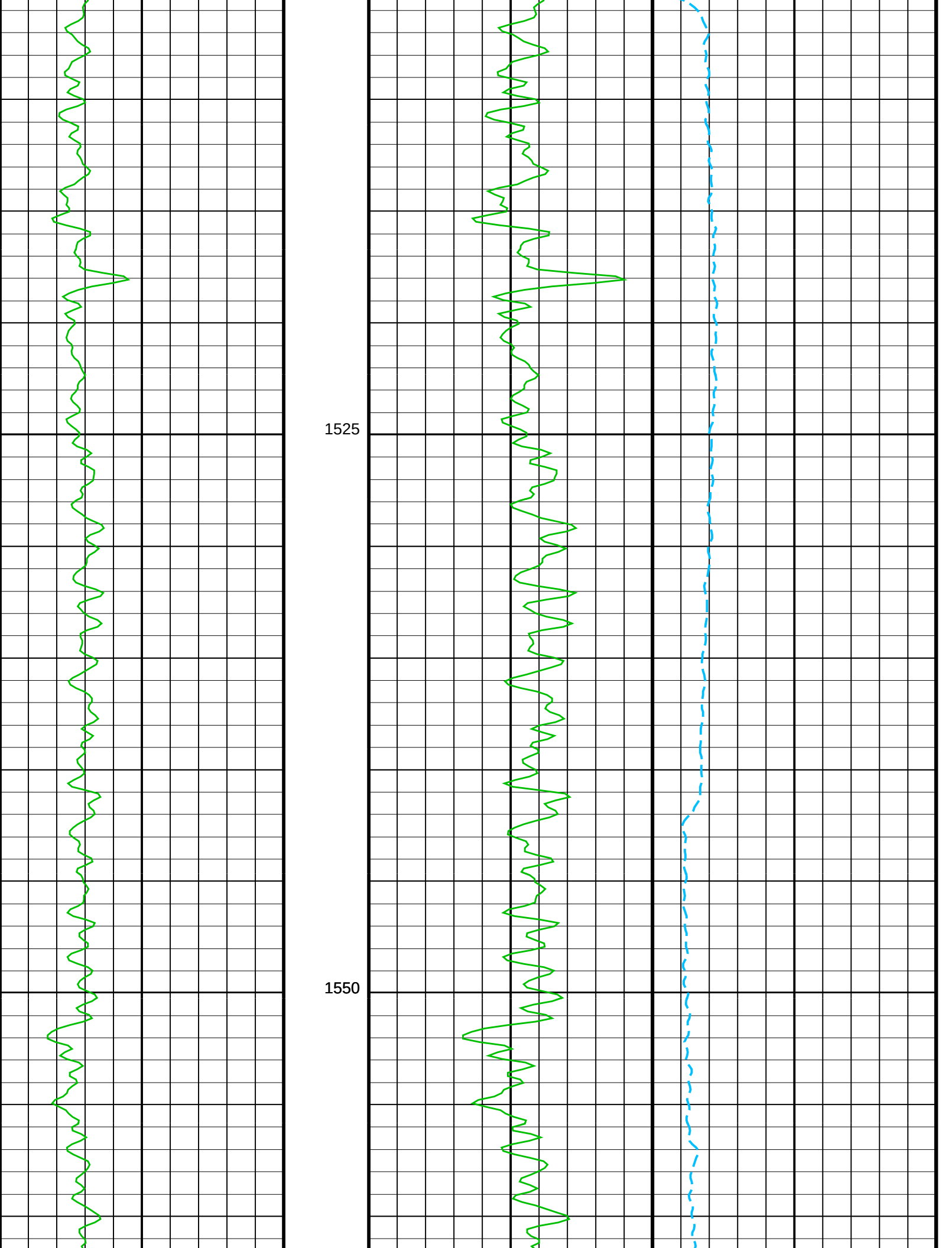
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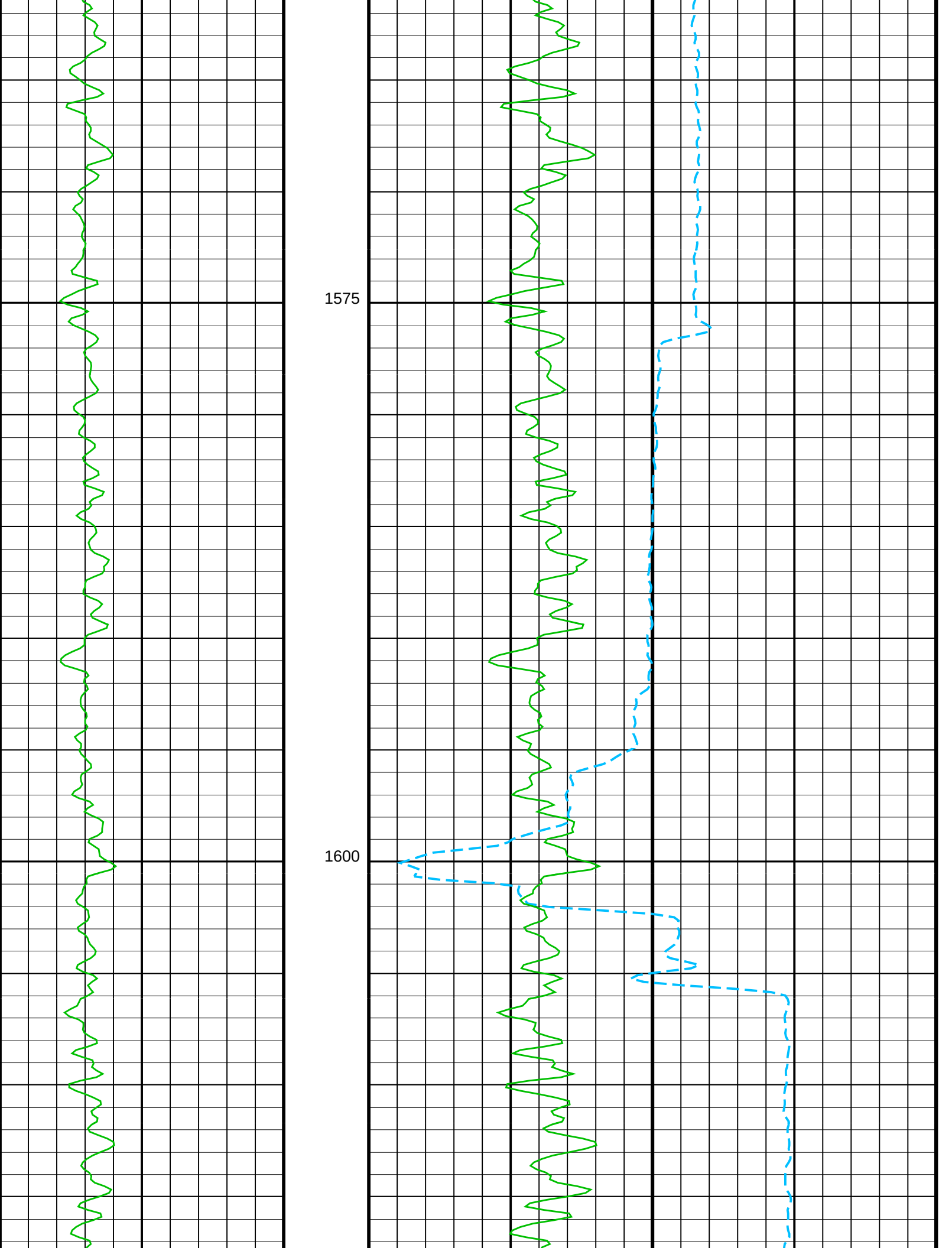
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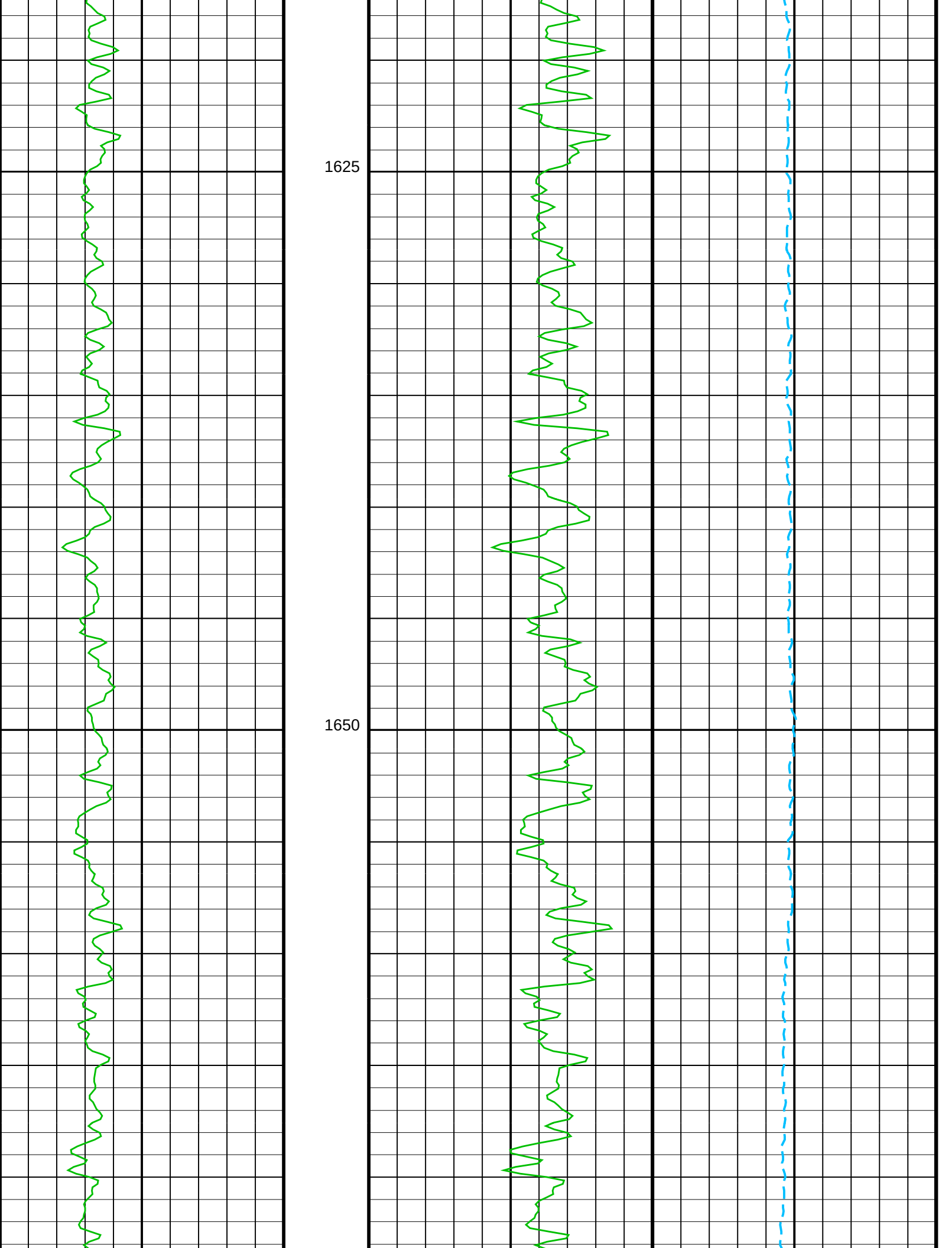
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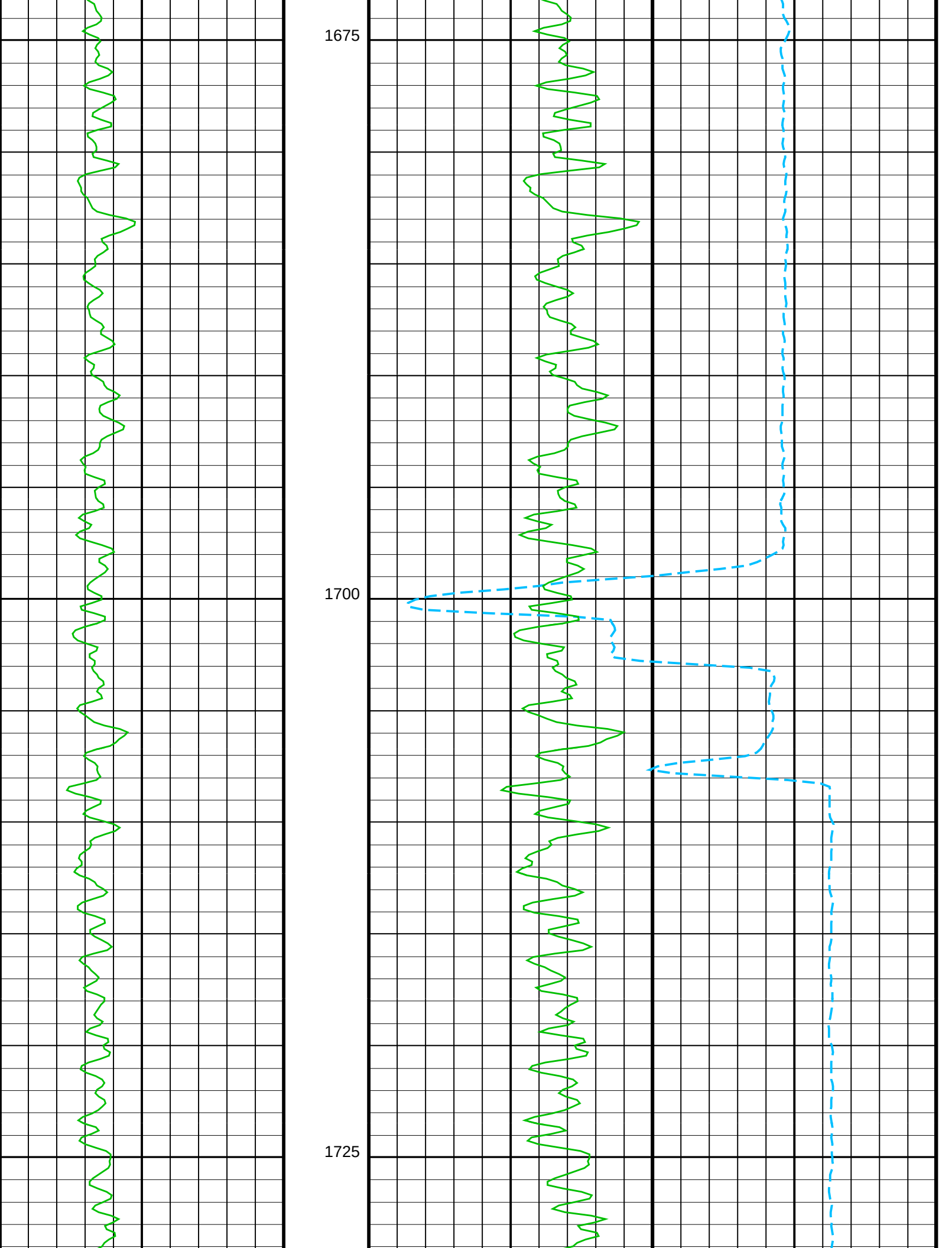
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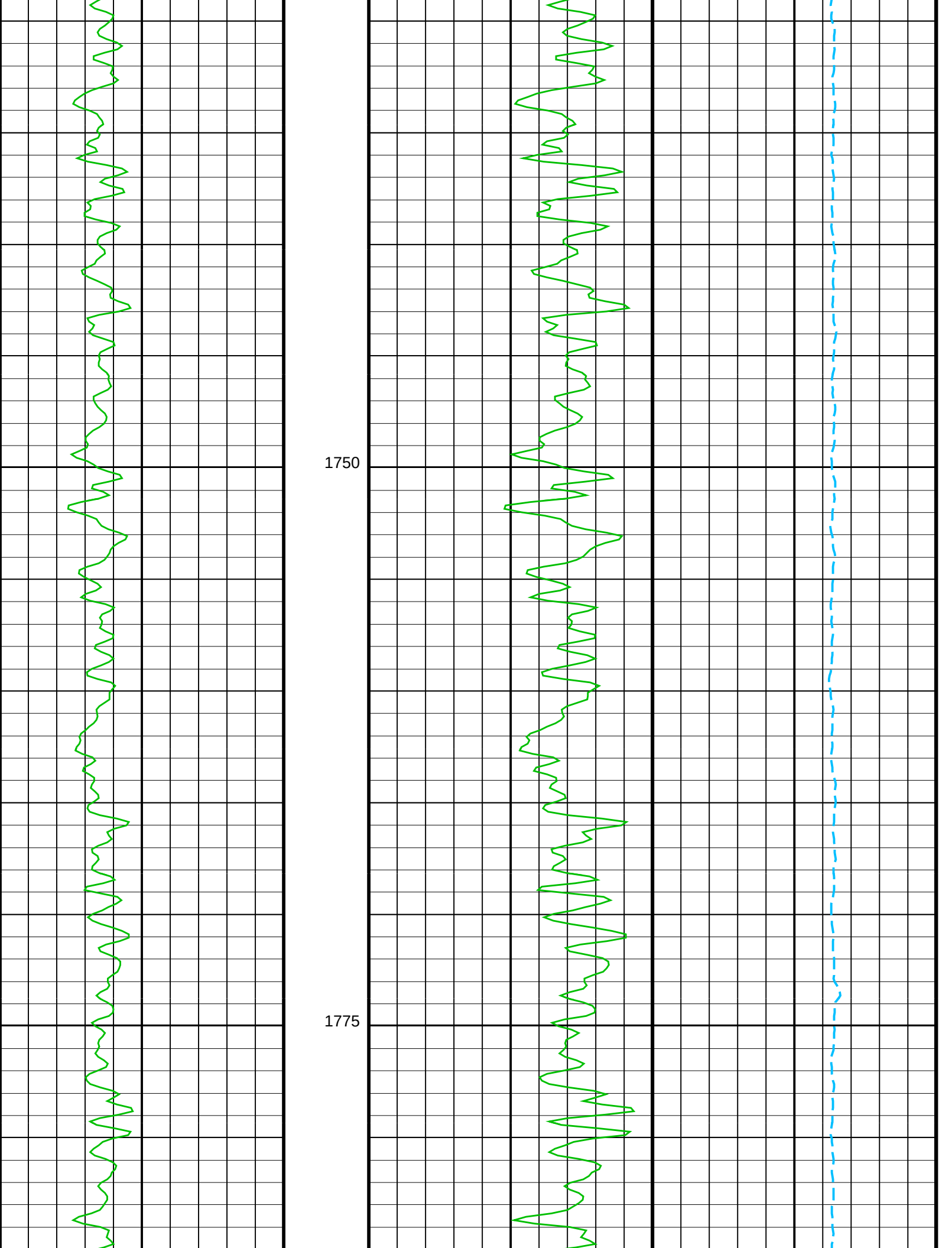
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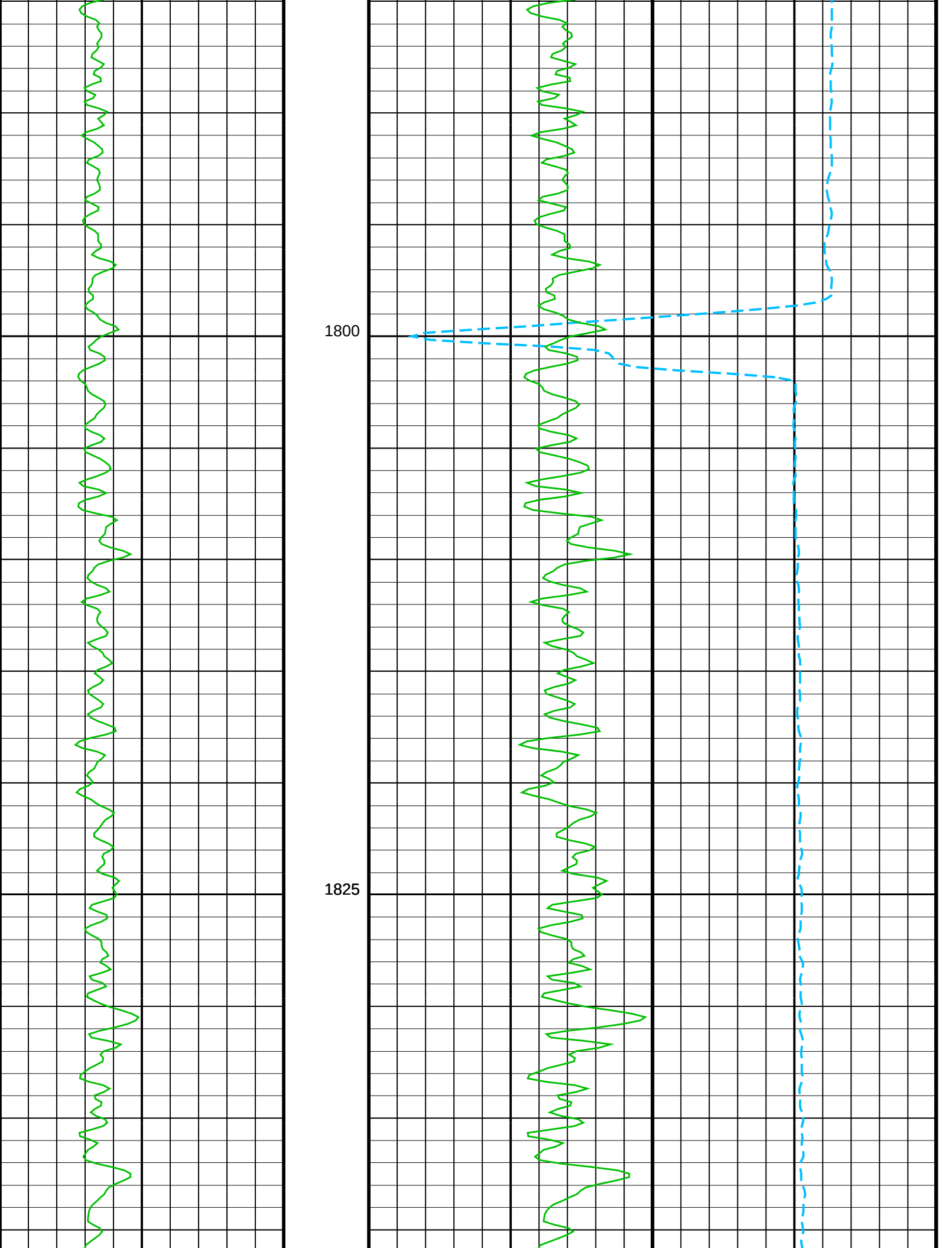
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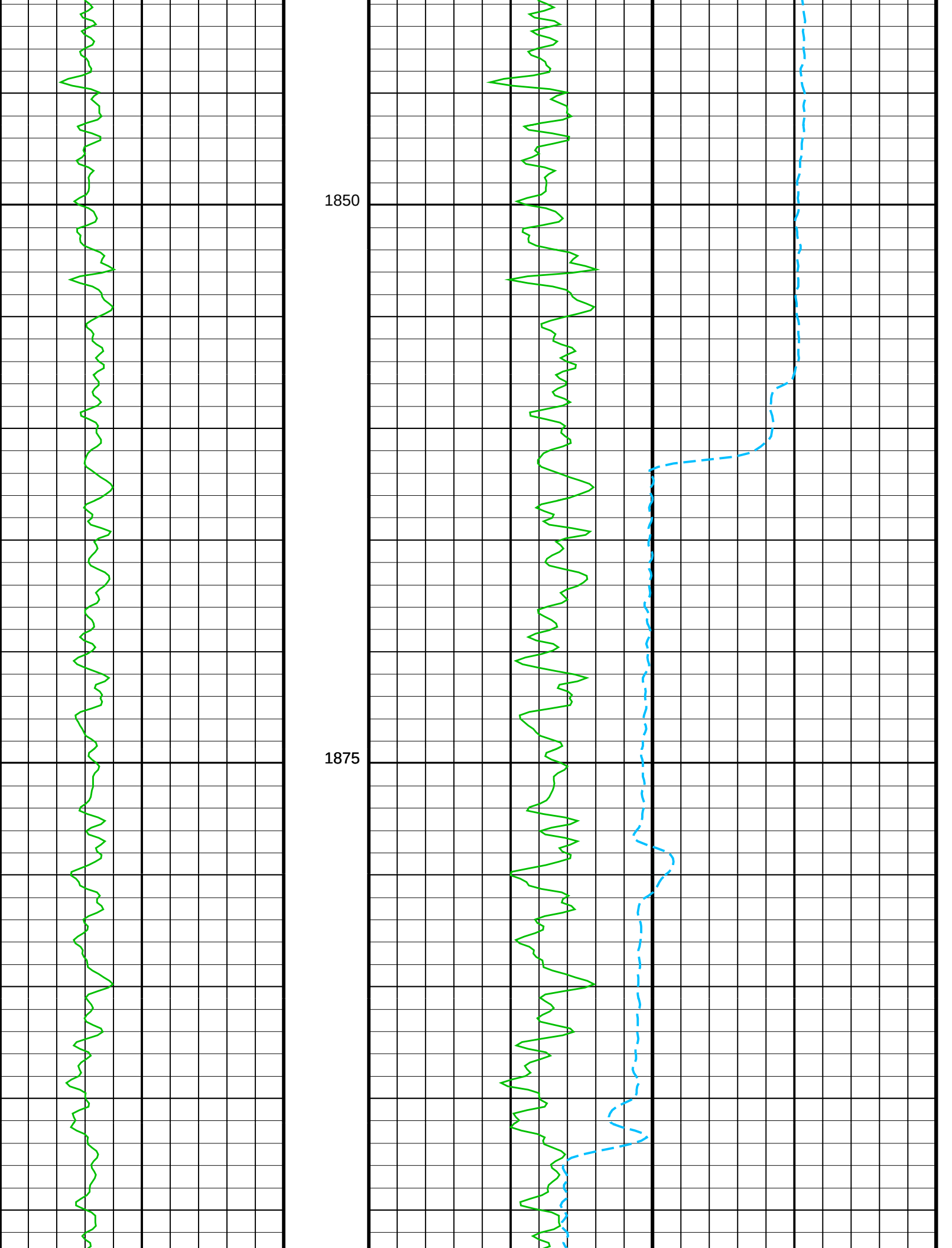
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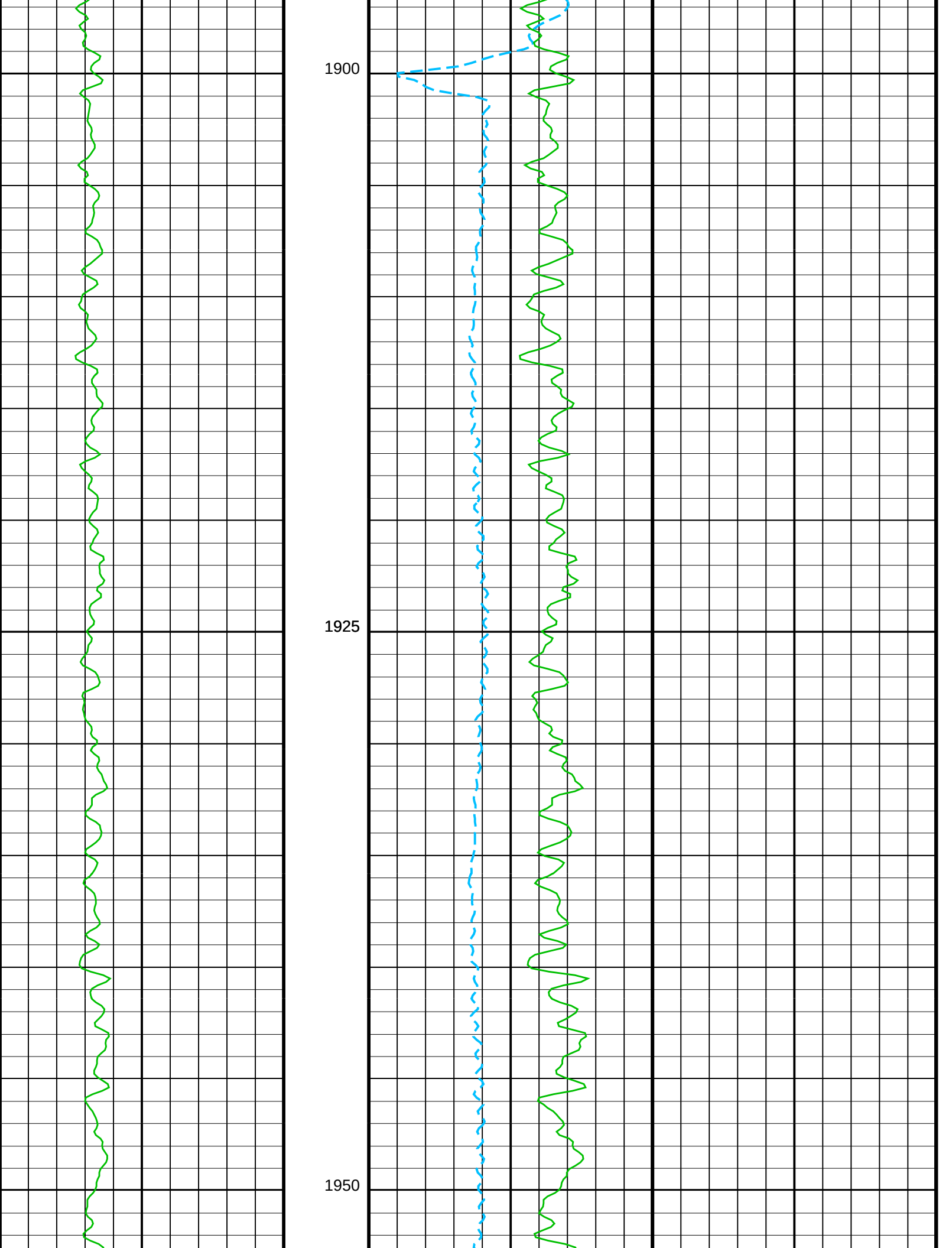
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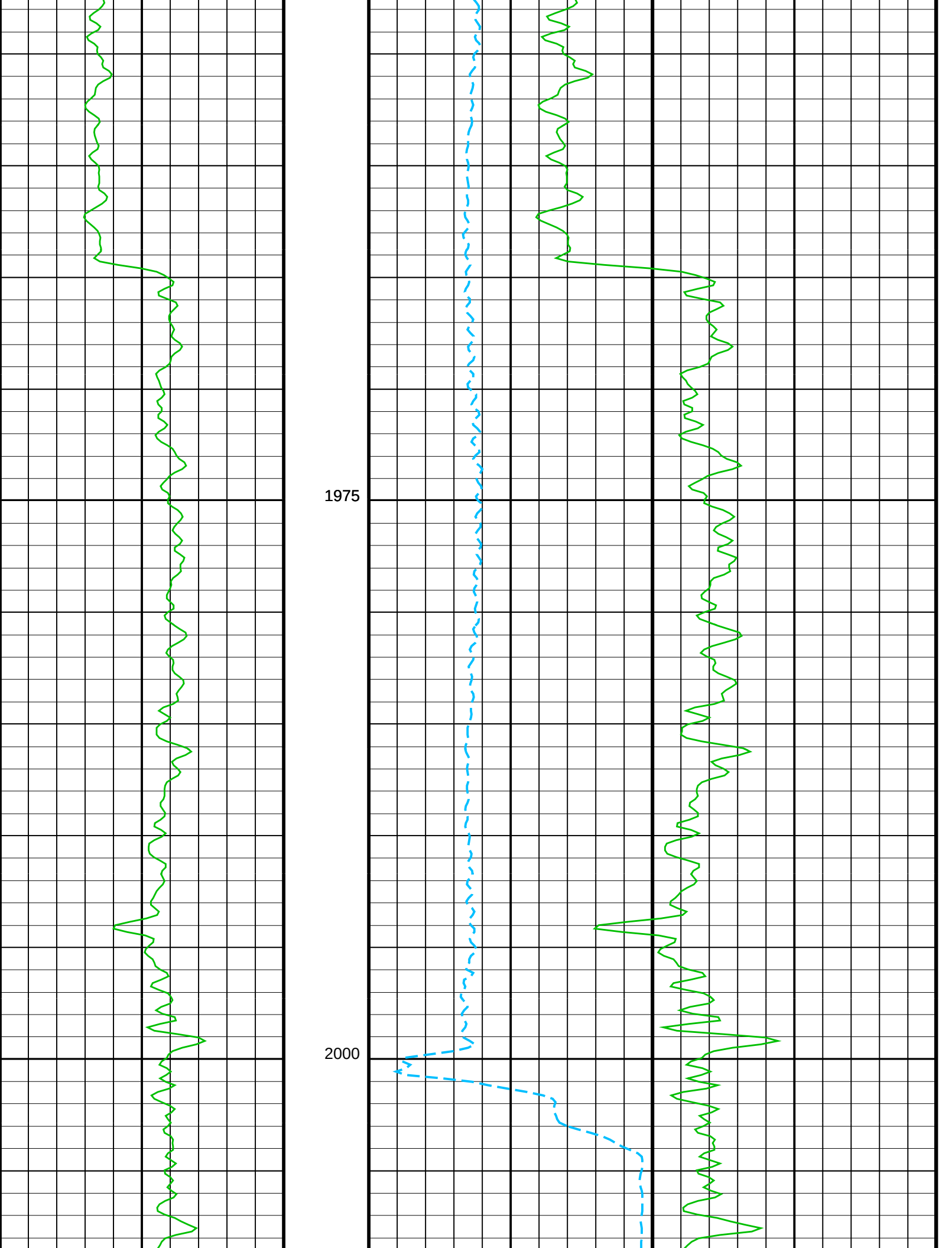
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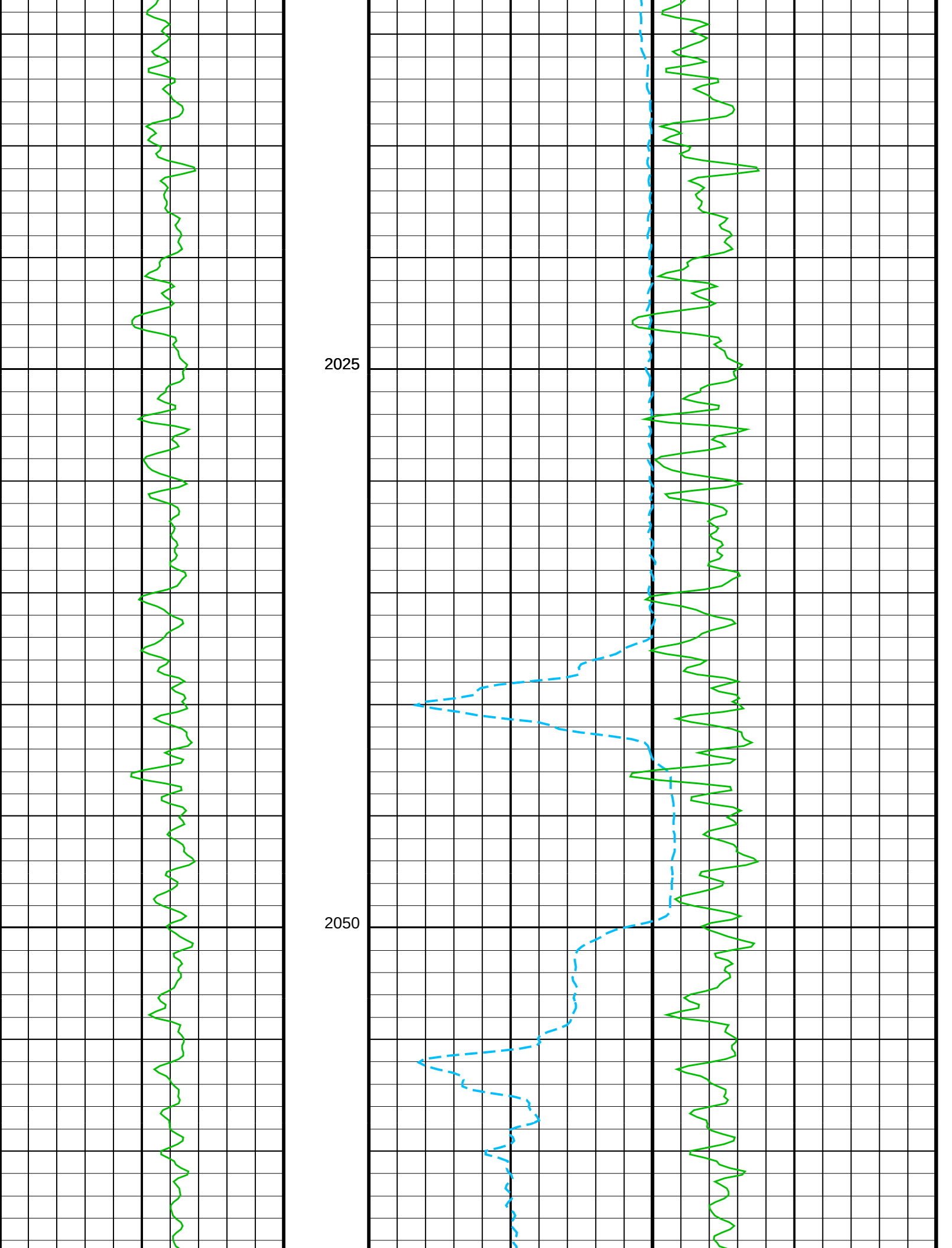
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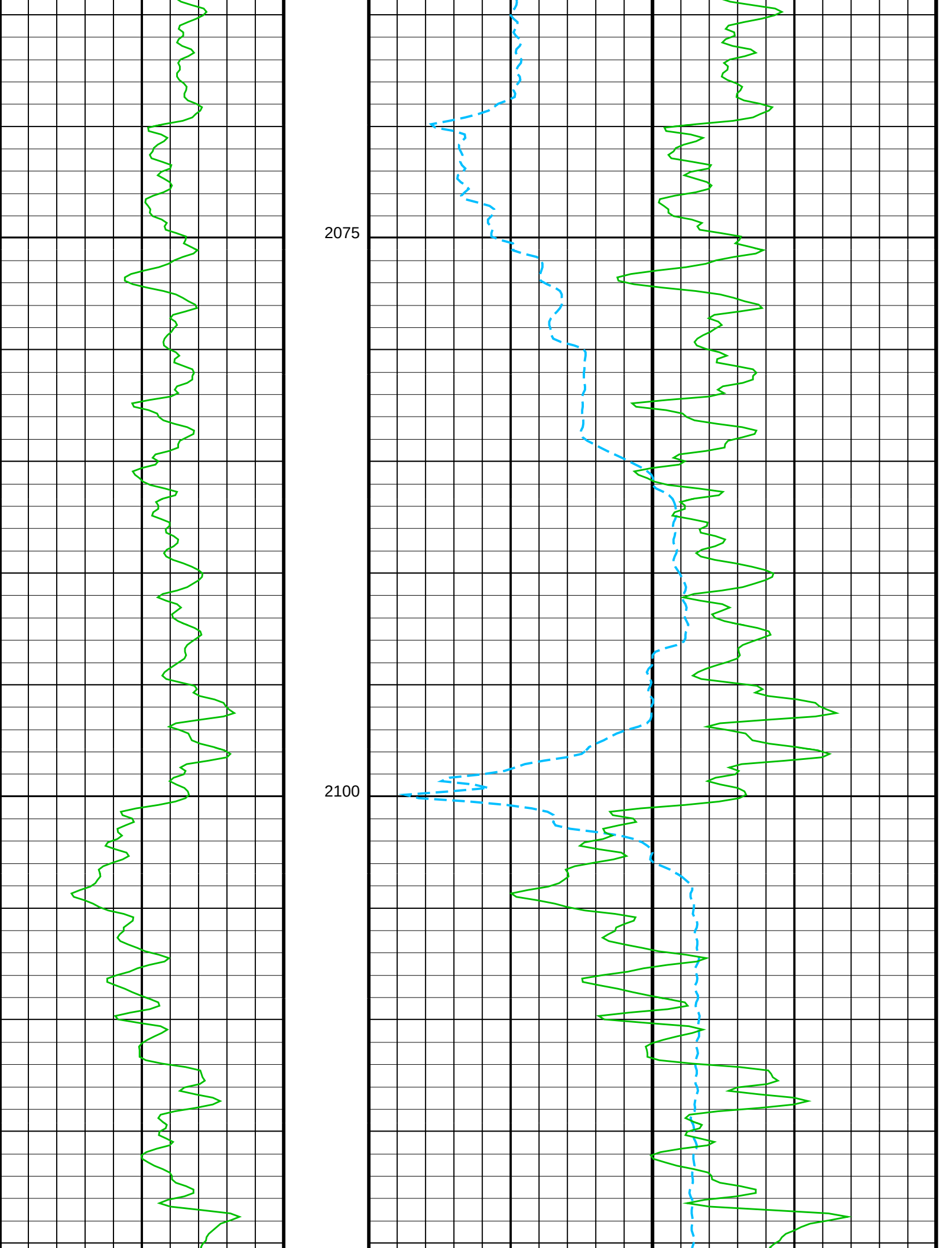
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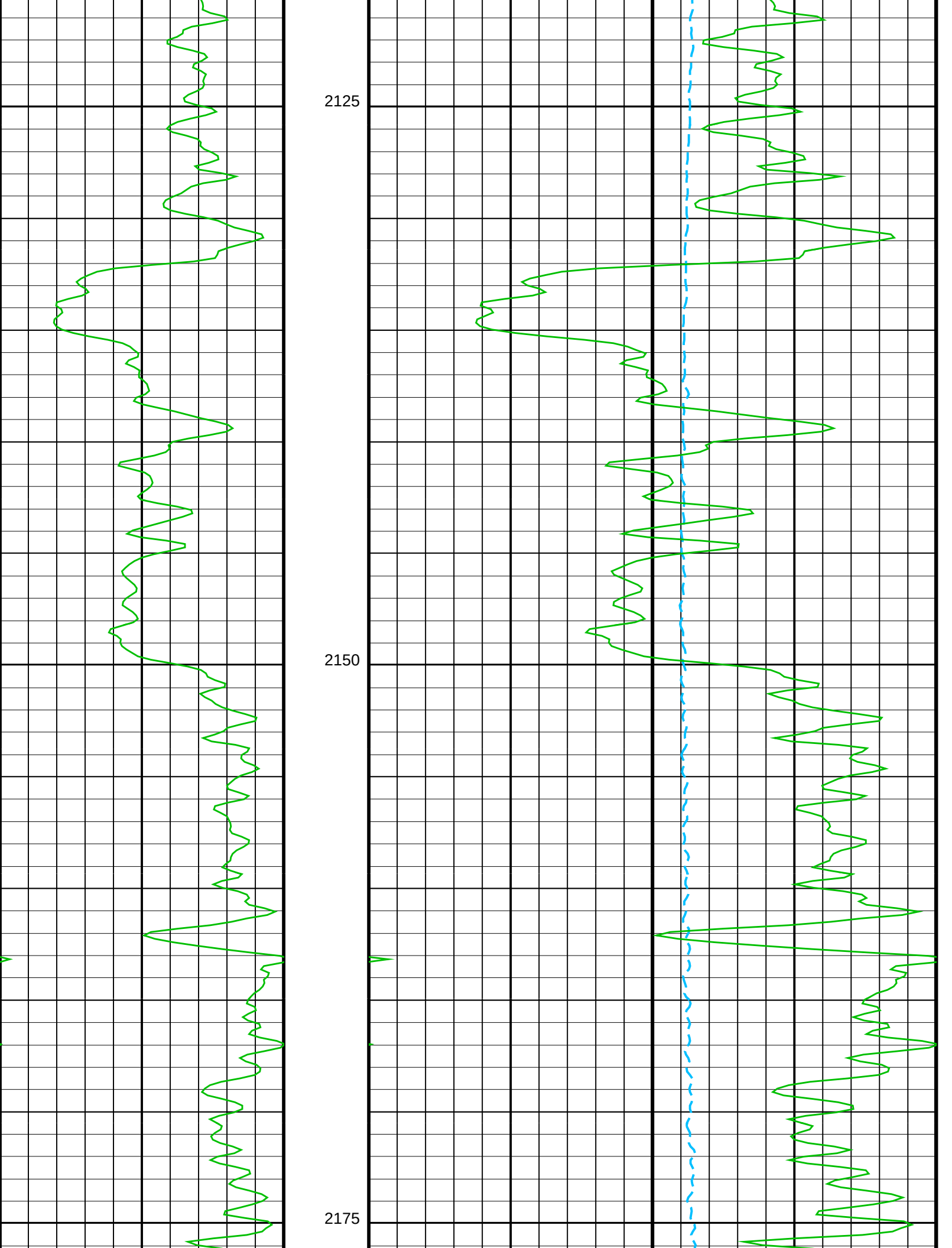
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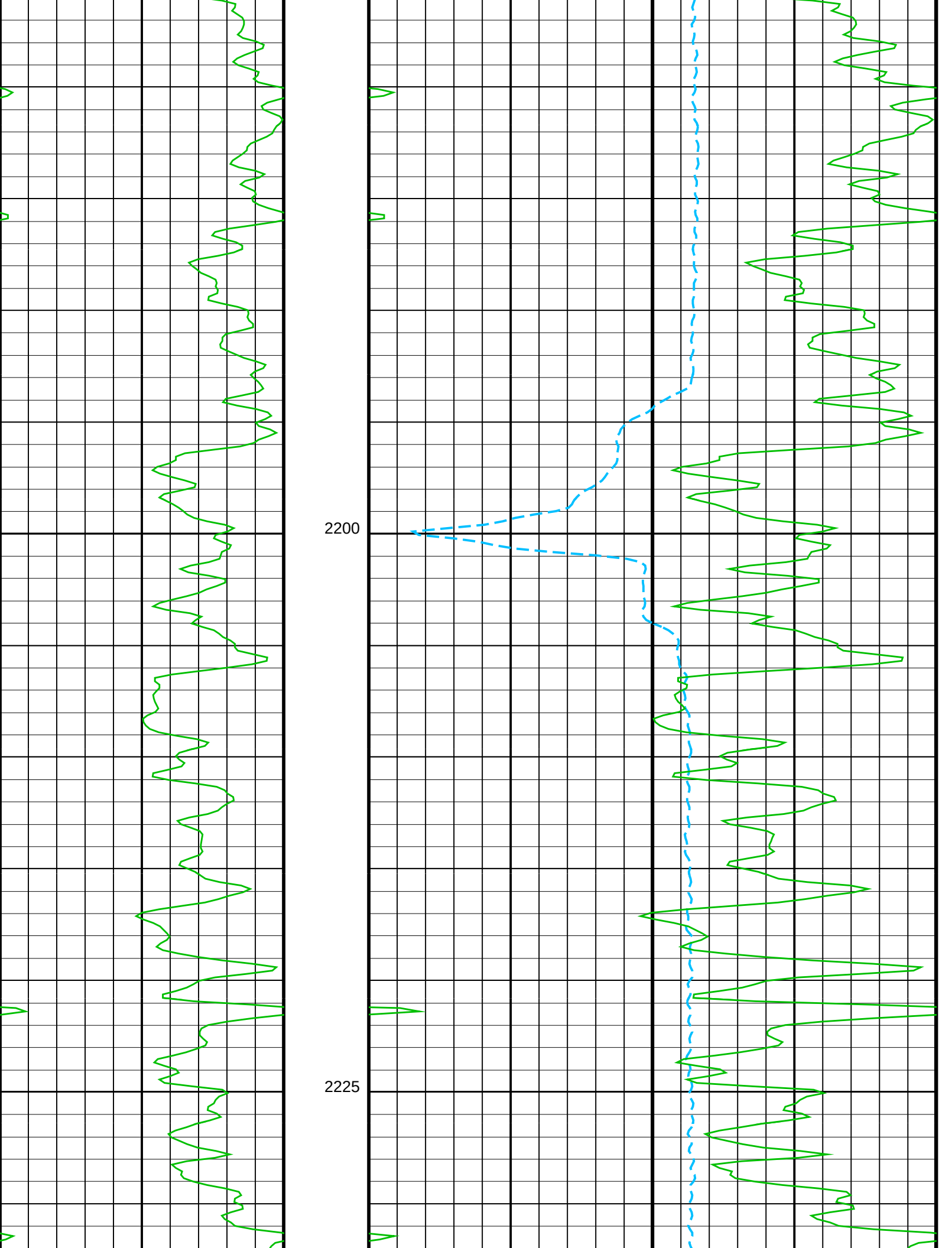
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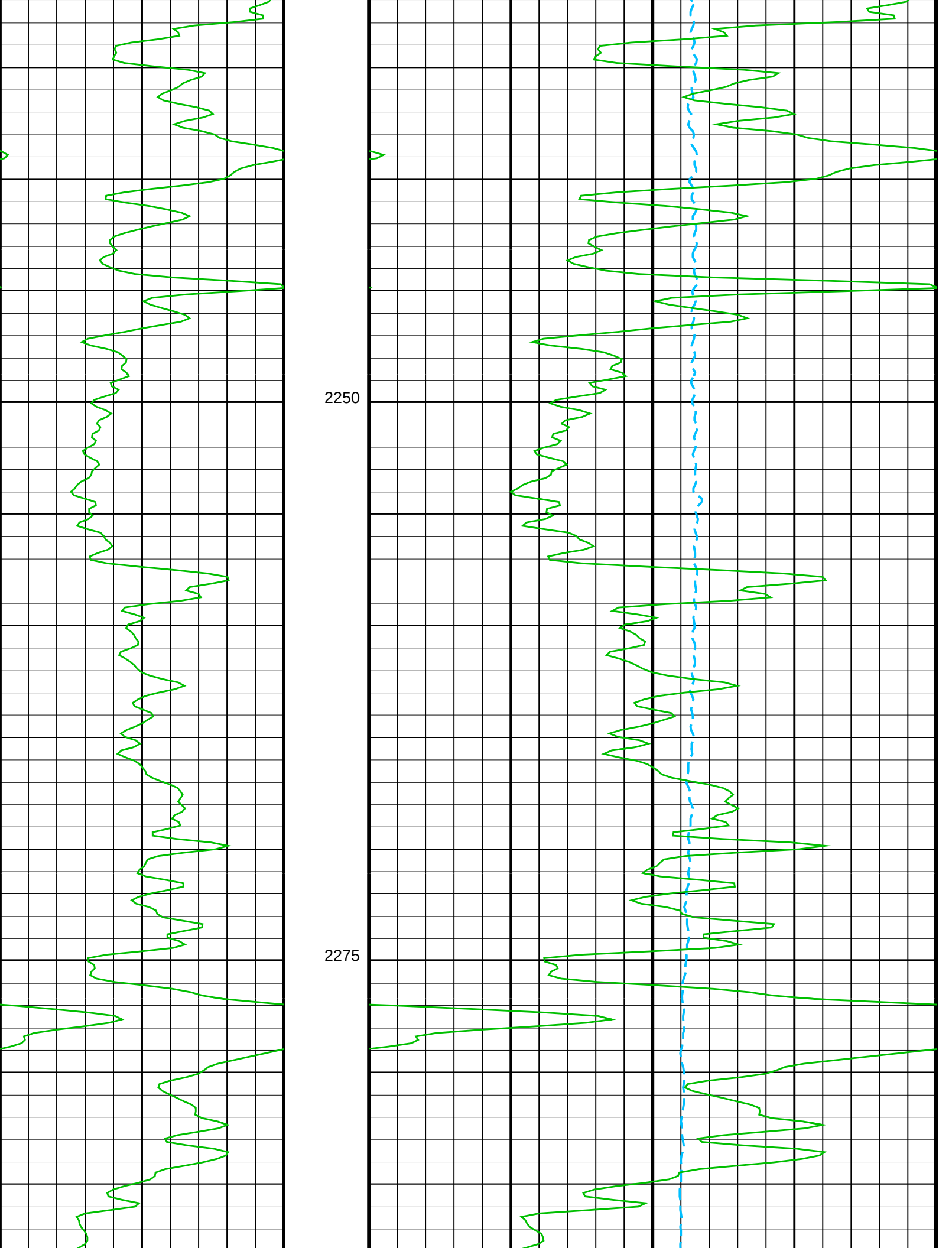
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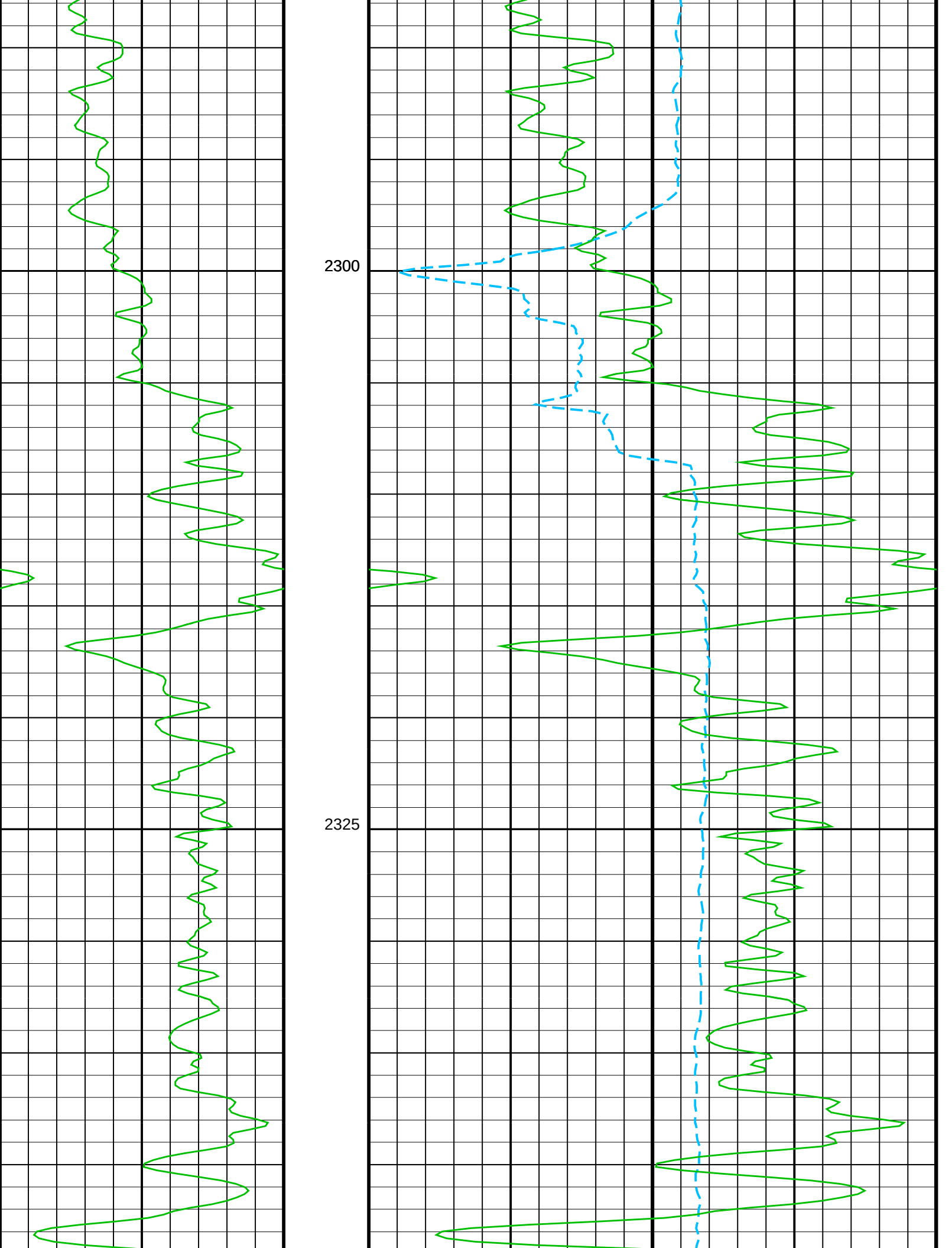
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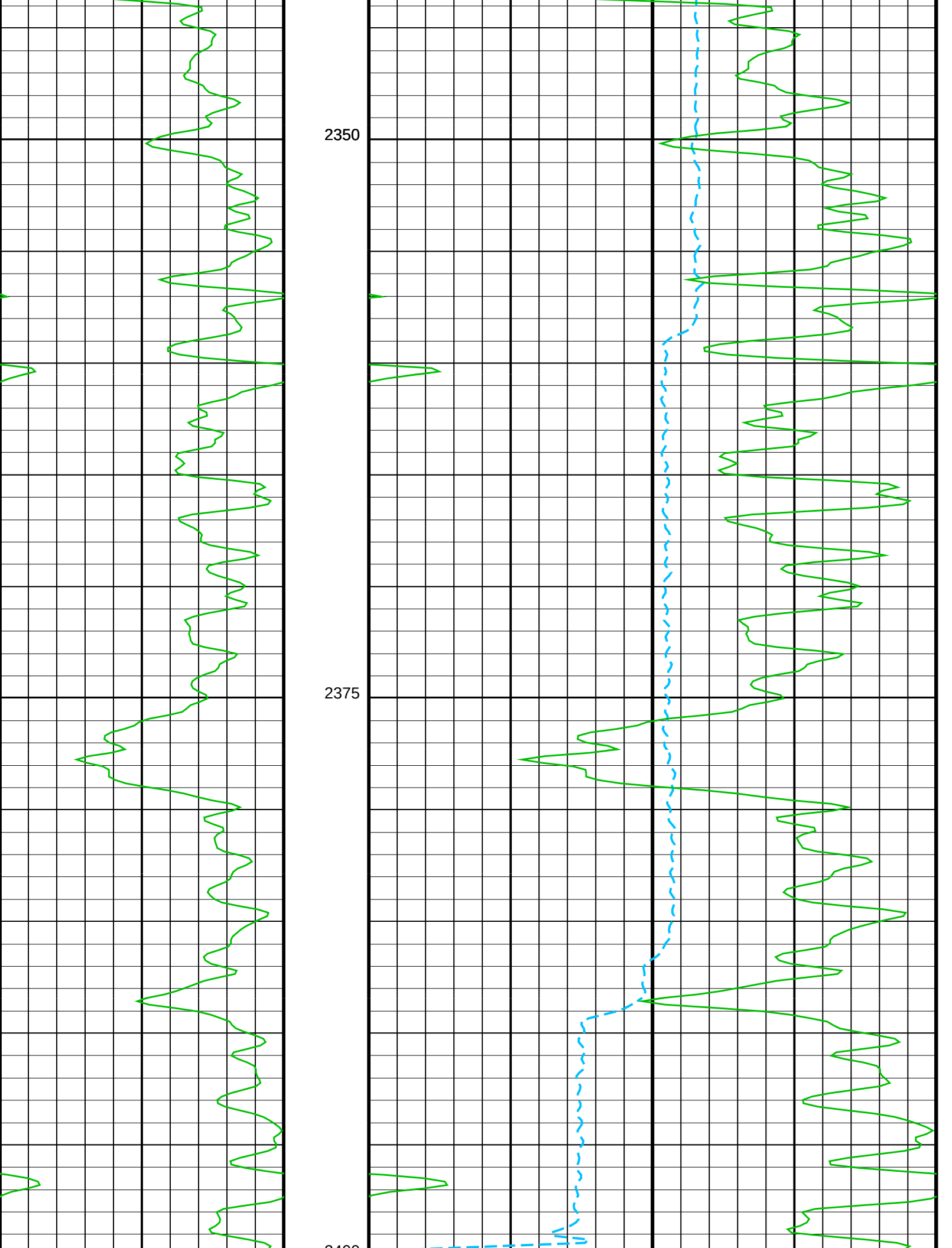
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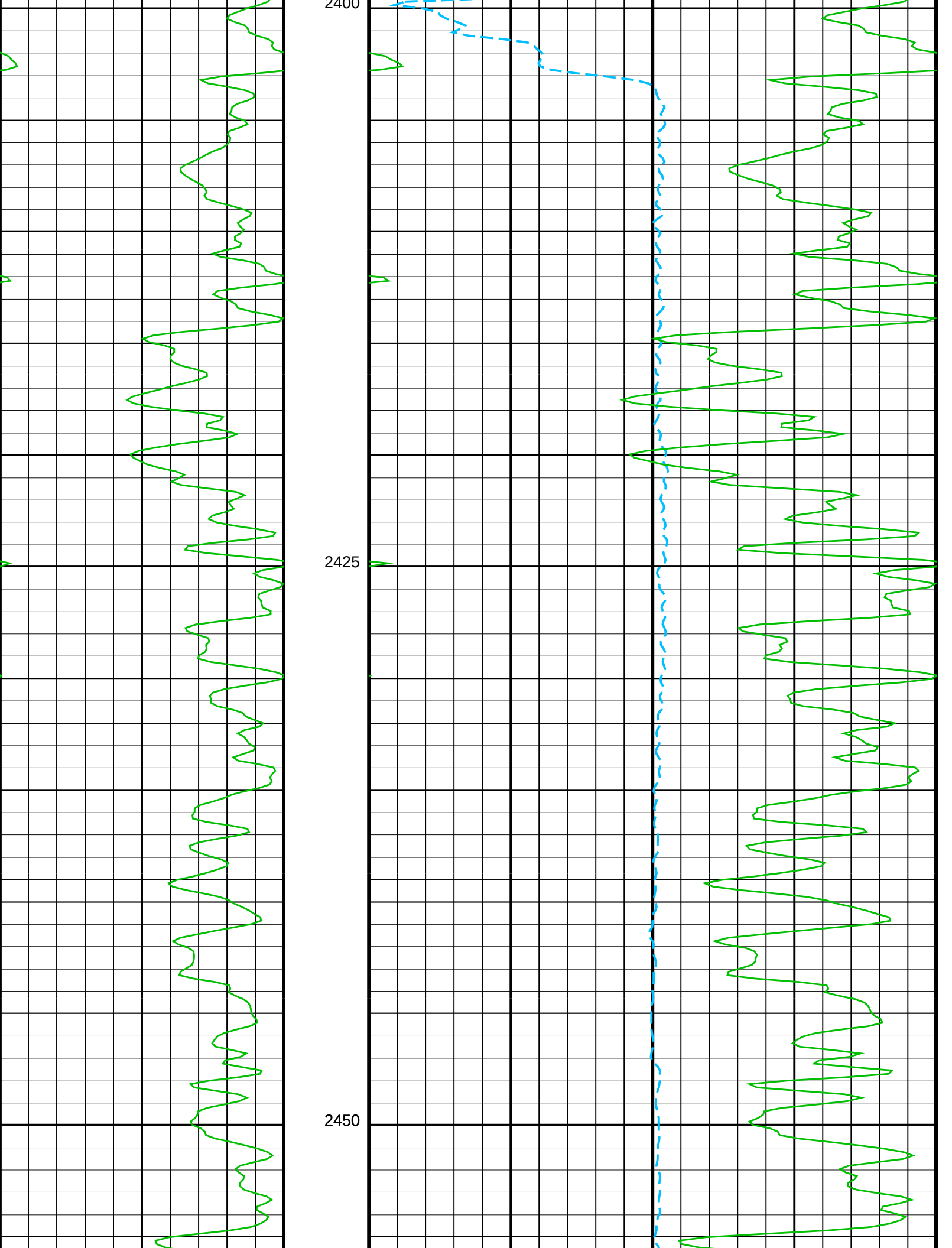
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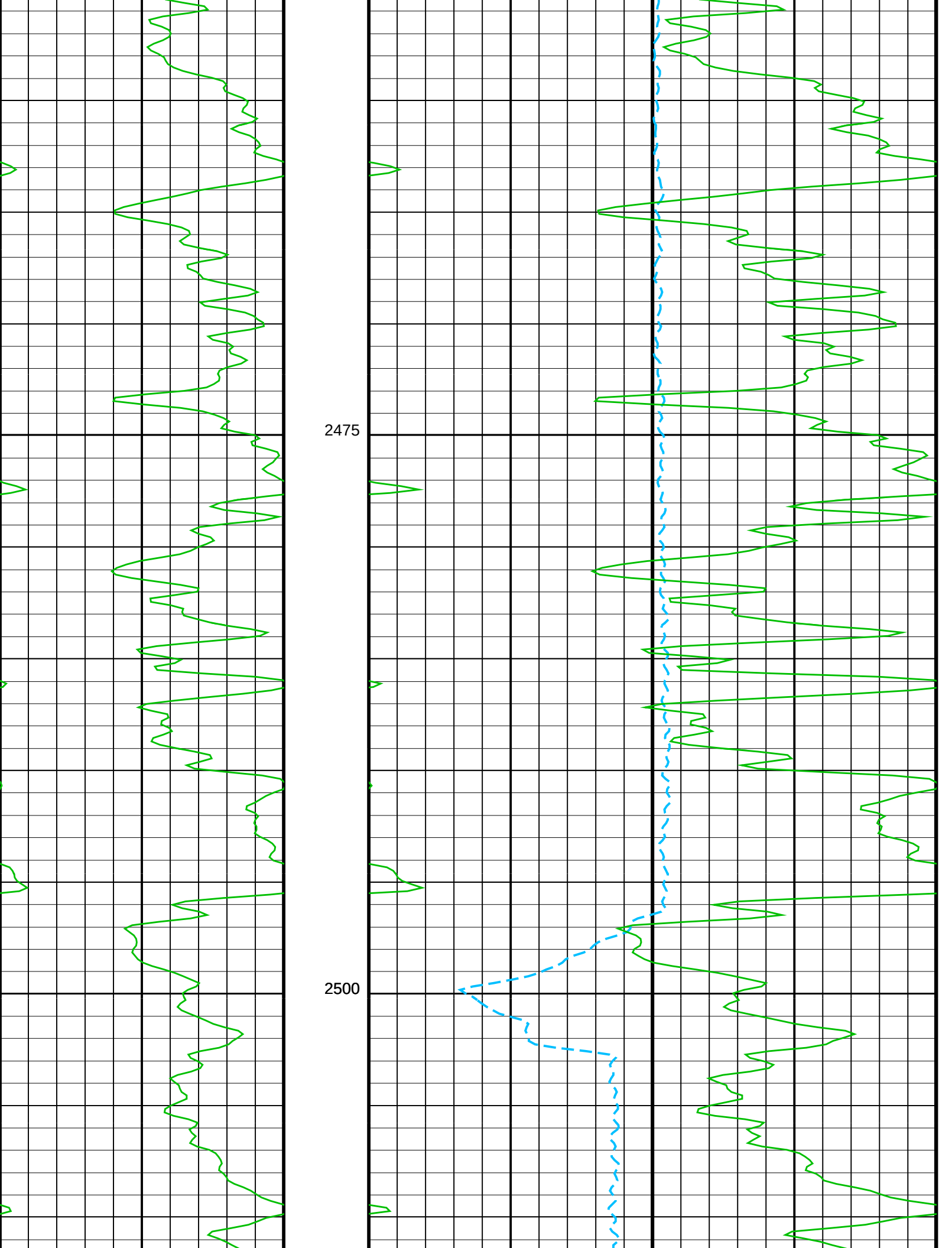
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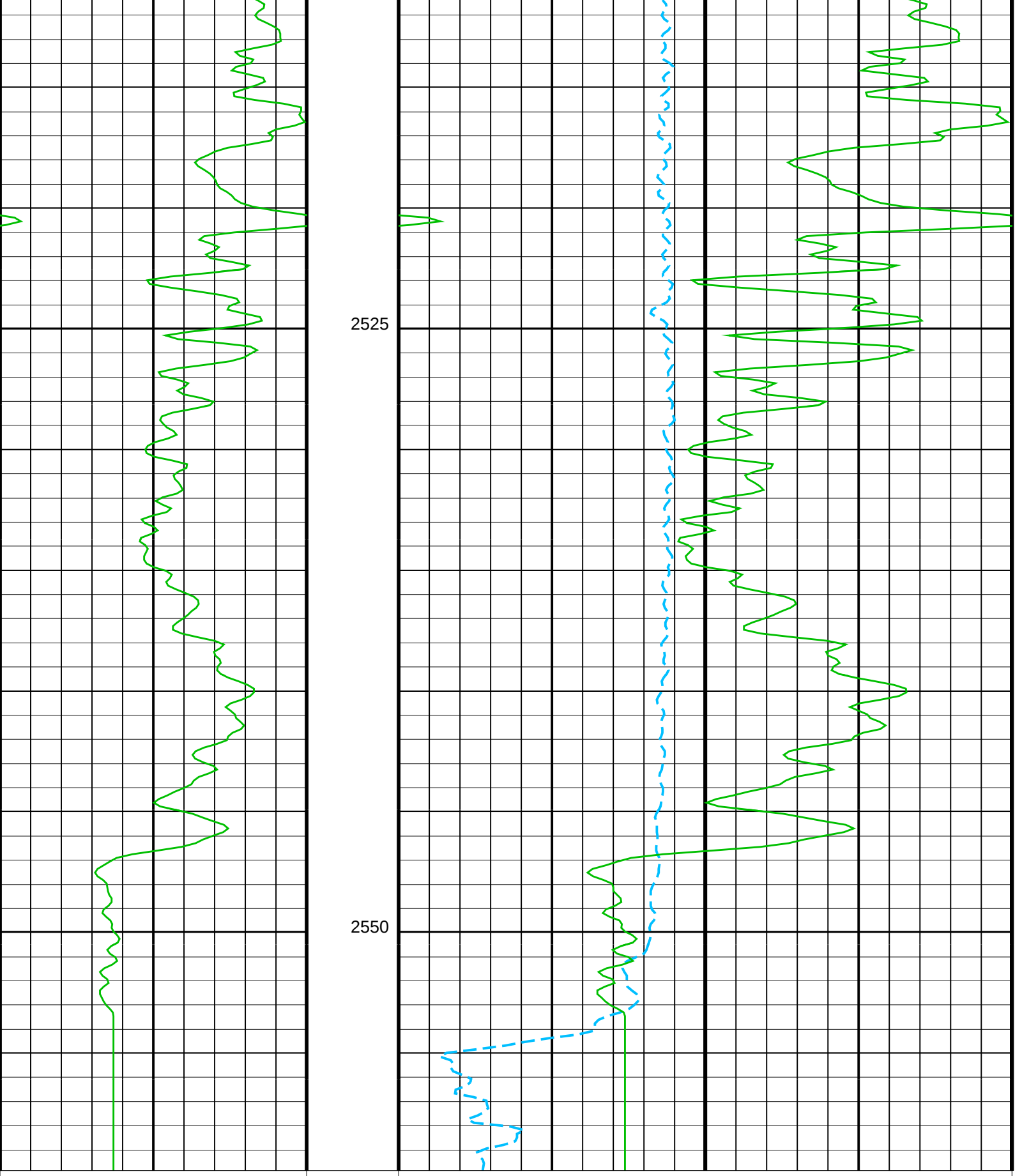

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OP System Version: 17C0−154

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Tide Level Report

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Rockhopper-1

Tidal Elevations (m) above LAT for Rockhopper-1, Jan 2010. Times are AEST with daylight savings.

Time (AEST with DST)	Elevation above LAT (m)
04-Jan-2010 00:00	1.48
04-Jan-2010 01:00	2.10
04-Jan-2010 02:00	2.58
04-Jan-2010 03:00	2.81
04-Jan-2010 04:00	2.75
04-Jan-2010 05:00	2.42
04-Jan-2010 06:00	1.92
04-Jan-2010 07:00	1.38
04-Jan-2010 08:00	0.95
04-Jan-2010 09:00	0.73
04-Jan-2010 10:00	0.77
04-Jan-2010 11:00	1.05
04-Jan-2010 12:00	1.50
04-Jan-2010 13:00	2.00
04-Jan-2010 14:00	2.42
04-Jan-2010 15:00	2.63
04-Jan-2010 16:00	2.56
04-Jan-2010 17:00	2.22
04-Jan-2010 18:00	1.67
04-Jan-2010 19:00	1.06
04-Jan-2010 20:00	0.54
04-Jan-2010 21:00	0.22
04-Jan-2010 22:00	0.20
04-Jan-2010 23:00	0.47
05-Jan-2010 00:00	0.98
05-Jan-2010 01:00	1.61