Schlumberger

Company: **ESSO Australia Pty. Ltd.**

Well: **HLA A7A**
Field: **Halibut**
Rig: **ISDL 453** State: **Victoria**

Rig: ISDL 453
Field: Halibut
Location: Bass Strait
Well: HLA A7A
Company: ESSO Australia Pty. Ltd.

Gamma Ray Service
1:500 Measured depth
Real Time Log

Location

Total depth:	3038.0 m
Spud date:	19−May−07
Runs:	1 To 1

Elevation

K.B.	Top Drive
G.L.	−73.00 m
D.F.	29.45 m

Permanent datum: Mean Sea Level Elev.: 0 m
Log measured from: Drill Floor 29.45 m above Perm. datum
Depth reference: Driller's Depth

Service Order no.	X = E 615274.268	Longitude	Latitude
07ASQ0004	Y = N 5748513.891	E 148°19'12.758"	S 38°24'15.043"

Depth logged: 2700 m To 3038 m
Date logged: 28−May−07 To 29−May−07
Mag decl: 13.23 deg.
Mag dip: −68.86 deg.
Other services: See Remarks

Bore hole record

Hole size	from	to
8.5 in.	552.0 m	3038.0 m

Casing record

Size	Density	from	to
10.75 in.	40.5 lb/ft	Surface	552.0 m

Mud record

Type	from	to
KCl/PHPA/Gycol	552.0 m	3038.0 m

Borehole deviation record

Min	Max	from	to
17.11 deg	42.79 deg.	552.0 m	3038.0 m

Surface equipment

Unit	OLU−JA−9602
Depth system	DES−CA−ASQ04−0

Software record

IDEAL Wis	ID12_0c_01
SPM	HSPM12_0c_04
LWD	See Remarks
MWD	8.0C03

Bit Run Summary

Run number		1
Bit size	in.	8.5
Bit start depth	m	552.0
Bit end depth	m	2700.0
Top interval logged	m	552.0
Bottom interval logged	m	2680.0
Begin log: time		04:07
Begin log: date		21−May−07
End log: time		18:55
End log: date		26−May−07
Mud data		
Depth	m	2352.0
Type		KCl/PHPA/Glycol
Mud weight	ppg	9.75
Solids	%	6.3
Chlorides	mg/L	43,000
Rm	Ohm−m@°C	n/a
Rmf	Ohm−m@°C	n/a
Rmc	Ohm−m@°C	n/a

Potassium	%	4.2									
Environmental data											
GR											
Mud weight	ppg	9.75									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size	in	8.5									
Mud weight	ppg	9.75									
Temperature	°C	78									
Mud salinity	ppk	n/a									
Formation salinity		n/a									
Recording rate 1	SEC	n/a									
Recording rate 2	SEC	n/a									
Filtering GR		3pt									
Filtering density		n/a									
Filtering Neutron		n/a									
Company representative		R.Spence	G.Campbell	T.Bassett							
Schlumberger D&M Personnel		G.Sparrow	A.Kohli	C.Hibberson	C.Cocks	M.How					

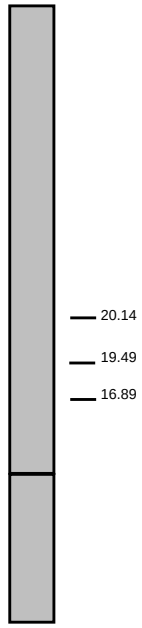
OTHER SERVICES FOR RUN 1	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
Directional Drilling Directional Surveys Annulus Pressure & Temperature		

REMARKS: RUN NUMBER 1		REMARKS: RUN NUMBER
Depth is referenced to Driller's Depth. All Data presented is from Real Time Transmission Gamma Ray is corrected for mud weight, tool size and bit size. Gamma Ray is not corrected for potassium. POOH to Change BHA.		

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE EQUIPMENT



6−3/4 in. PowerPulse* DHS: 8.0C03 MDC: VC64 MEC: 212 MDI: 1096 MGR: 295	24.99
6−5/8 in. NM Pony S/N: ASQ605506	15.51
6−5/8 in. NM Roller Reamer S/N: GU2317R	13.83
6−5/8 in. NM Pony S/N: ASS15700	11.84
7 in. PowerPak* Motor A700GT 7:8 S/N: N7311 1.15 deg. Bent Housing 8−3/8 in. Motor Sleeve	10.28
8−1/2'' Smith PDC Bit S/N: JW6578A2	0.22

Maximum string diameter 8.50 in.

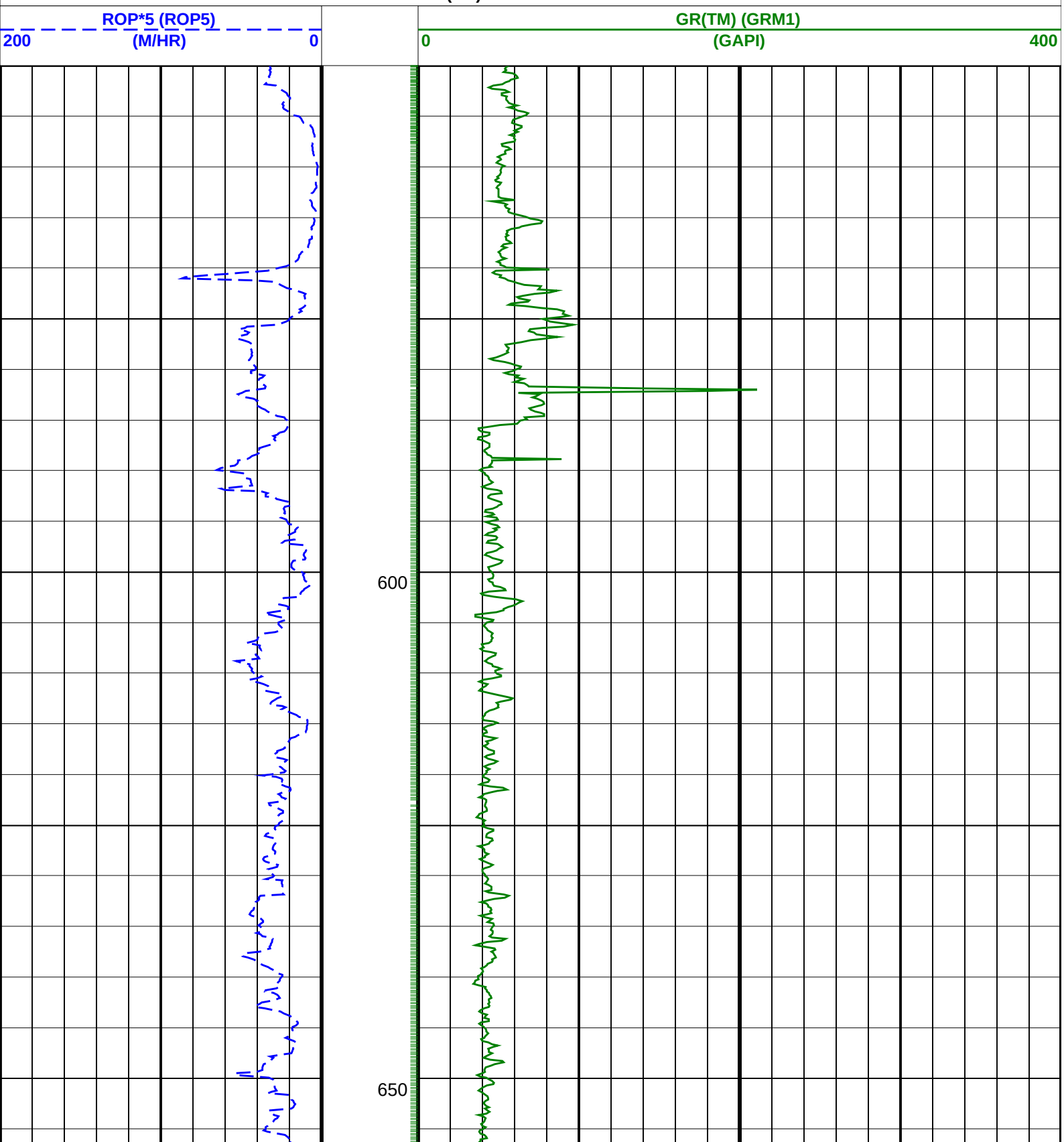
All lengths in Meters

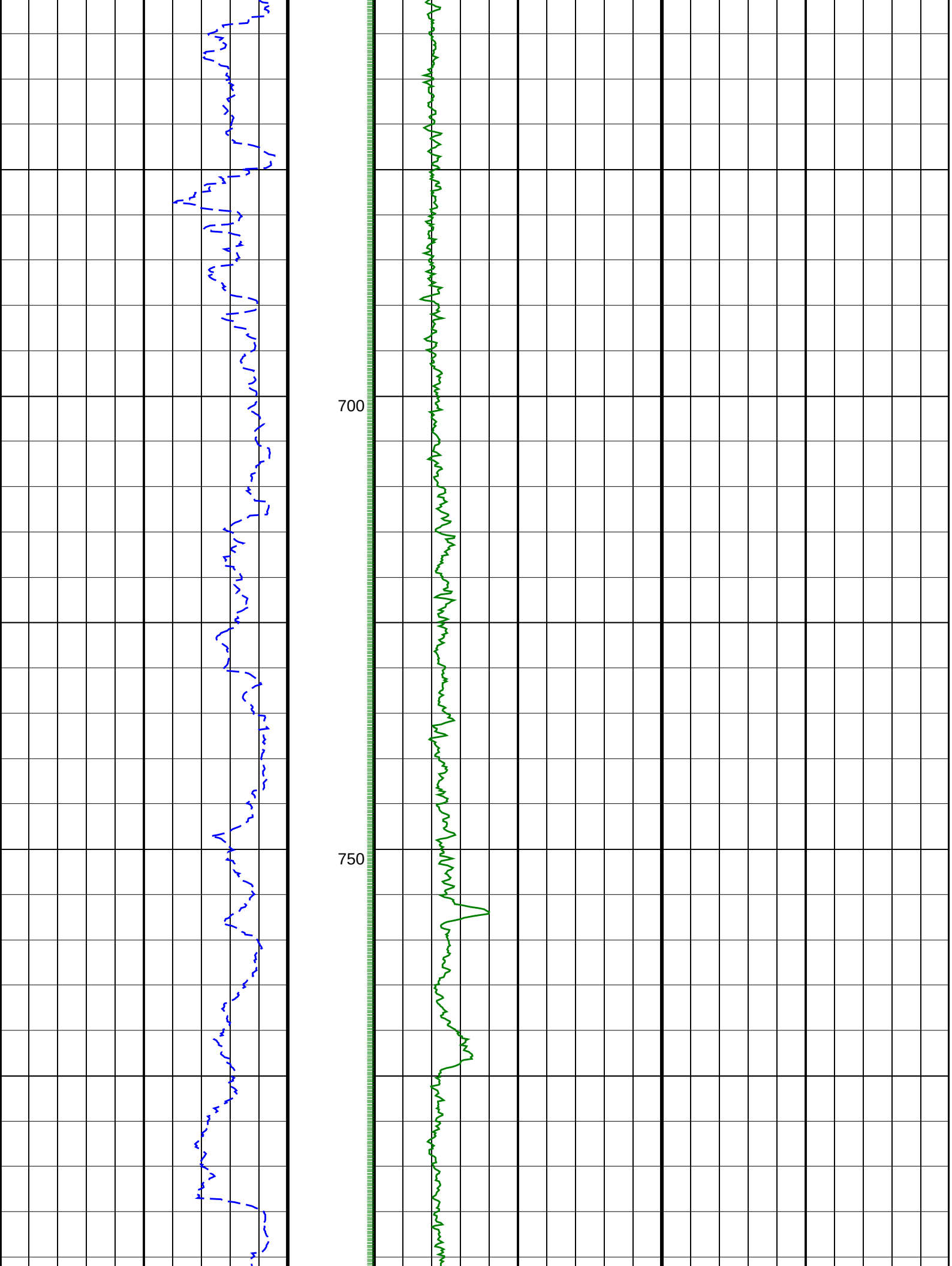
HLA A7A RT 1:500 MD

IDEAL Version: ID12_0C_09 <MD > Vertical Scale: 1:500 Graphics File Created: 06−Jun−2007 20:45

PIP SUMMARY

GR(TM) PIP

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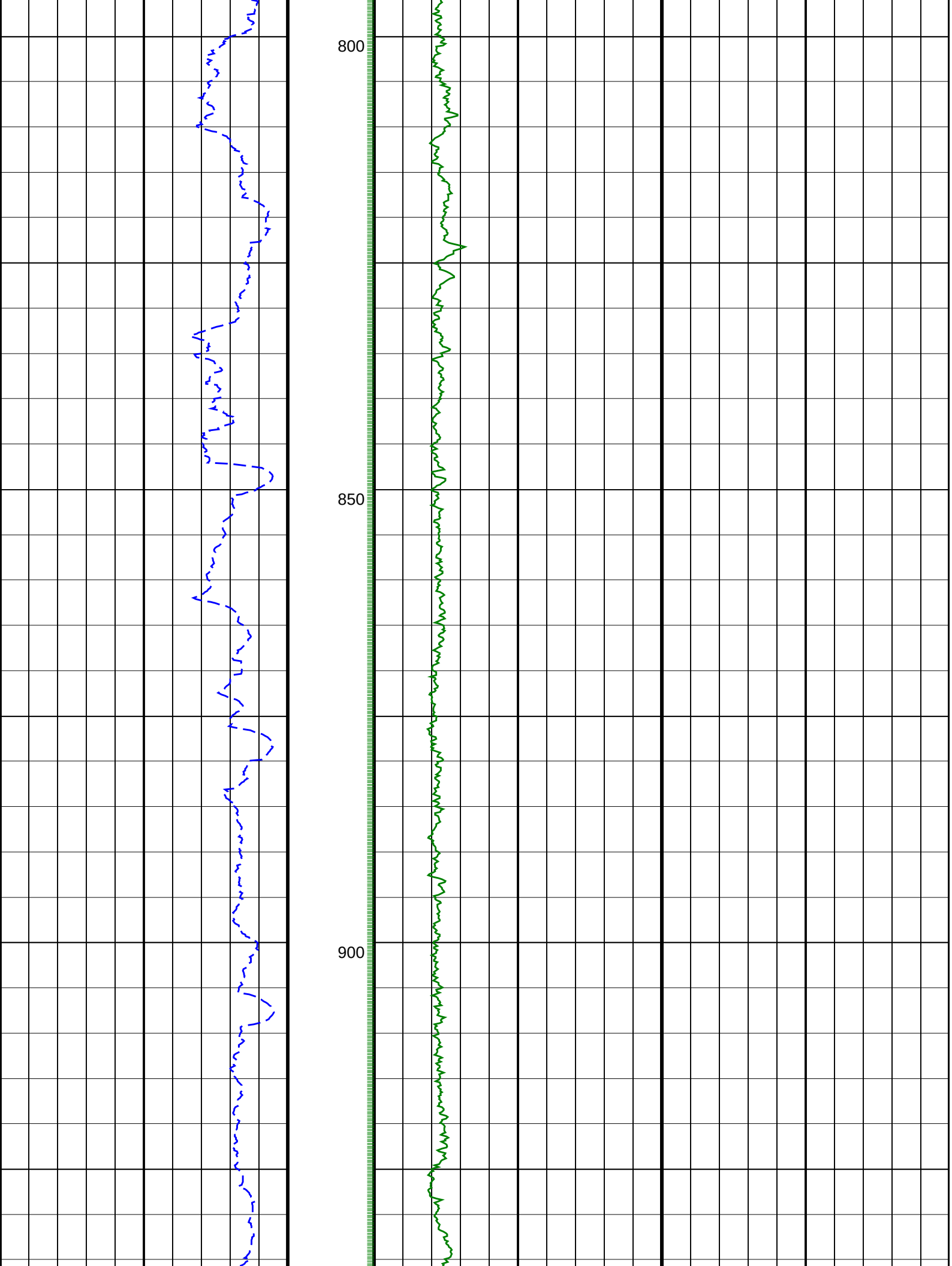
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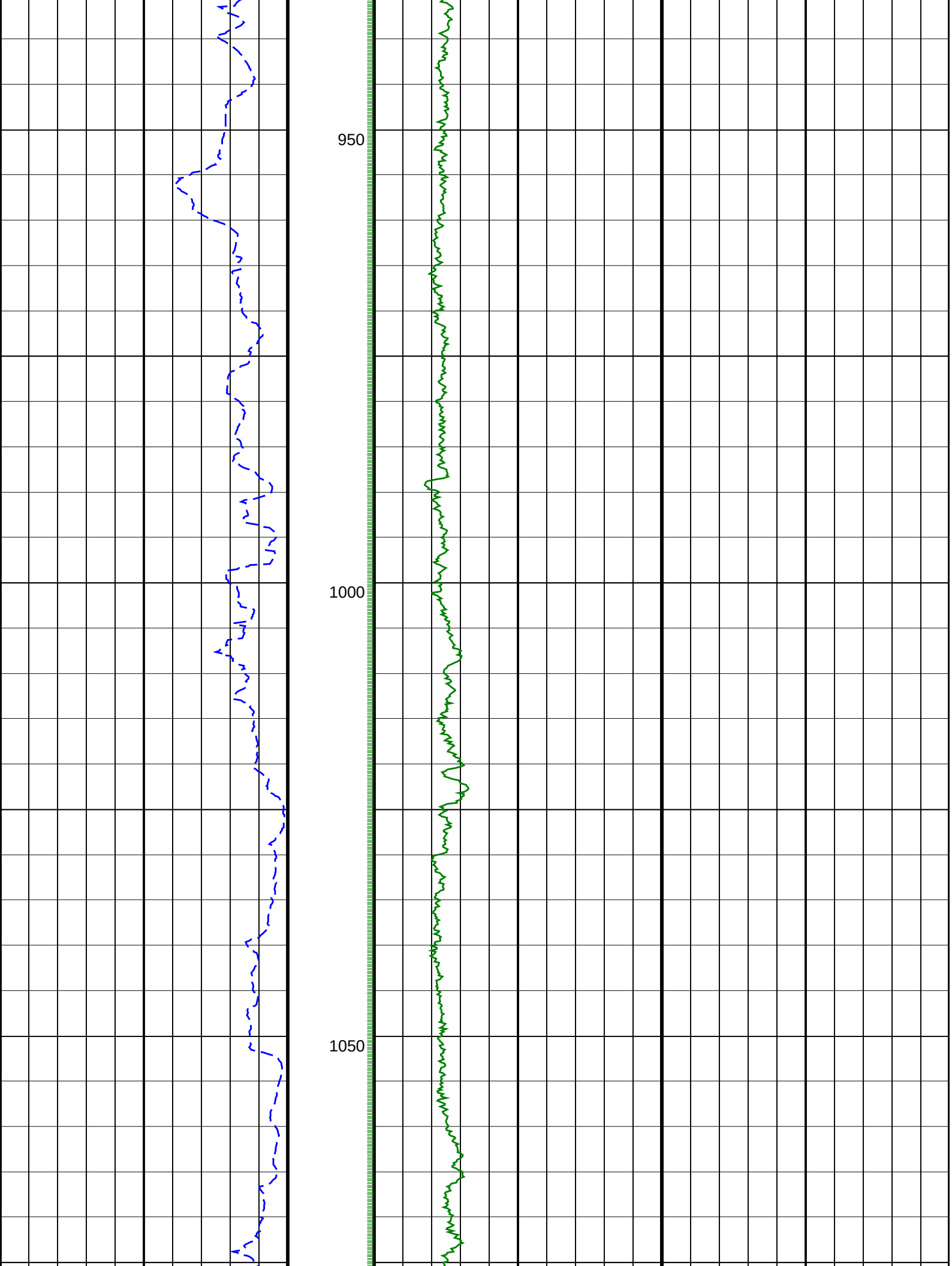
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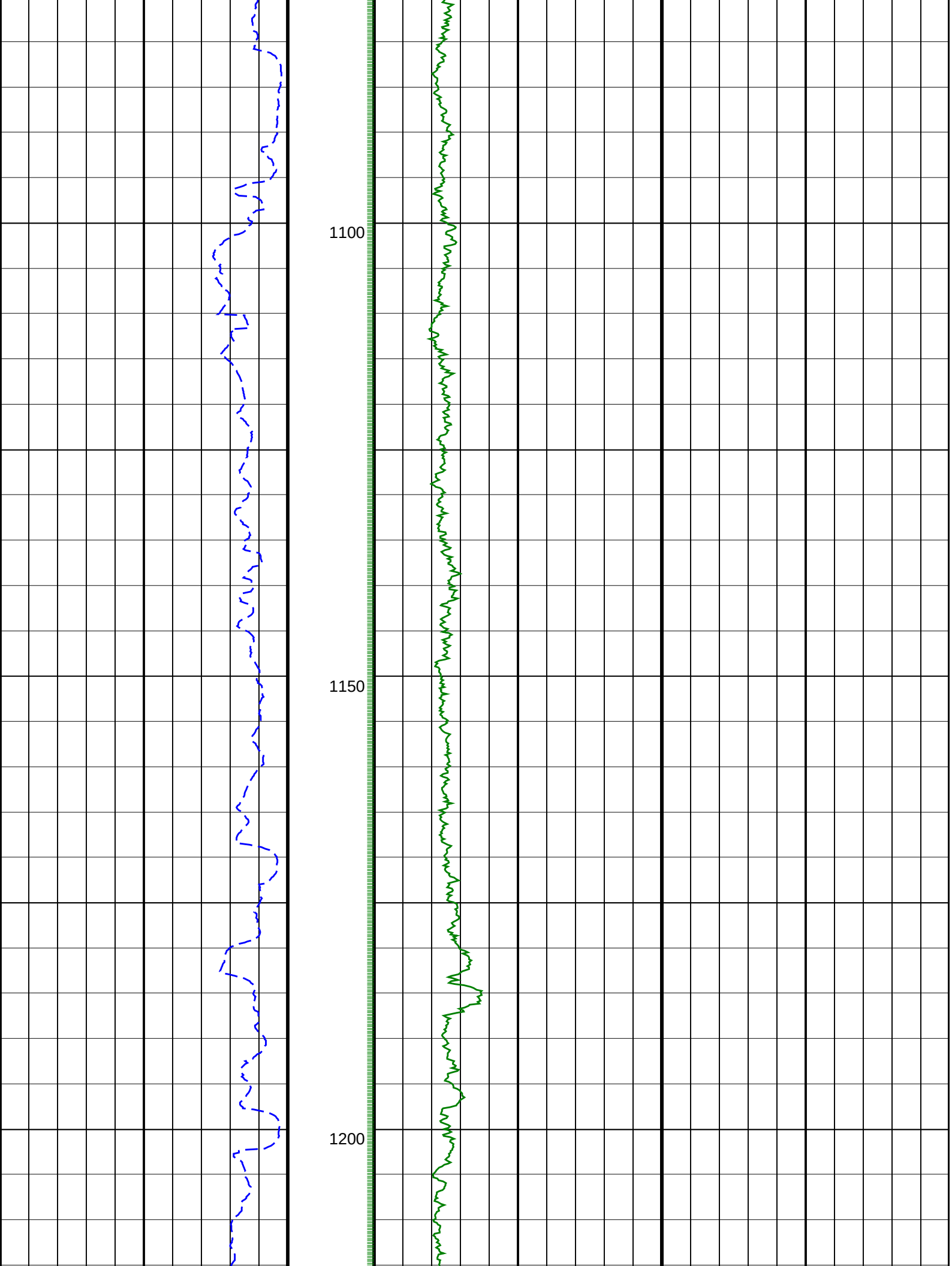
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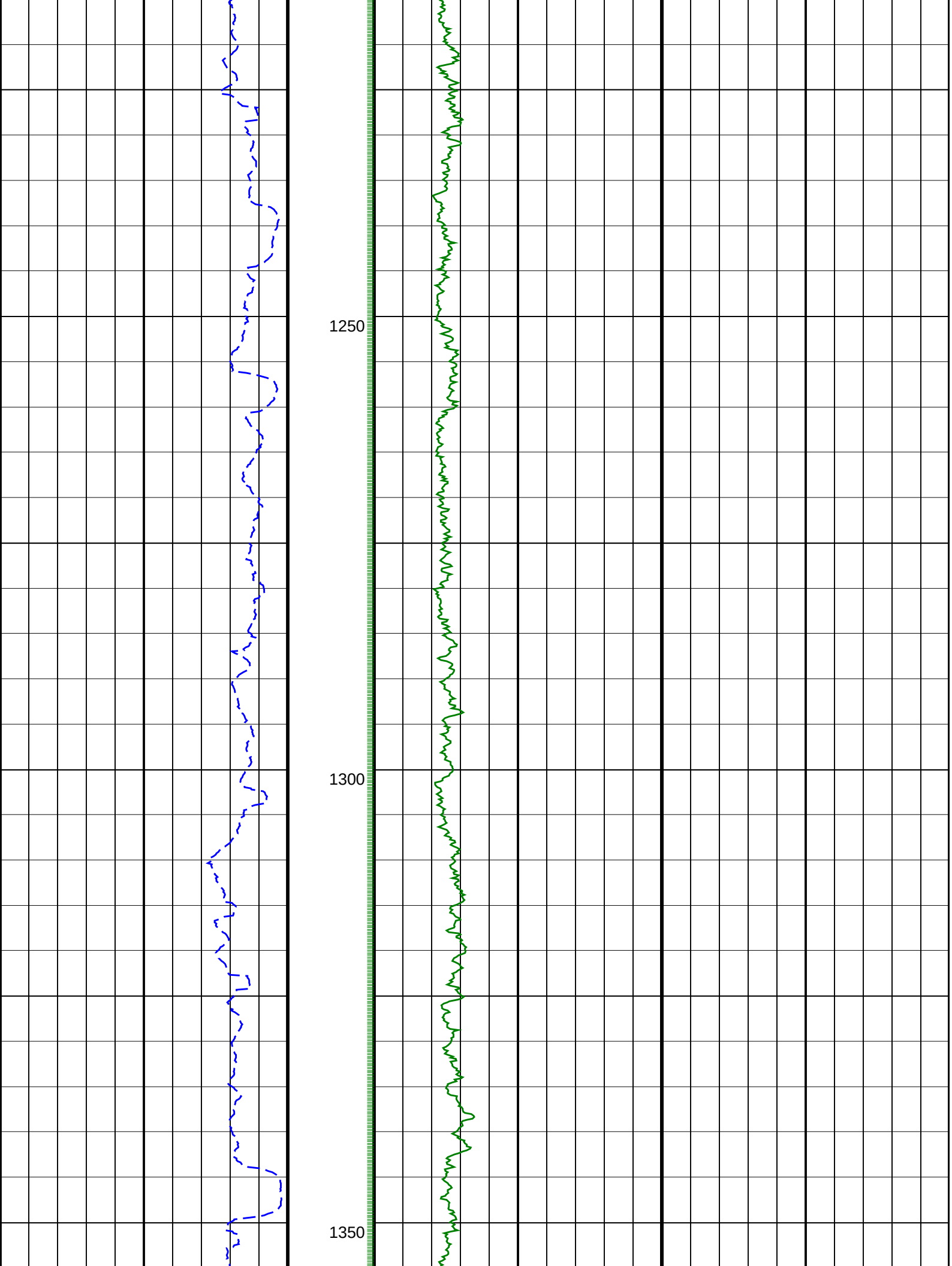
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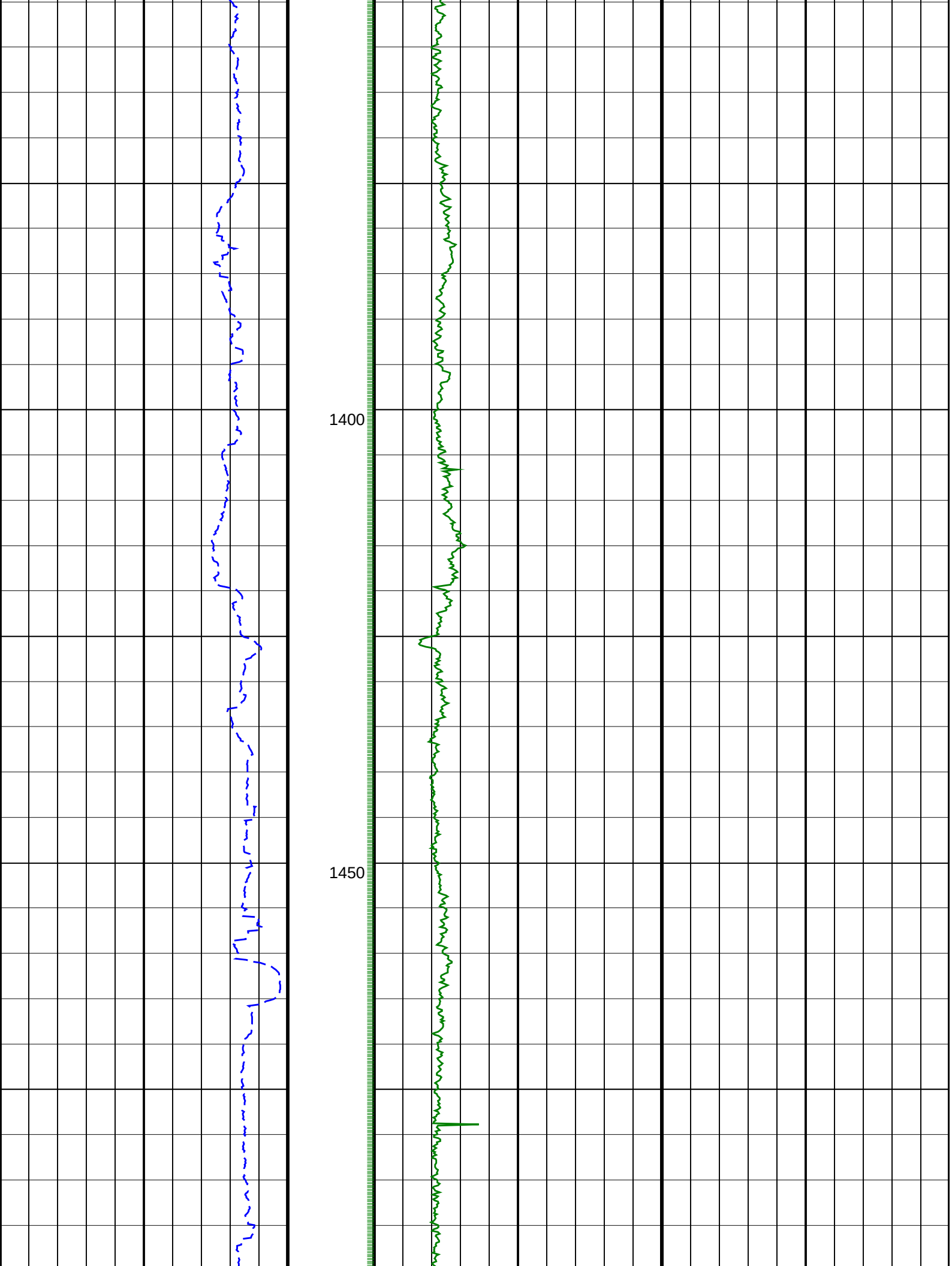
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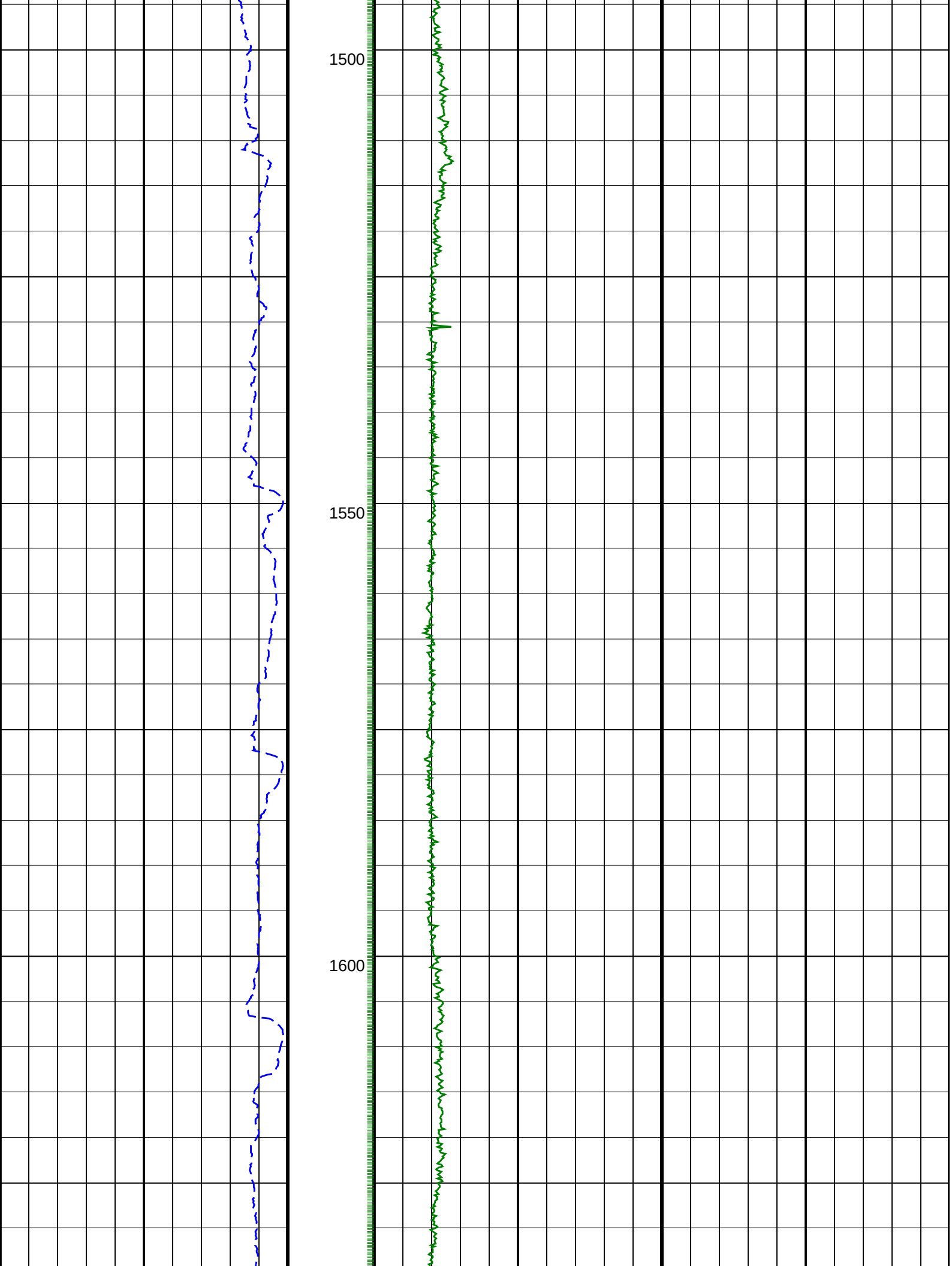
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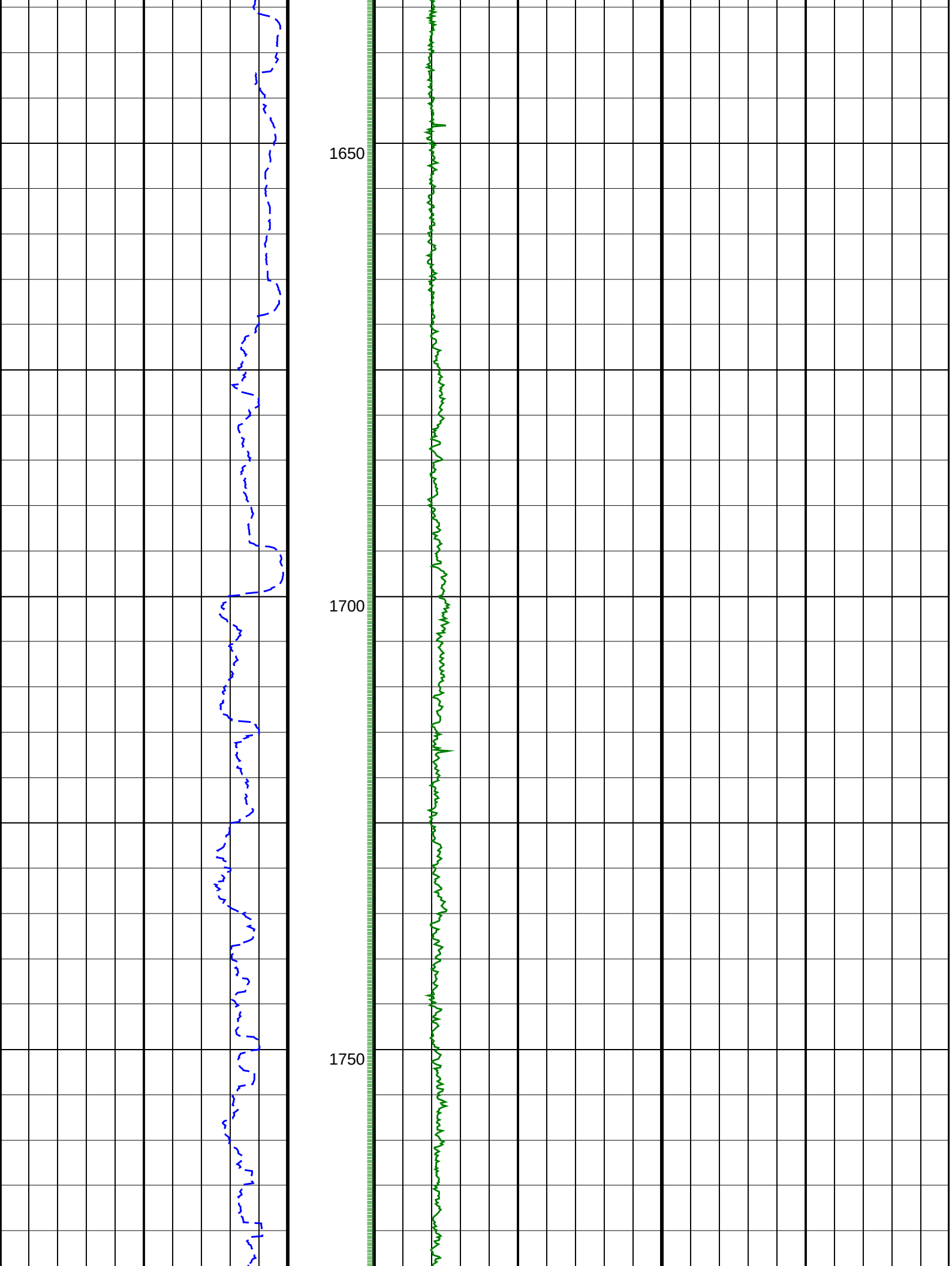
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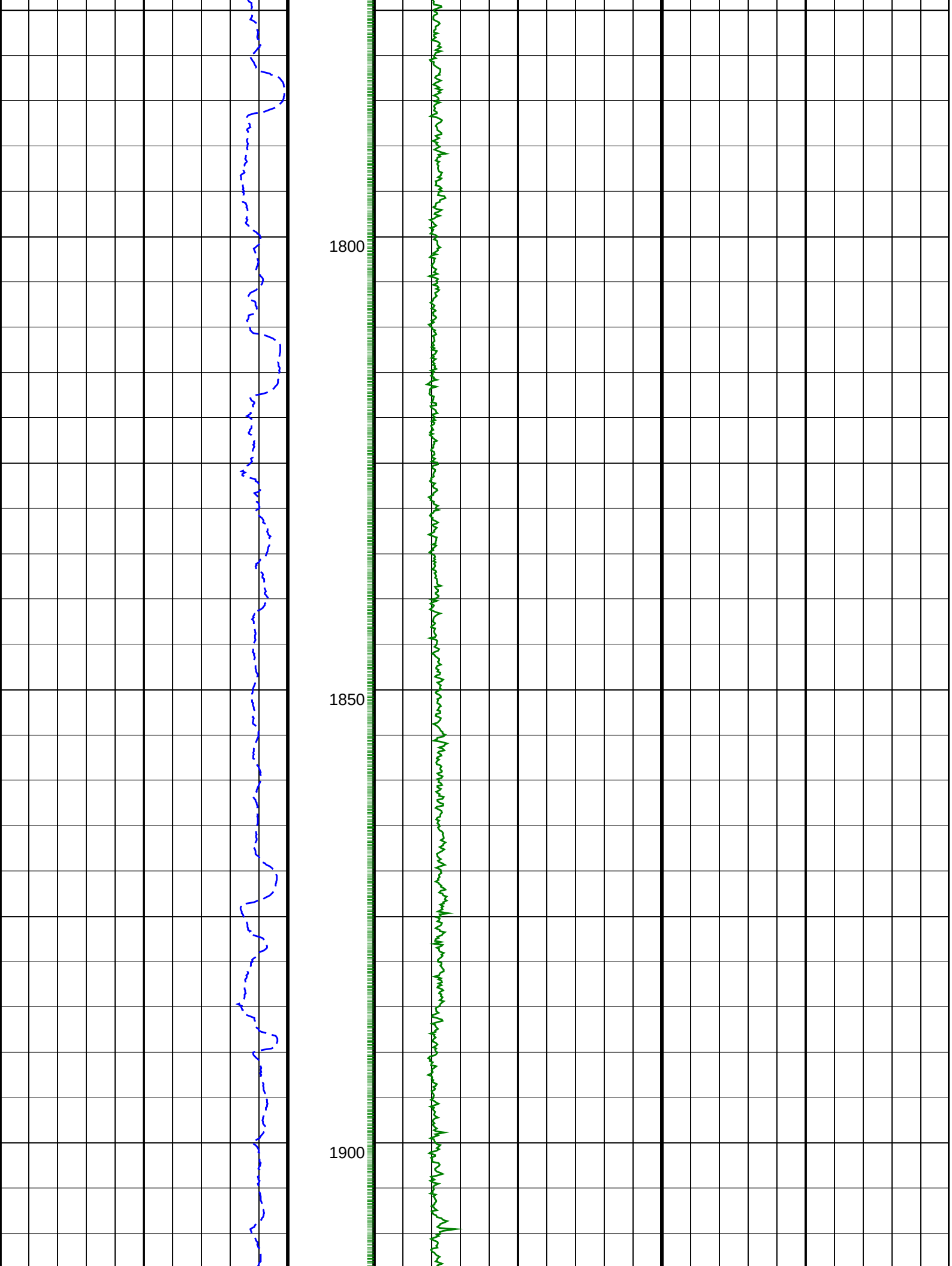
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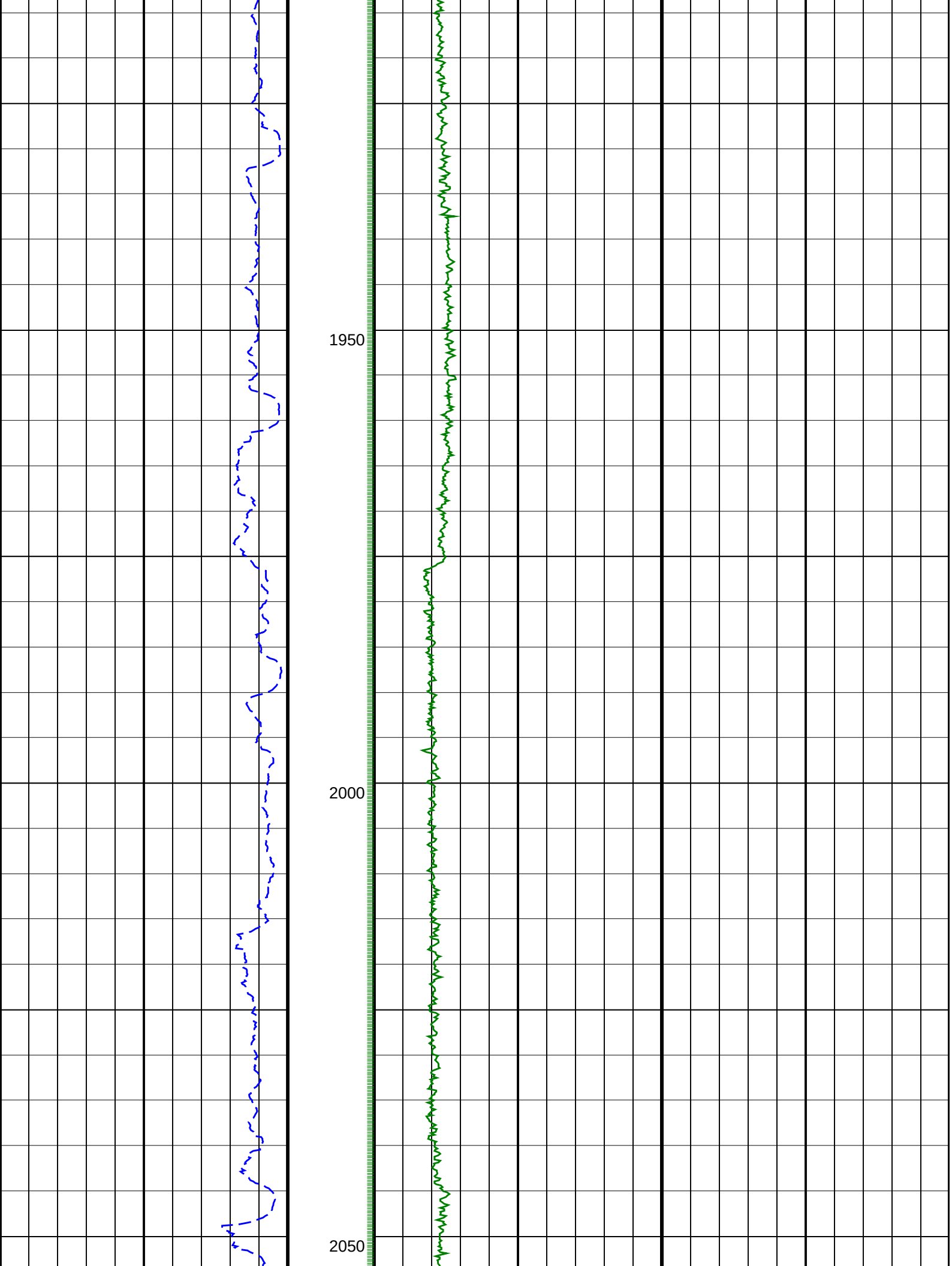
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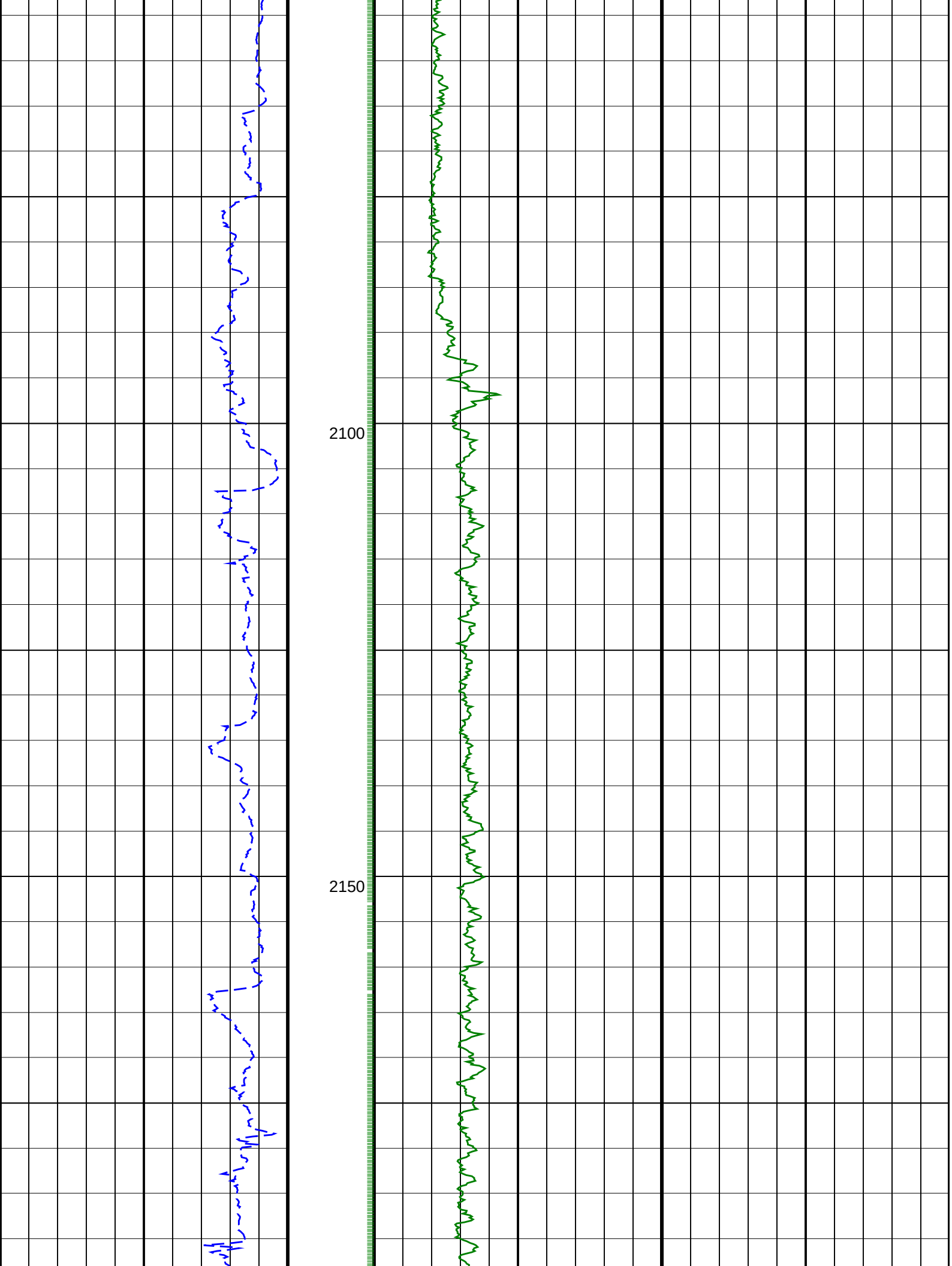
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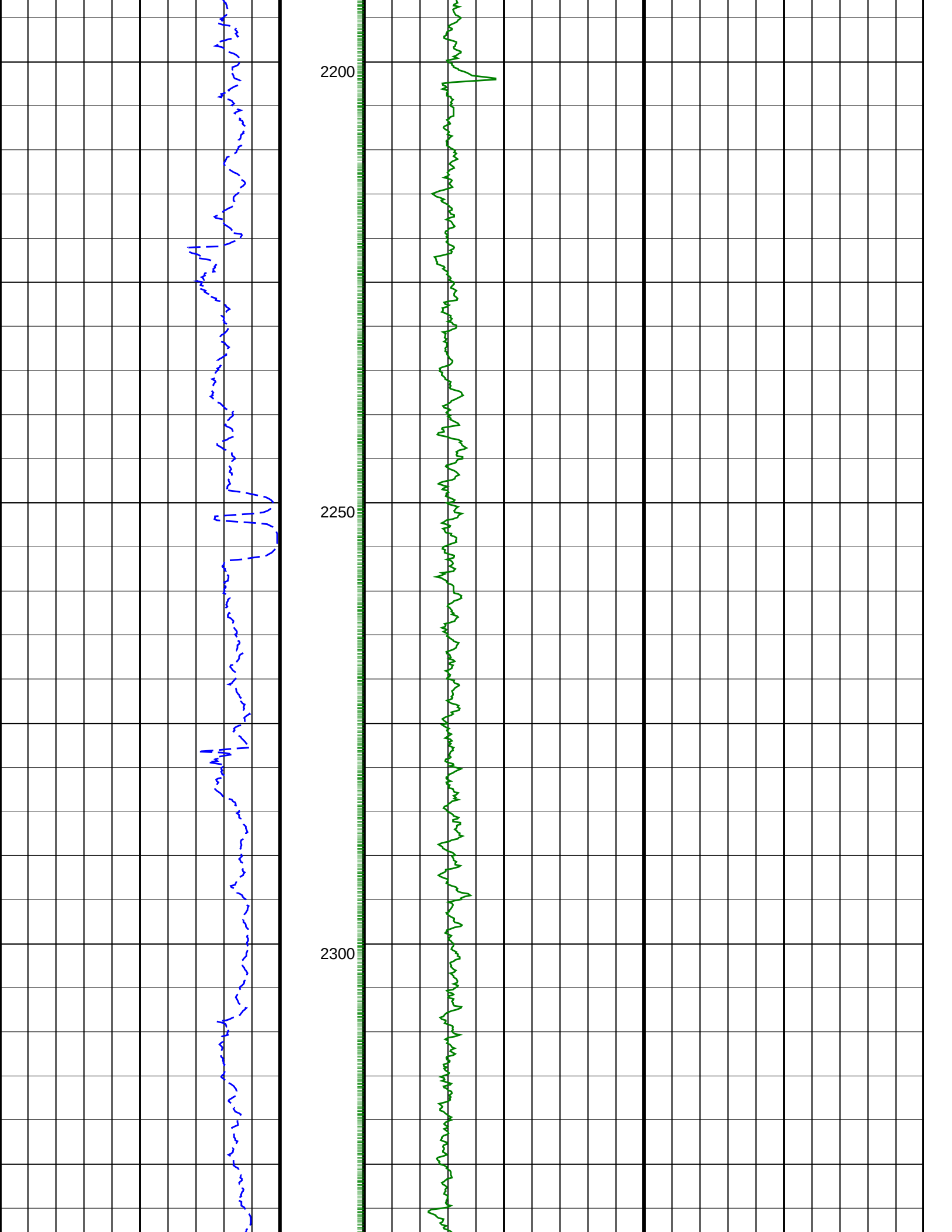
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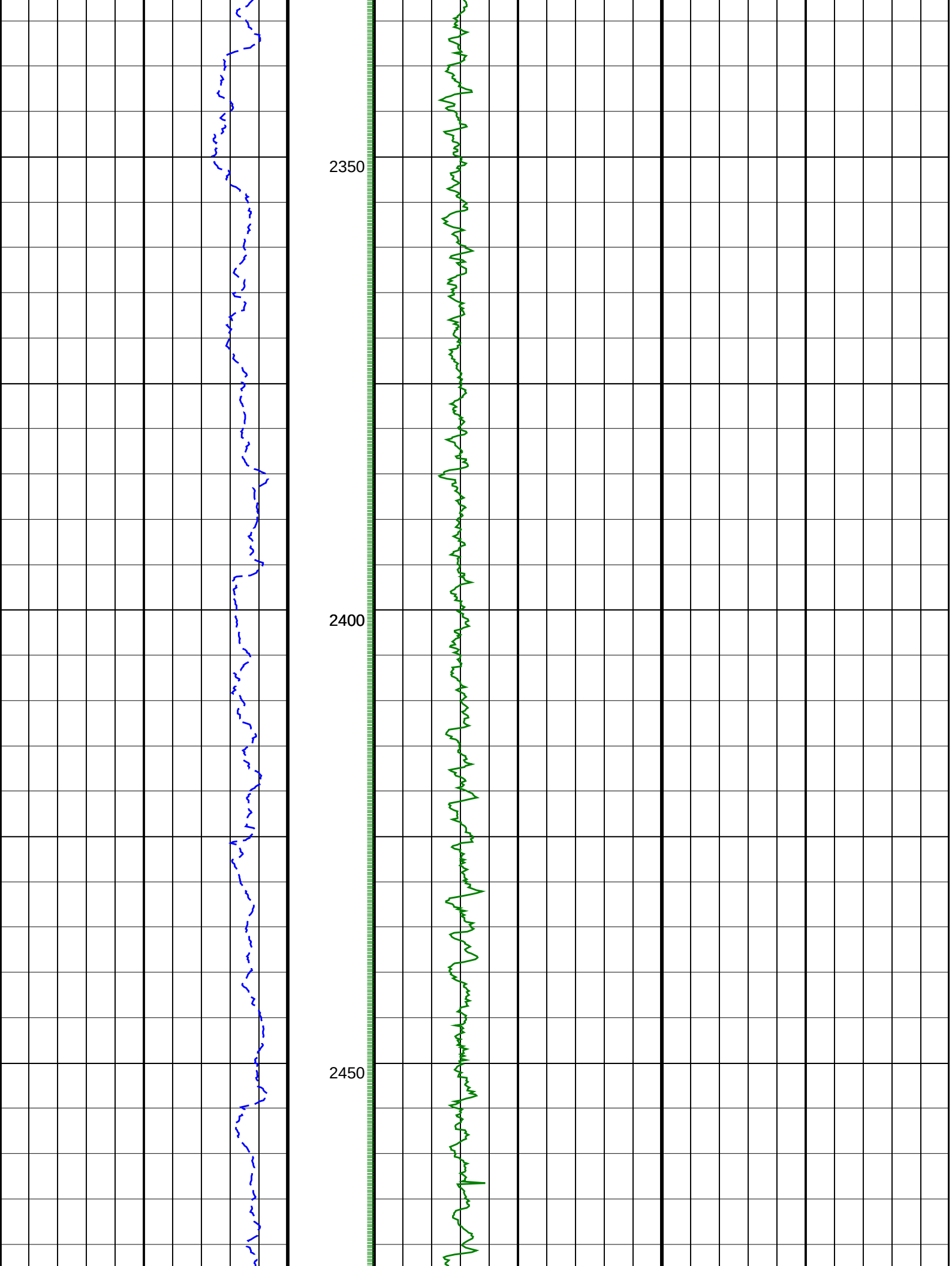
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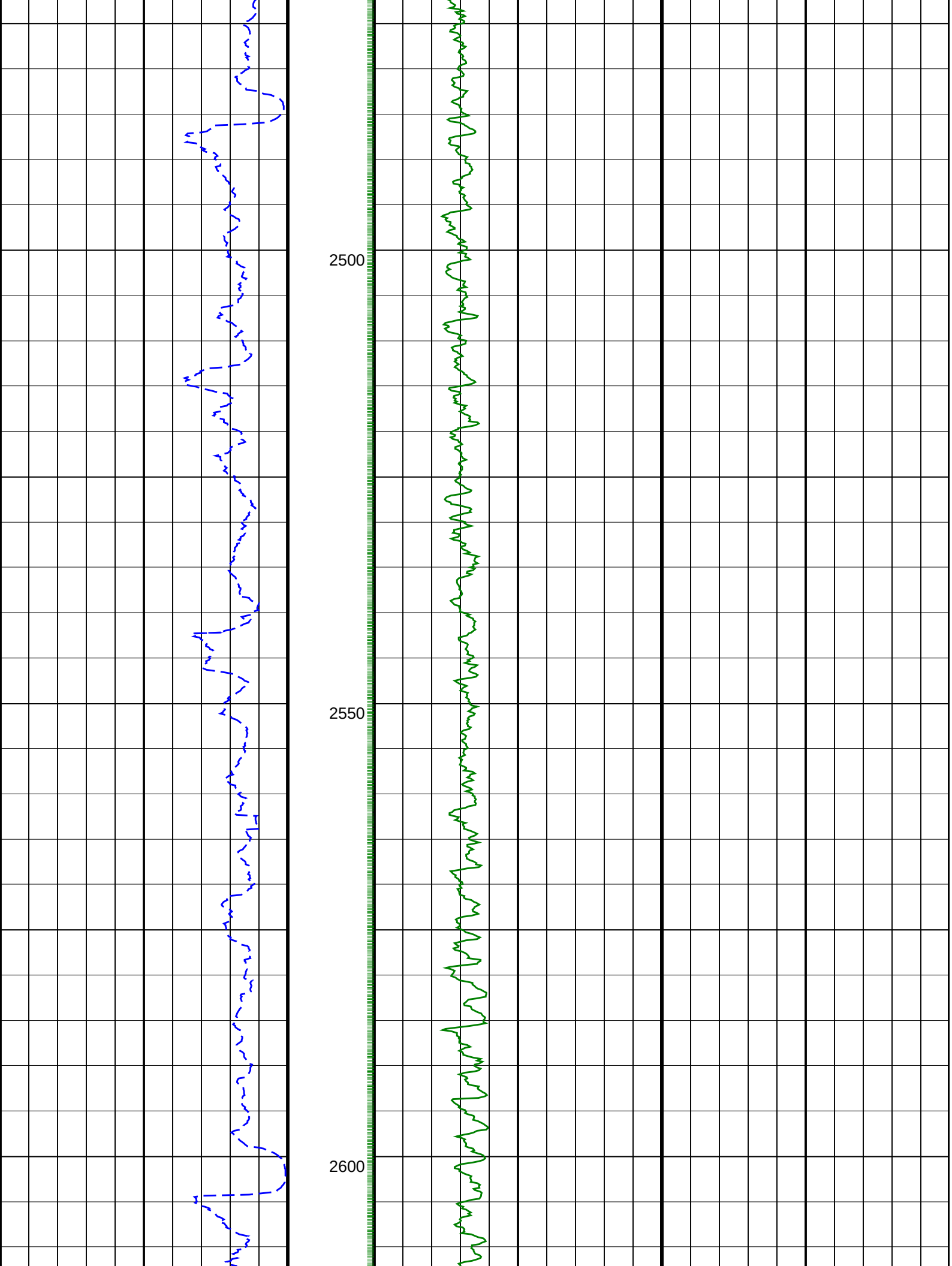
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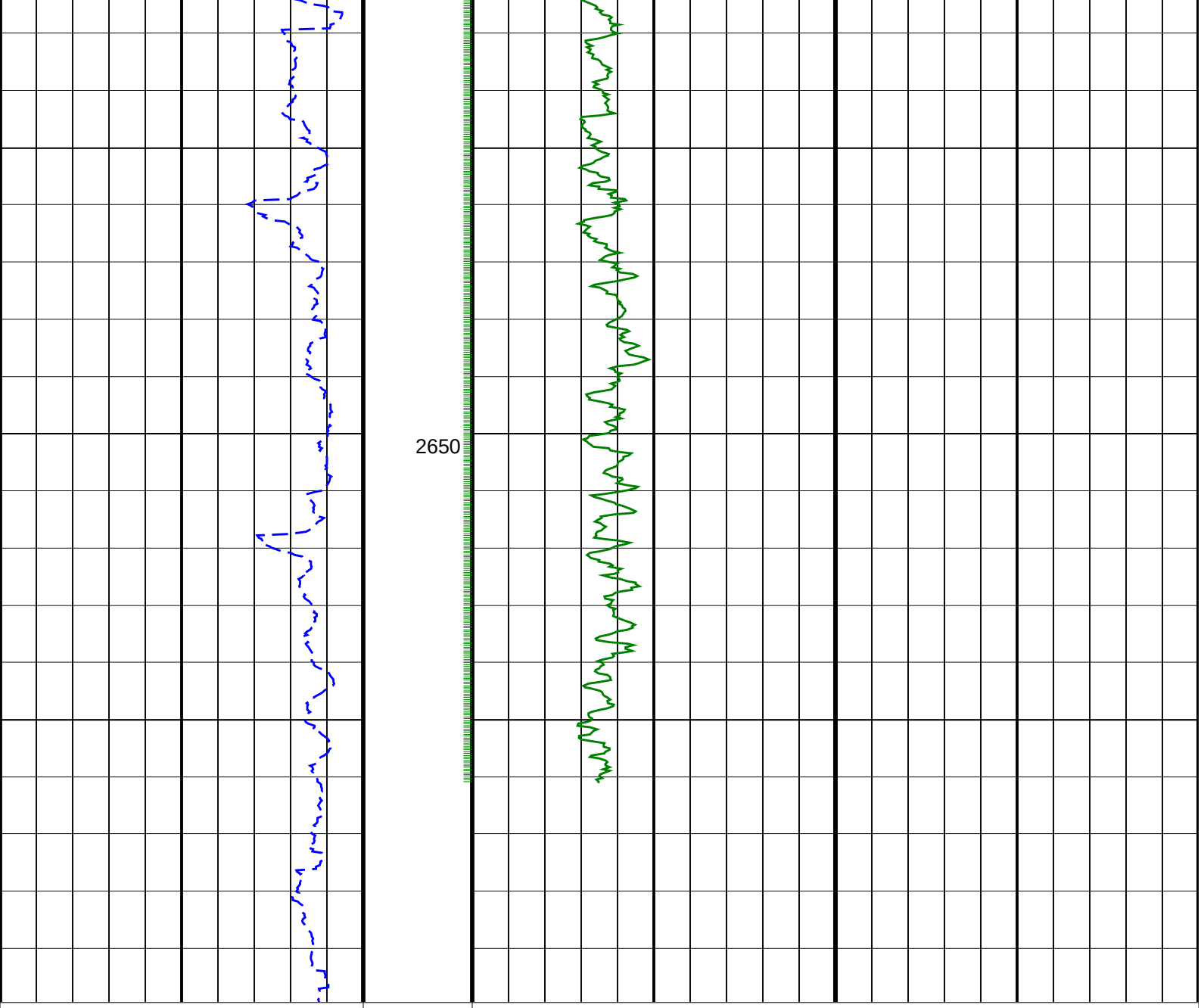

SCHLUMBERGER

Survey report 5-Jun-2007 01:09:51 Page 1 of 4

Client.....: ESSO Australia Pty. Ltd.
Field.....: Halibut

Well.....: HLA A7A
API number.....: N/A
Engineer.....: GHS/AK/CH

RIG:.....: ISDL 453
STATE:.....: Victoria

Spud date.....: 19-May-2007
Last survey date.....: 29-May-2007
Total accepted surveys...: 84
MD of first survey.....: 552.00 m
MD of last survey.....: 3038.00 m

----- Survey calculation methods-----
Method for positions.....: Minimum curvature
Method for DLS.....: Mason & Taylor

----- Depth reference -----
Permanent datum.....: Mean Sea Level
Depth reference.....: Drillers Depth
GL above permanent.....: -73.00 m
KB above permanent.....: TopDrive
DF above permanent.....: 29.40 m

----- Vertical section origin-----
Latitude (+N/S-).....: -5.21 m

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2006
Magnetic date.....: 21-May-2007
Magnetic field strength..: 1199.13 HCNT
Magnetic dec (+E/W-).....: 13.22 degrees
Magnetic dip.....: -68.86 degrees

----- MWD survey Reference Criteria ---
Reference G.....: 1000.04 mGal
Reference H.....: 1199.13 HCNT
Reference Dip.....: -68.86 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT

Departure (+E/W-).....: 9.70 m

Azimuth from Vsect Origin to target: 164.58 degrees

Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.23 degrees
Grid convergence (+E/W-).: -0.82 degrees
Total az corr (+E/W-).....: 14.05 degrees
(Total az corr = magnetic dec - grid conv)

Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

Seq # -	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
1	552.00	17.11	141.77	0.00	547.71	41.16	-41.87	31.57	52.44	142.98	0.00	TIP	None
2	680.34	28.29	165.03	128.34	666.15	89.21	-86.31	51.21	100.35	149.32	1.10	MWD	None
3	709.44	29.61	165.51	29.10	691.61	103.30	-99.93	54.79	113.96	151.27	0.46	MWD	None
4	738.64	32.13	165.79	29.20	716.67	118.28	-114.44	58.50	128.53	152.93	0.86	MWD	None
5	767.94	33.00	166.40	29.30	741.37	134.04	-129.75	62.29	143.93	154.36	0.32	MWD	None
6	797.26	33.94	165.47	29.32	765.82	150.21	-145.44	66.22	159.80	155.52	0.37	MWD	None
7	826.63	34.02	164.06	29.37	790.18	166.62	-161.27	70.53	176.02	156.38	0.27	MWD	None
8	855.70	33.61	164.24	29.07	814.33	182.80	-176.84	74.95	192.06	157.03	0.15	MWD	None
9	884.96	33.25	164.06	29.26	838.75	198.92	-192.34	79.36	208.07	157.58	0.13	MWD	None
10	914.01	32.82	163.95	29.05	863.10	214.75	-207.57	83.72	223.81	158.03	0.15	MWD	None
11	943.43	33.02	164.23	29.42	887.80	230.74	-222.94	88.10	239.72	158.44	0.09	MWD	None
12	972.49	33.29	164.46	29.06	912.13	246.63	-238.25	92.39	255.53	158.80	0.10	MWD	None
13	1001.57	33.30	164.17	29.08	936.44	262.60	-253.62	96.71	271.43	159.13	0.05	MWD	None
14	1030.51	35.30	165.27	28.94	960.34	278.90	-269.35	101.00	287.66	159.44	0.72	MWD	None
15	1059.91	38.30	166.14	29.40	983.88	296.51	-286.41	105.34	305.17	159.81	1.04	MWD	None
16	1089.48	41.46	165.81	29.57	1006.57	315.46	-304.80	109.94	324.02	160.17	1.07	MWD	None
17	1118.56	41.79	165.62	29.08	1028.31	334.77	-323.52	114.71	343.26	160.48	0.12	MWD	None
18	1147.81	42.11	165.37	29.25	1050.06	354.32	-342.45	119.60	362.74	160.75	0.12	MWD	None
19	1177.07	42.24	164.11	29.26	1071.75	373.97	-361.40	124.77	382.34	160.95	0.29	MWD	None
20	1206.26	41.56	163.55	29.19	1093.47	393.46	-380.13	130.20	401.81	161.09	0.27	MWD	None
21	1235.41	41.52	163.70	29.15	1115.29	412.79	-398.67	135.65	421.12	161.21	0.04	MWD	None
22	1264.68	41.00	165.90	29.27	1137.29	432.09	-417.30	140.71	440.38	161.37	0.53	MWD	None
23	1293.45	40.97	165.76	28.77	1159.01	450.95	-435.59	145.33	459.20	161.55	0.03	MWD	None
24	1322.62	40.85	165.35	29.17	1181.06	470.05	-454.09	150.10	478.26	161.71	0.10	MWD	None
25	1351.88	41.75	165.88	29.26	1203.04	489.36	-472.80	154.89	497.52	161.86	0.33	MWD	None
26	**1381.11**	**41.68**	**165.73**	**29.23**	**1224.86**	**508.81**	**-491.65**	**159.66**	**516.93**	**162.01**	**0.04**	**MWD**	**None**
27	1410.48	41.62	165.83	29.37	1246.80	528.32	-510.57	164.46	536.41	162.15	0.03	MWD	None
28	1439.66	41.44	165.89	29.18	1268.65	547.66	-529.33	169.19	555.71	162.28	0.06	MWD	None
29	1468.60	42.24	165.47	28.94	1290.21	566.96	-548.04	173.96	574.99	162.39	0.29	MWD	None
30	1497.78	42.38	165.73	29.18	1311.79	586.60	-567.06	178.85	594.60	162.50	0.08	MWD	None

Seq # -	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
31	1527.56	42.72	165.81	29.78	1333.73	606.74	-586.58	183.80	614.70	162.60	0.12	MWD	None
32	1556.60	42.79	166.01	29.04	1355.05	626.45	-605.71	188.59	634.39	162.71	0.05	MWD	None
33	1585.63	42.76	165.16	29.03	1376.36	646.16	-624.80	193.50	654.08	162.79	0.20	MWD	None
34	1614.64	42.34	164.38	29.01	1397.73	665.77	-643.73	198.66	673.68	162.85	0.23	MWD	None
35	1643.92	41.77	163.89	29.28	1419.47	685.39	-662.59	204.02	693.29	162.89	0.22	MWD	None
36	1673.13	41.66	163.29	29.21	1441.27	704.82	-681.24	209.51	712.73	162.91	0.14	MWD	None
37	1702.00	41.12	163.82	28.87	1462.93	723.91	-699.55	214.91	731.81	162.92	0.22	MWD	None
38	1731.54	41.27	163.73	29.54	1485.16	743.36	-718.23	220.35	751.27	162.94	0.05	MWD	None
39	1760.34	41.34	163.49	28.80	1506.80	762.37	-736.46	225.71	770.28	162.96	0.06	MWD	None
40	1790.23	40.88	164.28	29.89	1529.32	782.02	-755.34	231.17	789.93	162.98	0.23	MWD	None
41	1819.22	40.91	165.98	28.99	1551.23	800.99	-773.69	236.04	808.89	163.03	0.38	MWD	None
42	1848.32	41.04	166.36	29.10	1573.20	820.07	-792.21	240.60	827.94	163.11	0.10	MWD	None
43	1877.46	41.80	166.71	29.14	1595.05	839.34	-810.96	245.09	847.19	163.18	0.27	MWD	None
44	1906.62	42.18	166.88	29.16	1616.73	858.83	-829.96	249.54	866.66	163.27	0.14	MWD	None
45	1935.86	42.33	165.89	29.24	1638.37	878.48	-849.06	254.17	886.29	163.33	0.23	MWD	None
46	1965.15	41.93	165.80	29.29	1660.09	898.12	-868.12	258.98	905.92	163.39	0.14	MWD	None
47	1994.33	41.59	165.57	29.18	1681.86	917.55	-886.95	263.78	925.34	163.44	0.13	MWD	None
48	2023.63	41.94	165.77	29.30	1703.71	937.07	-905.86	268.61	944.84	163.48	0.13	MWD	None
49	2052.91	41.60	166.22	29.28	1725.55	956.57	-924.78	273.33	964.33	163.53	0.15	MWD	None
50	2082.02	41.88	166.48	29.11	1747.27	975.94	-943.61	277.91	983.69	163.59	0.11	MWD	None
51	2111.07	41.44	165.65	29.05	1768.97	995.24	-962.35	282.56	1002.98	163.64	0.24	MWD	None
52	2140.43	41.49	165.44	29.36	1790.98	1014.68	-981.18	287.41	1022.41	163.67	0.05	MWD	None
53	2169.61	41.37	165.29	29.18	1812.85	1033.98	-999.86	292.29	1041.71	163.70	0.05	MWD	None
54	2199.00	41.28	165.36	29.39	1834.93	1053.39	-1018.64	297.20	1061.11	163.73	0.03	MWD	None
55	2228.01	41.21	164.90	29.01	1856.74	1072.51	-1037.12	302.11	1080.23	163.76	0.11	MWD	None
56	2256.68	41.72	165.89	28.67	1878.22	1091.50	-1055.49	306.90	1099.20	163.79	0.29	MWD	None
57	2286.49	41.77	165.89	29.81	1900.46	1111.34	-1074.74	311.74	1119.04	163.82	0.02	MWD	None
58	2314.89	41.71	166.05	28.40	1921.65	1130.24	-1093.08	316.32	1137.93	163.86	0.04	MWD	None
59	2344.75	41.75	165.91	29.86	1943.94	1150.11	-1112.37	321.13	1157.79	163.90	0.03	MWD	None
60	2373.85	41.67	165.80	29.10	1965.66	1169.47	-1131.14	325.87	1177.15	163.93	0.04	MWD	None

Seq #	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
61	2403.24	41.63	165.76	29.39	1987.62	1189.00	-1150.08	330.66	1196.67	163.96	0.02	MWD	None
62	2432.55	41.61	165.56	29.31	2009.53	1208.46	-1168.94	335.49	1216.13	163.99	0.05	MWD	None
63	2461.53	41.50	165.17	28.98	2031.22	1227.68	-1187.54	340.34	1235.34	164.01	0.10	MWD	None
64	2490.81	41.94	165.15	29.28	2053.08	1247.17	-1206.37	345.33	1254.83	164.03	0.15	MWD	None
65	2520.14	41.75	165.39	29.33	2074.93	1266.73	-1225.29	350.31	1274.39	164.04	0.08	MWD	None
66	2549.14	41.61	165.11	29.00	2096.58	1286.01	-1243.94	355.22	1293.67	164.06	0.08	MWD	None
67	2578.40	41.49	164.85	29.26	2118.48	1305.42	-1262.69	360.25	1313.07	164.08	0.07	MWD	None
68	2607.57	41.91	165.27	29.17	2140.26	1324.82	-1281.44	365.25	1332.47	164.09	0.17	MWD	None
69	2636.75	41.85	165.11	29.18	2161.99	1344.30	-1300.27	370.23	1351.95	164.11	0.04	MWD	None
70	2665.91	41.73	165.00	29.16	2183.73	1363.73	-1319.04	375.24	1371.38	164.12	0.05	MWD	None
71	2678.92	41.58	165.07	13.01	2193.45	1372.38	-1327.40	377.47	1380.03	164.13	0.12	MWD	None
72	2695.05	41.49	164.79	16.13	2205.52	1383.08	-1337.73	380.25	1390.72	164.13	0.13	MWD	None
73	2724.67	41.37	165.09	29.62	2227.73	1402.68	-1356.65	385.35	1410.32	164.14	0.08	MWD	None
74	2752.94	41.14	165.43	28.27	2248.98	1421.32	-1374.68	390.09	1428.96	164.16	0.11	MWD	None
75	2782.04	40.96	165.71	29.10	2270.93	1440.42	-1393.19	394.85	1448.06	164.18	0.09	MWD	None
76	2810.51	40.76	165.74	28.47	2292.46	1459.04	-1411.24	399.44	1466.68	164.20	0.07	MWD	None
77	2839.39	40.92	165.91	28.88	2314.31	1477.93	-1429.55	404.07	1485.56	164.22	0.07	MWD	None
78	2868.67	41.23	165.97	29.28	2336.38	1497.16	-1448.21	408.74	1504.79	164.24	0.11	MWD	None
79	2897.47	41.60	166.15	28.80	2357.98	1516.20	-1466.70	413.33	1523.83	164.26	0.13	MWD	None
80	2926.34	42.00	166.28	28.87	2379.50	1535.44	-1485.39	417.92	1543.06	164.29	0.14	MWD	None
81	2955.29	41.78	166.14	28.95	2401.05	1554.76	-1504.16	422.53	1562.38	164.31	0.08	MWD	None
82	2984.43	41.64	165.94	29.14	2422.81	1574.14	-1522.98	427.20	1581.76	164.33	0.07	MWD	None
83	3013.60	42.16	166.05	29.17	2444.52	1593.62	-1541.88	431.92	1601.23	164.35	0.18	MWD	None
84	3038.00	42.20	166.05	24.40	2462.60	1610.00	-1557.78	435.87	1617.61	164.37	0.02	Proj. to TD	

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Company: **ESSO Australia Pty. Ltd.**

Schlumberger

Well: **HLA A7A**

Field: **Halibut**

Rig: **ISDL 453**

State: **Victoria**

Gamma Ray Service
1:500 Measured depth
Real Time Log