

Company: ESSO Australia Pty. Ltd.

Well: MLA-A23A

Field: Marlin GDA 94

Rig: ISDL 453

State: Victoria

Victoria

Gamma Ray Service  
1:500 Measured Depth  
Real Time Log

Location			
Total depth:	3051.0 m	Elevation	
Spud date:	11-Jul-04	K.B. Top Drive	
Runs:	1 To 1	G.L. -59.00 m	
Permanent datum:	Mean Sea Level	Elev.: 0 m	
Log measured from:	Drill Floor	27.91 m above Perm. datum	
Depth reference:	Driller's Depth		

Rig: ISDL 453  
Field: Marlin GDA 94  
Location: Bass Straight  
Well: MLA-A23A  
Company: ESSO Australia Pty. Ltd.Depth logged: 1380.0 m To 3031.9 m Mag decl: 13.13 deg. Other services:  
Date logged: 15-Jul-04 To 21-Jul-04 Mag dip: -68.73 deg. Directional Drilling, D&I

## Bore hole record

## Casing record

Hole size	from	to	Size	Density	from	to
17 1/2 in.	Surface	610.0 m	13 3/8 in.	54.5 lb/ft	Surface	610.0 m
12 1/4 in.	610.0 m	1380.0 m	9 5/8 in.	40.0 lb/ft	Surface	1350.0 m
8 1/2 in.	1380.0 m	3051.0 m				

## Mud record

## Borehole deviation record

Type	from	to	Min	Max	from	to
KCl/PHPA/Glycol	1375.0 m	3051.0 m	24.4 deg.	36.4 deg.	1354.0 m	1785.3 m
			34.4 deg.	38.8 deg.	1785.3 m	2215.3 m
			31.6 deg.	37.5 deg.	2215.3 m	2644.9 m
			13.9 deg.	36.3 deg.	2644.9 m	3051.0 m

## Surface equipment

## Software record

Unit	OLU-FB-924	IDEAL Wis	ID8_1C_01	
Depth system	DES-AB-980	SPM	HSPM8_1c_07	
		LWD		
		MWD	V7.0C00	

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## OTHER SERVICES FOR RUN 1

Directional Drilling  
Directional Surveys

## OTHER SERVICES FOR RUN

## OTHER SERVICES FOR RUN

## REMARKS: RUN NUMBER 1

8-1/2 in. hole was drilled from 1380.0m to 3051.0m MD

Depth is referenced to Driller's Depth

Gamma Ray corrected for Tool Size,  
Bit Size and Mud Weight

Mud type is KCl/PHPA/Glycol

POOH due to reaching TD of MLA-A23A

## REMARKS: RUN NUMBER

## REMARKS: RUN NUMBER

EQUIPMENT DESCRIPTION		
RUN1	RUN	RUN
<p>DOWNHOLE E</p> <p>6-3/4 in. Pow MDC: V8 MEC: 21 MDI: 109 MGR: 50 DHS: 7.1</p> <p>D&amp;I GR</p> <p>6-3/8 in. N S/N: 961</p> <p>6-5/8 in. NM Rc S/N: GU</p> <p>6-1/2 in. N S/N: ASS</p> <p>6-1/2 in. Fl S/N: CMF</p> <p>7 in. PowerPa A700G1 S/N: 07 1.5 deg. Bent 8-3/8 in. Mot</p>	<p>24.5</p> <p>— 20.2 — 19.5</p> <p>16.2</p> <p>13.7</p> <p>11.6</p> <p>10.1</p> <p>9.4</p>	

6-5/8 in. Rotating l

S/N: OSS2

REED Hycalog

OD: 8-1

RSX163 S/N

0.5%

0.2%

Maximum string dia

All lengths in

# Bit Run Summary

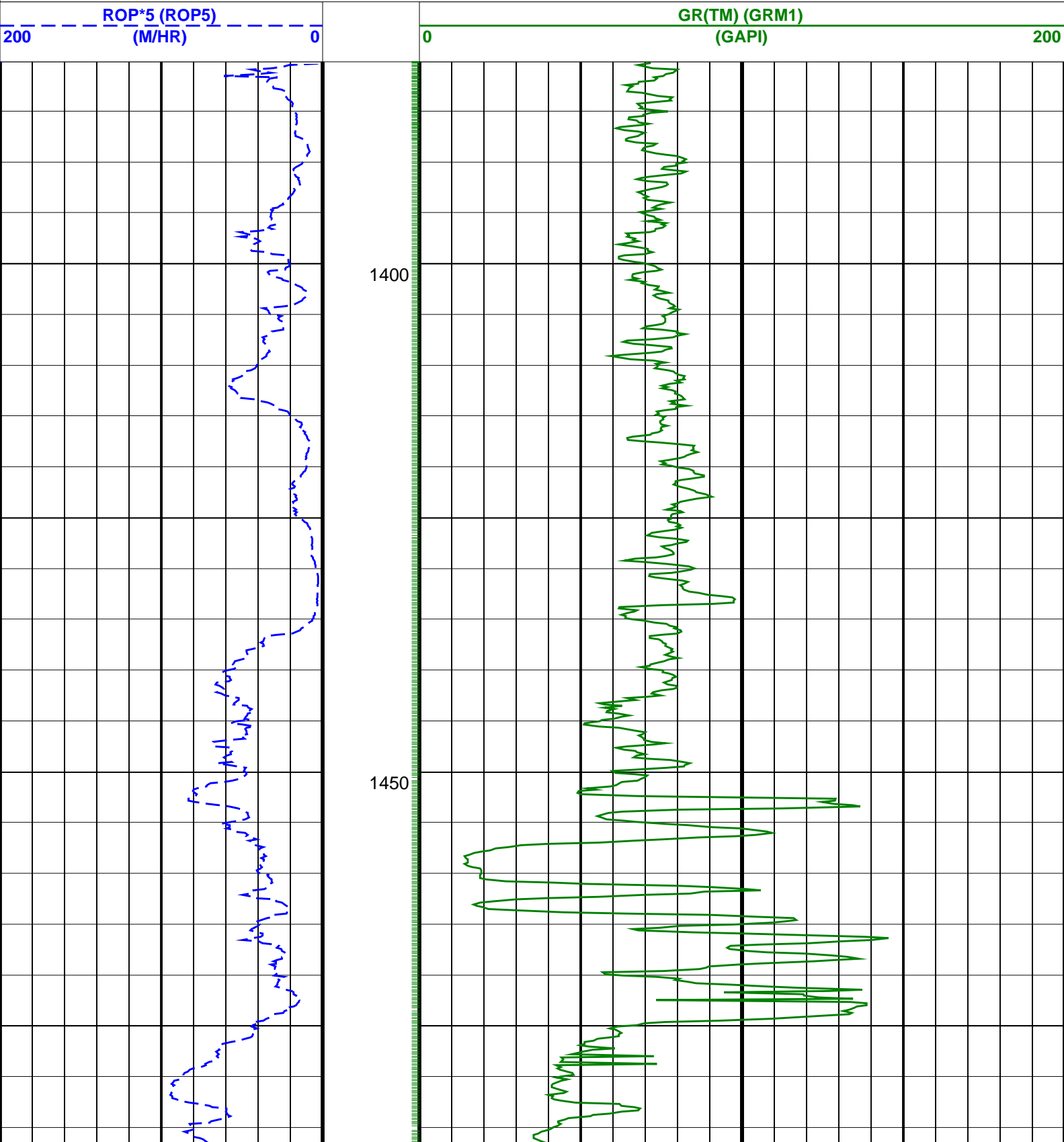
Run number		1									
Bit size	in.	8.5									
Bit start depth	m	1380.0									
Bit end depth	m	3051.0									
Top interval logged	m	1380.0									
Bottom interval logged	m	3031.9									
Begin log: time		06:00									
Begin log: date		15-Jul-04									
End log: time		14:30									
End log: date		21-Jul-04									
Mud data											
Depth	m	3042.0									
Type		KCL/PHPA/Glycol									
Mud weight	ppg	9.5									
Solids	%	5.5									
Chlorides	mg/L	38,000									
Rm											
Rmf											
Rmc											
Potassium	%	4.1									
Environmental data											
GR											
Mud weight	ppg	9.5									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size											
Mud weight											
Temperature											
Mud salinity											
Formation salinity											
Update rate 1	SEC	3.9									
Update rate 2	SEC										
Filtering GR		3 pt.									
Filtering density											
Filtering Neutron											
Company representative		B. Steel	R. Bain								
Anadrill personnel		J. Dolan	R.Borjas	C. Soper	D. Hay	L. Johnston					

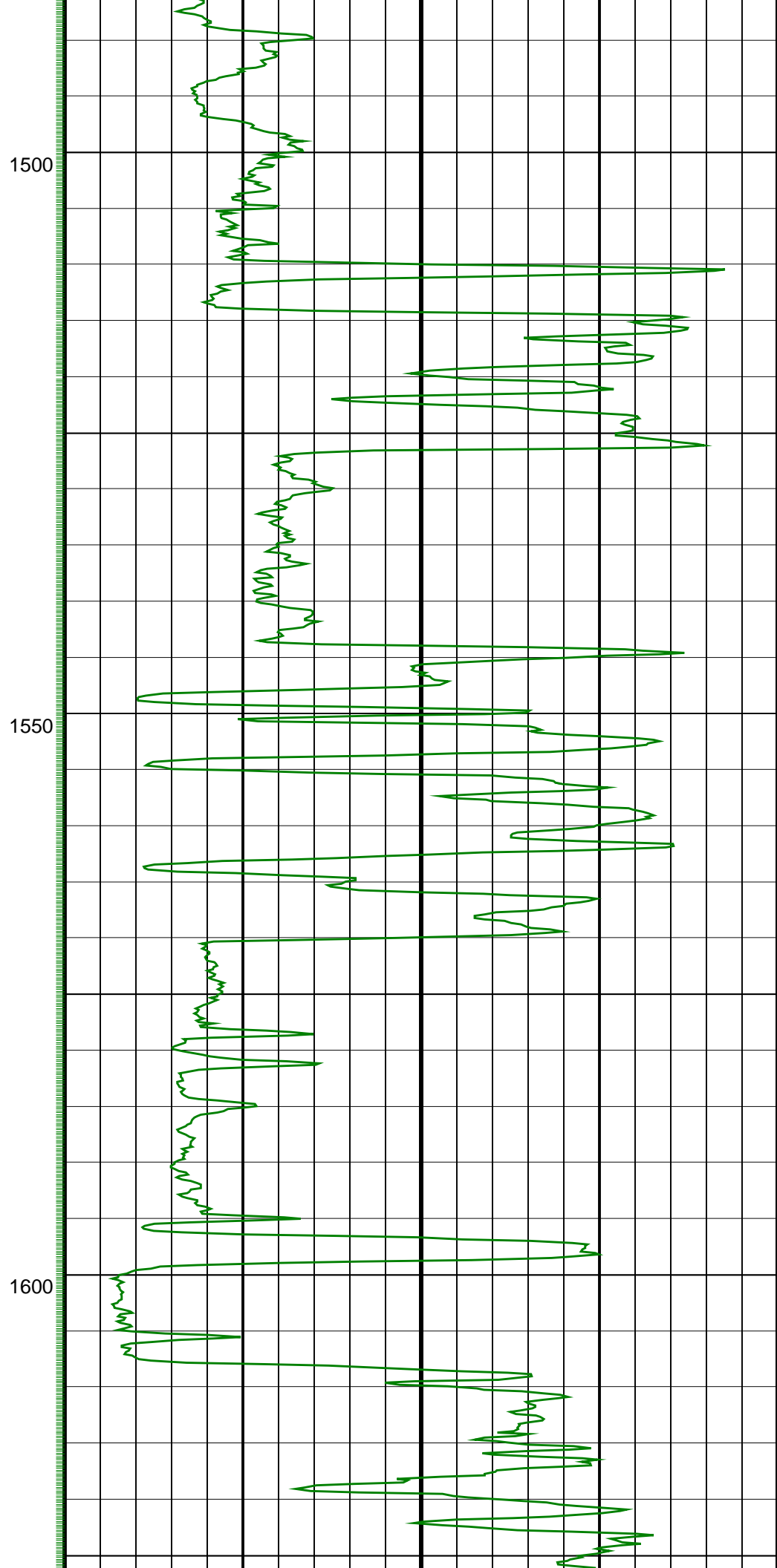
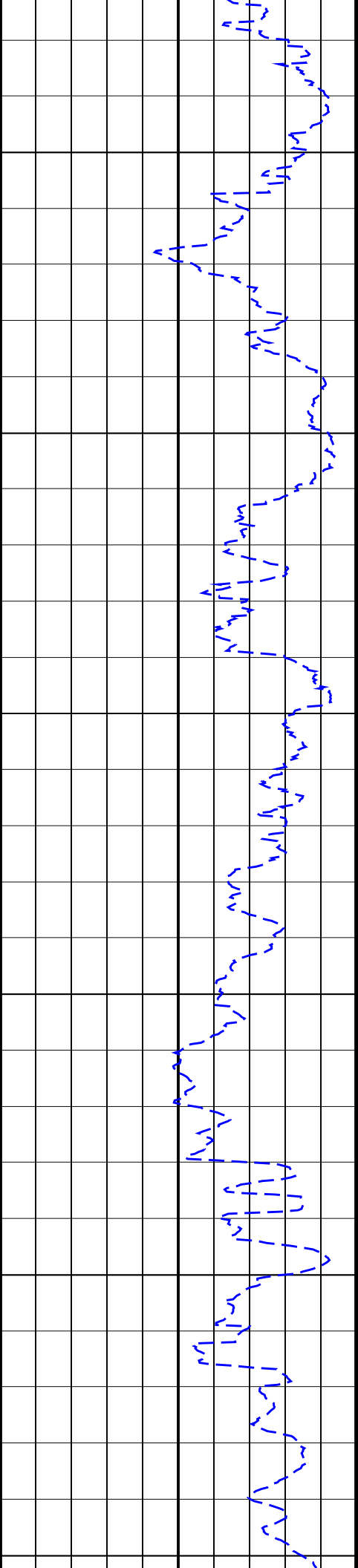
# MLA-A23A RT 500MD

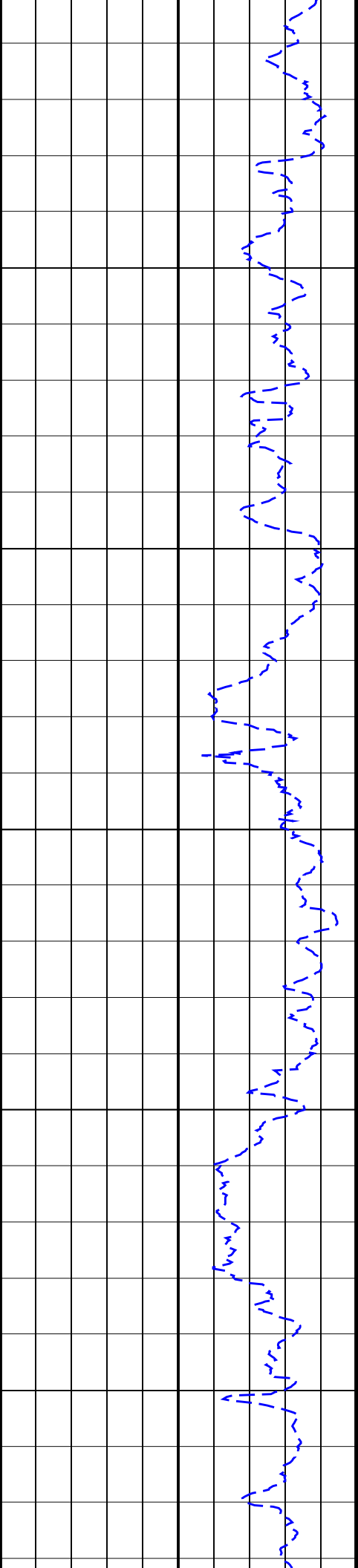
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## PIP SUMMARY

GR(TM) PIP



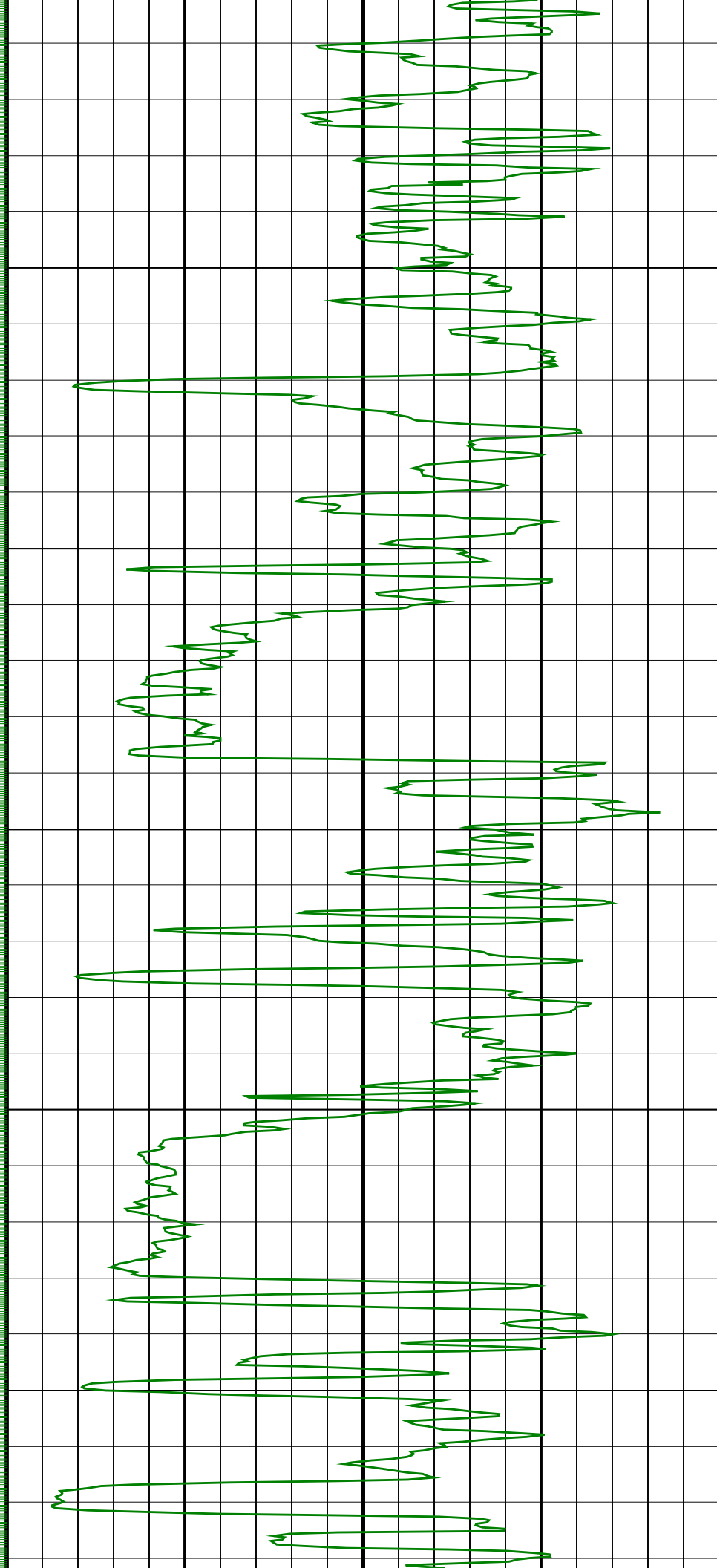


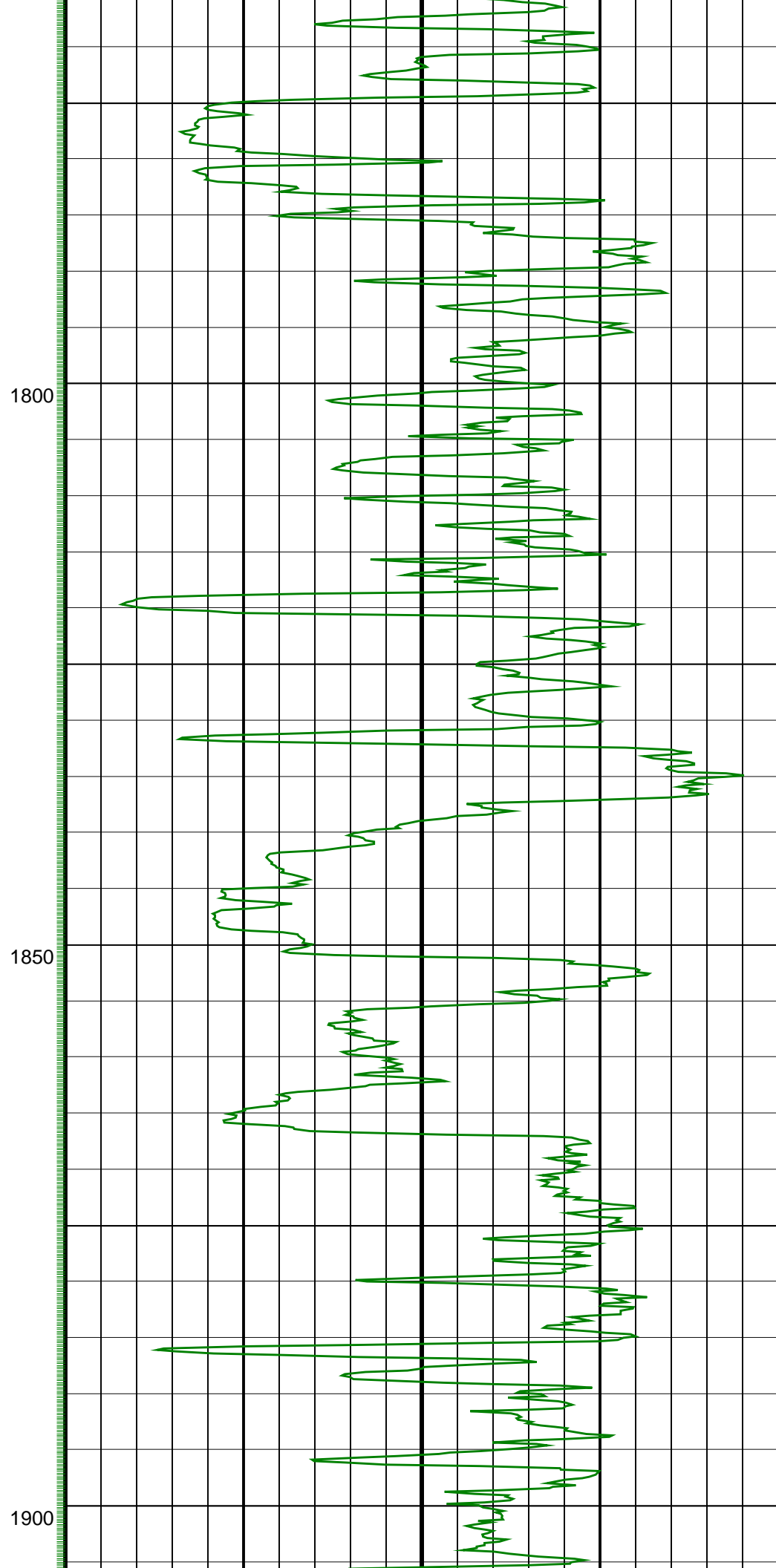
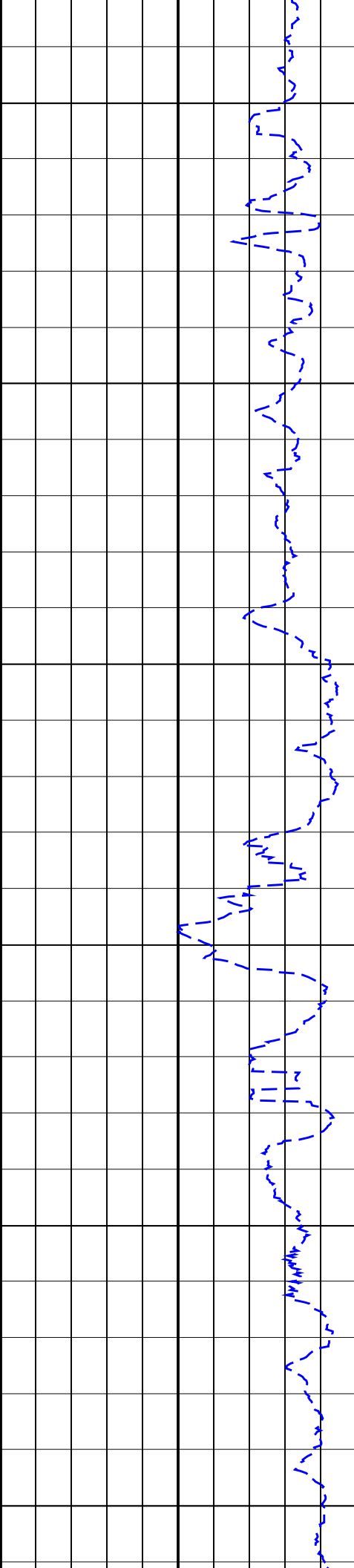


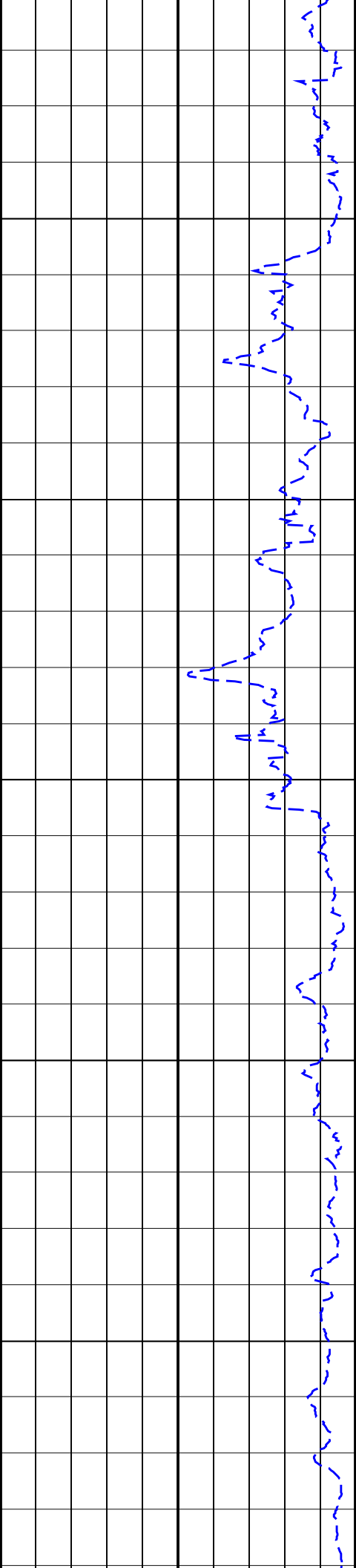
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1700

1750

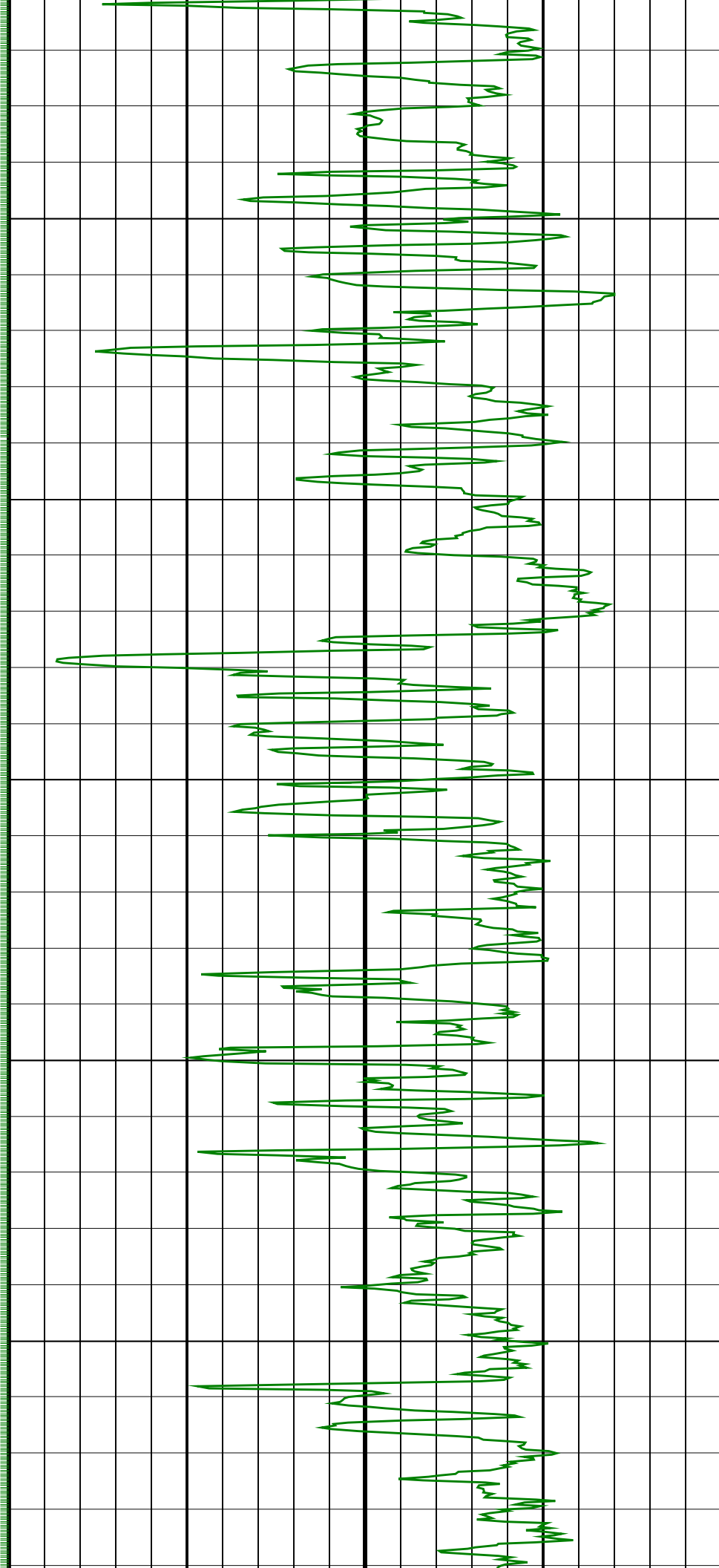




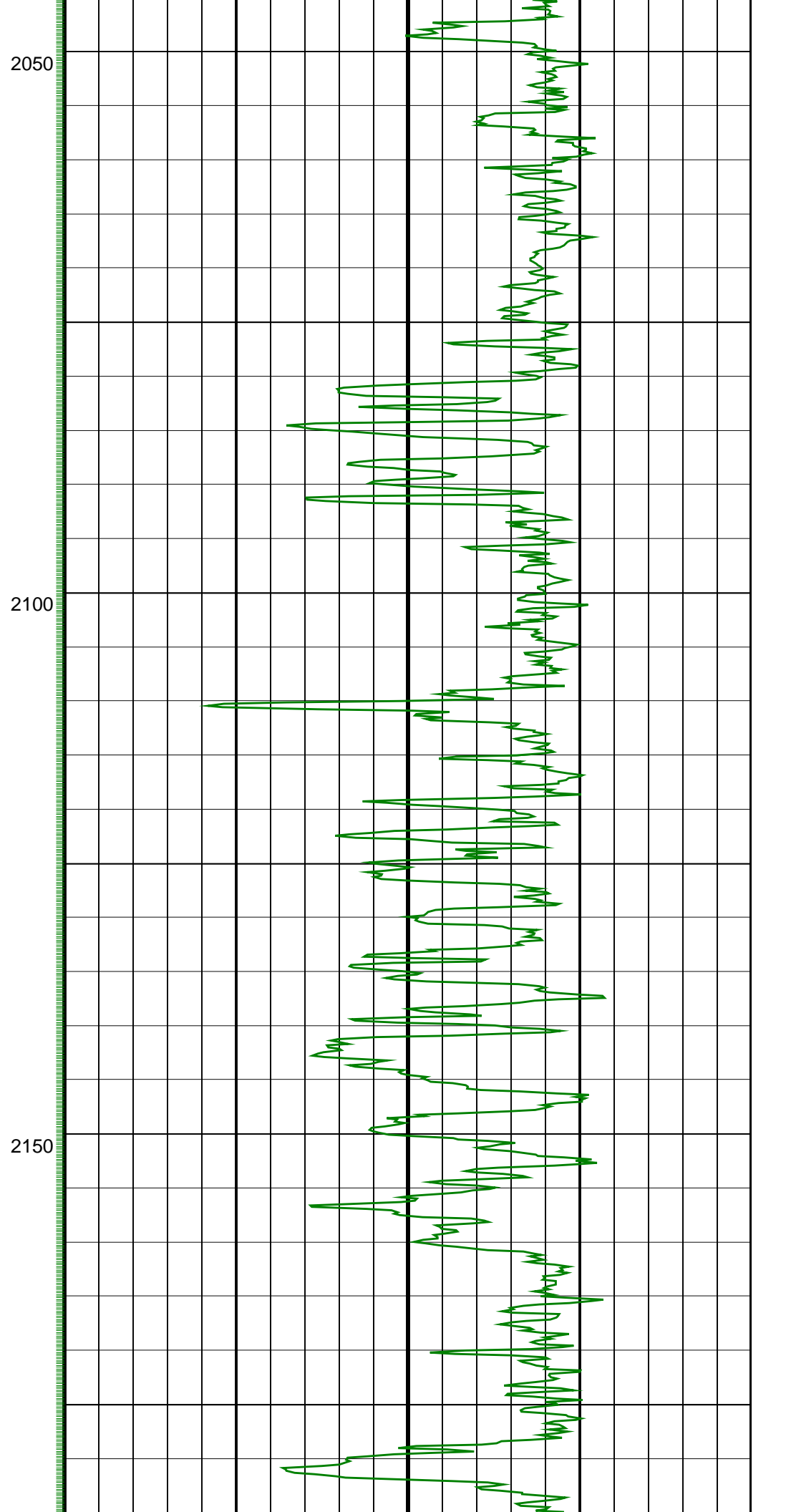
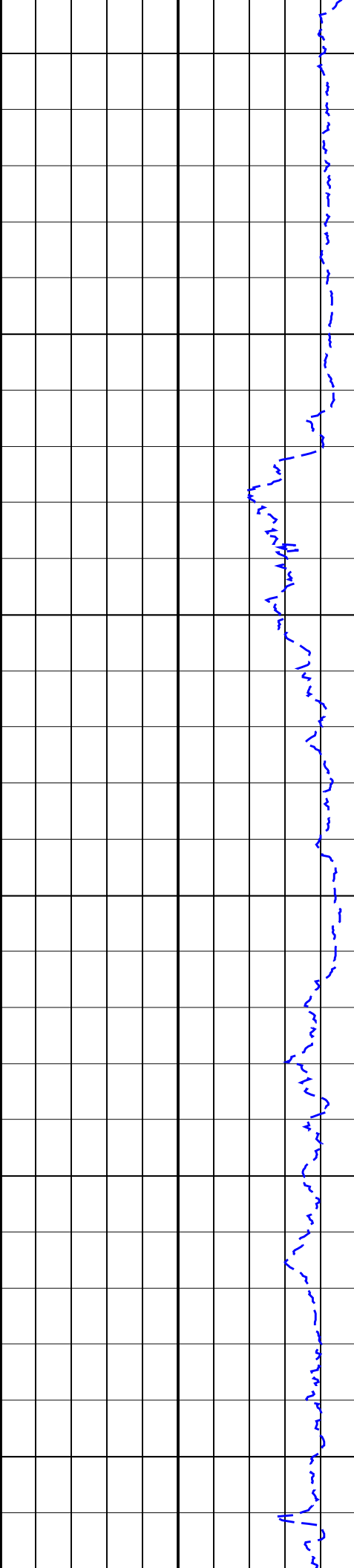


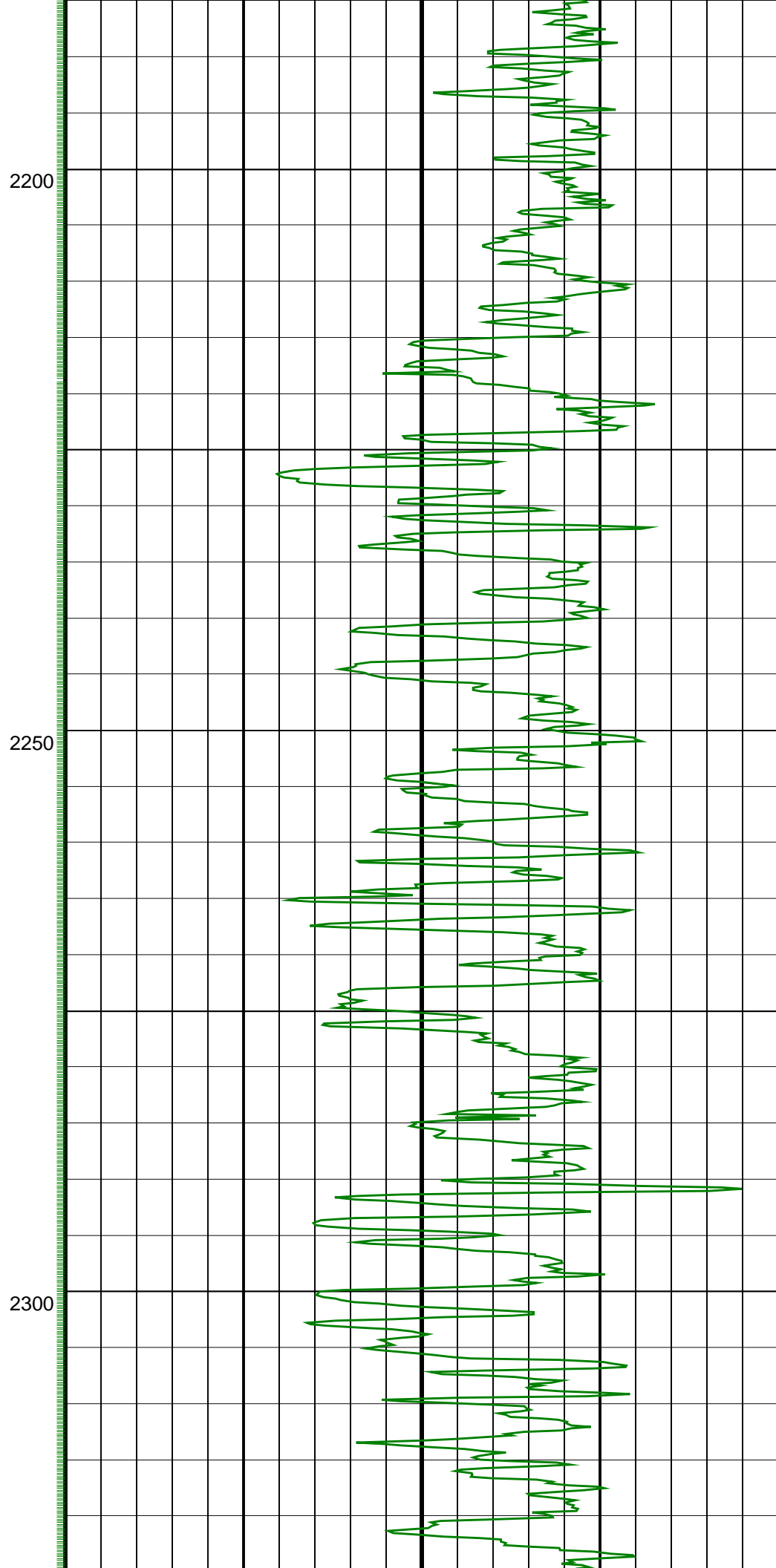
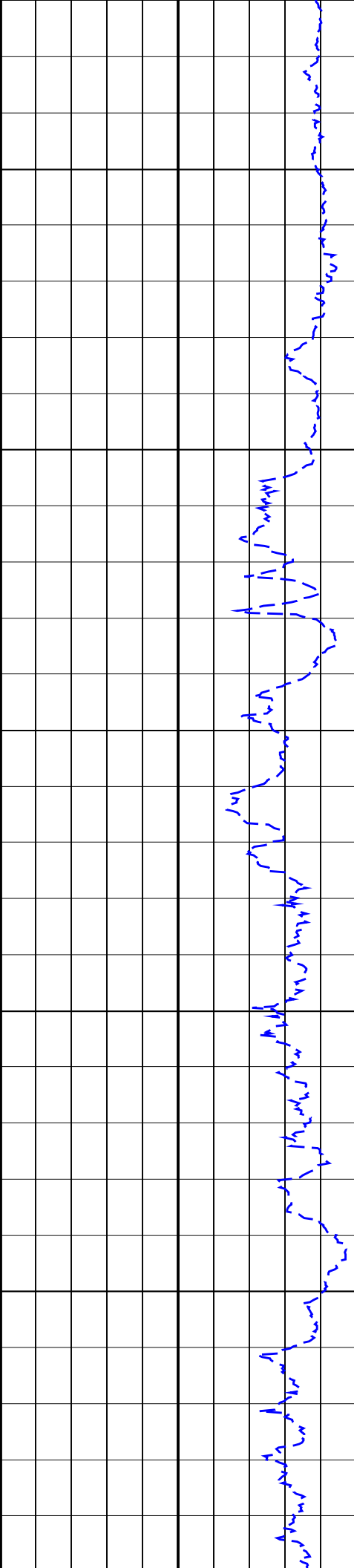
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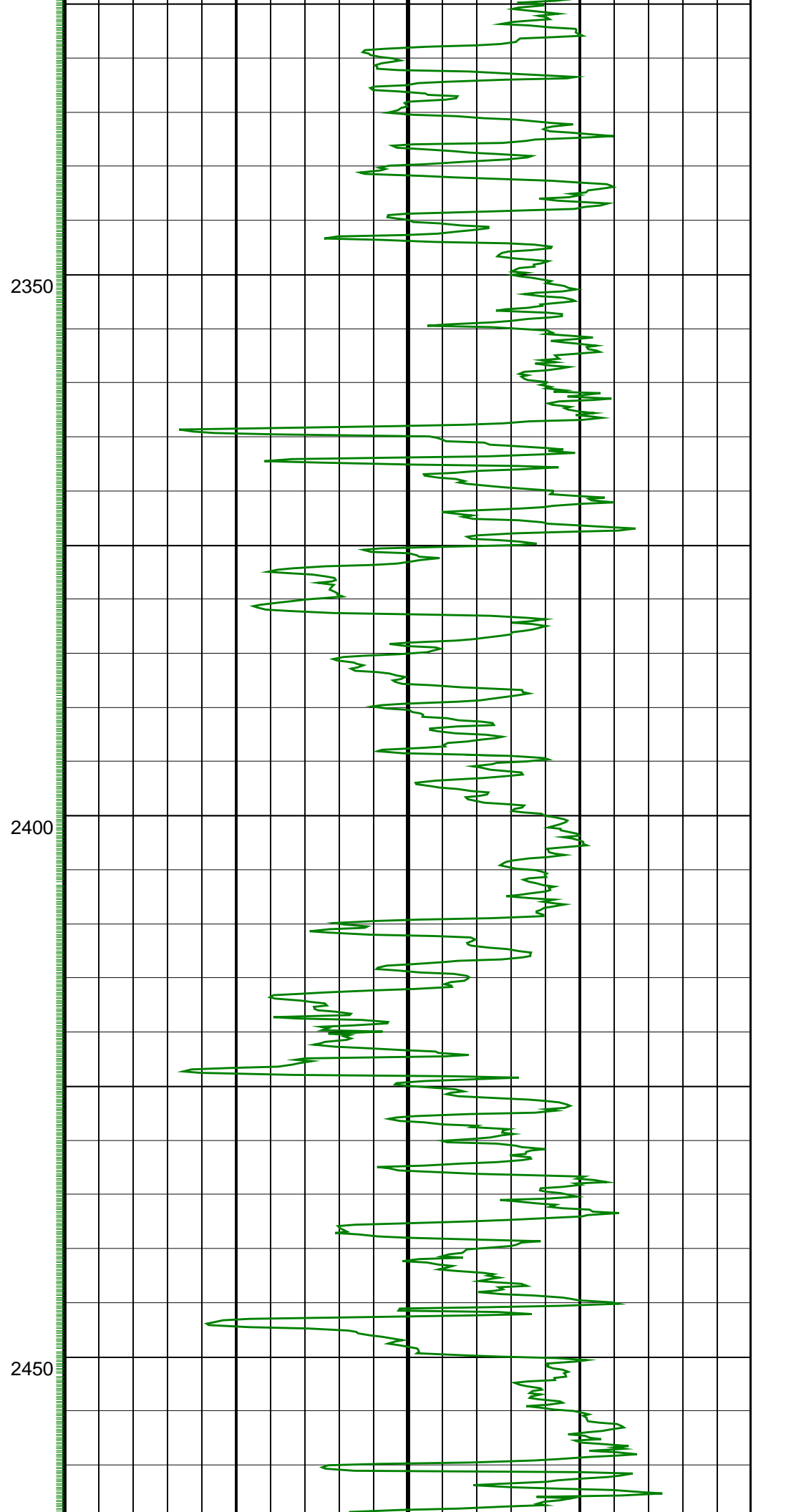
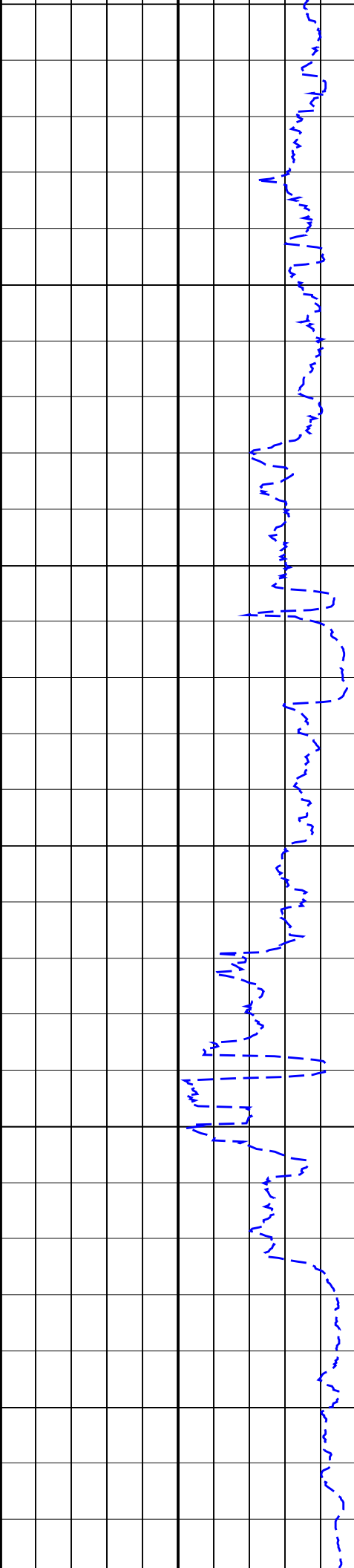
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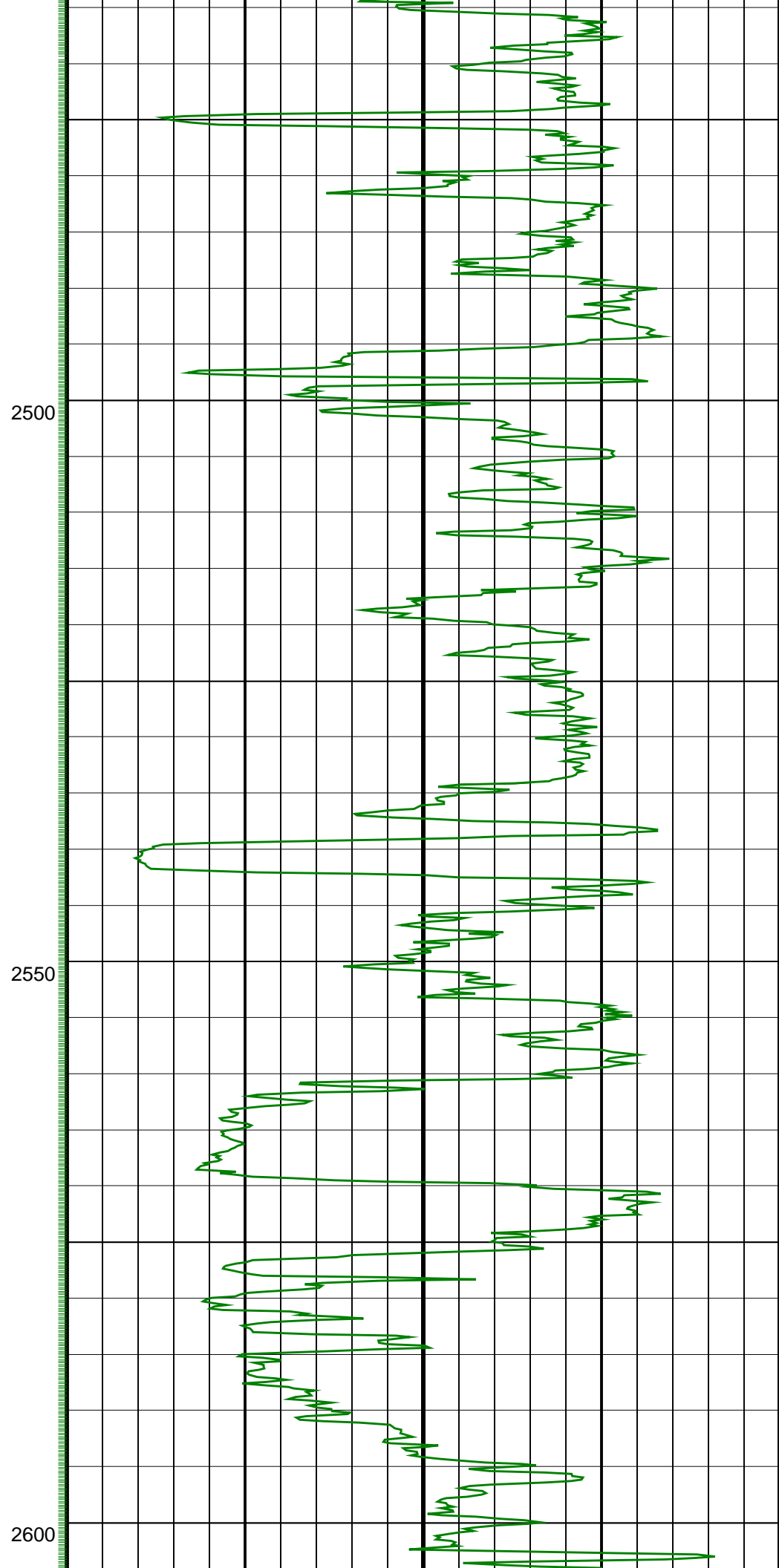
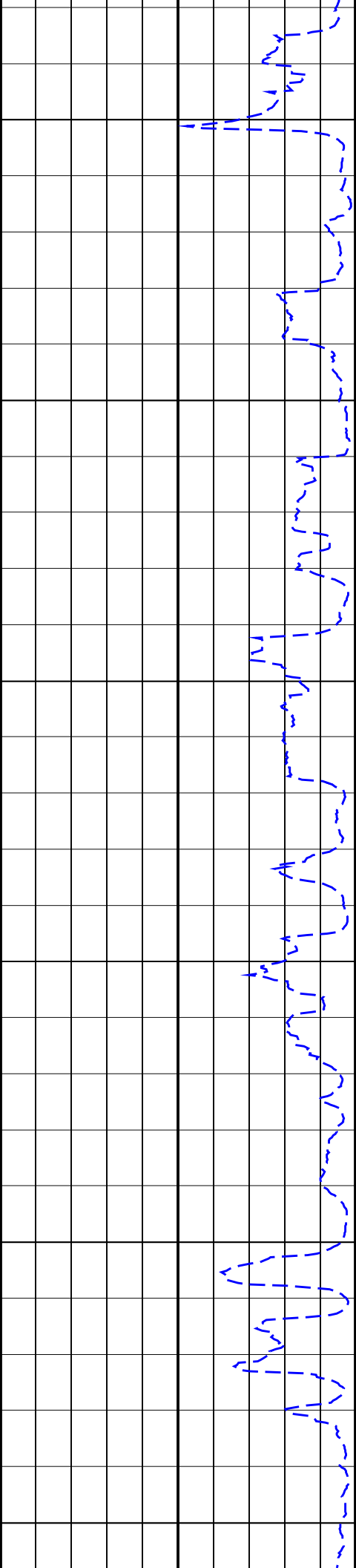


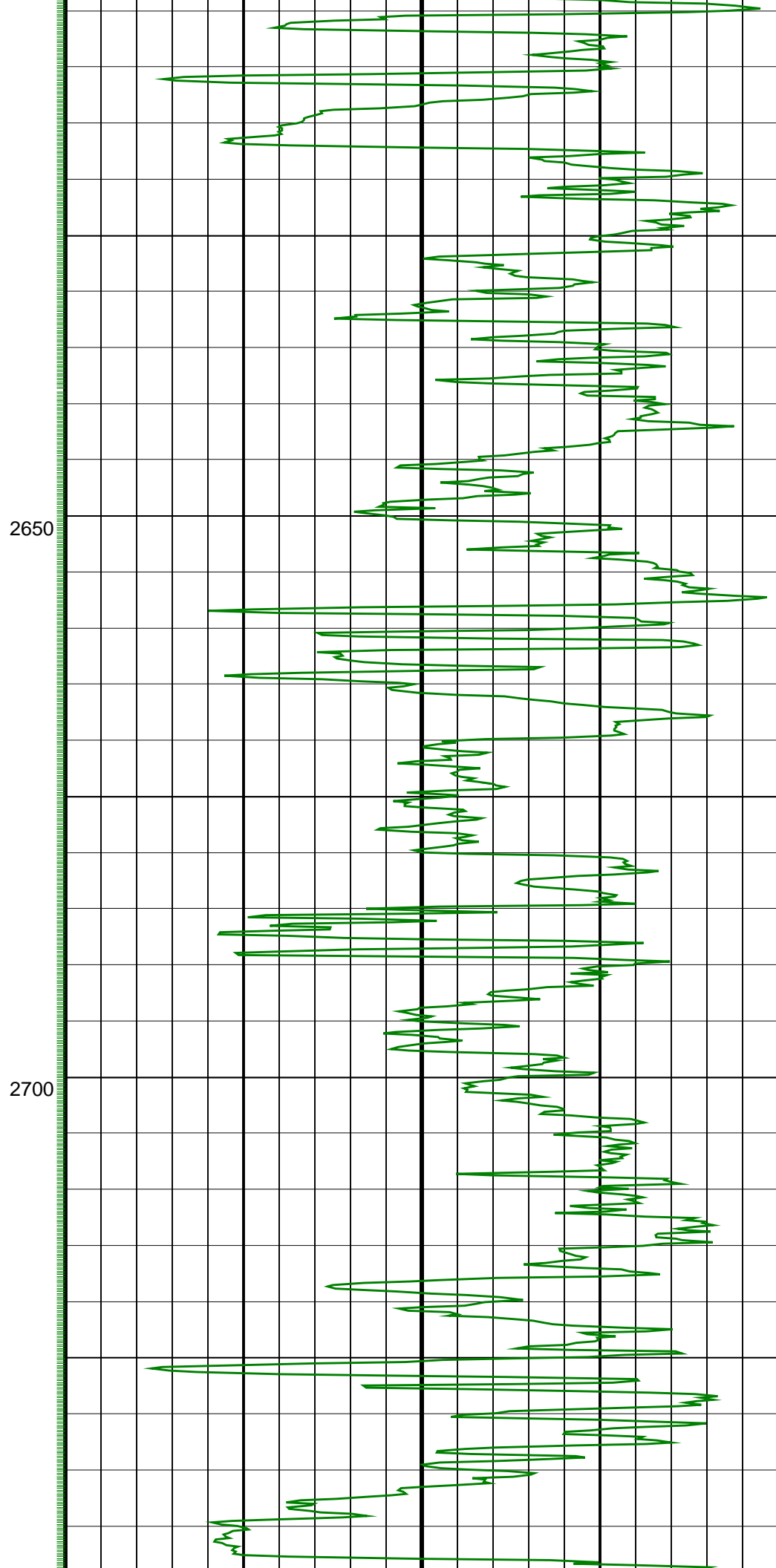
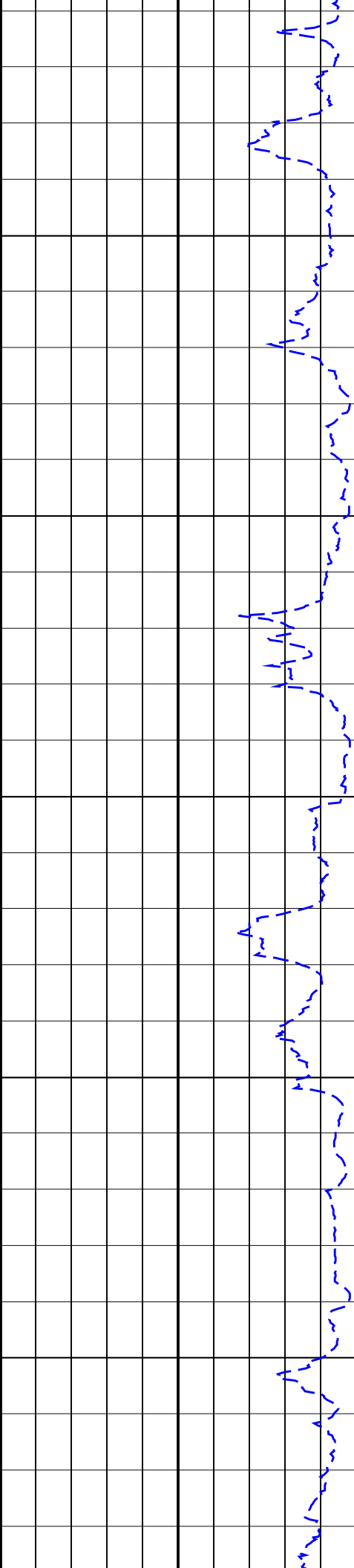


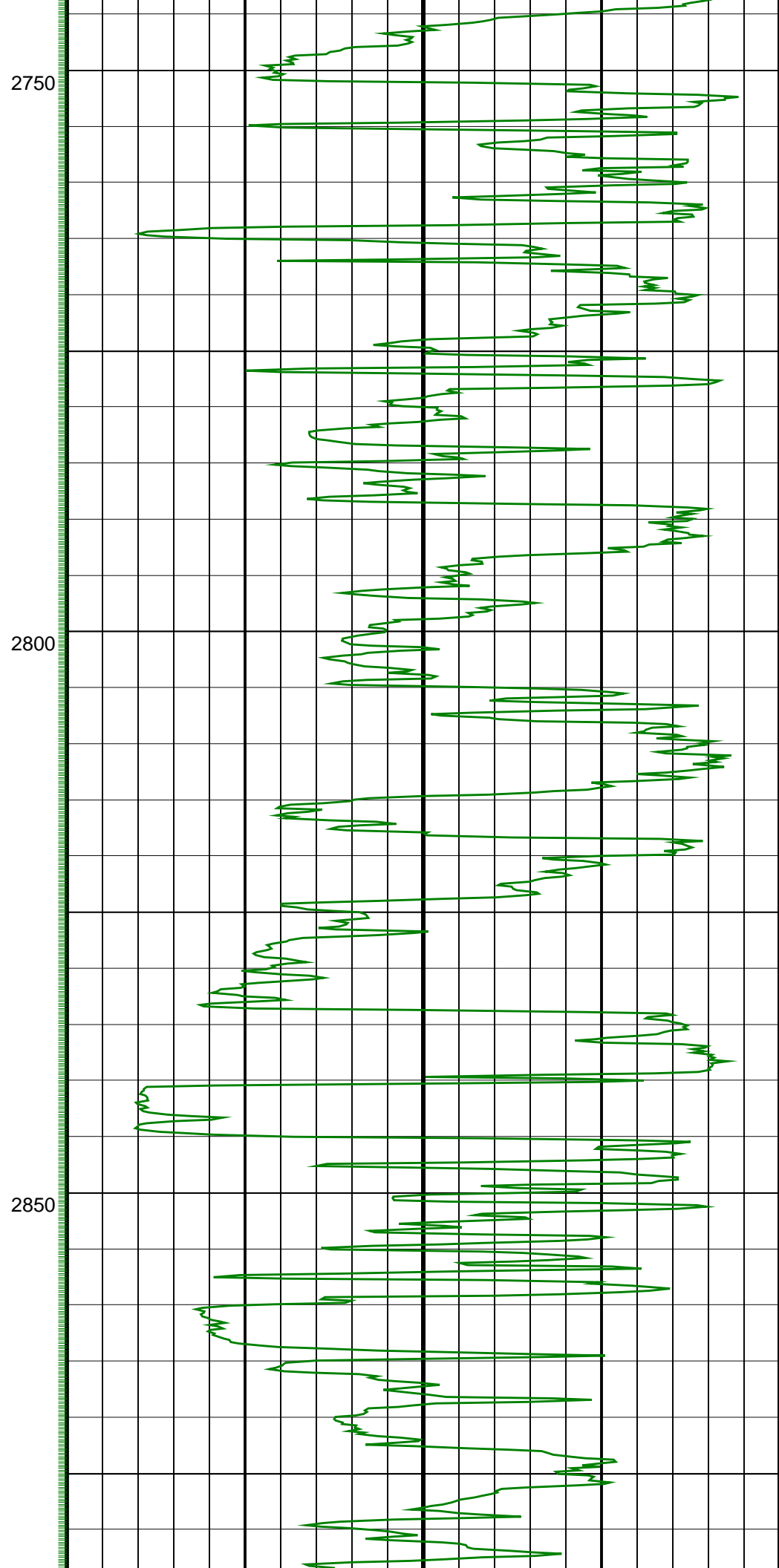
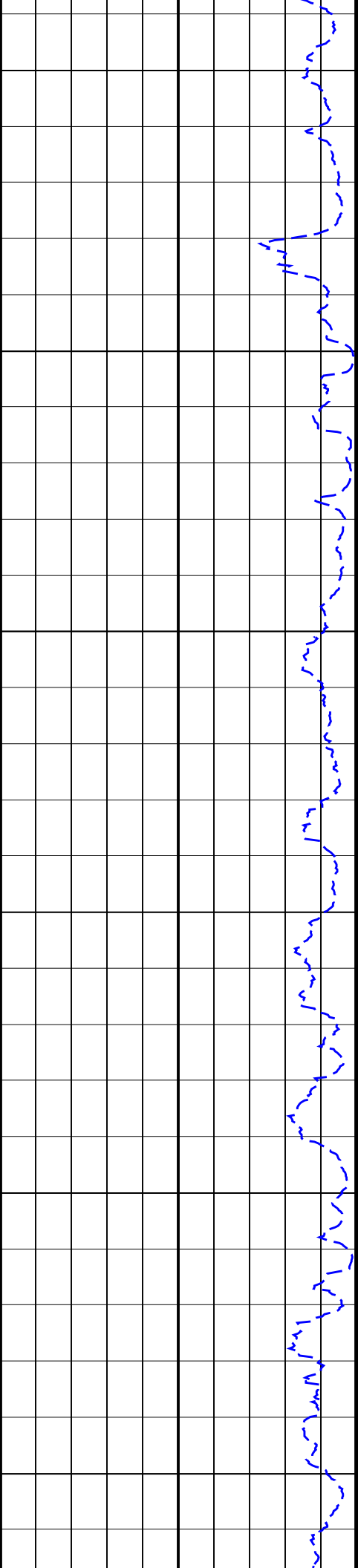


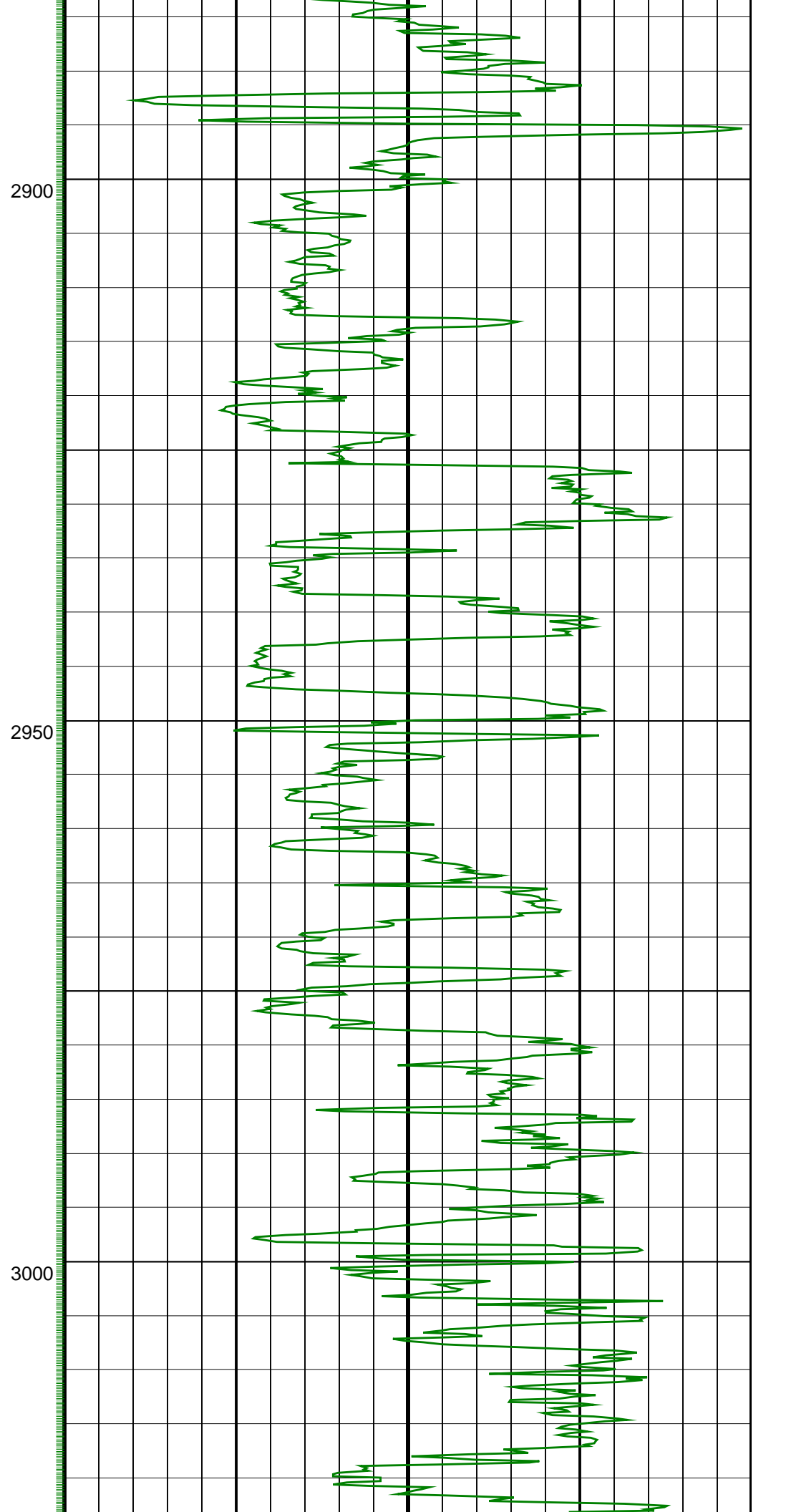
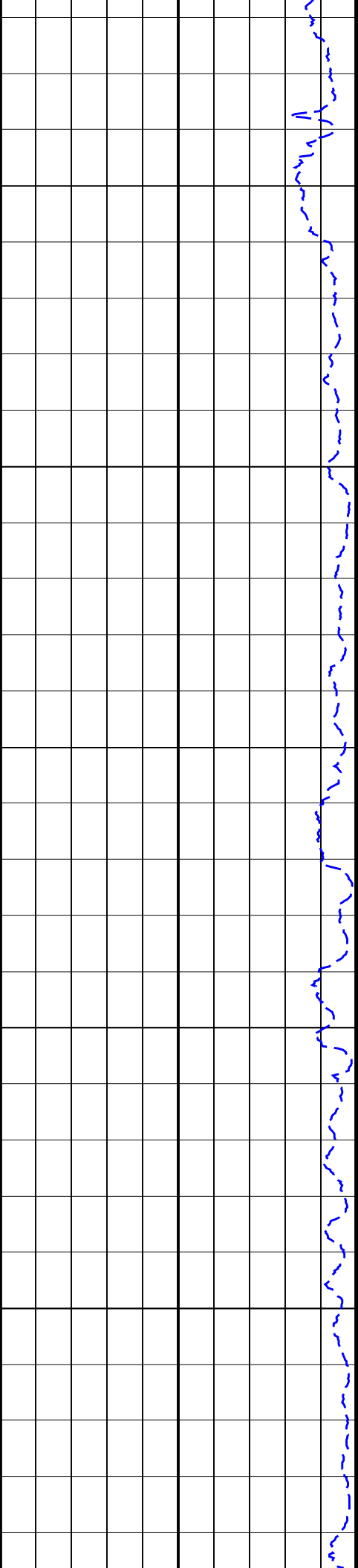


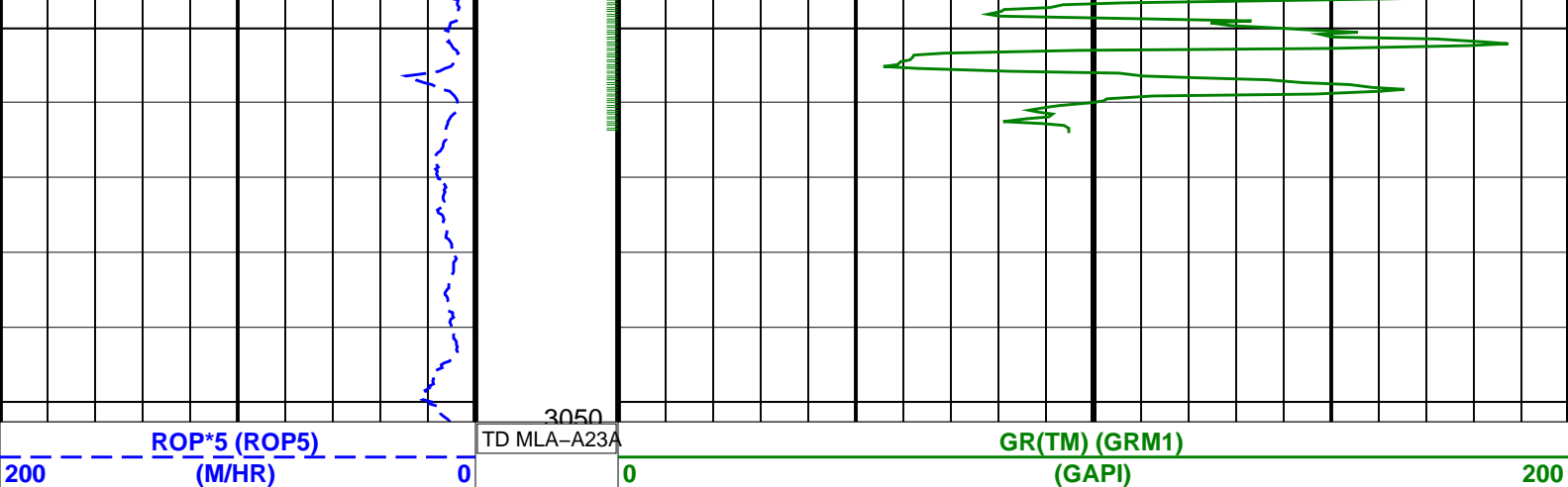












### PIP SUMMARY

GR(TM) PIP

### SCHLUMBERGER

Survey report 21-Jul-2004 15:47:41 Page 1 of 3

Client.....: ESSO Australia Pty Ltd  
Field.....: Marlin GDA 94

Well.....: MLA-A23a Spud date.....: 11-July-04  
API number.....: Last survey date.....: 21-Jul-04  
Engineer.....: J.Dolan, R.Borjas, L.Johnston Total accepted surveys...: 60  
MD of first survey.....: 1354.00 m  
Contractor.....: ISDL 453 MD of last survey.....: 3051.00 m  
STATE.....: Victoria

----- Survey calculation methods -----  
Method for positions.....: Minimum curvature Magnetic model.....: BGM version 2003  
Method for DLS.....: Mason & Taylor Magnetic date.....: 11-Jul-2004  
Magnetic field strength...: 1199.66 HCNT  
----- Depth reference -----  
Permanent datum.....: Mean Sea Level Magnetic dec (+E/W-).....: 13.13 degrees  
Depth reference.....: Driller's Depth Magnetic dip.....: -68.73 degrees  
GL above permanent.....: -59.00 m  
KB above permanent.....: 27.91 m  
DF above permanent.....: 27.91 m  
----- MWD survey Reference Criteria -----  
Reference G.....: 1000.03 mGal  
Reference H.....: 1199.66 HCNT  
Reference Dip.....: -68.73 degrees  
----- Vertical section origin -----  
Latitude (+N/S-).....: 0.00 m Tolerance of G.....: (+/-) 2.50 mGal  
Departure (+E/W-).....: 0.00 m Tolerance of H.....: (+/-) 6.00 HCNT  
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----  
Magnetic dec (+E/W-).....: 13.13 degrees  
Grid convergence (+E/W-).....: -0.76 degrees  
Total az corr (+E/W-).....: 13.89 degrees  
Azimuth from rotary table to target: 197.61 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

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SCHLUMBERGER Survey Report

21-Jul-2004 15:47:41 Page 2 of 3

Seq	Measured	Incl	Azimuth	Course	TVD	Vertical	Displ	Displ	Total	At	DLS	Srvy	Tool
#	depth	angle	angle	length	depth	section	+N/S-	+E/W-	displ	Azim	(deg/	tool	Corr
-	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(deg)	100f)	type	(deg)	
1	1354.00	24.41	208.68	0.00	1311.29	222.48	-208.20	-79.44	222.84	200.88	0.00	TIP	None
2	1412.62	31.19	197.32	58.62	1363.15	249.59	-233.36	-89.79	250.04	201.05	4.46	MWD	None
3	1435.36	32.38	191.97	22.74	1382.48	261.54	-244.95	-92.81	261.94	200.75	4.10	MWD	None
4	1469.69	34.54	188.94	34.33	1411.12	280.32	-263.56	-96.23	280.57	200.06	2.42	MWD	None
5	1498.10	36.38	190.02	28.41	1434.26	296.63	-279.81	-98.95	296.79	199.47	2.09	MWD	None
6	1526.48	36.23	193.91	28.38	1457.14	313.35	-296.24	-102.43	313.45	199.07	2.48	MWD	None
7	1554.83	36.28	198.02	28.35	1480.00	330.10	-312.35	-107.04	330.18	198.92	2.61	MWD	None
8	1583.38	36.43	198.33	28.55	1503.00	347.02	-328.43	-112.31	347.11	198.88	0.25	MWD	None
9	1612.18	36.36	198.70	28.80	1526.18	364.11	-344.64	-117.74	364.19	198.86	0.24	MWD	None
10	1641.00	35.79	196.73	28.82	1549.47	381.07	-360.80	-122.91	381.16	198.81	1.37	MWD	None



11	1669.93	35.39	196.62	28.93	1579.33	397.91	-376.93	-127.74	397.98	198.72	0.43	MWD	None
12	1698.85	35.72	196.59	28.92	1596.53	414.72	-393.04	-132.54	414.79	198.64	0.35	MWD	None
13	1727.94	35.67	196.77	29.09	1620.15	431.69	-409.30	-137.41	431.75	198.56	0.12	MWD	None
14	1756.54	35.98	196.69	28.60	1643.34	448.43	-425.33	-142.23	448.48	198.49	0.33	MWD	None
15	1785.30	35.60	195.45	28.76	1666.67	465.24	-441.49	-146.89	465.29	198.40	0.87	MWD	None
16	1814.24	34.92	195.65	28.94	1690.30	481.94	-457.59	-151.37	481.98	198.30	0.73	MWD	None
17	1843.05	34.84	195.98	28.81	1713.94	498.41	-473.44	-155.86	498.44	198.22	0.22	MWD	None
18	1871.63	35.07	196.19	28.58	1737.36	514.78	-489.17	-160.40	514.80	198.15	0.28	MWD	None
19	1900.02	34.38	196.89	28.39	1760.69	530.94	-504.68	-165.00	530.96	198.10	0.86	MWD	None
20	1928.81	35.24	196.20	28.79	1784.33	547.38	-520.43	-169.68	547.39	198.06	1.00	MWD	None
21	1957.63	34.51	196.38	28.82	1807.97	563.85	-536.25	-174.30	563.86	198.01	0.78	MWD	None
22	1986.33	35.36	194.30	28.70	1831.50	580.27	-552.10	-178.64	580.28	197.93	1.55	MWD	None
23	2014.67	37.19	193.47	28.34	1854.35	597.00	-568.37	-182.66	597.01	197.82	2.04	MWD	None
24	2043.39	38.82	193.79	28.72	1876.98	614.64	-585.56	-186.83	614.64	197.70	1.74	MWD	None
25	2071.57	38.36	194.51	28.18	1899.01	632.19	-602.60	-191.13	632.19	197.60	0.70	MWD	None
26	2100.21	37.30	194.78	28.64	1921.63	649.73	-619.60	-195.57	649.73	197.52	1.14	MWD	None
27	2128.93	38.54	196.06	28.72	1944.28	667.36	-636.61	-200.26	667.37	197.46	1.56	MWD	None
28	2157.62	38.41	196.37	28.69	1966.74	685.21	-653.75	-205.25	685.21	197.43	0.25	MWD	None
29	2186.68	37.18	196.59	29.06	1989.71	703.01	-670.83	-210.30	703.02	197.41	1.30	MWD	None
30	2215.32	35.98	196.99	28.64	2012.70	720.08	-687.17	-215.23	720.09	197.39	1.30	MWD	None

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SCHLUMBERGER Survey Report

21-Jul-2004 15:47:41

Page 3 of 3

Seq	Measured	Incl	Azimuth	Course	TVD	Vertical	Displ	Displ	Total	At	DLS	Srvy	Tool
#	depth	angle	length	depth	section	+N/S-	+E/W-	displ	Azim	(deg/	100f	type	tool
-	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(deg)	100f	(deg)			Corr
31	2243.97	35.90	196.43	28.65	2035.90	736.89	-703.27	-220.06	736.90	197.38	0.36	MWD	None
32	2272.58	35.07	196.27	28.61	2059.20	753.50	-719.21	-224.74	753.51	197.35	0.89	MWD	None
33	2301.12	35.16	196.01	28.54	2082.54	769.91	-734.98	-229.30	769.92	197.33	0.19	MWD	None
34	2329.93	35.22	195.85	28.81	2106.09	786.50	-750.94	-233.86	786.52	197.30	0.12	MWD	None
35	2358.20	34.43	195.49	28.27	2129.29	802.64	-766.49	-238.22	802.65	197.27	0.88	MWD	None
36	2386.44	34.46	194.07	28.24	2152.58	818.59	-781.93	-242.30	818.61	197.22	0.87	MWD	None
37	2416.23	32.78	193.88	29.79	2177.39	835.05	-797.94	-246.28	835.08	197.15	1.72	MWD	None
38	2444.90	31.57	192.94	28.67	2201.66	850.28	-812.79	-249.82	850.31	197.09	1.39	MWD	None
39	2473.21	32.10	193.08	28.31	2225.71	865.16	-827.34	-253.18	865.21	197.02	0.58	MWD	None
40	2501.92	33.94	195.27	28.71	2249.78	880.78	-842.50	-257.02	880.83	196.97	2.33	MWD	None
41	2530.34	33.35	195.78	28.42	2273.44	896.51	-857.67	-261.24	896.57	196.94	0.70	MWD	None
42	2559.17	34.43	194.57	28.83	2297.37	912.57	-873.19	-265.44	912.64	196.91	1.35	MWD	None
43	2587.94	36.59	193.41	28.77	2320.79	929.25	-889.40	-269.48	929.33	196.86	2.40	MWD	None
44	2616.48	37.45	193.70	28.54	2343.58	946.39	-906.11	-273.50	946.48	196.80	0.94	MWD	None
45	2644.94	36.30	193.73	28.46	2366.34	963.43	-922.70	-277.55	963.54	196.74	1.23	MWD	None
46	2674.27	35.62	193.93	29.33	2390.08	980.61	-939.42	-281.67	980.74	196.69	0.72	MWD	None
47	2702.63	34.95	193.40	28.36	2413.23	996.95	-955.34	-285.54	997.10	196.64	0.79	MWD	None
48	2731.20	33.06	193.28	28.57	2436.92	1012.89	-970.88	-289.23	1013.05	196.59	2.02	MWD	None
49	2759.64	31.42	192.91	28.44	2460.97	1028.01	-985.66	-292.67	1028.19	196.54	1.77	MWD	None
50	2788.87	28.98	192.53	29.23	2486.23	1042.66	-1000.00	-295.91	1042.86	196.48	2.55	MWD	None
51	2817.54	26.43	192.98	28.67	2511.61	1055.94	-1013.00	-298.85	1056.16	196.44	2.72	MWD	None
52	2845.85	23.56	192.40	28.31	2537.27	1067.86	-1024.67	-301.48	1068.10	196.39	3.10	MWD	None
53	2874.69	21.48	191.96	28.84	2563.91	1078.85	-1035.46	-303.81	1079.11	196.35	2.21	MWD	None
54	2903.24	19.54	190.65	28.55	2590.65	1088.80	-1045.27	-305.77	1089.08	196.31	2.13	MWD	None
55	2932.26	18.69	191.29	29.02	2618.07	1098.24	-1054.60	-307.58	1098.54	196.26	0.92	MWD	None
56	2960.99	17.56	192.44	28.73	2645.37	1107.13	-1063.35	-309.42	1107.45	196.22	1.26	MWD	None
57	2990.06	16.45	192.44	29.07	2673.17	1115.59	-1071.65	-311.25	1115.93	196.20	1.16	MWD	None
58	3018.84	15.08	193.63	28.78	2700.87	1123.39	-1079.27	-313.01	1123.74	196.17	1.49	MWD	None
59	3030.18	14.67	193.43	11.34	2711.83	1126.29	-1082.10	-313.69	1126.65	196.17	1.11	MWD	None
60	3051.00	13.94	193.05	20.82	2732.00	1131.42	-1087.11	-314.87	1131.79	196.15	1.08	Projection to TD	

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

**Schlumberger**

Well: **MLA-A23A**

Field: **Marlin GDA 94**

Rig: **ISDL 453**

State: **Victoria**

**Gamma Ray Service**

**1:500 Measured Depth  
Real Time Log**