

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

Well: WKF W31A

Field: **West Kingfish**

Rig: ISDL 453

State:

Victoria

Gamma Ray Service
1:500 True Vertical Depth
Real Time Log

Rig:		ISDL 453	
Field:		West Kingfish	
Location:		Bass Strait	
Well:		WKF W31A	
Company:		ESSO Australia Pty. Ltd.	
<div>Gamma Ray Service 1:500 True Vertical Depth Real Time Log</div>			
Location			
Total depth:	3450.0 m		
Spud date:	21 June 06		
Runs:	1 To 2	Elevation	K.B. Top Drive G.L. -76.13 m D.F. 33.43 m
Permanent datum:	Mean Sea Level	Elev.: 0 m	
Log measured from:	Drill Floor	33.43 m above Perm. datum	
Depth reference:	Driller's Depth		
Service Order no.	N 5727807.761 m	Longitude	Latitude
06ASQ0011	E 596265.029 m	E 148°6'19.408"	S 38°35'34.800"

Bit Run Summary

Run number		1	2							
Bit size	in	8.5	8.5							
Bit start depth	m	1300.0	2794.0							
Bit end depth	m	2794.0	3450.0							
Top interval logged	m	1300.0	2775.9							
Bottom interval logged	m	2775.9	3431.4							
Begin log: time		19:30	20:30							
Begin log: date		21 Jun 06	02 Jul 06							
End log: time		19:30	23:30							
End log: date		25 Jun 06	03 Jul 06							
Mud data										
Depth	m	2794.0	3417.0							
Type		KCl/PHPA/Gly	KCl/PHPA/Gly							
Mud weight	ppg	9.75	9.75							
Solids	%	6.1	7.4							
Chlorides	mg/l	41000	39000							
Rm		n/a	n/a							
Rmf		n/a	n/a							
Rmc		n/a	n/a							

Potassium	%	4.2	4.2								
Environmental data											
GR											
Mud weight	ppg	9.75	9.75								
Bit size	in	8.5	8.5								
Resistivity											
Neutron porosity											
Hole Size		n/a	n/a								
Mud weight		n/a	n/a								
Temperature		n/a	n/a								
Mud salinity		n/a	n/a								
Formation salinity		n/a	n/a								
Recording rate 1	SEC	3.83	3.83								
Recording rate 2	SEC	n/a	n/a								
Filtering GR		3 pt.	3 pt.								
Filtering density		n/a	n/a								
Filtering Neutron		n/a	n/a								
Company representative		G. Campbell	B. Davis	J. Bennett	B. Steel						
Schlumberger D&M Personnel		R. Burns	C. Skiba	C. Cocks	B. Manjenic						

<p style="text-align: center;">DISCLAIMER</p> <p>THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.</p>		
OTHER SERVICES FOR RUN1 Directional Drilling Directional Surveys D&I	OTHER SERVICES FOR RUN2 Directional Drilling Directional Surveys D&I	OTHER SERVICES FOR RUN
REMARKS: RUN NUMBER 1 Depth is referenced to Driller's Depth. Gamma Ray corrected for Tool Size, Bit Size, and Mud Weight. Gamma Ray is not corrected for Potassium. Mud type is KCl/PHPA/Glycol. 8.5 in. hole was drilled from 1300.0m to 2794.0m MD. POOH due to obstruction in casing, Hole originally planned to be abandoned.	REMARKS: RUN NUMBER 2 Depth is referenced to Driller's Depth. Gamma Ray corrected for Tool Size, Bit Size, and Mud Weight. Gamma Ray is not corrected for Potassium. Mud type is KCl/PHPA/Glycol. 8.5 in. hole was drilled from 2794.0m to 3450.0m MD after original hole was re-entered whilst drilling through new cement plug. GR data lost from 3179.5m to 3183.5m MD due to data entry error. POOH upon reaching TD.	REMARKS: RUN NUMBER

EQUIPMENT DESCRIPTION		
RUN1	RUN2	RUN

DOWNHOLE EQUIPMENT

DOWNHOLE EQUIPMENT

6-3/4 in. PowerPulse*
MDC: Z401
MEC: 1533
MDI: 1565
MGR: 565
DHS: V8.0C03

D&I — 19.40
GR — 18.75



NM Pony
S/N: ASS15700



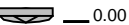
NM Roller Reamer
S/N: GU2299



NM Pony
S/N: 9612058



7 in. PowerPak* Motor
A700GT 7:8
S/N: N7310
1.5 deg. Bent Housing



Smith PDC Bit
OD: 8-1/2 in.
S73PX S/N: JT8946

Maximum string diameter 8.50 in.
All lengths in Metres

6-3/4 in. PowerPulse*
MDC: V875
MEC: 064
MDI: 738
MGR: 503
DHS: V8.0C03

D&I — 19.26
GR — 18.61



NM Pony
S/N: ASS15700



NM Roller Reamer
S/N: GU2299



NM Pony
S/N: 9612058



7 in. PowerPak* Motor
A700GT 7:8
S/N: N7413
1.5 deg. Bent Housing



Smith PDC Bit
OD: 8-1/2 in.
S616PX S/N: JW6578

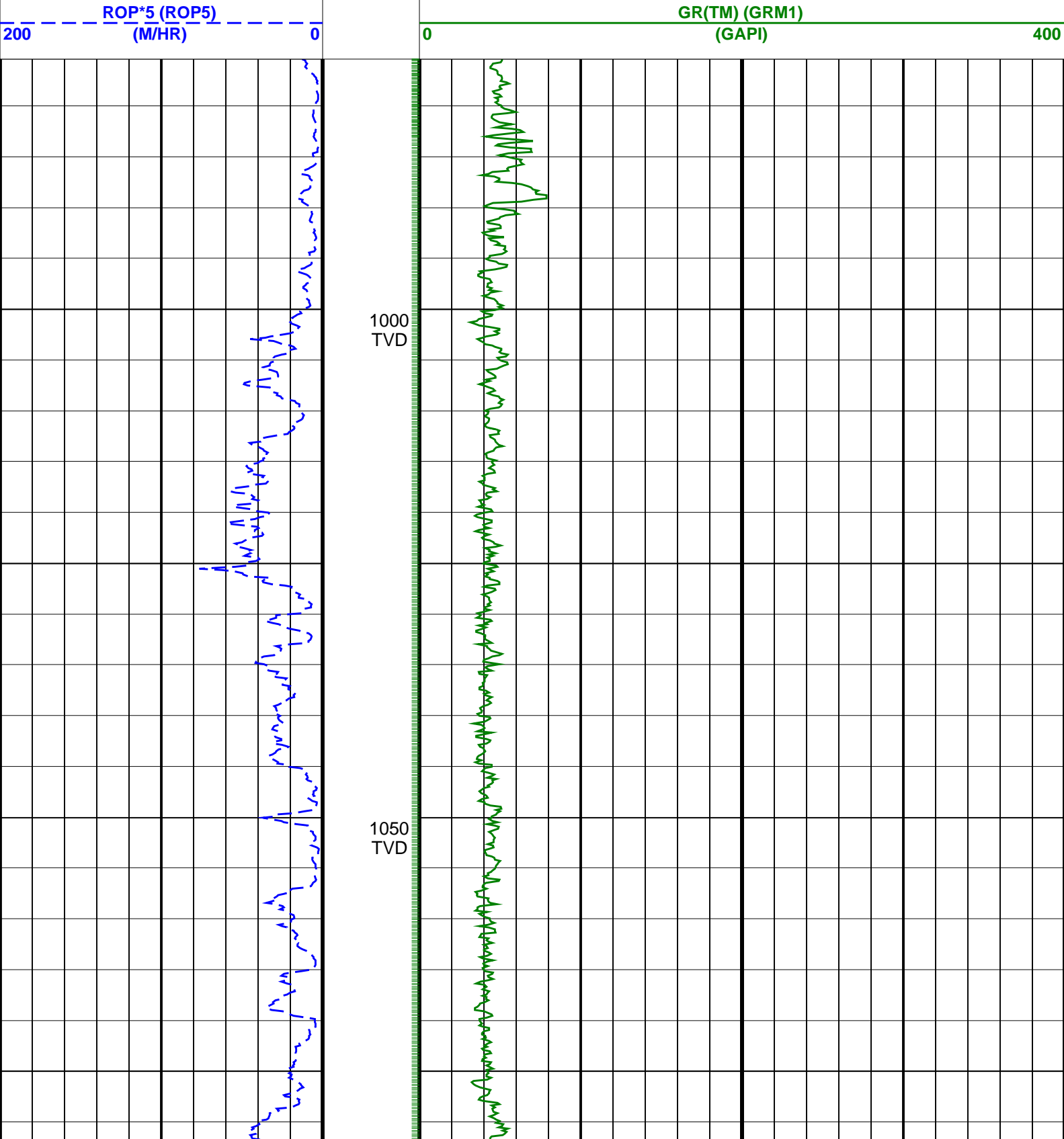
Maximum string diameter 8.50 in.
All lengths in Metres

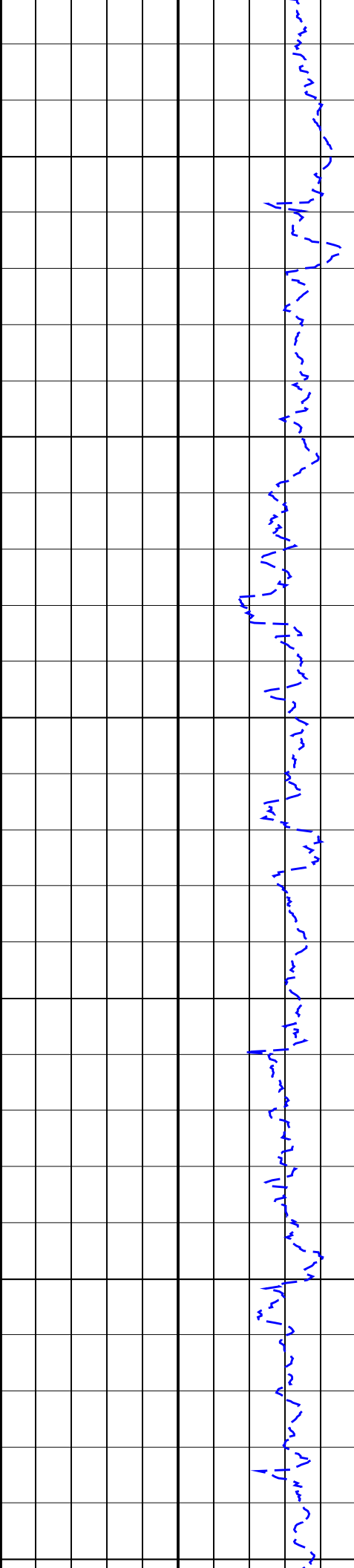
WKF W31A RT 1:500 TVD

IDEAL Version: ID11_OC_01 <TVD> Vertical Scale: 1:500 Graphics File Created: 04-Jul-2006 01:48

PIP SUMMARY

GR(TM) PIP

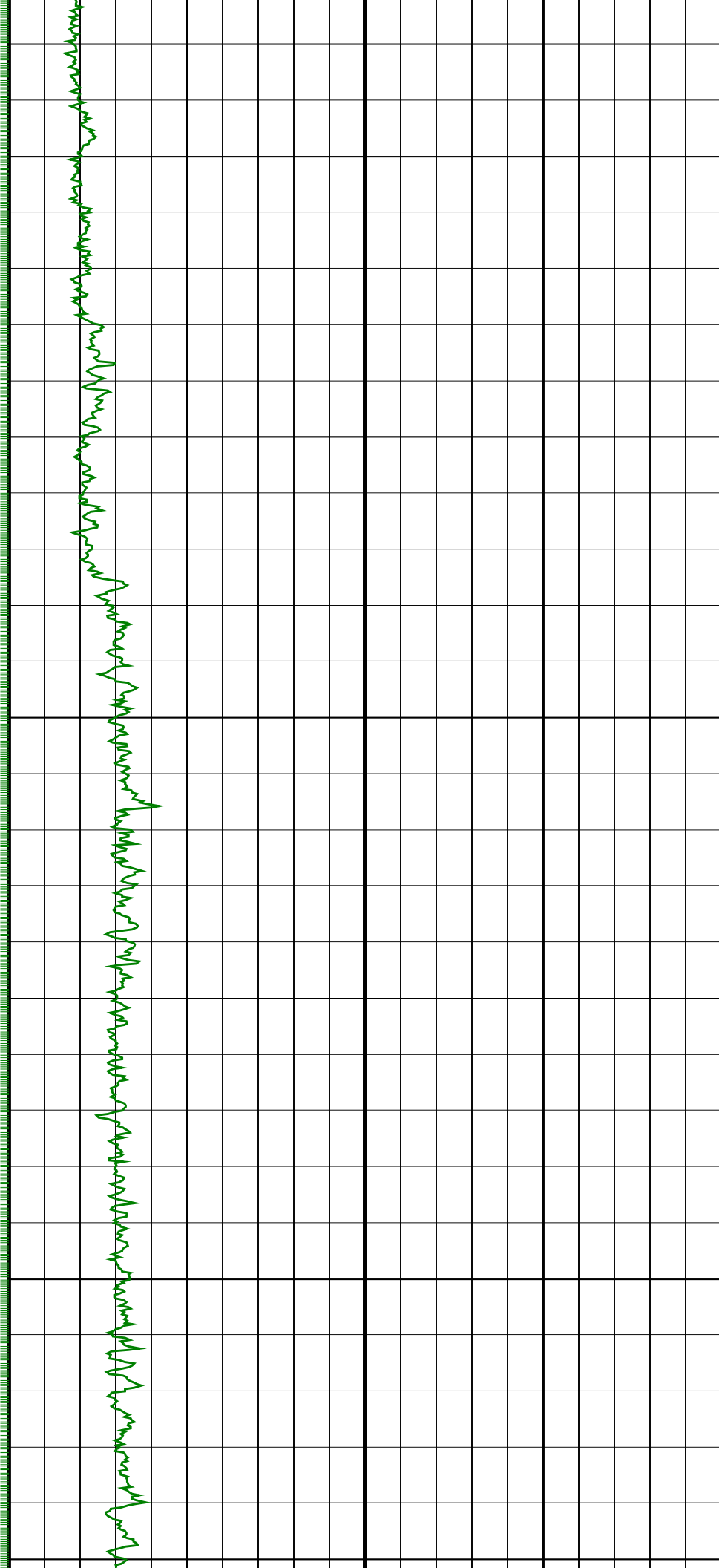


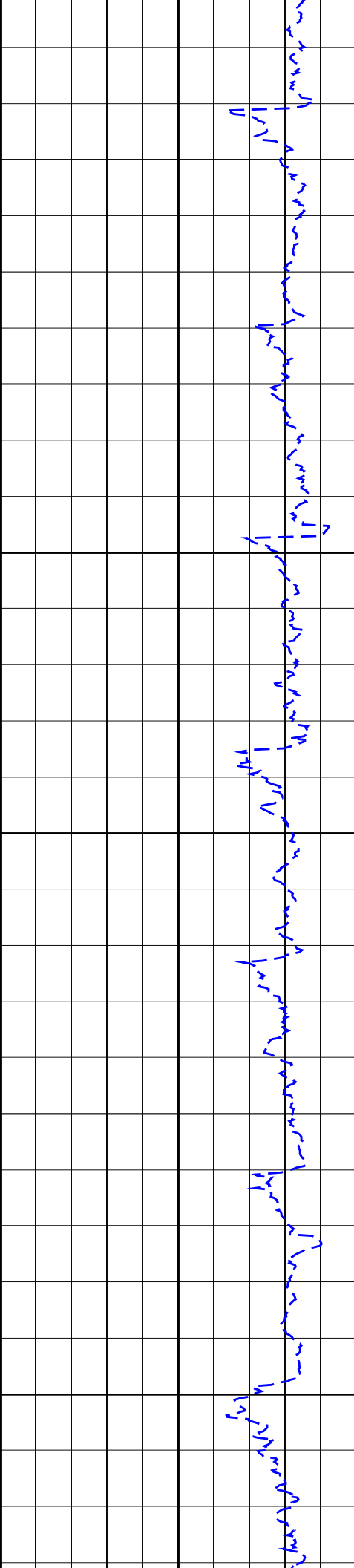


1400
TVD

1450
TVD

1500

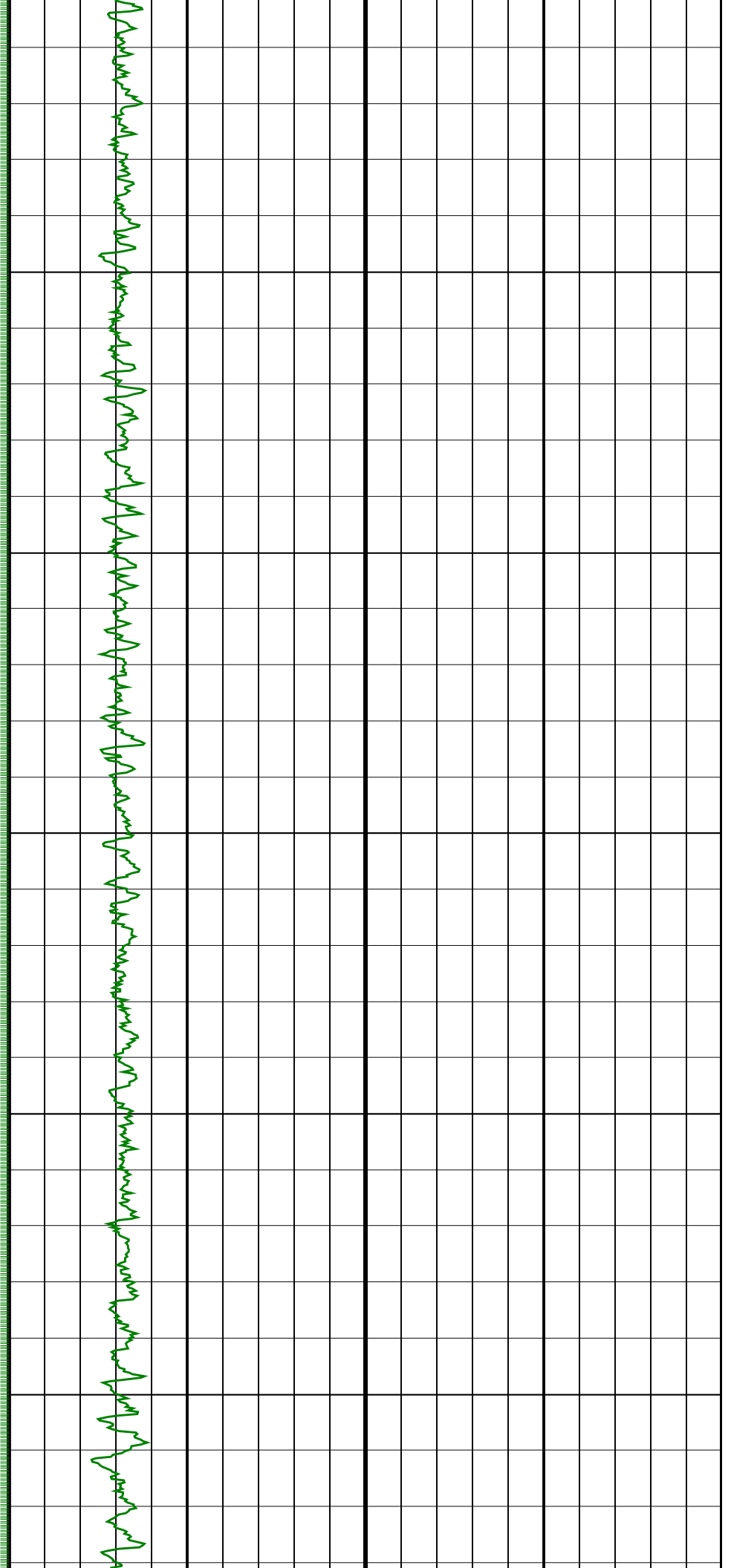


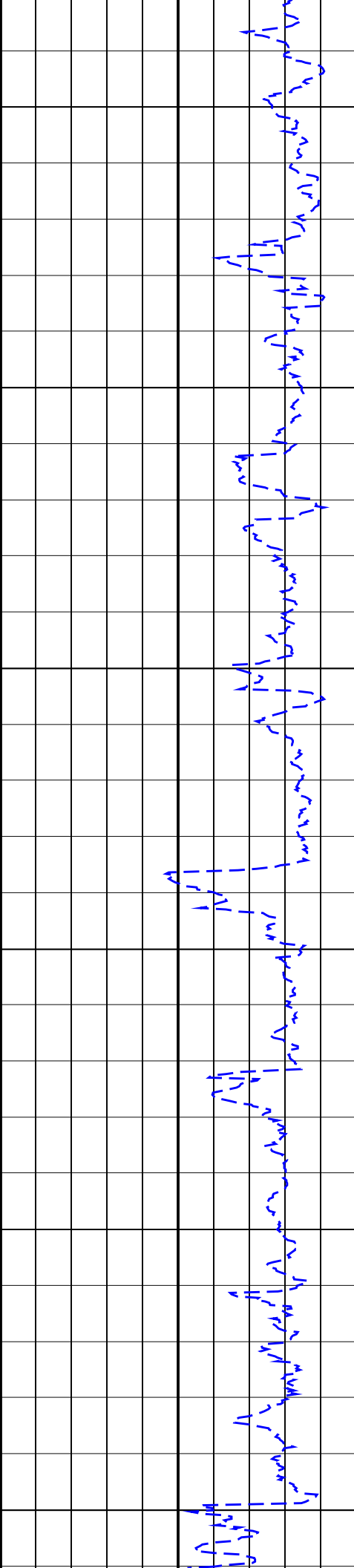


1500
TVD

1550
TVD

1600
TVD

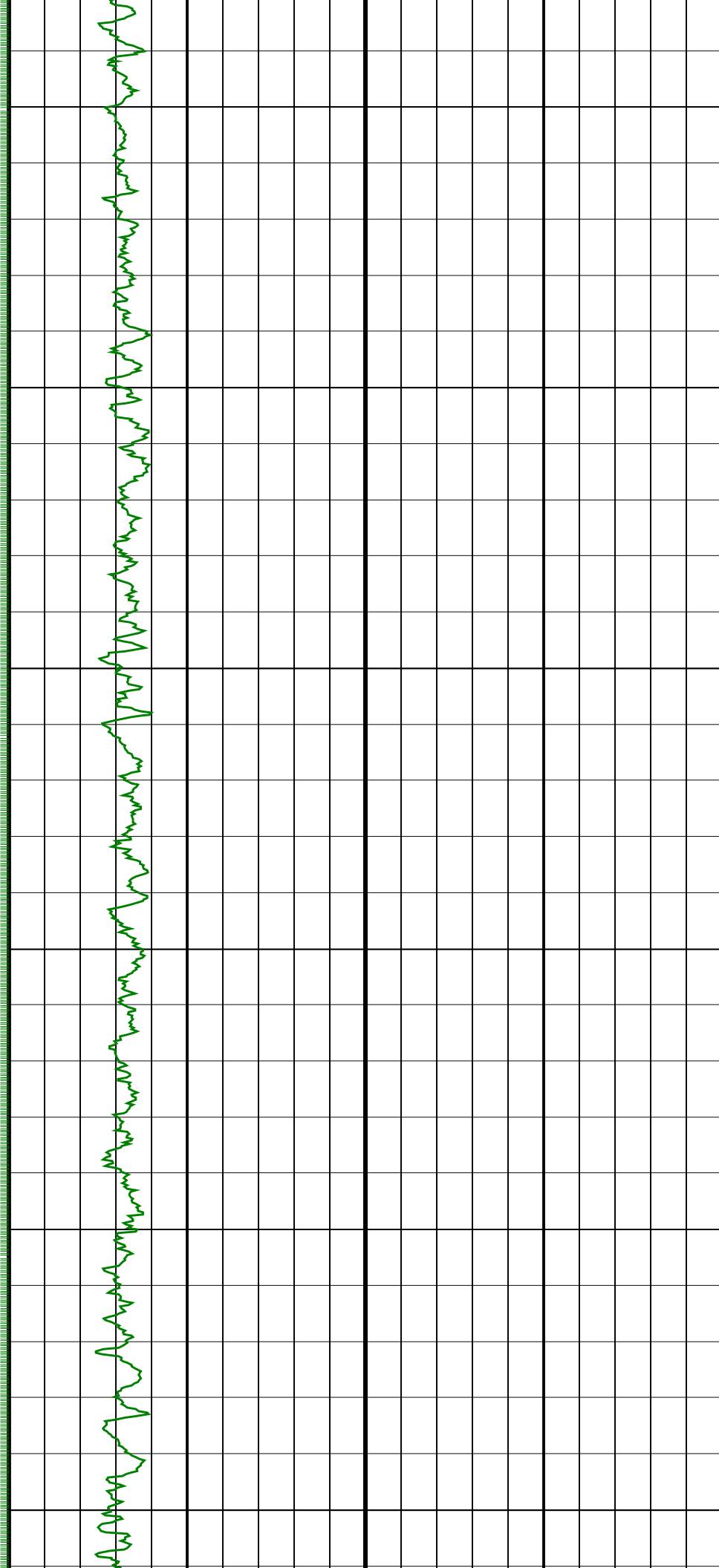


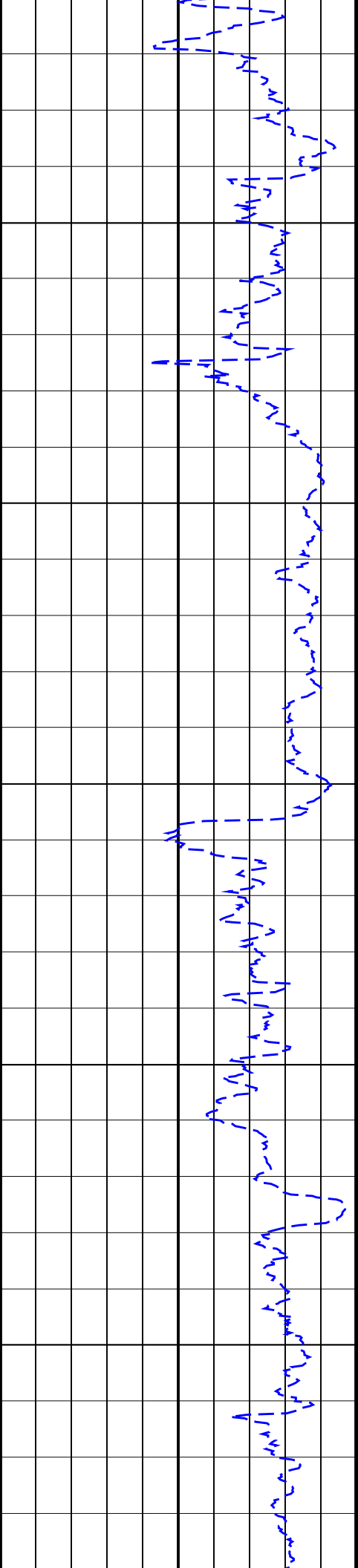


1650
TVD

1700
TVD

1750
TVD

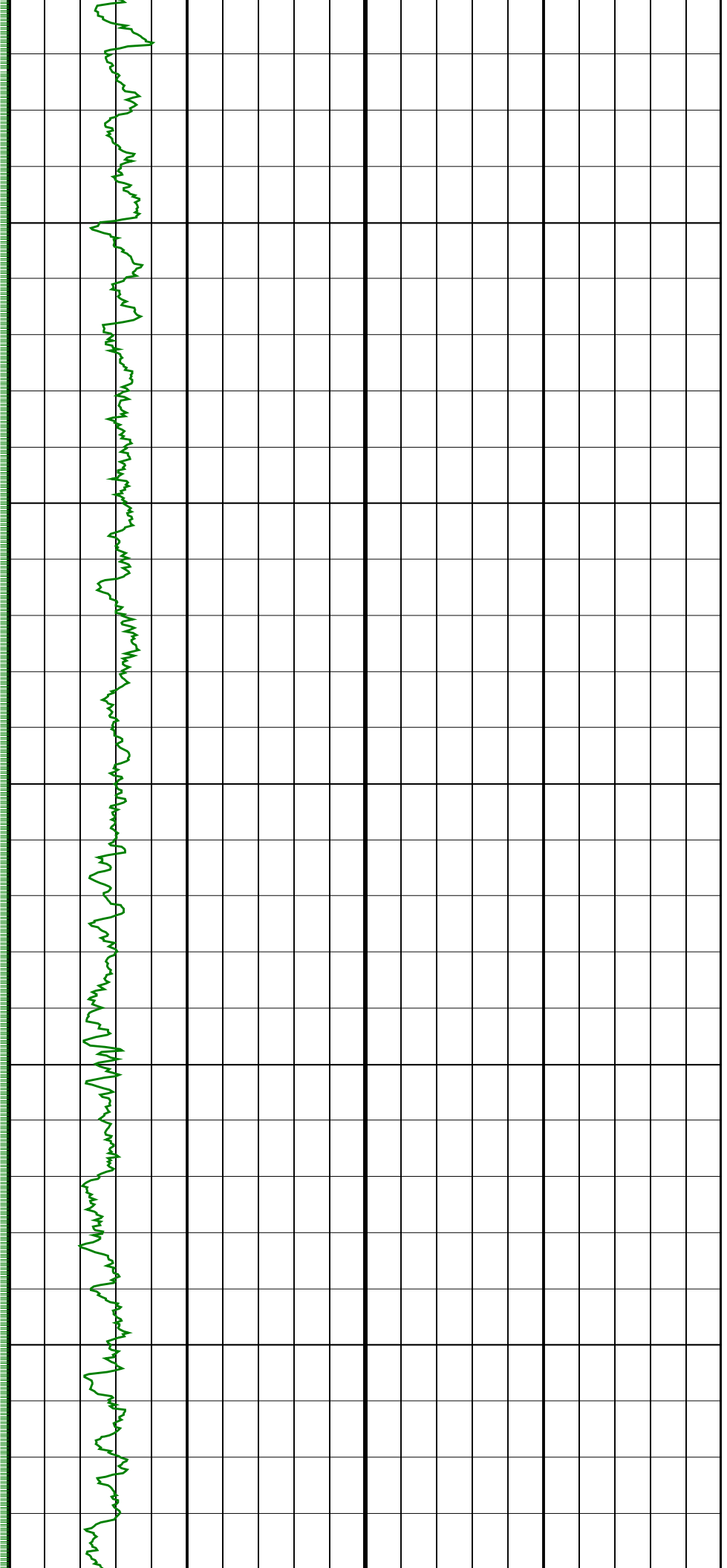


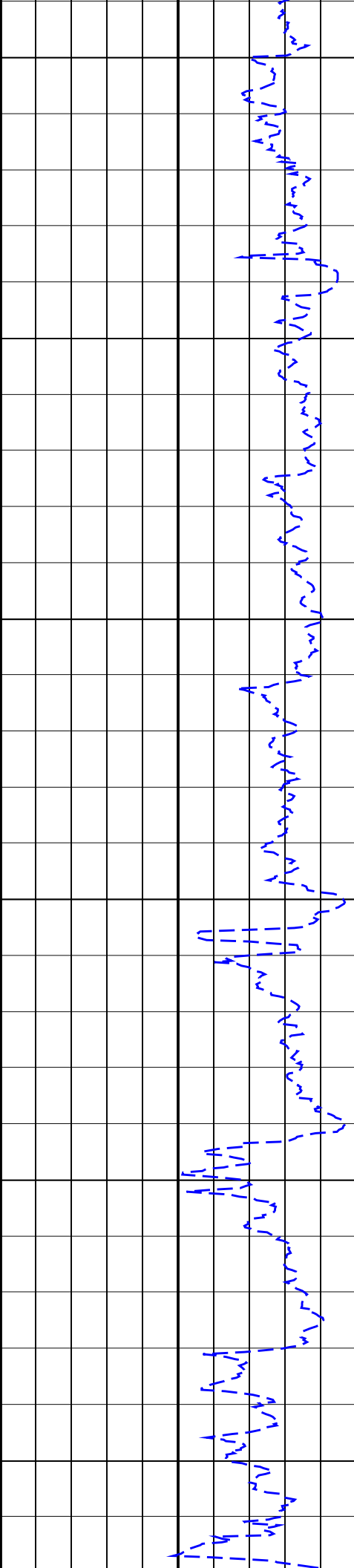


1800
TVD

1850
TVD

1900
TVD

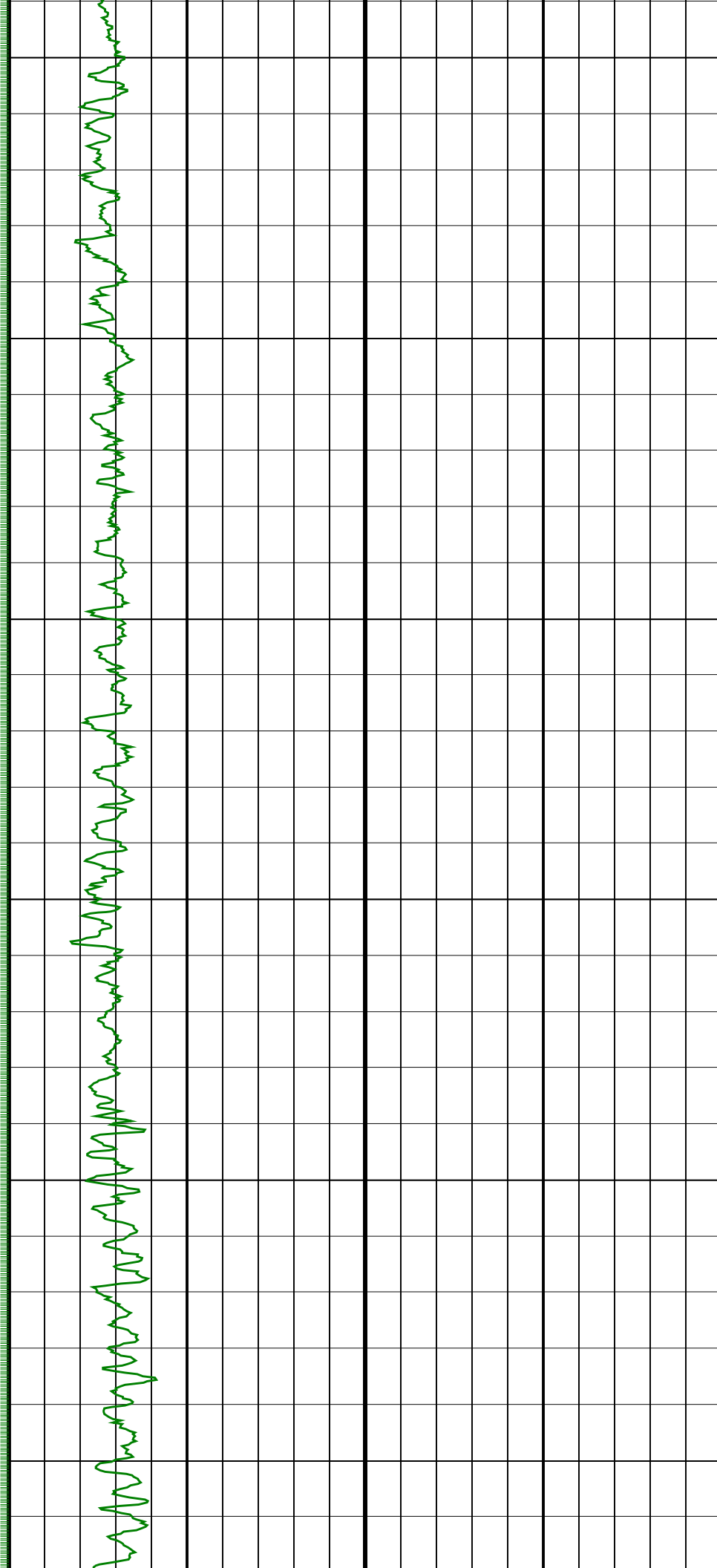


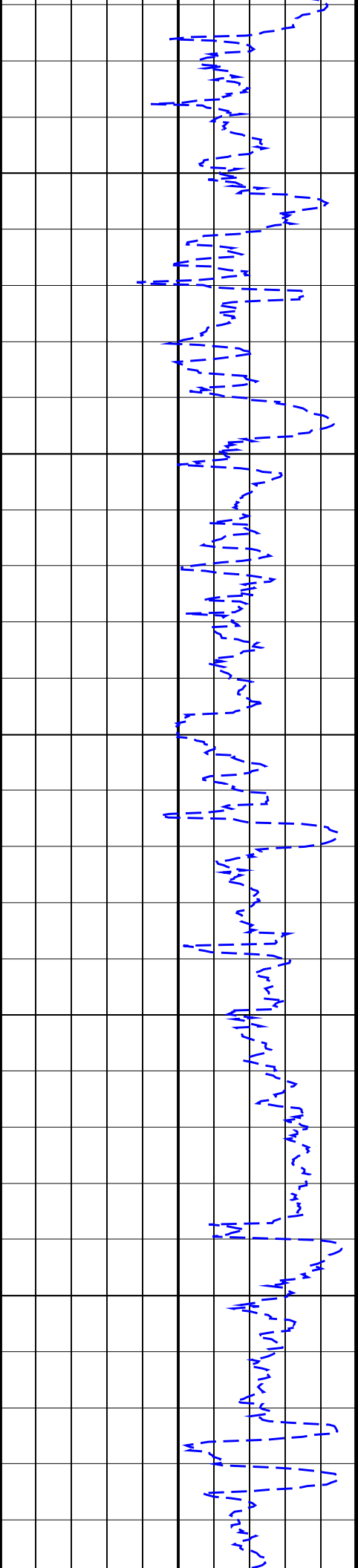


1950
TVD

2000
TVD

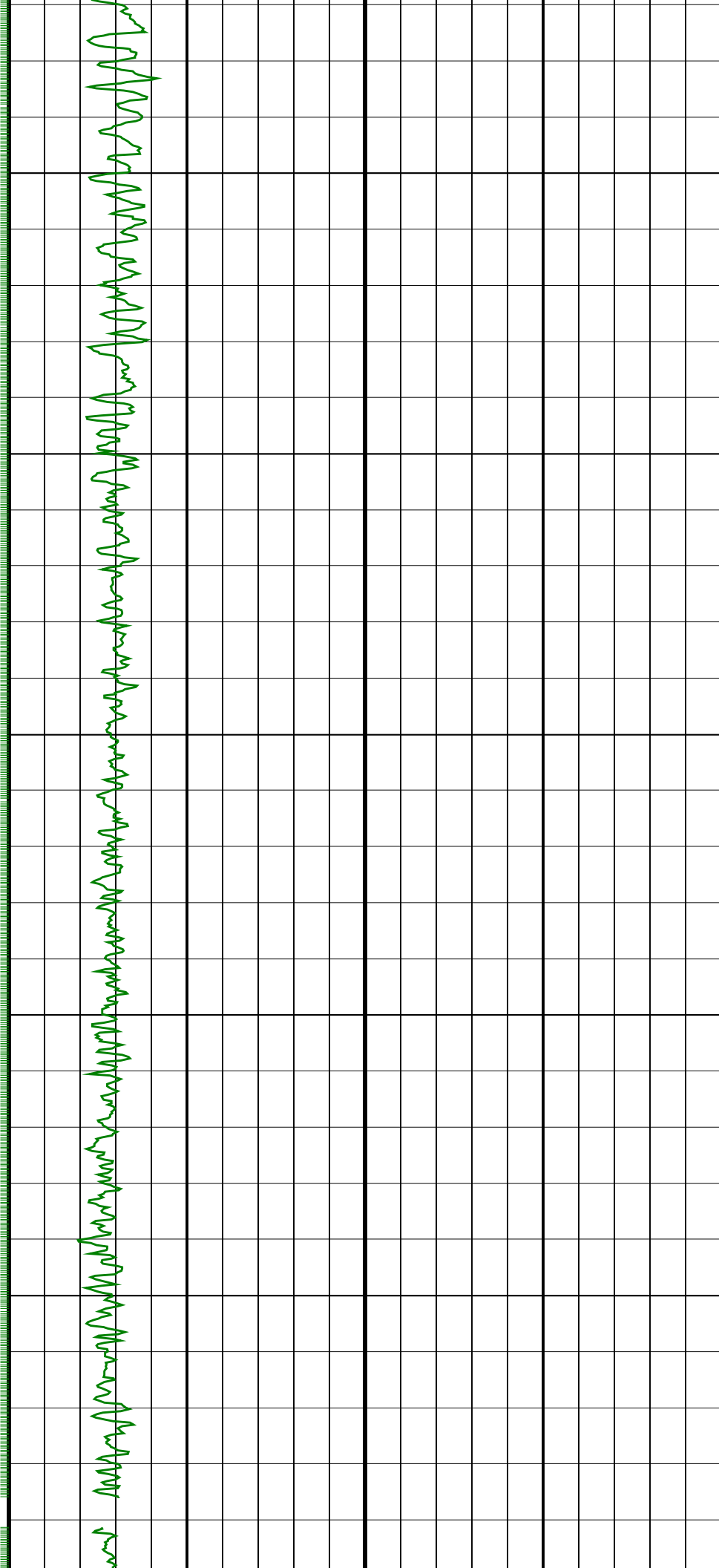
2050
TVD

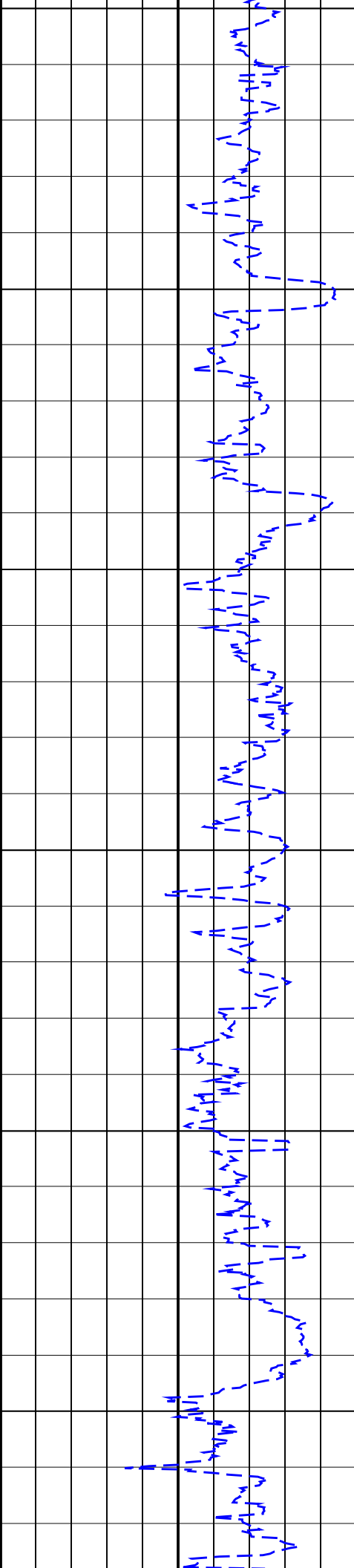




2100
TVD

2150
TVD

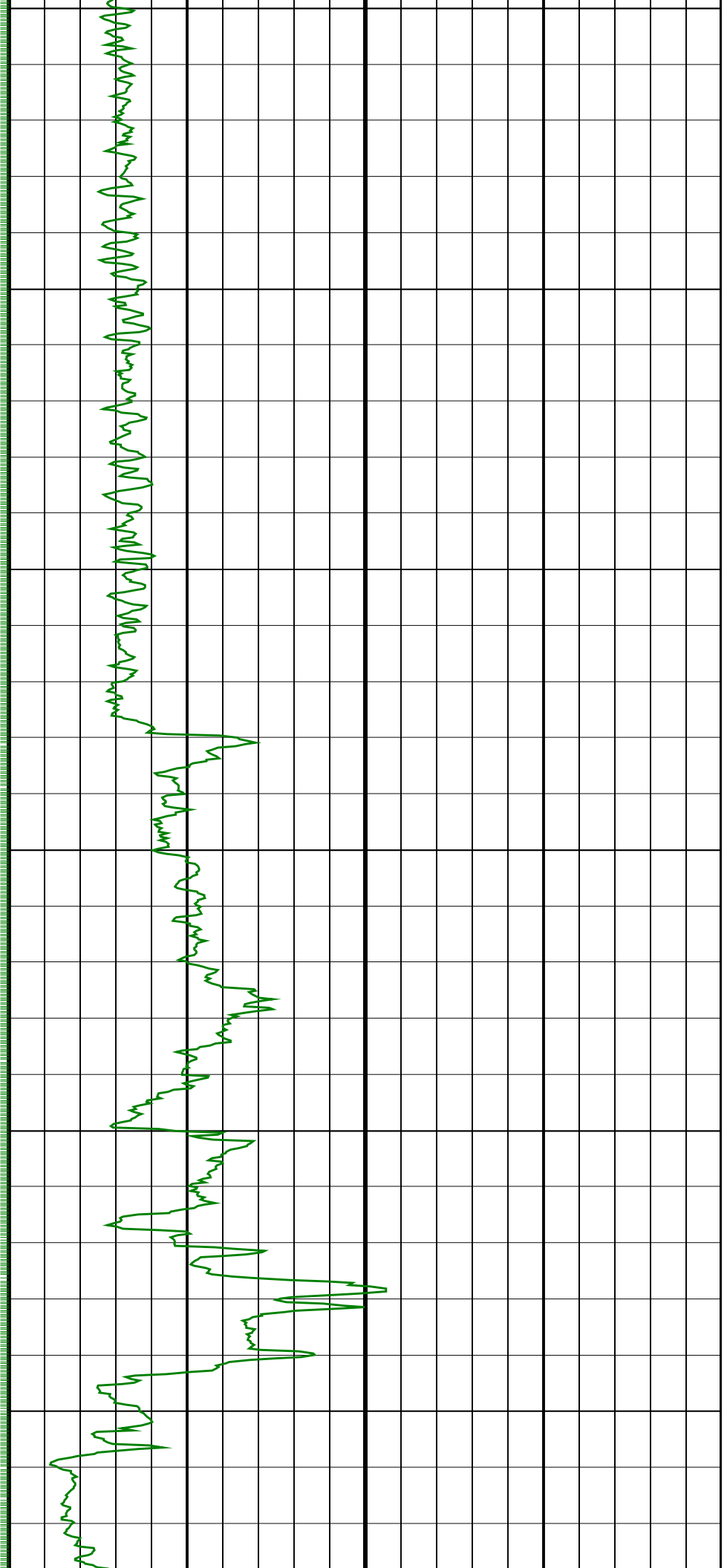


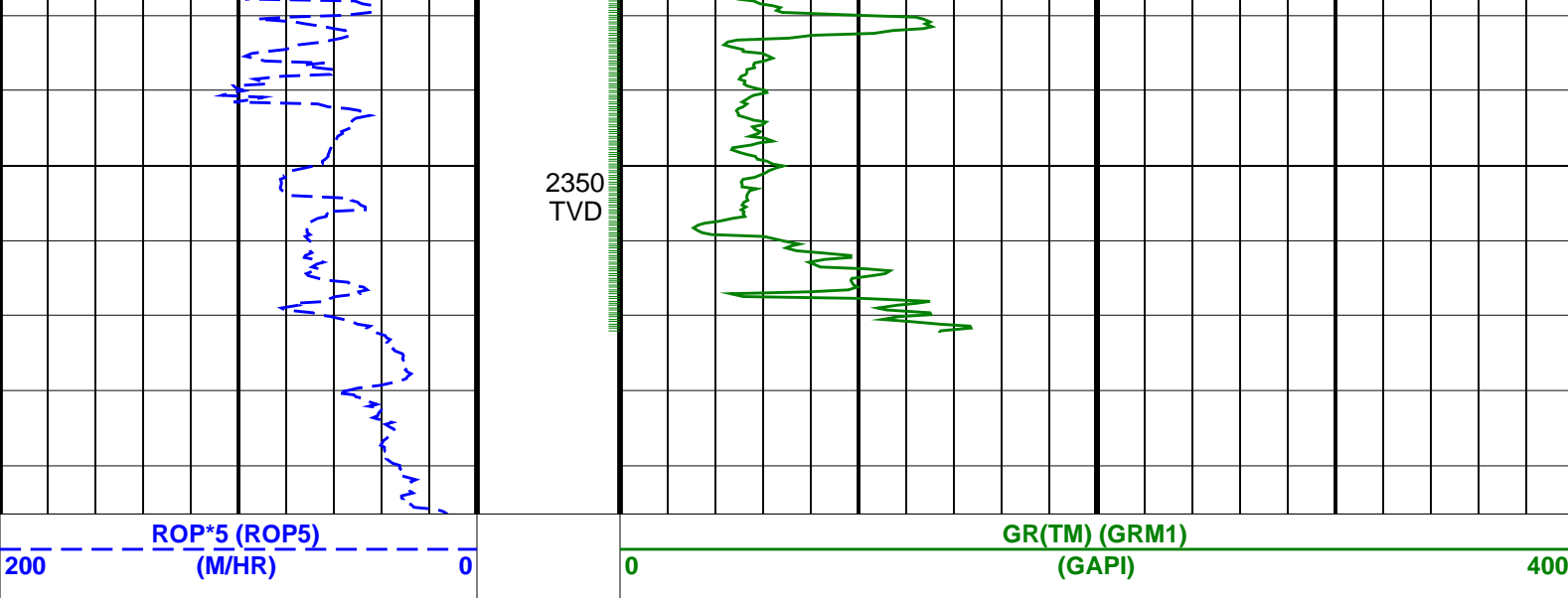


2200
TVD

2250
TVD

2300
TVD





PIP SUMMARY
+ GR(TM) PIP

SCHLUMBERGER

Survey report

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Client..... ESSO Australia Pty. Ltd.
Field..... West Kingfish

Well..... WKF W31A
Service number..... 06ASQ0011
Engineer..... R.Burns, C.Skiba

Rig..... ISDL 453
Victoria..... Victoria

Spud date..... 21 June 06
Last survey date..... 03-Jul-06
Total accepted surveys.... 76
MD of first survey..... 1300.00 m
MD of last survey..... 3450.00 m

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

----- Depth reference -----
Permanent datum..... Mean Sea Level
Depth reference..... Driller's Depth
GL above permanent..... -76.13 m
KB above permanent..... Top Drive
DF above permanent..... 33.43 m

----- Vertical section origin-----
Latitude (+N/S-)..... -3.29 m
Departure (+E/W-)..... 1.99 m

----- Platform reference point-----
Latitude (+N/S-)..... 5727807.761 m
Departure (+E/W-)..... 596265.029 m

Azimuth from Vsect Origin to target: 294.28 degrees

----- Geomagnetic data -----
Magnetic model..... BGGM version 2005
Magnetic date..... 20-Jun-2006
Magnetic field strength... 1202.45 HCNT
Magnetic dec (+E/W-)..... 13.25 degrees
Magnetic dip..... -69.06 degrees

----- MWD survey Reference Criteria -----
Reference G..... 1000.06 mGal
Reference H..... 1202.45 HCNT
Reference Dip..... -69.06 degrees
Tolerance of G..... (+/-) 2.50 mGal
Tolerance of H..... (+/-) 6.00 HCNT
Tolerance of Dip..... (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-)..... 13.25 degrees
Grid convergence (+E/W-).. -0.69 degrees
Total az corr (+E/W-)..... 13.94 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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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/100f)	Srvy tool type	Tool Corr (deg)
1	1300.00	57.11	269.74	0.00	975.11	651.92	-6.28	-714.54	714.57	269.50	0.00	TIP	None
2	1336.19	52.77	278.83	36.19	995.92	679.68	-4.13	-744.03	744.04	269.68	7.25	MWD	None
3	1365.80	52.20	282.53	29.61	1013.96	702.50	0.22	-767.10	767.10	270.02	3.08	MWD	None
4	1394.73	51.00	285.10	28.93	1031.93	724.79	5.62	-789.11	789.13	270.41	2.47	MWD	None
5	1422.96	50.80	288.55	28.23	1049.74	746.51	11.96	-810.08	810.17	270.85	2.90	MWD	None
6	1452.01	50.51	293.22	29.05	1068.16	768.93	19.97	-831.06	831.30	271.38	3.80	MWD	None
7	1480.72	51.01	300.69	28.71	1086.34	791.11	30.04	-850.85	851.38	272.02	6.16	MWD	None
8	1509.86	50.52	305.10	29.14	1104.77	813.41	42.29	-869.80	870.82	272.78	3.61	MWD	None
9	1536.36	50.50	305.15	26.50	1121.63	833.50	54.05	-886.52	888.17	273.49	0.05	MWD	None
10	1565.10	50.07	305.80	28.74	1139.99	855.19	66.88	-904.53	907.00	274.23	0.70	MWD	None
11	1596.20	49.60	306.00	31.10	1160.05	878.47	80.82	-923.78	927.31	275.00	0.48	MWD	None
12	1625.29	49.39	306.13	29.09	1178.94	900.12	93.84	-941.66	946.32	275.69	0.24	MWD	None
13	1654.10	48.92	306.07	28.81	1197.79	921.45	106.68	-959.27	965.18	276.35	0.50	MWD	None
14	1682.18	49.74	307.10	28.08	1216.09	942.26	119.38	-976.37	983.64	276.97	1.23	MWD	None
15	1710.86	49.37	307.23	28.68	1234.69	963.54	132.56	-993.76	1002.56	277.60	0.41	MWD	None

16	1738.95	48.77	307.19	28.09	1253.09	984.22	145.39	-1010.66	1021.07	278.19	0.65	MWD	None
17	1768.12	49.94	306.42	28.17	1272.09	1005.83	158.65	-1028.38	1040.55	278.77	1.37	MWD	None
18	1796.79	49.75	306.27	28.67	1290.58	1027.25	171.64	-1046.03	1060.02	279.32	0.24	MWD	None
19	1825.70	49.88	306.80	28.91	1309.24	1048.84	184.79	-1063.78	1079.71	279.85	0.45	MWD	None
20	1854.30	49.93	306.86	28.60	1327.66	1070.19	197.90	-1081.29	1099.25	280.37	0.07	MWD	None
21	1882.82	49.33	306.67	28.52	1346.13	1091.41	210.91	-1098.70	1118.76	280.87	0.66	MWD	None
22	1912.05	49.60	306.76	29.23	1365.13	1113.10	224.19	-1116.51	1138.79	281.35	0.29	MWD	None
23	1940.64	49.02	306.70	28.59	1383.77	1134.27	237.15	-1133.88	1158.42	281.81	0.62	MWD	None
24	1969.31	48.73	306.61	28.67	1402.62	1155.36	250.05	-1151.21	1178.05	282.25	0.32	MWD	None
25	1998.03	48.40	306.48	28.72	1421.63	1176.40	262.87	-1168.50	1197.71	282.68	0.37	MWD	None
26	2026.83	49.21	307.25	28.80	1440.60	1197.55	275.87	-1185.84	1217.51	283.10	1.05	MWD	None
27	2055.39	48.96	307.38	28.56	1459.30	1218.58	288.95	-1203.01	1237.22	283.51	0.29	MWD	None
28	2083.60	49.73	306.46	28.21	1477.68	1239.46	301.81	-1220.12	1256.89	283.89	1.12	MWD	None
29	2113.01	49.51	306.37	29.41	1496.73	1261.36	315.11	-1238.15	1277.61	284.28	0.24	MWD	None
30	2141.82	49.17	306.23	28.80	1515.50	1282.73	328.04	-1255.75	1297.89	284.64	0.38	MWD	None

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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/100f)	Srvy tool type	Tool Corr (deg)
31	2170.51	49.05	306.30	28.70	1534.29	1303.96	340.87	-1273.25	1318.09	284.99	0.14	MWD	None
32	2199.15	48.82	306.15	28.64	1553.10	1325.08	353.64	-1290.67	1338.24	285.32	0.27	MWD	None
33	2228.17	48.79	306.25	29.02	1572.21	1346.45	366.53	-1308.29	1358.66	285.65	0.09	MWD	None
34	2256.96	48.86	306.07	28.79	1591.17	1367.65	379.32	-1325.78	1378.98	285.97	0.16	MWD	None
35	2286.00	48.98	306.44	29.04	1610.25	1389.07	392.26	-1343.43	1399.53	286.28	0.32	MWD	None
36	2314.77	49.03	306.52	28.77	1629.12	1410.29	405.17	-1360.89	1419.93	286.58	0.08	MWD	None
37	2343.36	49.15	307.22	28.59	1647.85	1431.38	418.14	-1378.18	1440.21	286.88	0.58	MWD	None
38	2372.31	49.07	307.34	28.95	1666.80	1452.70	431.39	-1395.59	1460.75	287.18	0.13	MWD	None
39	2400.92	49.08	307.58	28.61	1685.54	1473.75	444.54	-1412.75	1481.04	287.47	0.19	MWD	None
40	2429.82	50.11	307.35	28.90	1704.27	1495.18	457.93	-1430.22	1501.74	287.75	1.10	MWD	None
41	2458.44	49.78	307.28	28.62	1722.69	1516.52	471.21	-1447.64	1522.40	288.03	0.36	MWD	None
42	2487.55	49.36	307.30	29.11	1741.57	1538.11	484.63	-1465.27	1543.34	288.30	0.44	MWD	None
43	2516.05	48.95	307.52	28.50	1760.21	1559.11	497.73	-1482.40	1563.72	288.56	0.47	MWD	None
44	2544.63	48.63	307.57	28.58	1779.04	1580.03	510.83	-1499.44	1584.07	288.81	0.34	MWD	None
45	2573.46	49.23	307.06	28.83	1797.98	1601.21	524.01	-1516.73	1604.70	289.06	0.75	MWD	None
46	2602.09	48.82	306.99	28.63	1816.75	1622.29	537.02	-1533.99	1625.27	289.29	0.44	MWD	None
47	2630.74	48.35	307.15	28.65	1835.70	1643.24	549.97	-1551.13	1645.75	289.52	0.52	MWD	None
48	2659.33	49.48	306.27	28.59	1854.49	1664.29	562.85	-1568.41	1666.34	289.74	1.40	MWD	None
49	2688.04	49.16	306.25	28.71	1873.20	1685.58	575.73	-1585.96	1687.23	289.95	0.34	MWD	None
50	2717.04	49.63	305.71	29.00	1892.08	1707.14	588.67	-1603.78	1708.40	290.16	0.66	MWD	None
51	2745.60	49.37	305.68	28.56	1910.63	1728.43	601.34	-1621.42	1729.33	290.35	0.28	MWD	None
52	2774.72	49.18	305.78	29.12	1929.63	1750.06	614.22	-1639.33	1750.62	290.54	0.21	MWD	None
53	2803.78	49.96	305.78	29.06	1948.47	1771.74	627.16	-1657.28	1771.97	290.73	0.82	MWD	None
54	2832.31	49.50	305.25	28.53	1966.91	1793.09	639.80	-1675.00	1793.03	290.91	0.65	MWD	None
55	2861.12	48.72	305.24	28.80	1985.77	1814.46	652.37	-1692.78	1814.13	291.08	0.83	MWD	None
56	2889.66	49.20	305.47	28.55	2004.51	1835.60	664.83	-1710.34	1835.01	291.24	0.54	MWD	None
57	2918.51	48.85	306.13	28.85	2023.43	1856.94	677.57	-1728.00	1856.10	291.41	0.64	MWD	None
58	2946.57	48.71	307.42	28.06	2041.92	1877.54	690.20	-1744.91	1876.46	291.58	1.06	MWD	None
59	2974.93	49.27	306.73	28.36	2060.53	1898.41	703.10	-1761.98	1897.09	291.75	0.82	MWD	None
60	3004.03	49.85	306.59	29.10	2079.41	1920.04	716.33	-1779.75	1918.50	291.92	0.62	MWD	None

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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/100f)	Srvy tool type	Tool Corr (deg)
61	3033.97	50.42	307.45	29.94	2098.60	1942.46	730.17	-1798.10	1940.70	292.10	0.89	MWD	None
62	3061.52	49.76	307.07	27.55	2116.27	1963.05	742.96	-1814.92	1961.10	292.26	0.80	MWD	None
63	3091.30	49.63	308.10	29.78	2135.54	1985.15	756.81	-1832.91	1983.01	292.44	0.81	MWD	None
64	3119.52	49.20	308.24	28.22	2153.89	2005.96	770.06	-1849.76	2003.65	292.60	0.48	MWD	None
65	3148.61	49.20	307.48	29.09	2172.90	2027.36	783.57	-1867.15	2024.90	292.77	0.60	MWD	None
66	3177.53	49.48	306.87	28.92	2191.75	2048.75	796.83	-1884.63	2046.16	292.92	0.57	MWD	None
67	3206.43	48.69	307.27	28.90	2210.67	2070.04	809.99	-1902.05	2067.34	293.07	0.89	MWD	None
68	3234.80	48.43	307.17	28.37	2229.45	2090.77	822.85	-1918.99	2087.97	293.21	0.29	MWD	None
69	3263.45	48.49	306.40	28.65	2248.45	2111.71	835.70	-1936.16	2108.82	293.35	0.62	MWD	None
70	3292.15	47.52	306.67	28.70	2267.65	2132.55	848.39	-1953.30	2129.59	293.48	1.05	MWD	None
71	3320.67	47.20	306.95	28.52	2286.97	2153.03	860.96	-1970.10	2150.01	293.61	0.41	MWD	None
72	3348.60	47.60	306.81	27.93	2305.88	2173.09	873.30	-1986.55	2170.03	293.73	0.45	MWD	None
73	3377.27	48.03	306.89	28.67	2325.13	2193.83	886.04	-2003.55	2190.72	293.86	0.46	MWD	None
74	3406.09	48.50	306.62	28.82	2344.31	2214.83	898.91	-2020.78	2211.69	293.98	0.54	MWD	None
75	3428.95	48.87	306.54	22.86	2359.41	2231.60	909.14	-2034.56	2228.45	294.08	0.50	MWD	None
76	3450.00	49.15	306.85	21.05	2373.21	2247.12	918.64	-2047.30	2243.96	294.17	0.53	Proj.	to TD

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Well:	WKF W31A
Field:	West Kingfish
Rig:	ISDL 453
State:	Victoria

Gamma Ray Service
1:500 True Vertical Depth
Real Time Log