Sperry Drilling Services

MWD

DDS Drillstring Dynamics

Company	: Apache Energy Ltd
Rig	: Ocean Patriot
Well	: Fur Seal-1
Field	: Exploration
Country	: Australia
DOE Number	:

Country	: Australia
Field	: Exploration
Location	: Lat: 38° 7' 47.91" South Long: 148° 9' 8.44" East
Well	: Fur Seal-1
Company	: Apache Energy Ltd
Rig	: Ocean Patriot

LOCATION

Latitude	: 38° 7' 47.91" South
Longitude	: 148° 9' 8.44" East
UTM Easting =	600,995.50 m
UTM Northing =	5,779,136.70 m

Other Services

Permanent Datum	: AHD	Elevation :	0.00 m
Log Measured From	: Drill Floor	21.50 m	Above Permanent Datum
Drilling Measured From	: Drill Floor		

TIME LOG

Elev.	KB				
	DF	21.50 m			
	GL				
	WD	56.62 m			

Depth Logged	: 111.70 m	2,610.00 m	Unit No.	: 182	Job No. : AU-FE-0003890148
Date Logged	: 25-Oct-05	To 01-Nov-05			
Total Depth MD	: 2,610.00 m	TVD: 2,609.73 m	Plot Type	: Final	
Spud Date	: 24-Oct-05		Plot Date	: 08-Nov-05	

Borehole Record (MD)

Run No.	Size	From	To
2	311.000 mm	111.70 m	824.00 m
3	216.000 mm	824.00 m	2,610.00 m

Casing Record (MD)

Size	Weight	From	To
762.000 mm	307.00 kg/m	80.10 m	111.00 m
340.000 mm	101.20 kg/m	80.10 m	817.60 m

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	26-Oct-05	01-Nov-05			
Rig Bit Number	2	3			
Bit Size (mm)	311	216			
Tool Nominal OD (mm)	203	171			
Log Start Depth (MD, m)	111.7	824.0			
Log End Depth (MD, m)	824.0	2,610.0			
Drill or Wipe	Drilling	Drilling			
Drill/Wipe Start Date and Time	25-Oct-05 04:40	28-Oct-05 05:10			
Drill/Wipe End Date and Time	25-Oct-05 23:59	01-Nov-05 01:45			
Min Inc (deg) @ Depth (MD, m)	0.19 @ 316.46	0.47 @ 2,030.20			
Max Inc (deg) @ Depth (MD, m)	1.36 @ 804.24	1.41 @ 2,517.63			
Bit TFA(in2) / Bit Type	1.740 / Security FS2563	1.11 / Smith S73VPX			
Flow Rate (gpm)	1,060	600			
Max AV (mpm) / CV (mpm) @ MWD	N/A / N/A	181.5 / 137.2			
Fluid Type	Seawater/PHG	KCl/PHPA			
Density (sg) / Viscosity (spqt)	1.1 / N/A	1.2 / 67.0			
Filtrate CL (ppm)	N/A	47,000			
pH / Fluid Loss (mptm)	N/A / N/A	8.9 / 4.8			
PV (cp) / YP (lhf2)	N/A / N/A	26 / 18.5			
% Solids / % Sand	N/A / N/A	14 / 0.6			
% Oil / Oil:Water Ratio	N/A / N/A	N/A / 0:91			
Rm @ Measured Temp (degC)	N/A @ N/A	0.11 @ 24.0			
Rmf @ Measured Temp (degC)	N/A @ N/A	0.09 @ 22.0			
Rmc @ Measured Temp (degC)	N/A @ N/A	0.25 @ 24.0			
Max Tool Temp (degC) / Source	25.0 / EWR-P4	78.0 / EWR-P4			
Rm @ Max Tool Temp (degC)	N/A @ 25.0	0.05 @ 78.0			
Lead MWD Engineer	A. Oraekwuotu	A. Oraekwuotu/A.Rule			
Customer Representative	J. Herriot	J. Herriot			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM			
Software Version	68.18	68.18			
Sub Serial Number	198838	195232			
Insert Serial Number	074608	209729			
Logging String Serial Number	90086009H1GVR8	90086708H1RGV6			
Date and Time Initialized	25-Oct-05 03:08	28-Oct-05 12:54			
Date and Time Read	26-Oct-05 05:54:00	01-Nov-05 14:23:00			

Directional Sensor Information

Tool Type	PM	PM			
Distance From Bit (m)	18.36	32.73			
Software Version	N/A	N/A			
Sub Serial Number	124777	178482			
Sonde Serial Number	022873	126995			
Sensor ID Number	022873	126995			
Survey String Serial Number	90086411M8	90082559			
Toolface Offset (deg)	N/A	N/A			

Drillstring Dynamics Sensor Information

Tool Type	DDS	DDS			
Distance From Bit (m)	0	0			
Recorded Sample Period (sec)	12	8			
Software Version	0.37	0.50			
Sub Serial Number	210651	064636			
Insert Serial Number	184694	53520			
Sensor ID Number	1004	126			

REMARKS

1. All depths are bit depths and referenced to the drillers pipe tally unless otherwise noted.

2. AV/CV is calculated at the MWD collar using the Power Law for water based muds and is in m/min.

3. Curve mnemonics are :

SAAX - Smoothed Average X-Axis Accelerometer, g's (Sperry)
SAAY - Smoothed Average Y-Axis Accelerometer, g's (Sperry)
SAAZ - Smoothed Average Z-Axis Accelerometer, g's (Sperry)
SPAX - Smoothed Peak X-Axis Accelerometer, g's (Sperry)
SPAY - Smoothed Peak Y-Axis Accelerometer, g's (Sperry)
SPAZ - Smoothed Peak Z-Axis Accelerometer, g's (Sperry)
WOB - Weight on Bit, klb (GeoServices)
RPM - Surface Drillstring Revolutions per minute, rpm (GeoServices)
TORQUE - Surface Torque, ft-klbs (GeoServices)

WARRANTY

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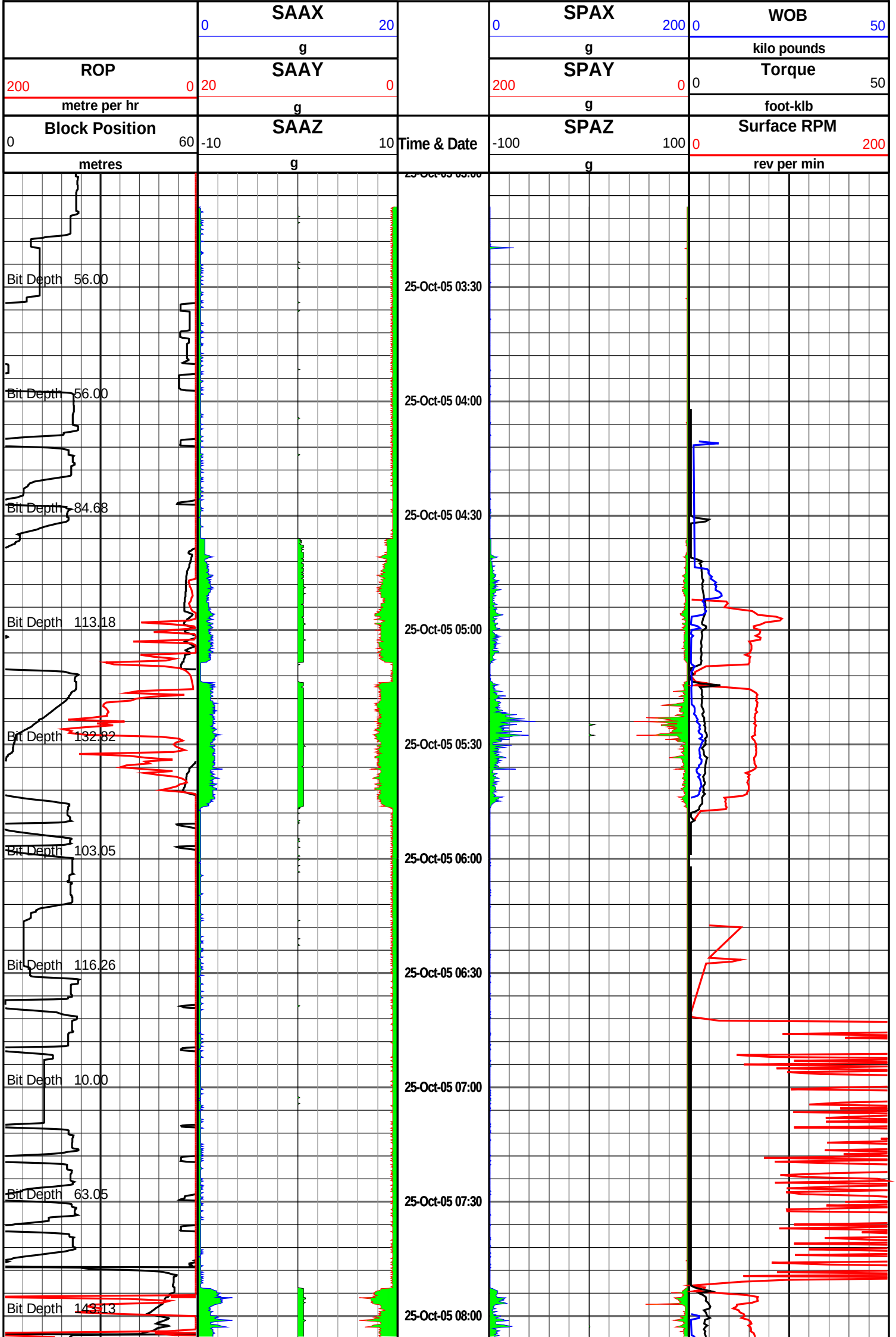
Run 100 : 311 mm Hole Section

Drilled from 111.7 to 824.0 mMDRT

03:00 hrs 25th October - 03:30 hrs 26th October 2005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50
foot-klb
Block Position
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60
metres
SAAZ
-10
10
g
Time & Date
SPAZ
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100
g
Surface RPM
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200
rev per min
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Bit Depth 56.00
Bit Depth 84.68
Bit Depth 113.18
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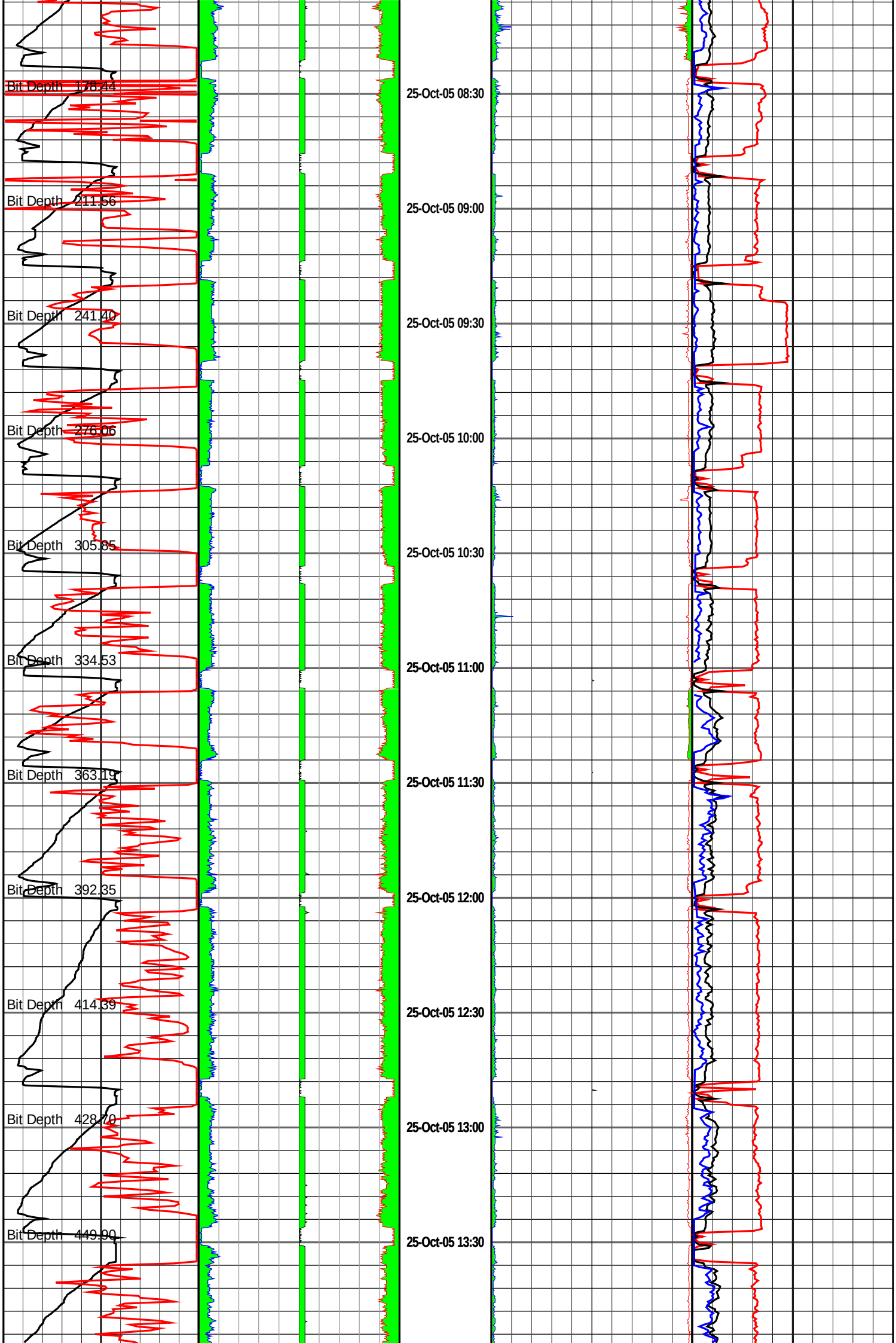
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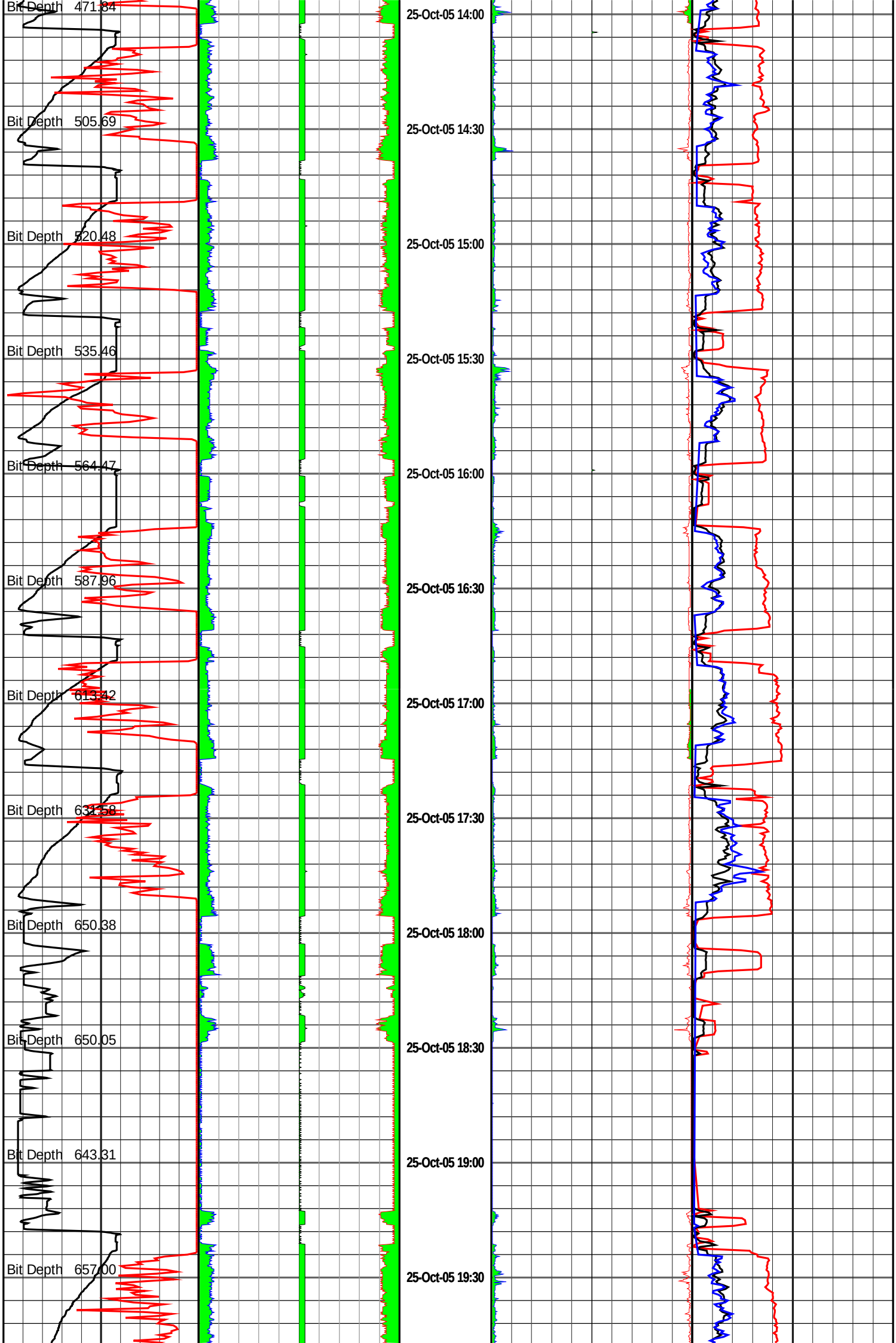
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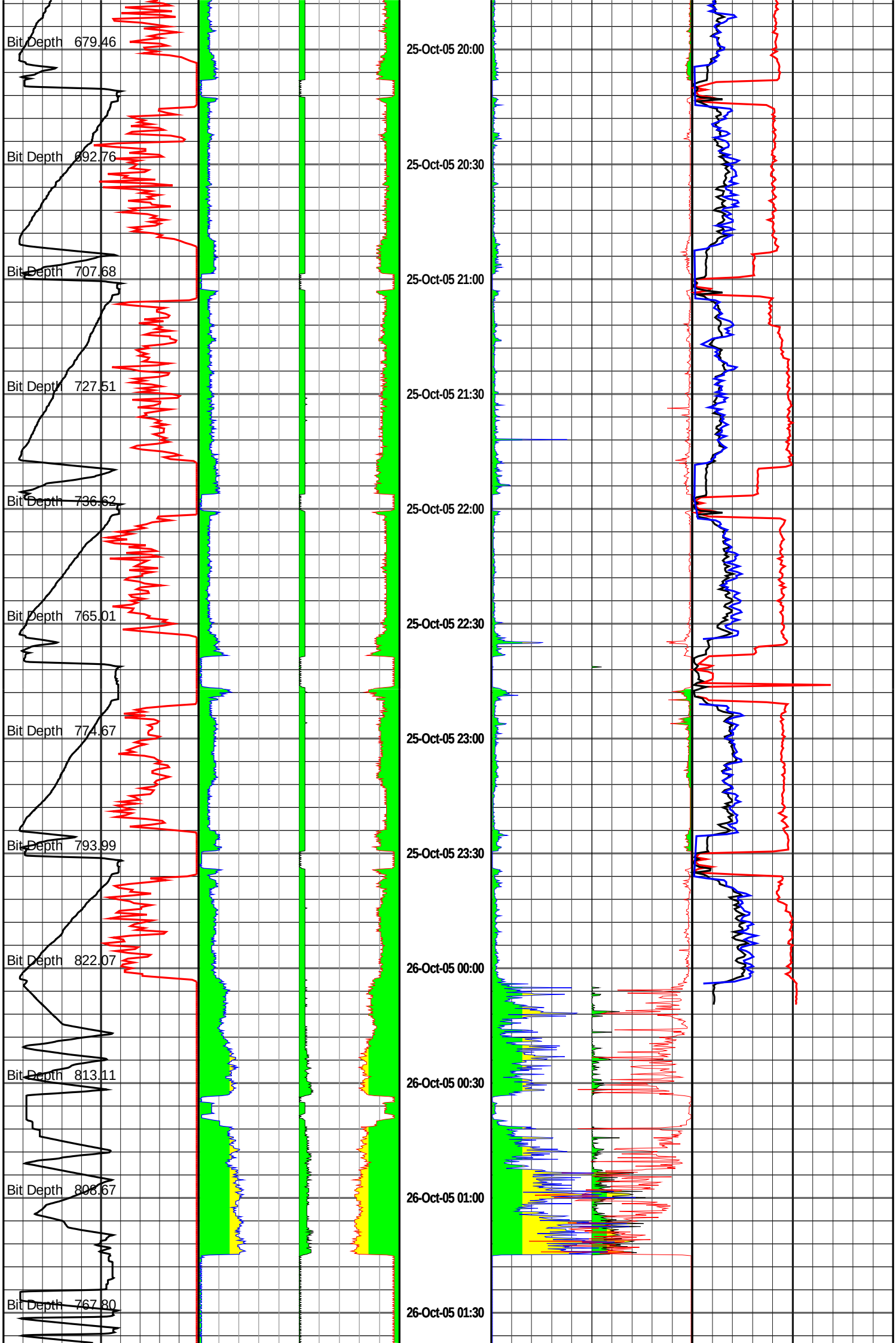
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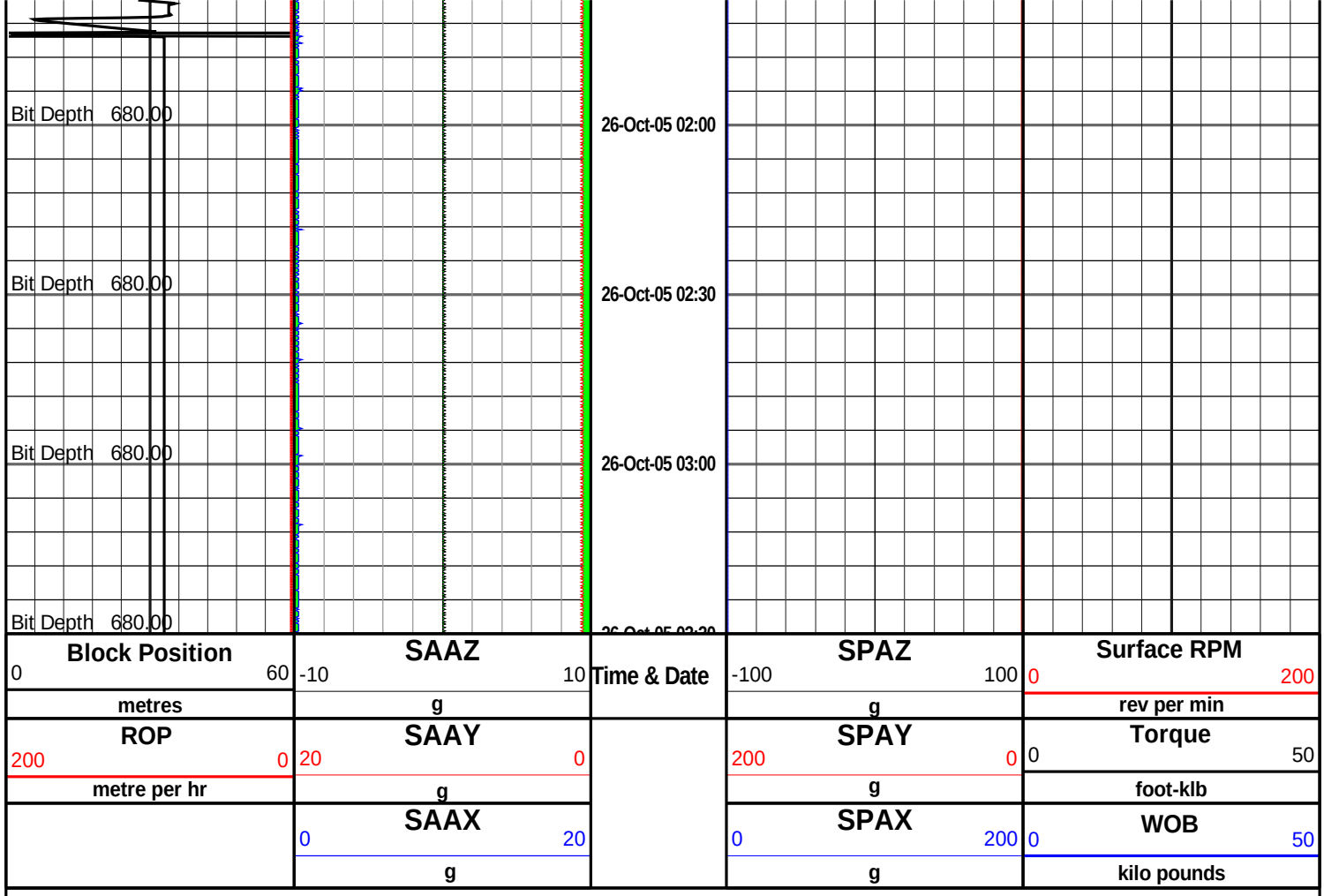
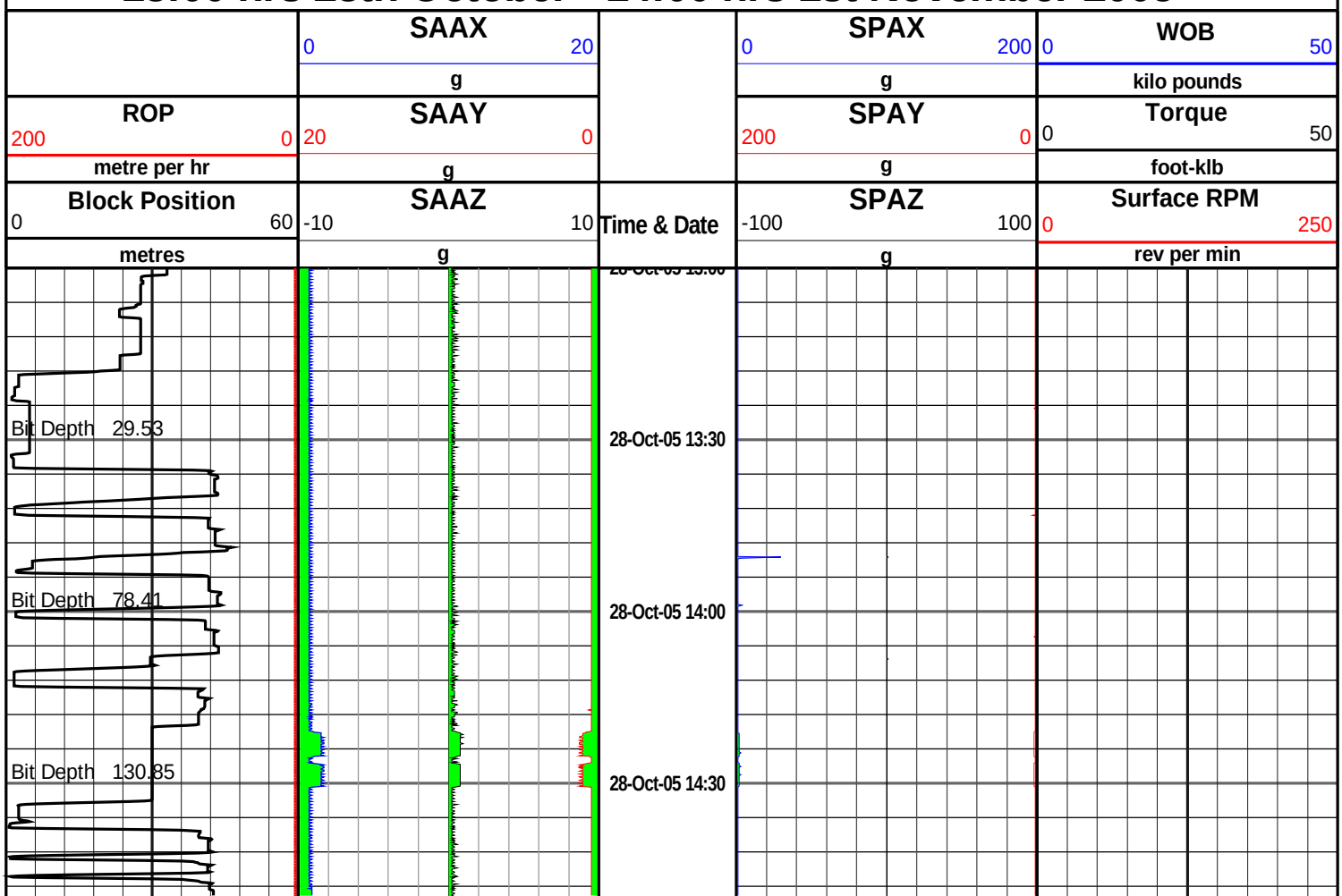
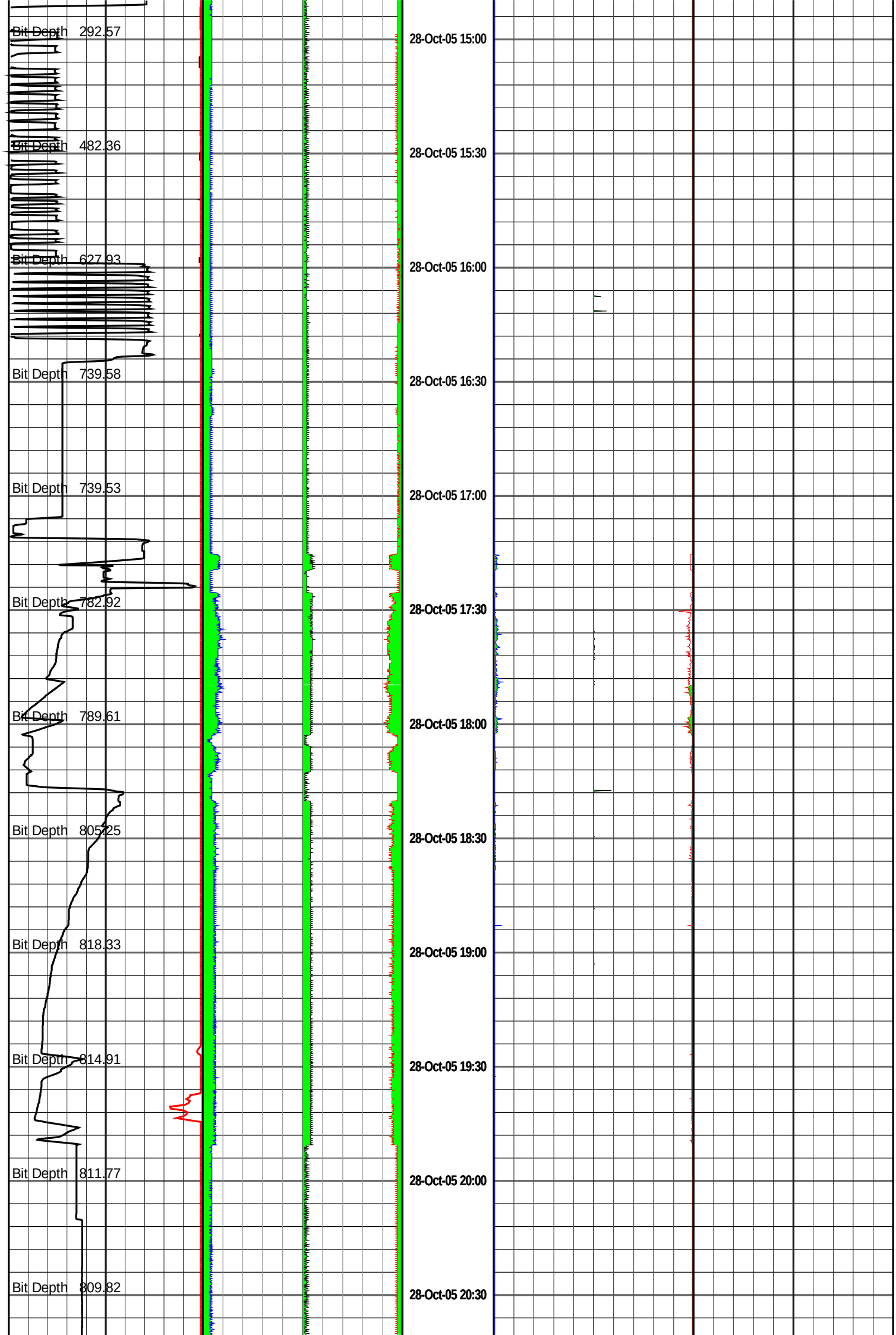


Run 200 : 216 mm Hole Section

Drilled from 824.0 to 2610.0 mMDRT

13:00 hrs 28th October - 14:00 hrs 1st November 2005

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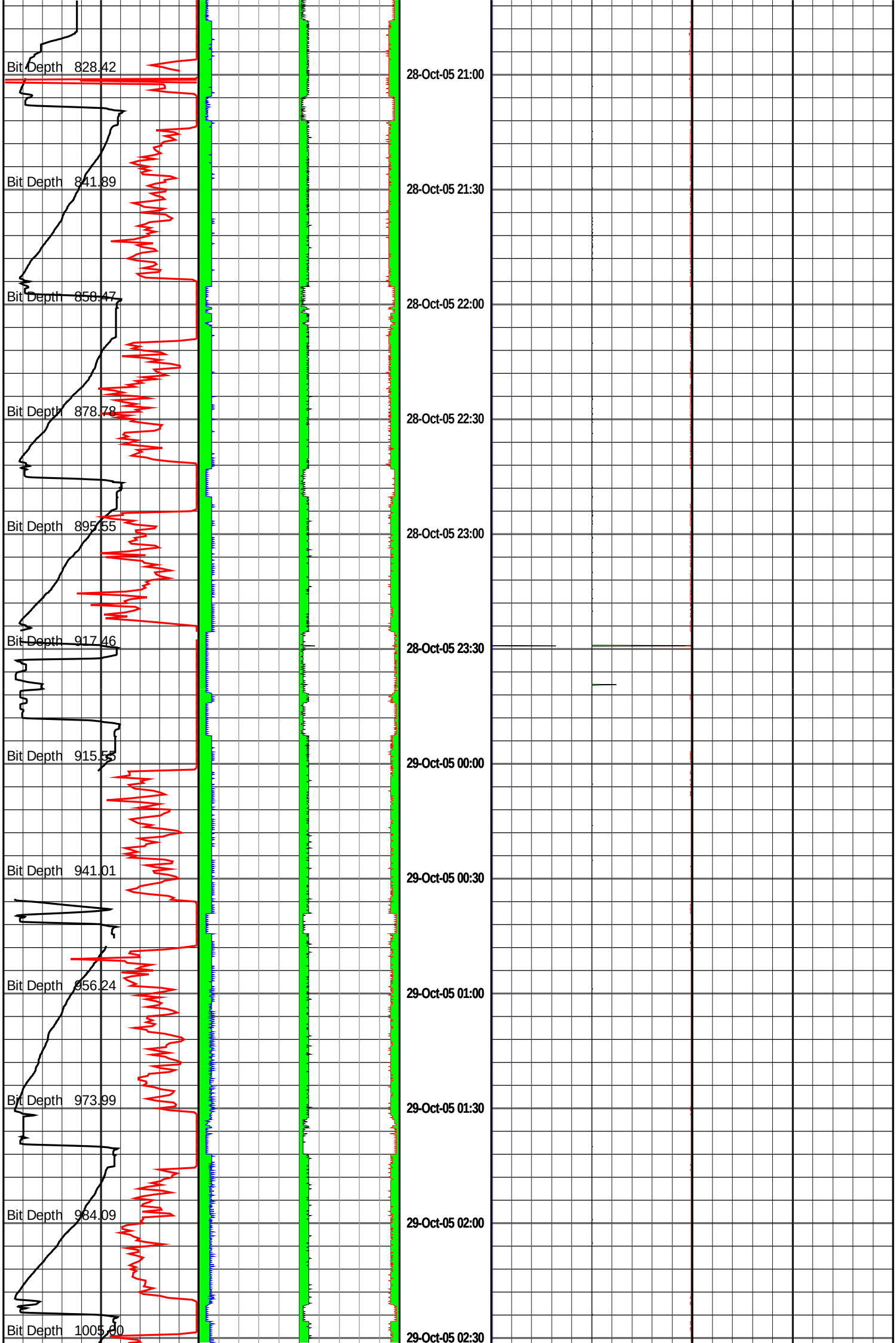
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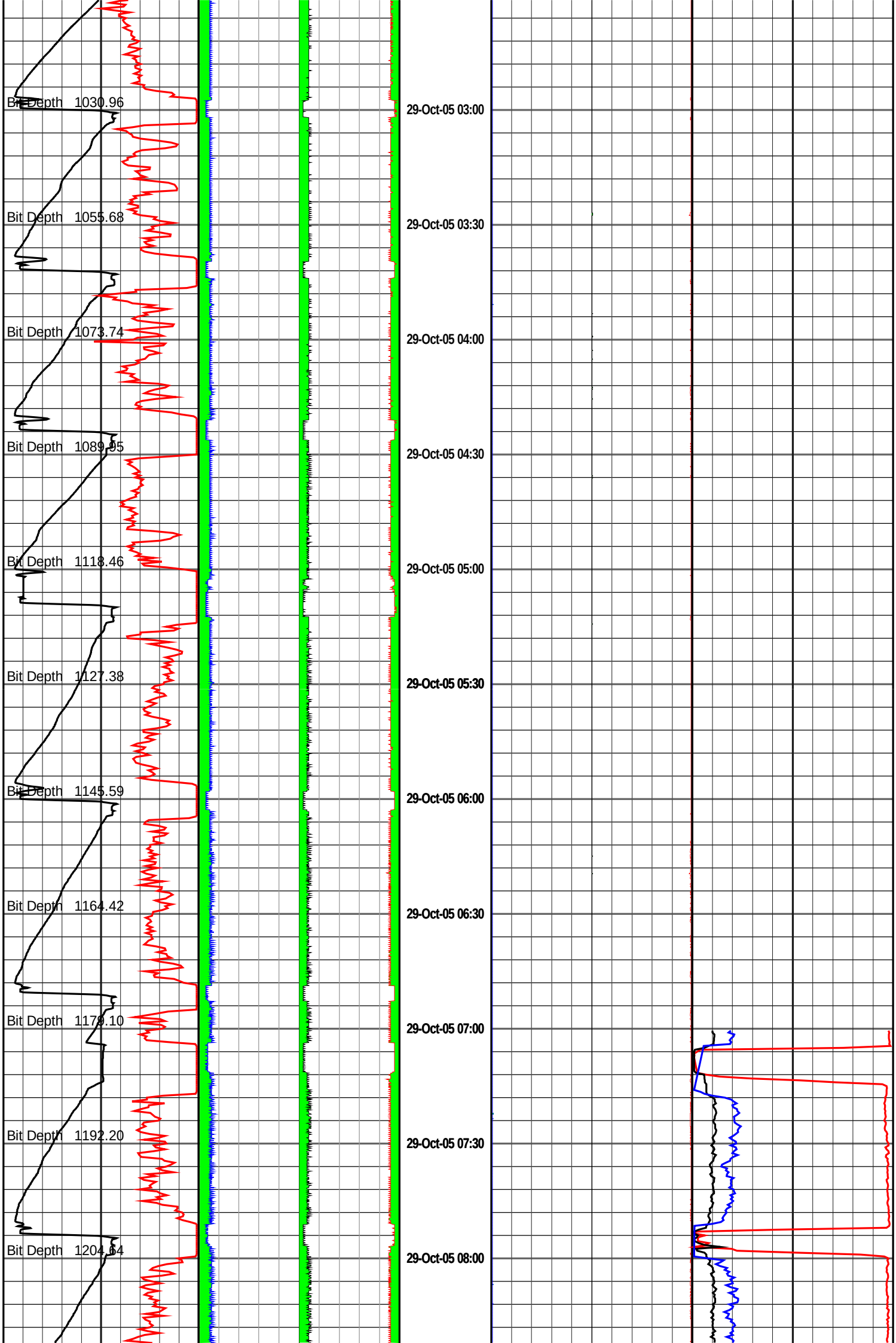
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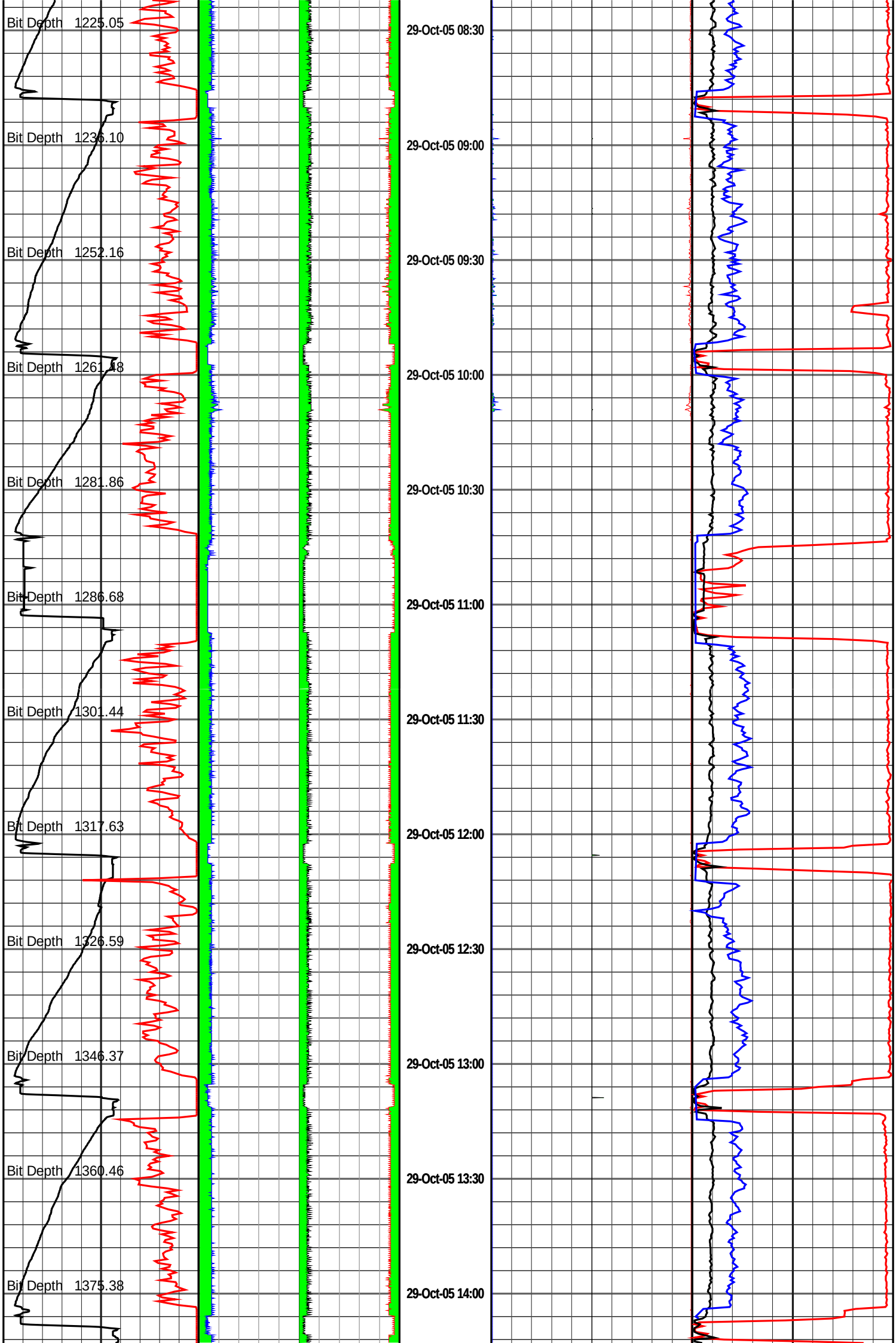
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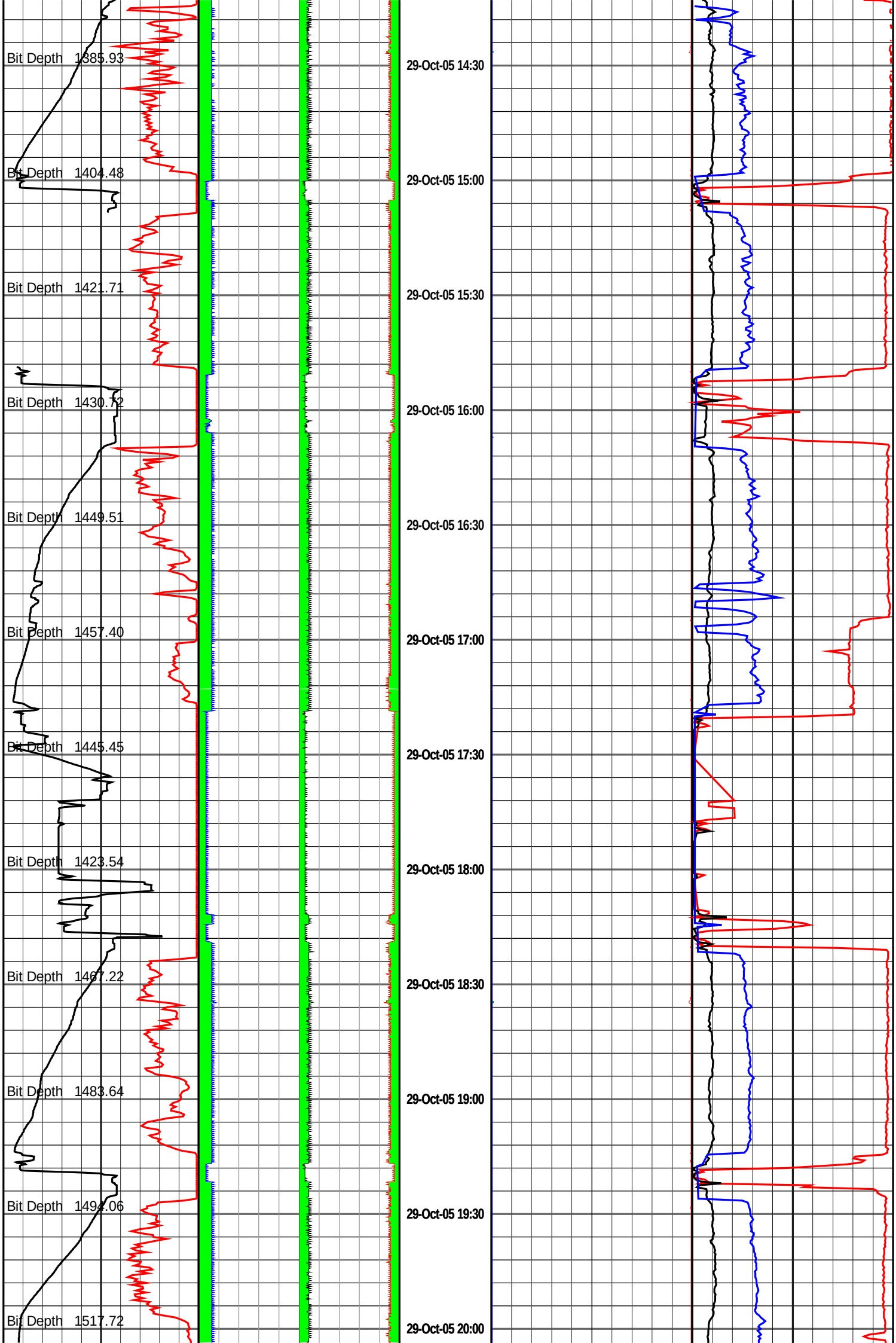
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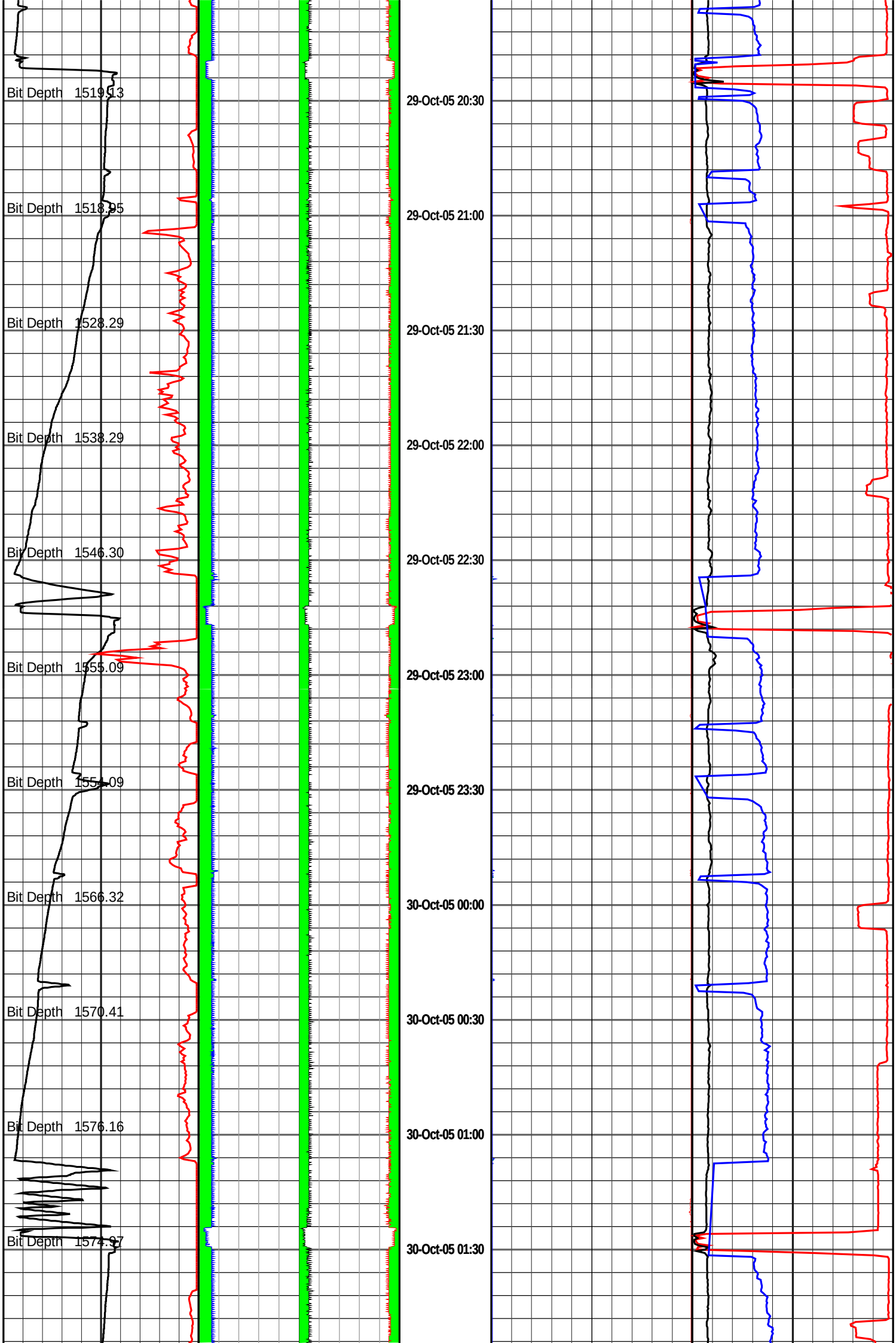
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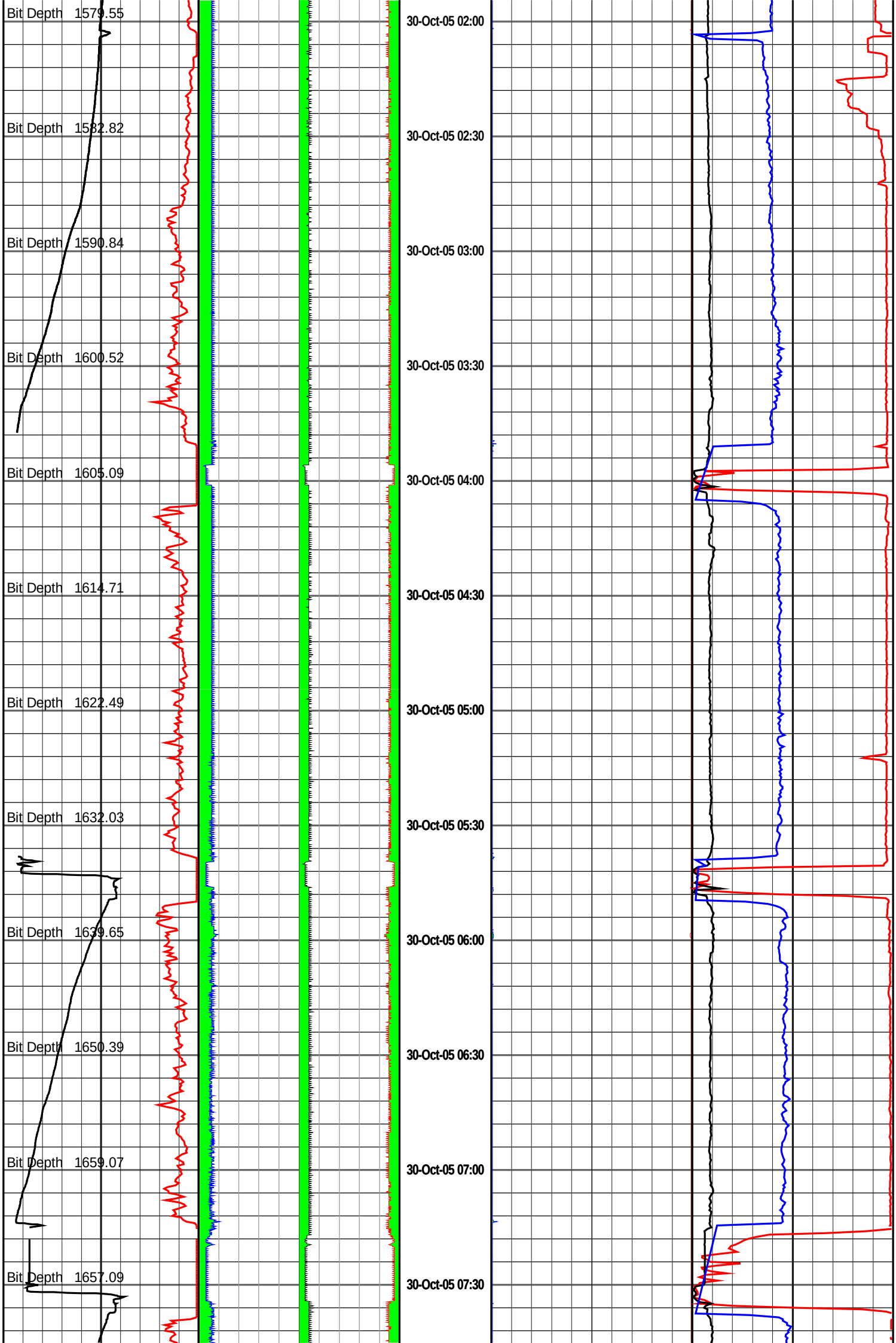
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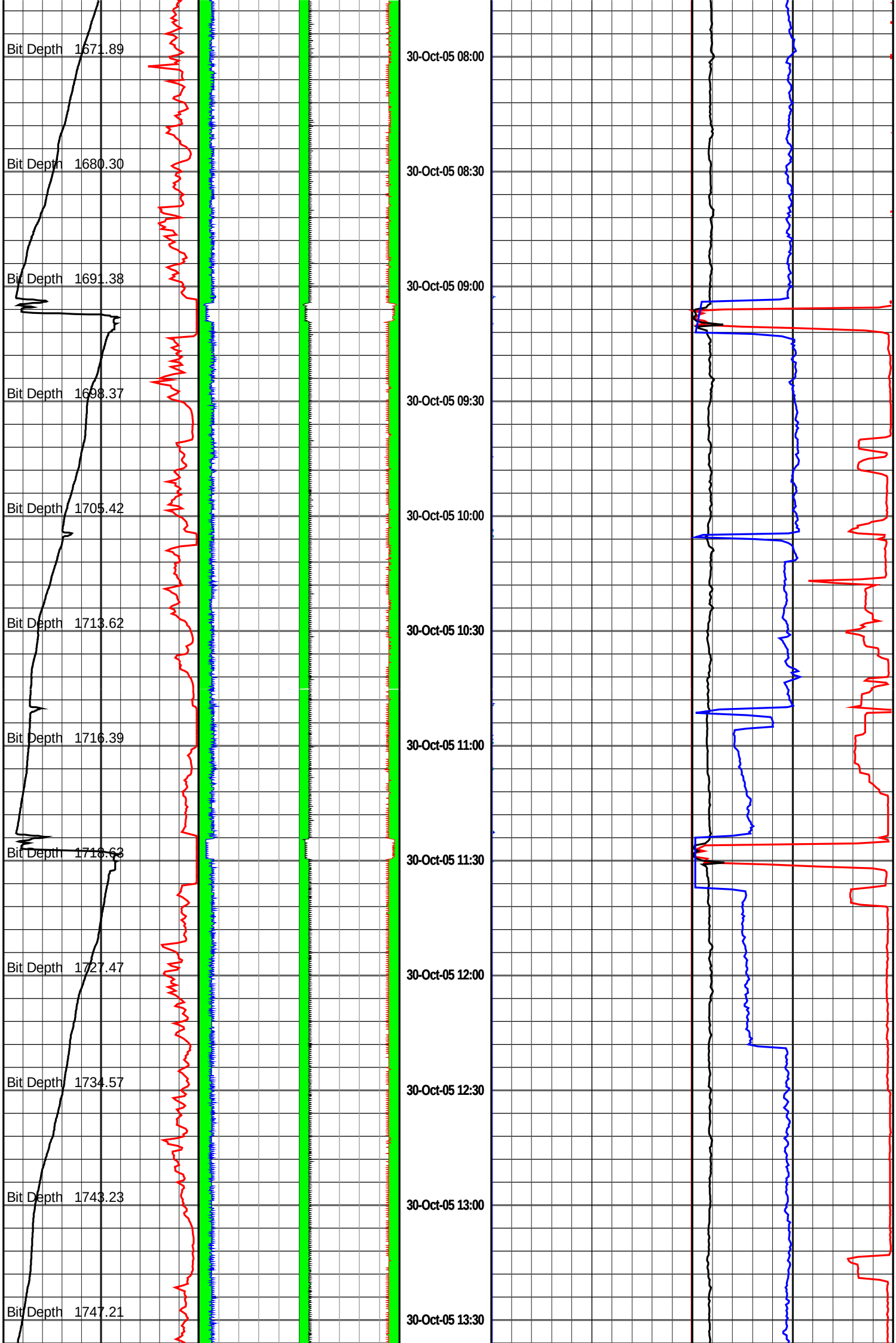
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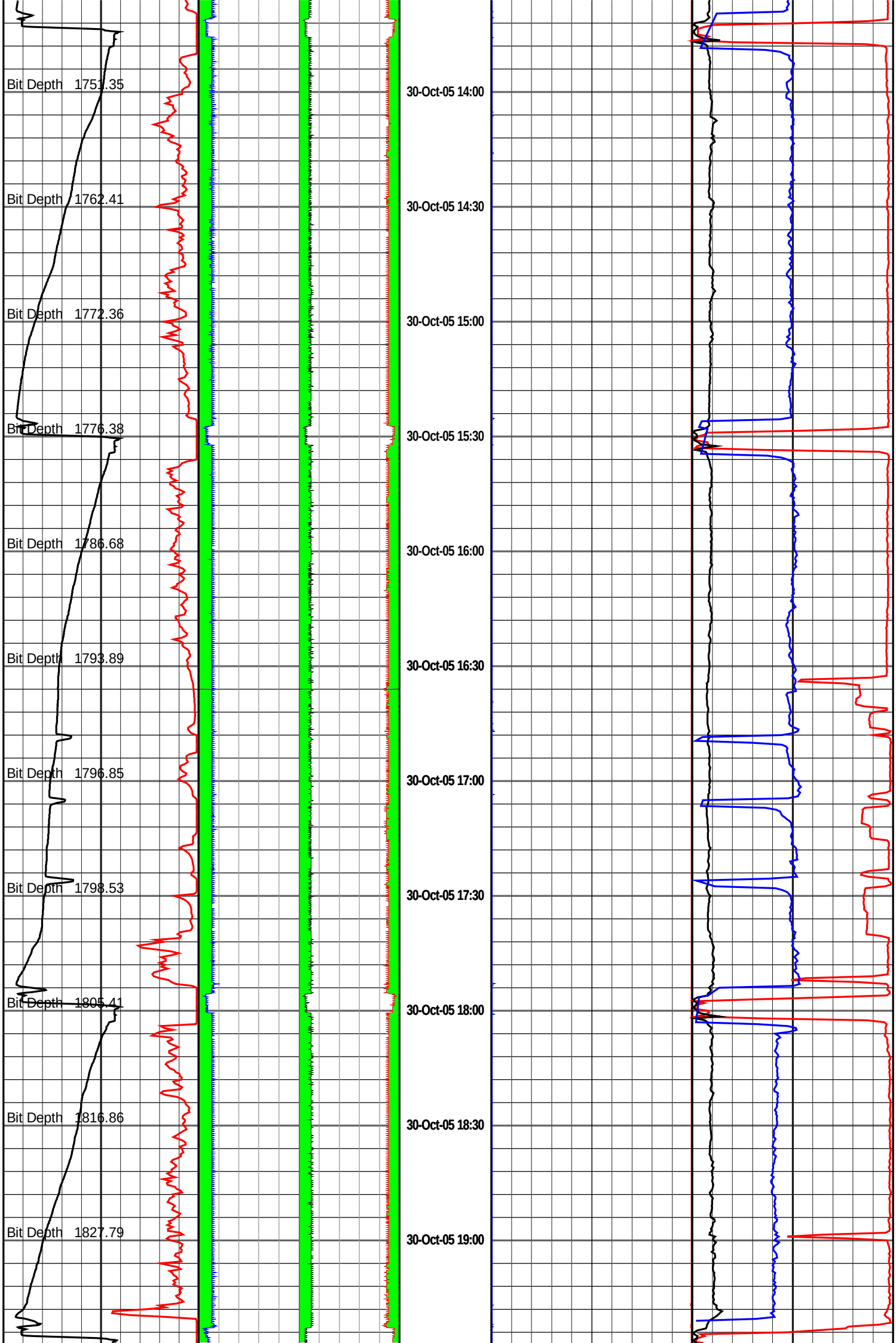
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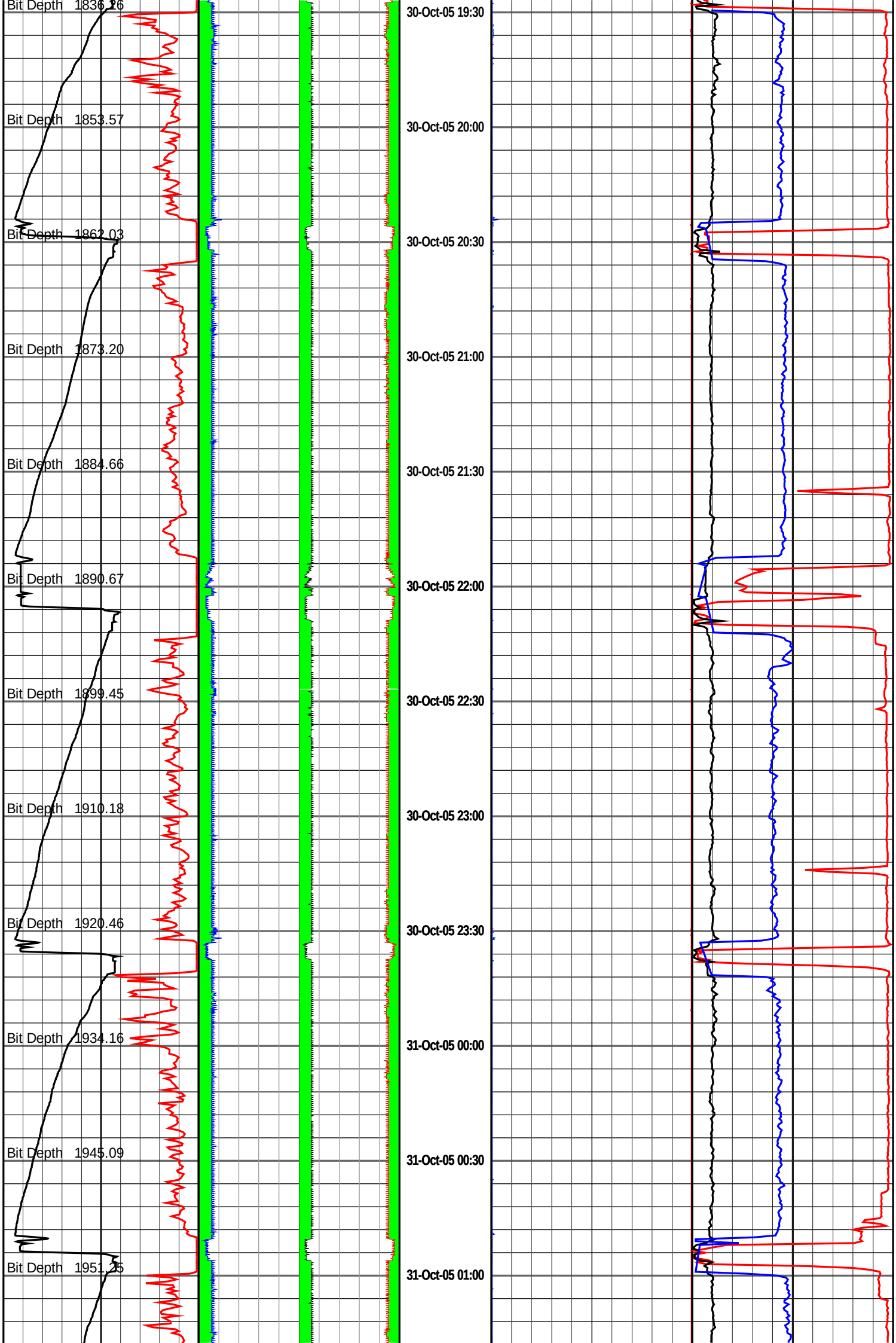
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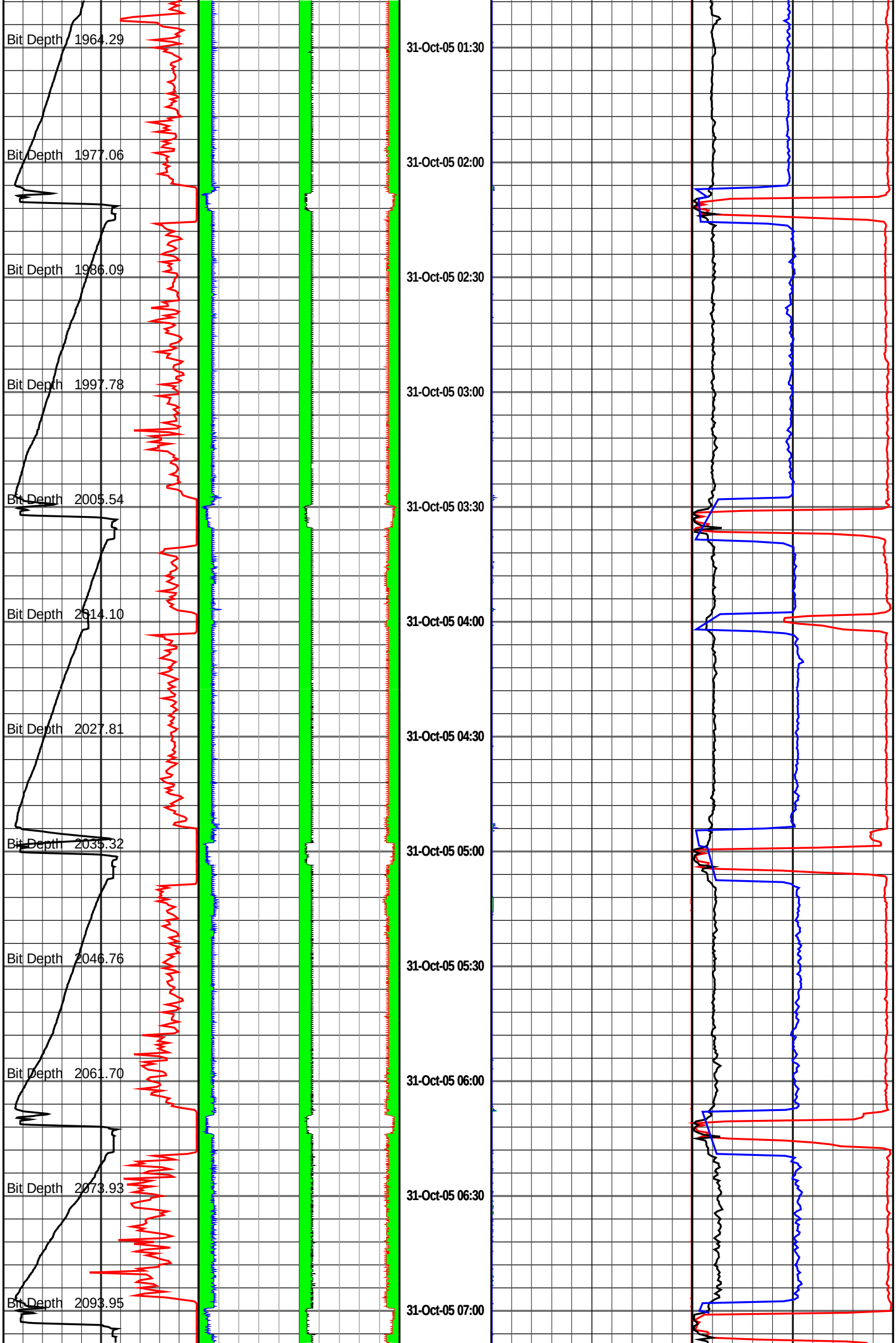
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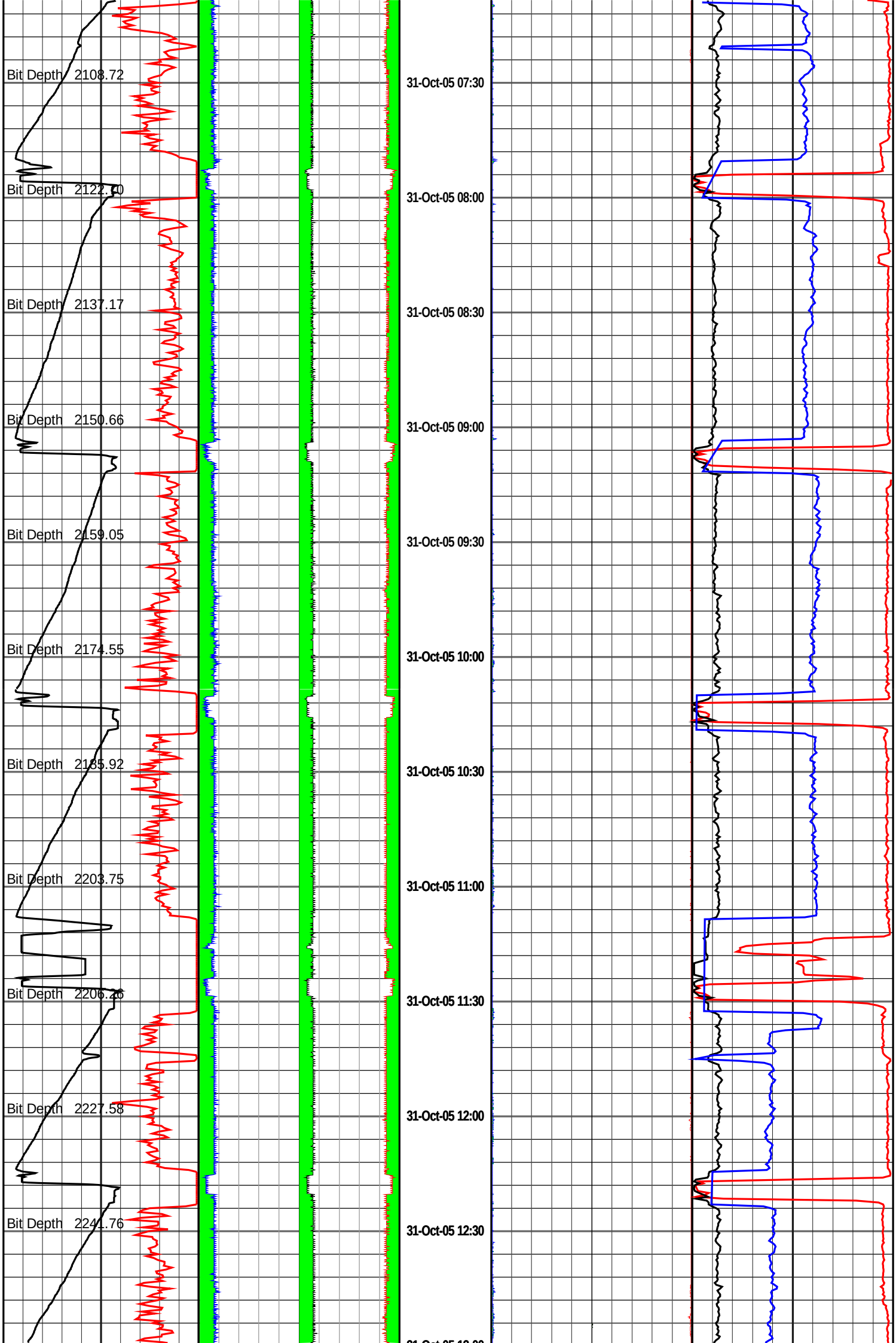
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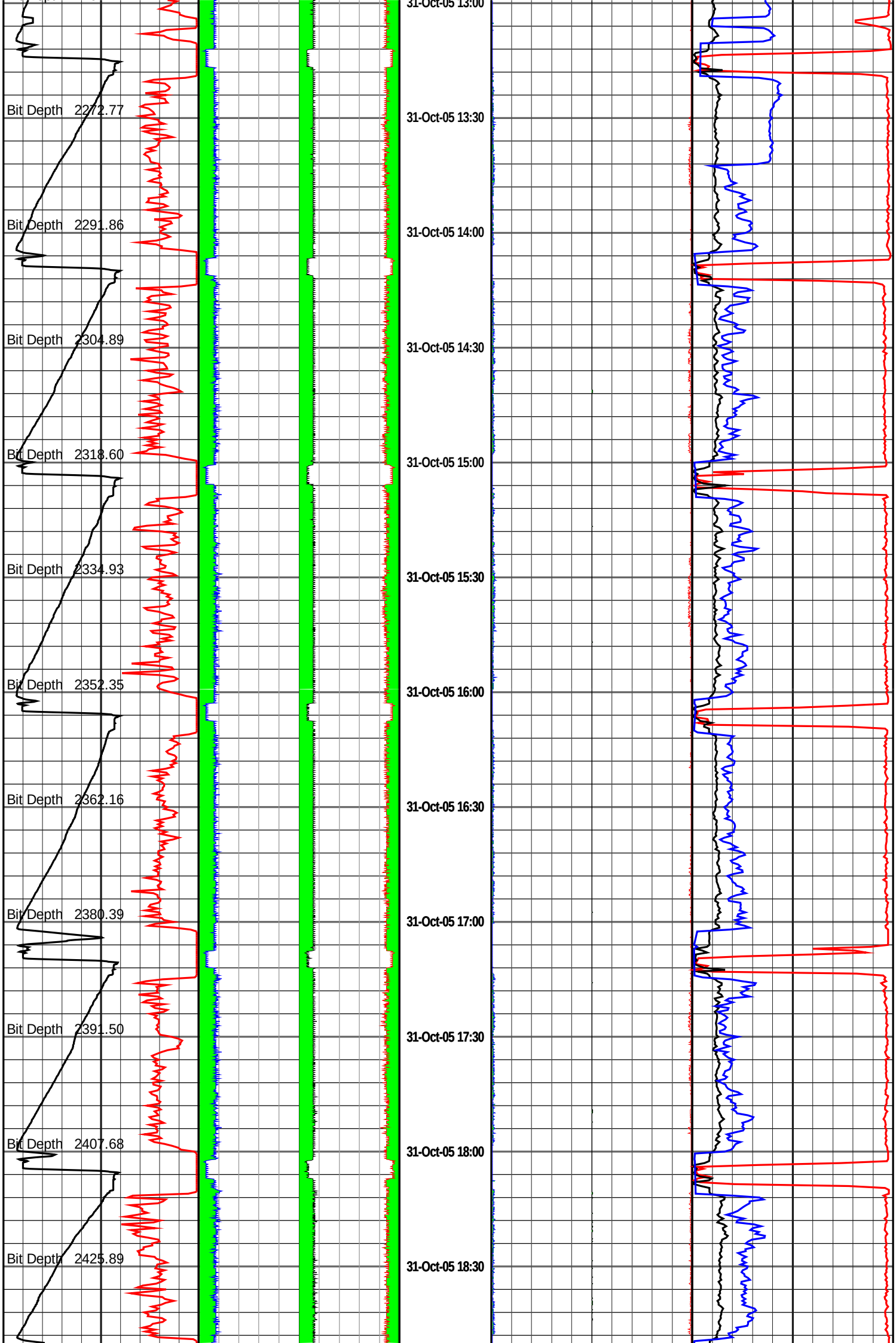
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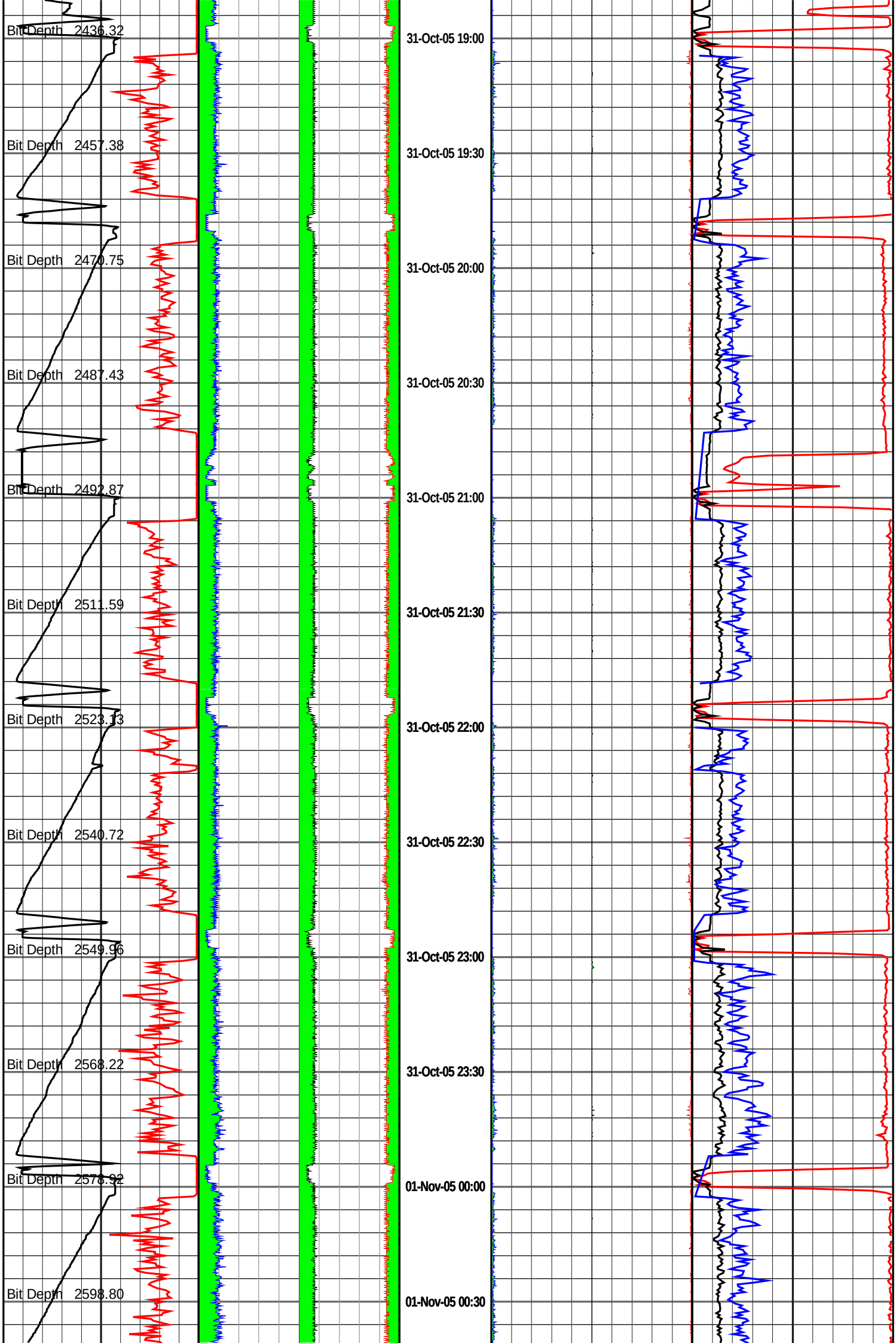
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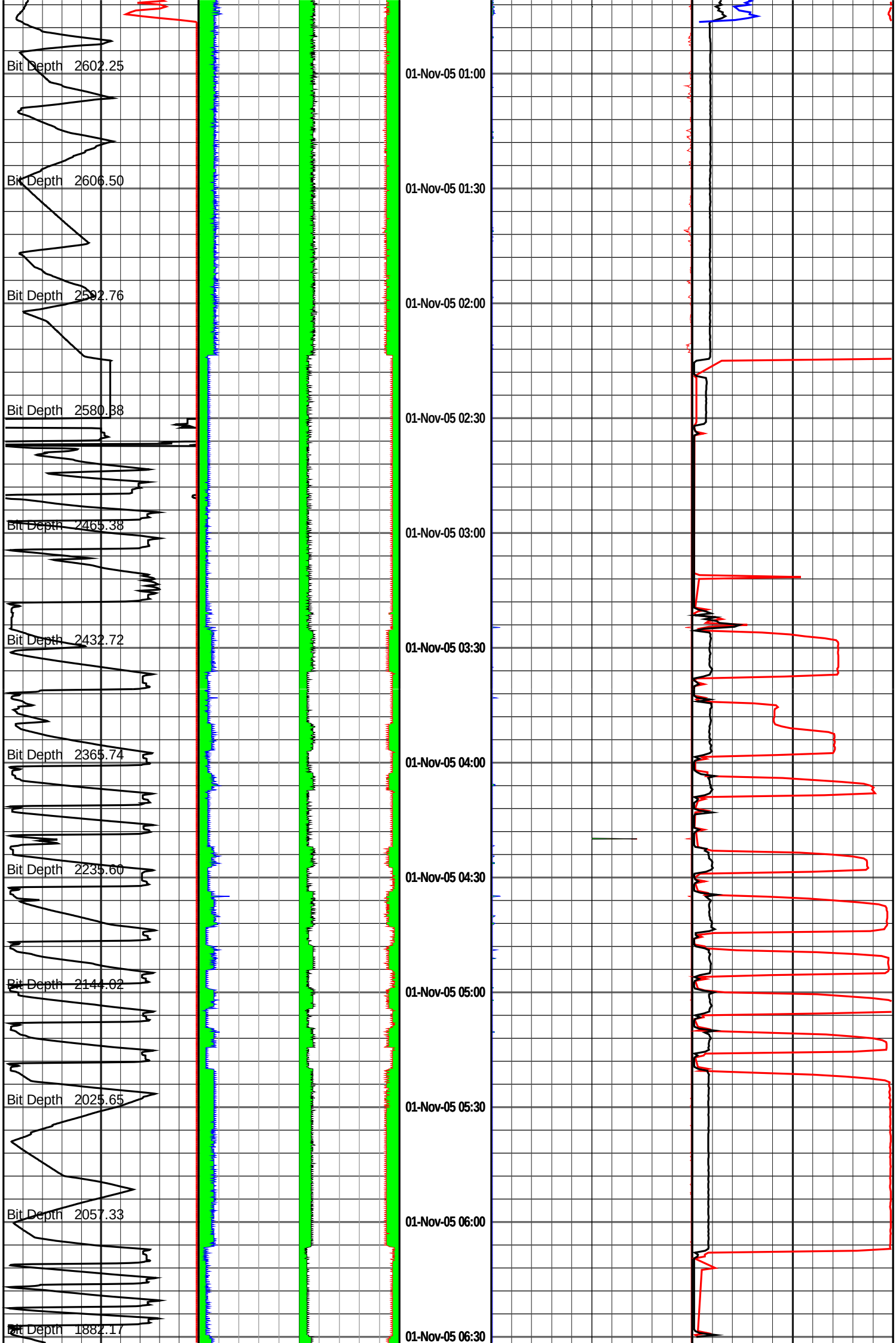
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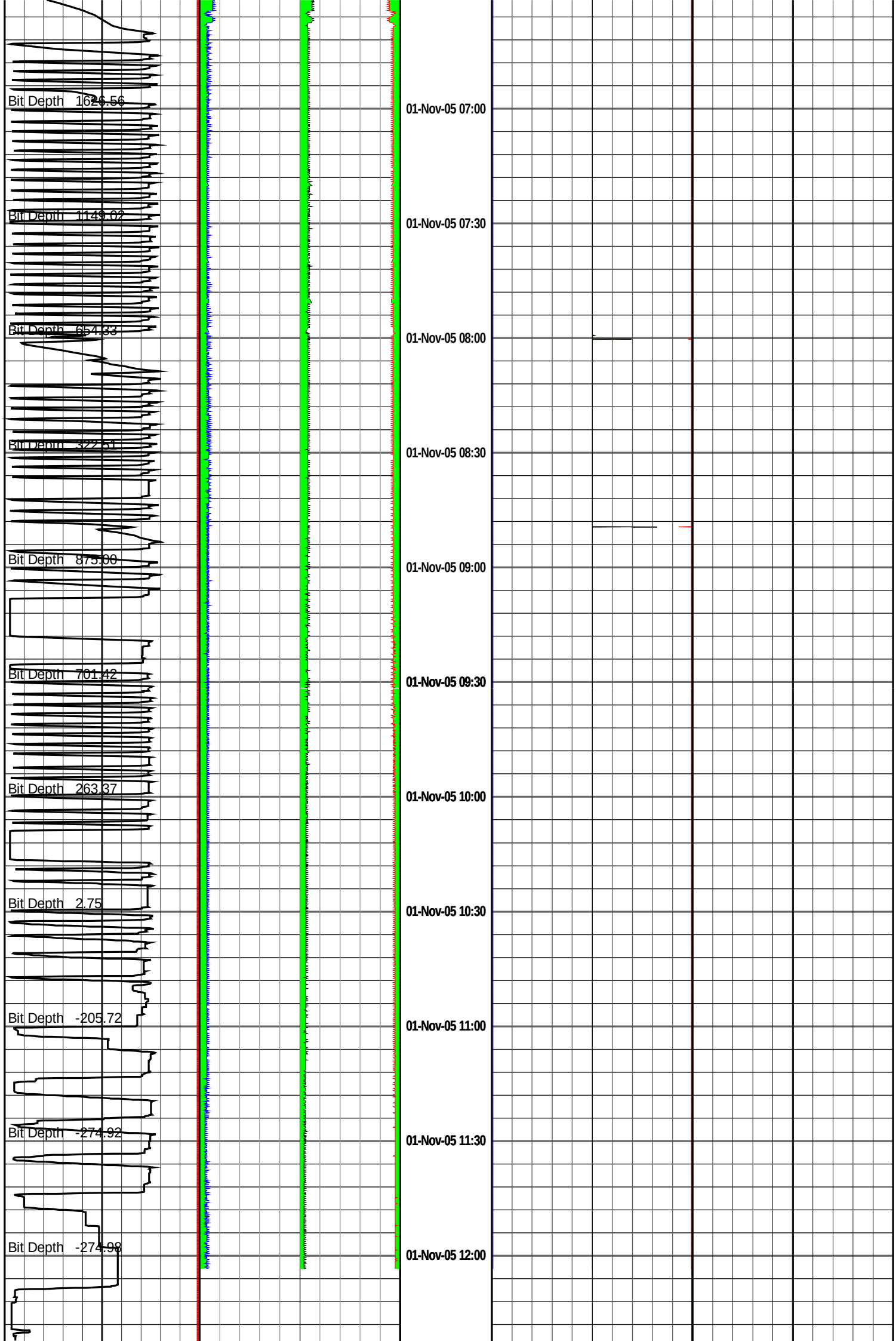
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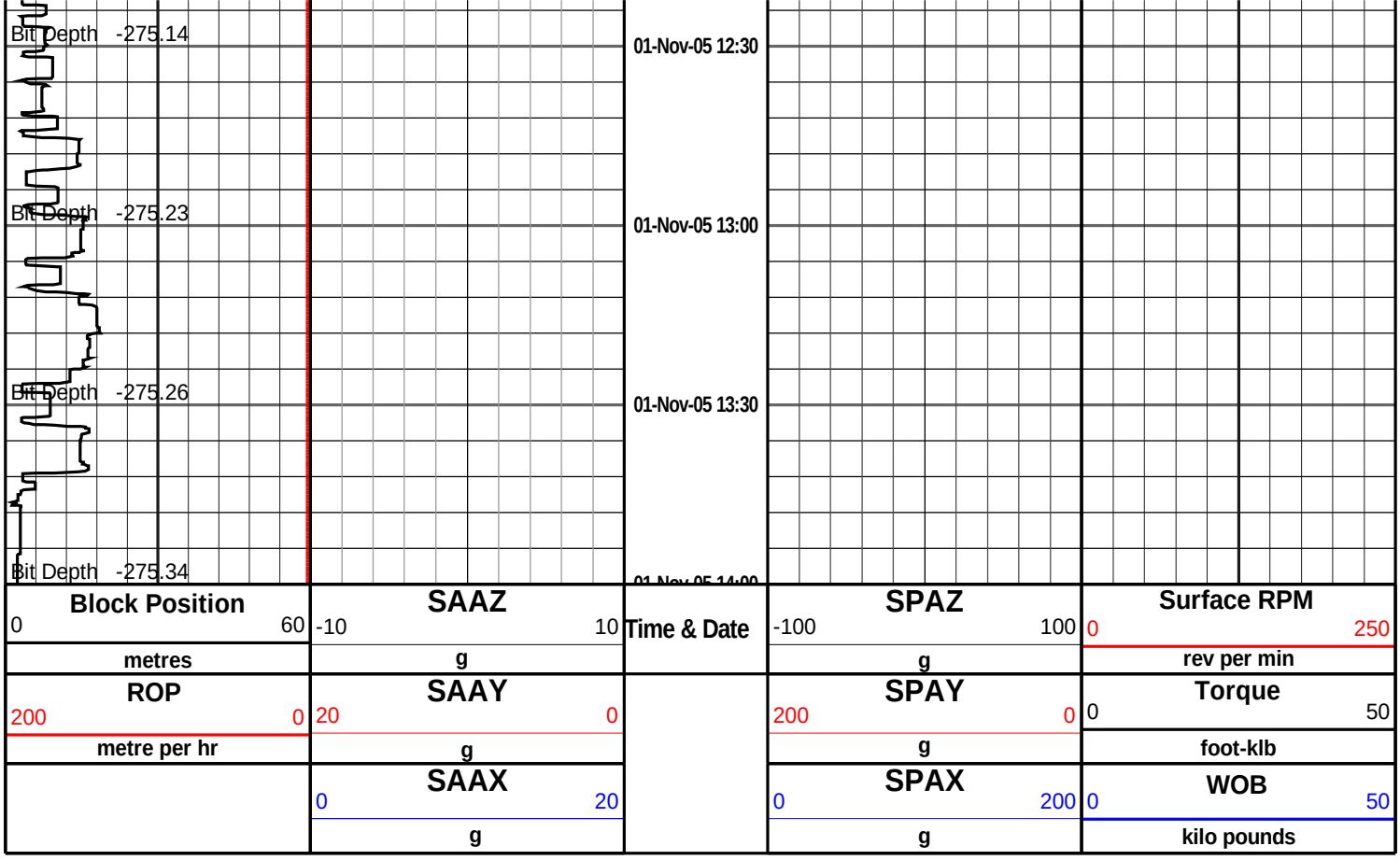


HALLIBURTON

DIRECTIONAL SURVEY REPORT

Apache Energy Ltd
Fur Seal-1
Exploration
Victoria
Australia
AU-FE-0003890148
Final Survey projected to TD. RT to AHD = 21.5m.

Measured Depth (metres)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (metres)*	*Latitude (metres)*	*Departure (metres)*	*Vertical Section (metres)*	*Dogleg (deg/30m)*
0.000	0.00	0.00	0.000	0.000 N	0.000 E	0.000	TIE-IN
147.580	0.20	177.10	147.580	0.260 S	0.013 E	-0.260	0.04
202.770	0.44	176.34	202.769	0.569 S	0.032 E	-0.569	0.13
230.700	0.60	175.42	230.698	0.821 S	0.050 E	-0.821	0.17
259.170	0.44	182.26	259.166	1.079 S	0.058 E	-1.079	0.17
316.460	0.19	202.22	316.456	1.388 S	0.014 E	-1.388	0.14
431.050	0.42	169.27	431.044	1.977 S	0.022 E	-1.977	0.08
574.280	0.77	174.99	574.266	3.457 S	0.205 E	-3.457	0.07
631.930	0.59	187.00	631.912	4.138 S	0.203 E	-4.138	0.12
747.010	1.16	234.79	746.979	5.397 S	0.820 W	-5.397	0.23
804.240	1.36	261.58	804.196	5.830 S	1.963 W	-5.830	0.32
825.390	1.41	257.87	825.340	5.921 S	2.465 W	-5.921	0.15
854.170	1.08	262.66	854.113	6.030 S	3.081 W	-6.030	0.36
882.940	1.07	265.44	882.878	6.086 S	3.618 W	-6.086	0.05
911.810	1.19	271.36	911.742	6.100 S	4.189 W	-6.100	0.17
940.400	1.16	271.02	940.326	6.088 S	4.775 W	-6.088	0.04
969.000	1.14	275.16	968.921	6.057 S	5.347 W	-6.057	0.09
997.650	1.07	274.19	997.565	6.012 S	5.898 W	-6.012	0.09
1026.350	1.05	269.72	1026.260	5.994 S	6.426 W	-5.994	0.09
1054.970	0.93	273.03	1054.876	5.983 S	6.920 W	-5.983	0.14

HALLIBURTON

Fur Seal-1

Measured Depth (metres)	Inclination (degrees)	Direction (degrees)	Vertical Depth (metres)	Latitude (metres)	Departure (metres)	Vertical Section (metres)	Dogleg (deg/30m)
1083.560	0.88	279.71	1083.463	5.934 S	7.368 W	-5.934	0.12
1112.050	0.86	280.50	1111.949	5.858 S	7.794 W	-5.858	0.02
1140.780	0.80	280.28	1140.676	5.782 S	8.205 W	-5.782	0.06
1169.420	0.69	281.95	1169.314	5.711 S	8.571 W	-5.711	0.12
1198.140	0.81	286.36	1198.031	5.618 S	8.934 W	-5.618	0.14
1255.860	1.01	305.38	1255.744	5.211 S	9.736 W	-5.211	0.19
1284.620	0.87	311.34	1284.500	4.921 S	10.105 W	-4.921	0.18
1313.270	0.86	333.94	1313.147	4.585 S	10.362 W	-4.585	0.35
1341.990	0.67	334.23	1341.865	4.241 S	10.529 W	-4.241	0.21
1370.650	0.68	330.15	1370.523	3.942 S	10.687 W	-3.942	0.05
1427.720	0.77	326.65	1427.588	3.328 S	11.066 W	-3.328	0.05
1456.160	0.82	328.79	1456.025	2.995 S	11.277 W	-2.995	0.07
1484.950	0.85	336.79	1484.812	2.622 S	11.468 W	-2.622	0.12
1513.890	0.88	324.92	1513.749	2.244 S	11.680 W	-2.244	0.19
1542.830	0.86	327.87	1542.686	1.878 S	11.923 W	-1.878	0.05
1571.590	0.87	324.35	1571.442	1.517 S	12.166 W	-1.517	0.06
1599.700	0.77	338.40	1599.549	1.166 S	12.360 W	-1.166	0.24
1657.300	0.97	353.39	1657.143	0.322 S	12.559 W	-0.322	0.15
1686.010	0.88	355.80	1685.849	0.138 N	12.603 W	0.138	0.10
1715.080	0.89	6.11	1714.916	0.585 N	12.596 W	0.585	0.16
1743.680	0.78	6.96	1743.513	1.000 N	12.548 W	1.000	0.12
1772.080	0.50	6.19	1771.911	1.316 N	12.511 W	1.316	0.29
1800.650	0.48	16.78	1800.480	1.554 N	12.464 W	1.554	0.10
1829.260	0.58	38.40	1829.089	1.782 N	12.339 W	1.782	0.23
1858.090	0.50	34.50	1857.917	2.000 N	12.178 W	2.000	0.09
1887.200	0.56	59.17	1887.026	2.177 N	11.984 W	2.177	0.24
1916.070	0.69	58.49	1915.894	2.340 N	11.715 W	2.340	0.14
1944.740	0.66	50.11	1944.562	2.536 N	11.442 W	2.536	0.11
1973.020	0.75	60.07	1972.840	2.732 N	11.157 W	2.732	0.16
2001.540	0.62	65.93	2001.358	2.888 N	10.854 W	2.888	0.15
2030.200	0.47	54.96	2030.017	3.020 N	10.615 W	3.020	0.19
2058.700	0.51	43.07	2058.516	3.179 N	10.433 W	3.179	0.11
2087.390	0.51	81.71	2087.205	3.290 N	10.221 W	3.290	0.35
2116.440	0.55	117.19	2116.254	3.244 N	9.970 W	3.244	0.34
2144.780	0.56	102.11	2144.592	3.153 N	9.713 W	3.153	0.16
2231.210	0.95	136.21	2231.015	2.547 N	8.802 W	2.547	0.20
2317.050	0.95	103.22	2316.844	1.871 N	7.619 W	1.871	0.19
2402.730	0.93	77.31	2402.513	1.861 N	6.254 W	1.861	0.15
2431.360	1.07	70.01	2431.139	2.003 N	5.778 W	2.003	0.20
2460.090	1.06	56.97	2459.864	2.239 N	5.303 W	2.239	0.25
2488.890	1.28	60.60	2488.658	2.543 N	4.799 W	2.543	0.24
2517.630	1.41	56.39	2517.390	2.896 N	4.225 W	2.896	0.17
2610.000	1.41	56.39	2609.732	4.153 N	2.333 W	4.153	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 0.00 DEGREES (GRID)
A TOTAL CORRECTION OF 13.79 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 2610.000 METRES
IS 4.764 METRES ALONG 330.68 DEGREES (GRID)

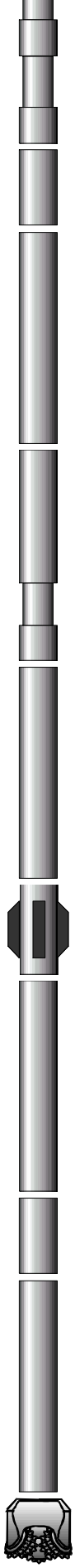
MWD RUN 100 - BHA

Date Printed:08 November 2005

	Component Length (m)	Cumulative Length (m)
		267.89

MWD RUN 100 - MWD

	Sensor Measure Point Distance To Bit (m)

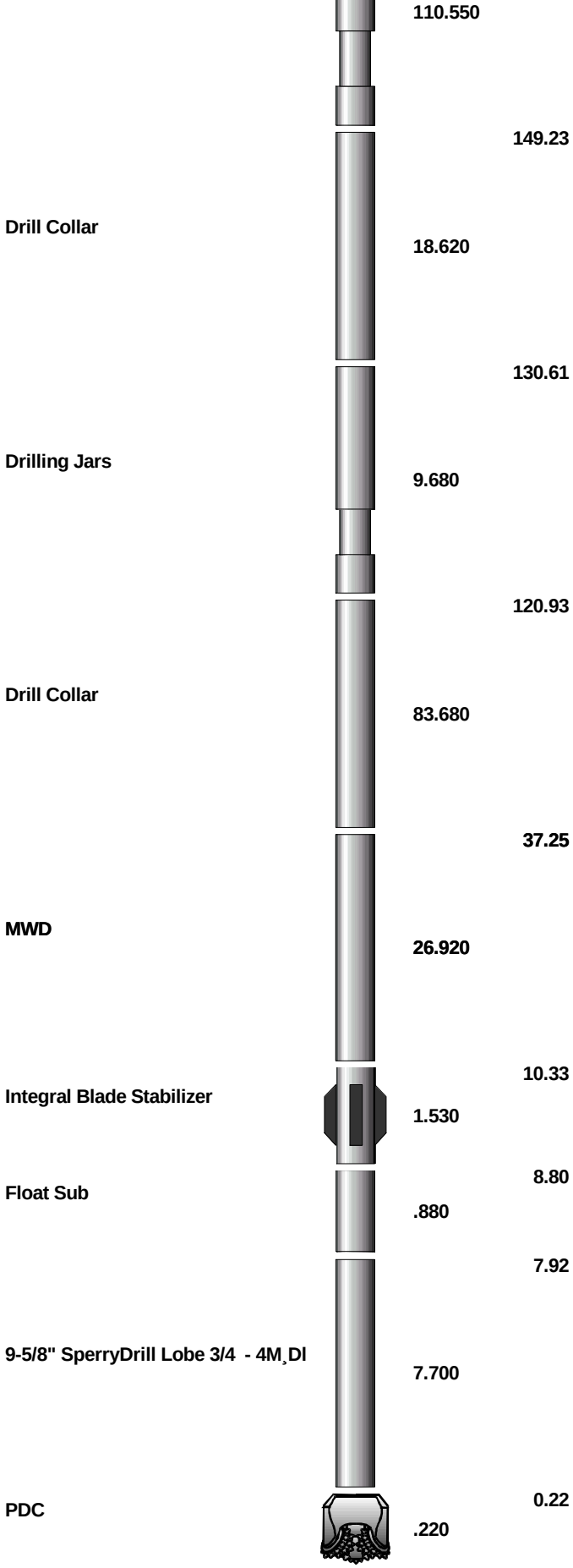


MWD RUN 200 - BHA

MWD RUN 200 - MWD

	Component Length (m)	Cumulative Length (m)
HWDP	138.100	259.78
Cross Over Sub	1.100	129.79
Drill Collar	17.470	128.69
Drilling Jars	9.050	111.22
Drill Collar	70.480	102.17
Integral Blade Stabilizer	2.150	31.69
MWD	19.610	29.54
Cross Over Sub	.970	9.93
9-5/8" SperryDrill Lobe 3/4 - 4M, DI	8.540	8.96
PDC	.420	0.42

	Sensor Measure Point Distance To Bit (m)
Pulser	
Processor	
Directional	18.360
Processor	
Gamma Ray	14.980
Resistivity	11.950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Drilling Jars
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MWD
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10.33
Integral Blade Stabilizer
1.530
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Float Sub
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7.92
9-5/8" SperryDrill Lobe 3/4 - 4M¸Dl
7.700
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PDC
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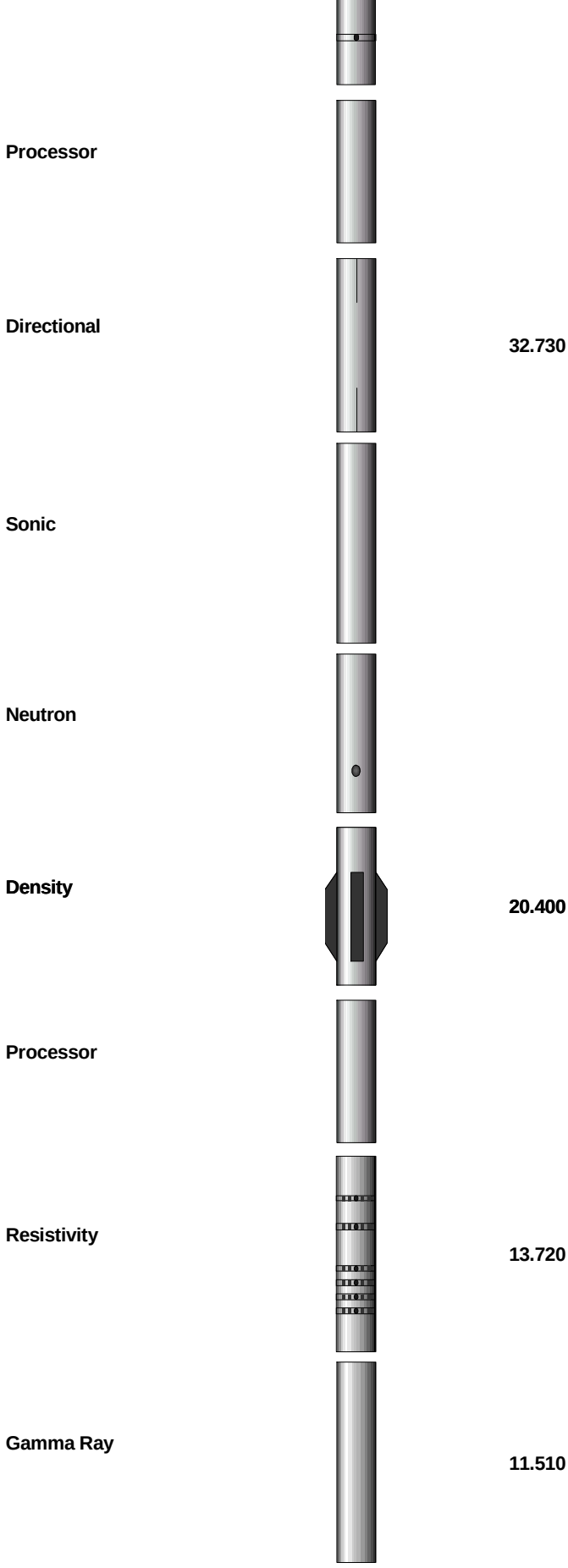
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Gamma Ray
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