



LWD MEMORY LOG

Gamma Ray

Scale: **Company: Noble Energy**

Well: Gutteresen State DD30-/66

True Vertical Depth	Field:	Wattenberg
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Depth Reference:

County: Wein	County: United states
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Driller's Depth

State: Colorado

Latitude: 40° 11' 25.368" N

Surface Location:

Other Services:

API No: 05-123-48662-00

Job ID: 110089473

SEC: 30 TWN: 3N RGE: 63W

Permanent Datum (P.D.):	Mean Sea Level	Elevation:	0.00 ft	Elev. KB:	N/A
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Log Measured From:	Rig Floor	Above P.D.:	4823.00 ft	Elev. G.L:	4793.00 ft
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Dates	Interval	Magnetic Field Reference
07-08-2019	07-08-2019	07-08-2019
09-08-2019	09-08-2019	09-08-2019
11-08-2019	11-08-2019	11-08-2019
13-08-2019	13-08-2019	13-08-2019
15-08-2019	15-08-2019	15-08-2019
17-08-2019	17-08-2019	17-08-2019
19-08-2019	19-08-2019	19-08-2019
21-08-2019	21-08-2019	21-08-2019
23-08-2019	23-08-2019	23-08-2019
25-08-2019	25-08-2019	25-08-2019
27-08-2019	27-08-2019	27-08-2019
29-08-2019	29-08-2019	29-08-2019
31-08-2019	31-08-2019	31-08-2019
02-09-2019	02-09-2019	02-09-2019
04-09-2019	04-09-2019	04-09-2019
06-09-2019	06-09-2019	06-09-2019
08-09-2019	08-09-2019	08-09-2019
10-09-2019	10-09-2019	10-09-2019
12-09-2019	12-09-2019	12-09-2019
14-09-2019	14-09-2019	14-09-2019
16-09-2019	16-09-2019	16-09-2019
18-09-2019	18-09-2019	18-09-2019
20-09-2019	20-09-2019	20-09-2019
22-09-2019	22-09-2019	22-09-2019
24-09-2019	24-09-2019	24-09-2019
26-09-2019	26-09-2019	26-09-2019
28-09-2019	28-09-2019	28-09-2019
30-09-2019	30-09-2019	30-09-2019
01-10-2019	01-10-2019	01-10-2019
03-10-2019	03-10-2019	03-10-2019
05-10-2019	05-10-2019	05-10-2019
07-10-2019	07-10-2019	07-10-2019
09-10-2019	09-10-2019	09-10-2019
11-10-2019	11-10-2019	11-10-2019
13-10-2019	13-10-2019	13-10-2019
15-10-2019	15-10-2019	15-10-2019
17-10-2019	17-10-2019	17-10-2019
19-10-2019	19-10-2019	19-10-2019
21-10-2019	21-10-2019	21-10-2019
23-10-2019	23-10-2019	23-10-2019
25-10-2019	25-10-2019	25-10-2019
27-10-2019	27-10-2019	27-10-2019
29-10-2019	29-10-2019	29-10-2019
31-10-2019	31-10-2019	31-10-2019
02-11-2019	02-11-2019	02-11-2019
04-11-2019	04-11-2019	04-11-2019
06-11-2019	06-11-2019	06-11-2019
08-11-2019	08-11-2019	08-11-2019
10-11-2019	10-11-2019	10-11-2019
12-11-2019	12-11-2019	12-11-2019
14-11-2019	14-11-2019	14-11-2019
16-11-2019	16-11-2019	16-11-2019
18-11-2019	18-11-2019	18-11-2019
20-11-2019	20-11-2019	20-11-2019
22-11-2019	22-11-2019	22-11-2019
24-11-2019	24-11-2019	24-11-2019
26-11-2019	26-11-2019	26-11-2019
28-11-2019	28-11-2019	28-11-2019
30-11-2019	30-11-2019	30-11-2019
01-12-2019	01-12-2019	01-12-2019
03-12-2019	03-12-2019	03-12-2019
05-12-2019	05-12-2019	05-12-2019
07-12-2019	07-12-2019	07-12-2019
09-12-2019	09-12-2019	09-12-2019
11-12-2019	11-12-2019	11-12-2019
13-12-2019	13-12-2019	13-12-2019
15-12-2019	15-12-2019	15-12-2019
17-12-2019	17-12-2019	17-12-2019
19-12-2019	19-12-2019	19-12-2019
21-12-2019	21-12-2019	21-12-2019
23-12-2019	23-12-2019	23-12-2019
25-12-2019	25-12-2019	25-12-2019
27-12-2019	27-12-2019	27-12-2019
29-12-2019	29-12-2019	29-12-2019
31-12-2019	31-12-2019	31-12-2019

From: 2019-11-12	Drilled (ft)	Logged (ft)	Azi Reference North:	Grid	Dip Angle: (deg)	66.59
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To: 2019-11-13	Top: 1945.00	Top: 1945.00	Total Magnetic Field Strength: (nT)	52081
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Spud: 2019-10-28	Bottom: 16732.00	Bottom: 16719.00	Mag to Reference North Correction: (deg)	7.34
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Borehole Record

Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
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13.500	30.00	1945.00	9.625	36.00	30.00	1935.00
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8.500	1945.00	16732.00		
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[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Mud Record

Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
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Based Mud	1945.00	16732.00	8.500	14787.00	0.23	3.90	90.18	8.61
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[illegible][illegible][illegible][illegible]

Acquisition System	Software Version	Other
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Cadence	RT 5.4	Rig:	H&P 321
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Deliverable	5.4.862/.1	Contractor:	Helmerich & Payne Drilling Co
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District: RMA Unit: D&E

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Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	8.500	PDC	3.00	AutoTrak Curve	1945.00	13908.00	1945.00	13931.00	2019-11-09 07:24	2019-11-11 10:08	42.36
2	2	8.500	PDC	3.00	AutoTrak Curve	13908.00	16719.00	13931.00	16732.00	2019-11-12 00:59	2019-11-12 12:01	12.79

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Andrew Hays	2019-11-09	2019-11-11	Tien Bui	2019-11-11	2019-11-12			

Mud Properties Record

Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2019-11-09 05:00	1	4957.00	Oil Based Mud	9.3	14	N/A	20.8	80.9/19.1	Active Pit	24000	0.00
2019-11-10 16:00	1	8750.00	Oil Based Mud	9.4	11	N/A	16.6	77.8/22.2	Active Pit	33000	0.00
2019-11-11 05:00	1	13025.00	Oil Based Mud	9.4	13	N/A	19.2	77.6/22.4	Active Pit	29000	0.00
2019-11-11 18:33	2	13931.09	Oil Based Mud	9.3	13	N/A	19.0	77.6/22.4	Active Pit	28000	0.00
2019-11-12 09:32	2	15991.00	Oil Based Mud	9.3	12	N/A	17.8	77.7/22.3	Active Pit	28000	0.00

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	AutoTrak Curve Steering Unit	12606359	Near Bit VSS	5.93	6.73	7.000	4.330
1	AutoTrak Curve Steering Unit	12606359	Near Bit Inclination	5.93	6.73	7.000	4.330
1	AutoTrak Curve MWD	14381863	Gamma (single)	2.78	12.90	7.000	3.250
1	AutoTrak Curve MWD	14381863	Directional (mag)	12.27	22.39	7.000	3.250
2	AutoTrak Curve Steering Unit	14316022	Near Bit Inclination	5.93	6.73	7.000	4.330
2	AutoTrak Curve Steering Unit	14316022	Near Bit VSS	5.93	6.73	7.000	4.330
2	AutoTrak Curve MWD	14371880	Gamma (single)	2.77	12.90	6.938	3.250
2	AutoTrak Curve MWD	14371880	Directional (mag)	12.27	22.40	6.938	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
ATC SU	AutoTrak Curve SU	Auto Trak Curve Steering Unit
ATC MWD	AutoTrak Curve MWD	Auto Trak Curve MWD
ATC LCPM	AutoTrak Curve LCPM	Auto Trak Curve LCPM

Comments

1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD Run 1 and 2 utilized 6 ¾ inch NaviGamma service (Gamma Ray and Directional) behind an 8 1/2 inch bit and rotary steerable assembly from 1945 to 16732 feet MD (1945 to 6705 feet TVD).
3	The Gamma Ray Apparent (GRAM) data is presented 0 to 300 API, per the customer's request.

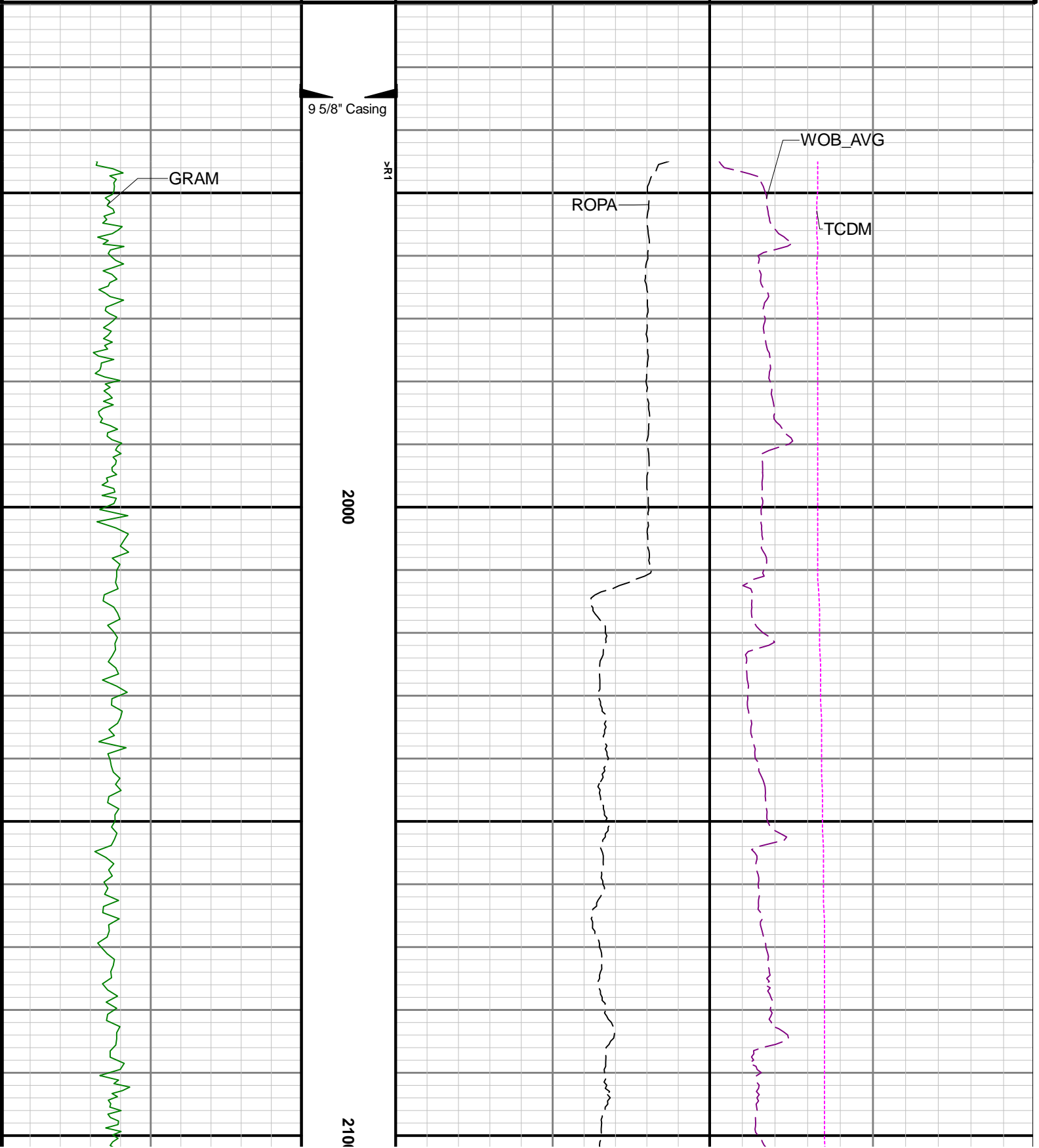
Remarks

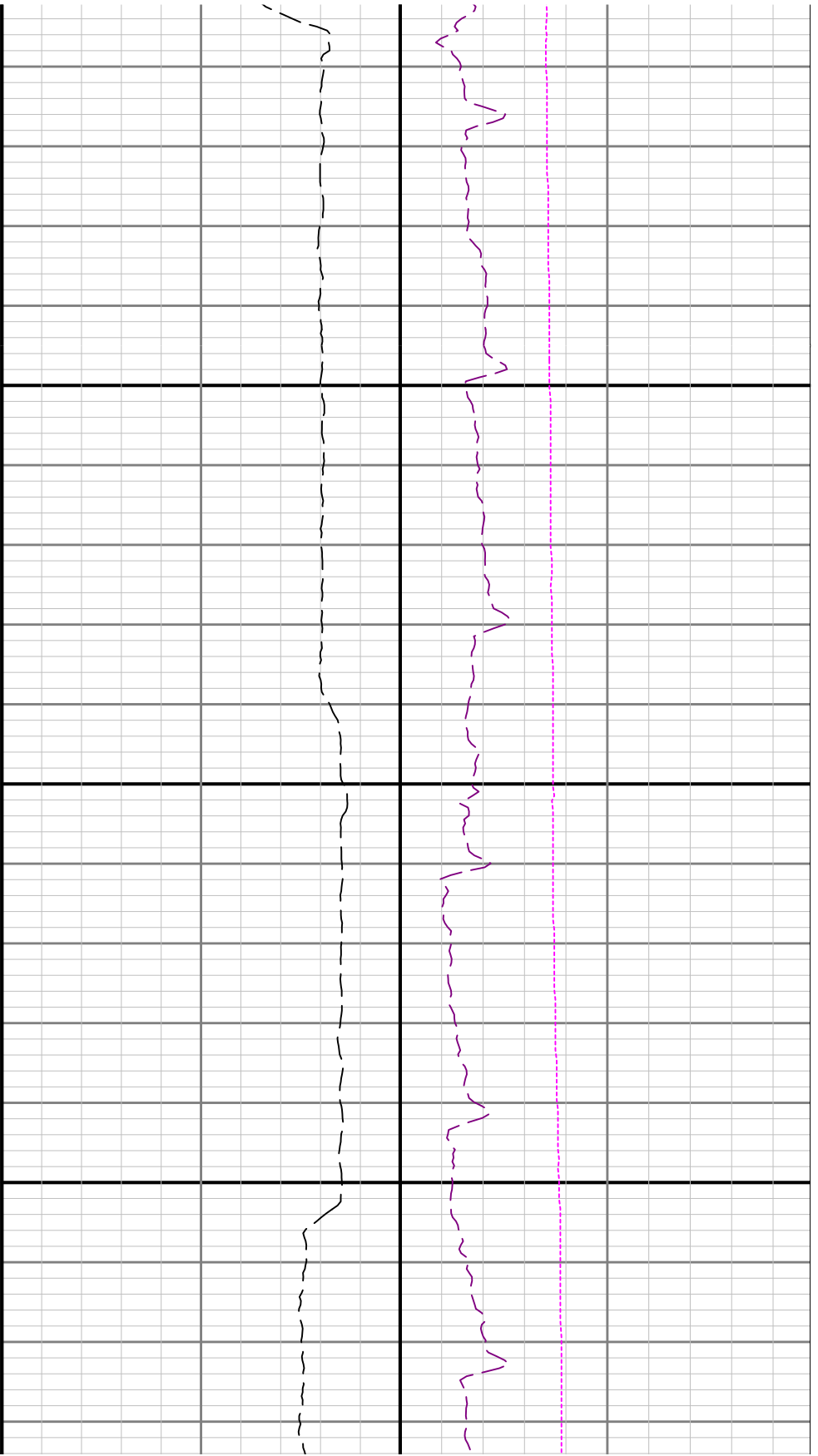
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
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Curve Mnemonics

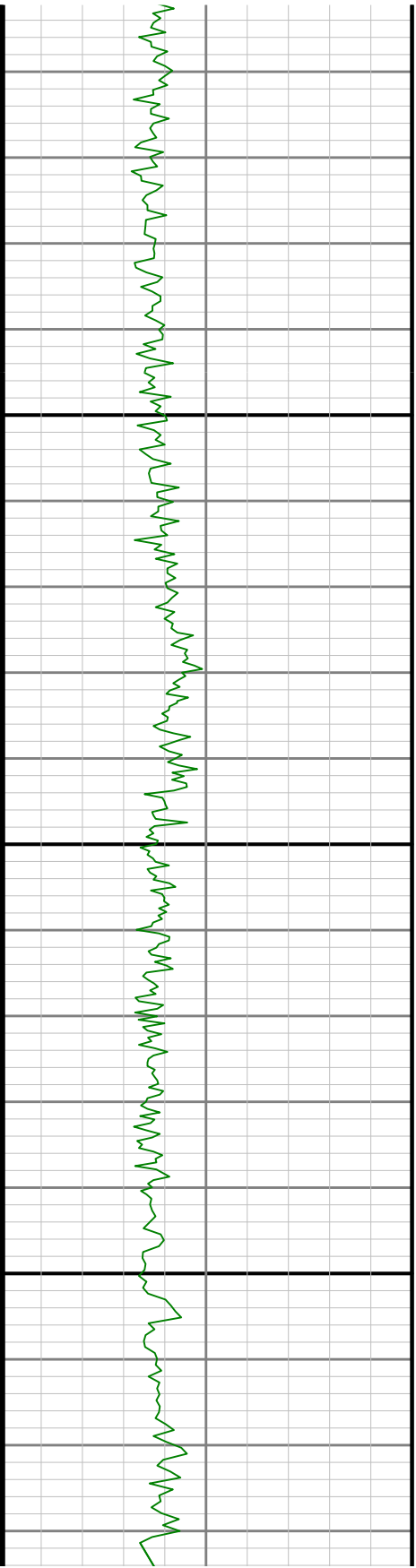
Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
WOB_AVG	Weight On Bit, Average 1 ft Average	klb
GRAM	Gamma Ray - Apparent - Memory 0.5 ft Average	API
TCDM	Directional Real-Time Survey Temperature	degF

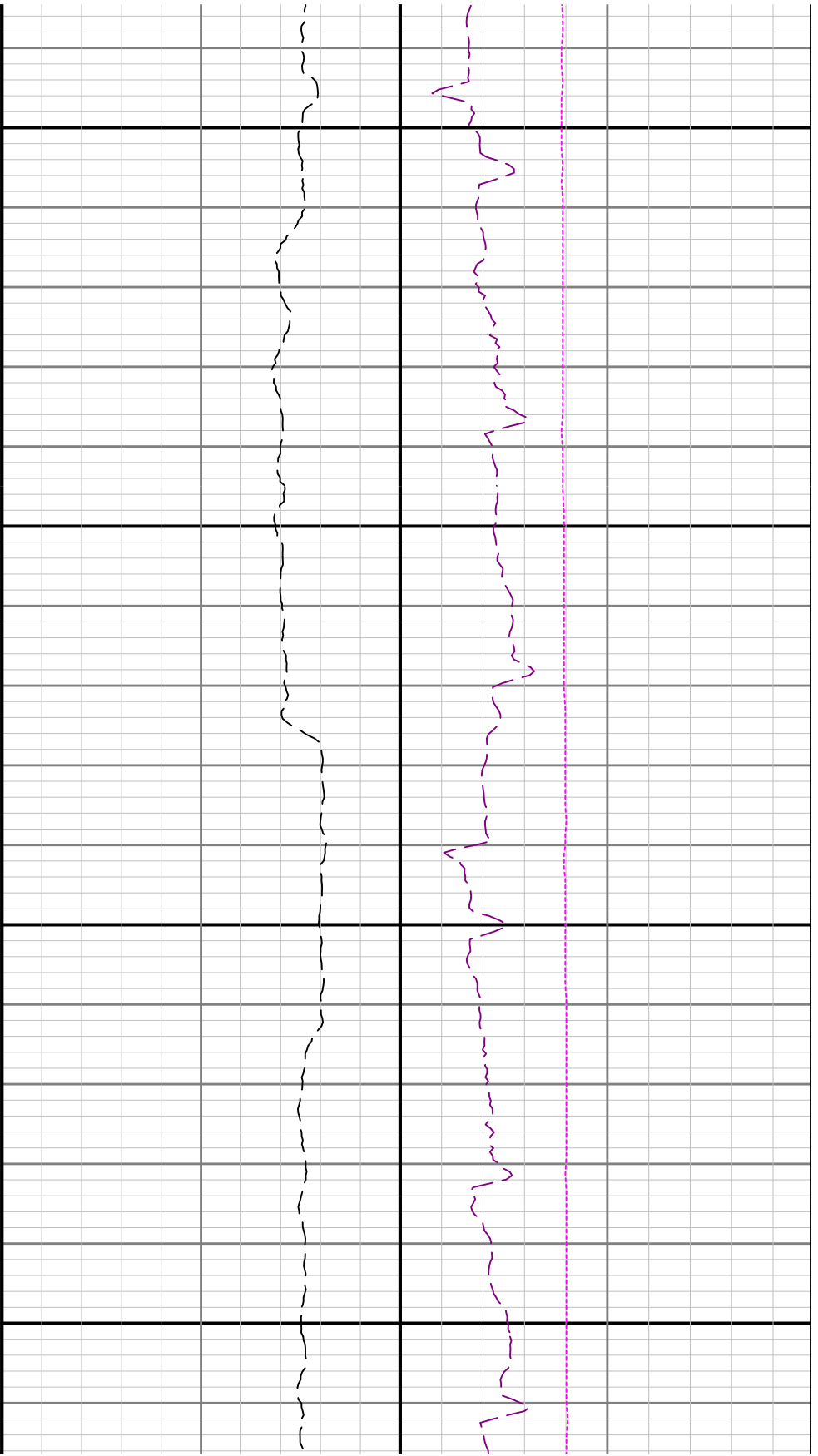
Gamma Ray - Apparent 0.5 ft Average GRAM	TVD 1-240 feet	Depth Averaged ROP 3 ft Average ROPA	Weight On Bit, Average 1 ft Average WOB_AVG
0 300		1000 _____ 0	0 _____ 50
API		ft/h	klb
			Downhole Temperature TCDM
			0 _____ 300
			degF





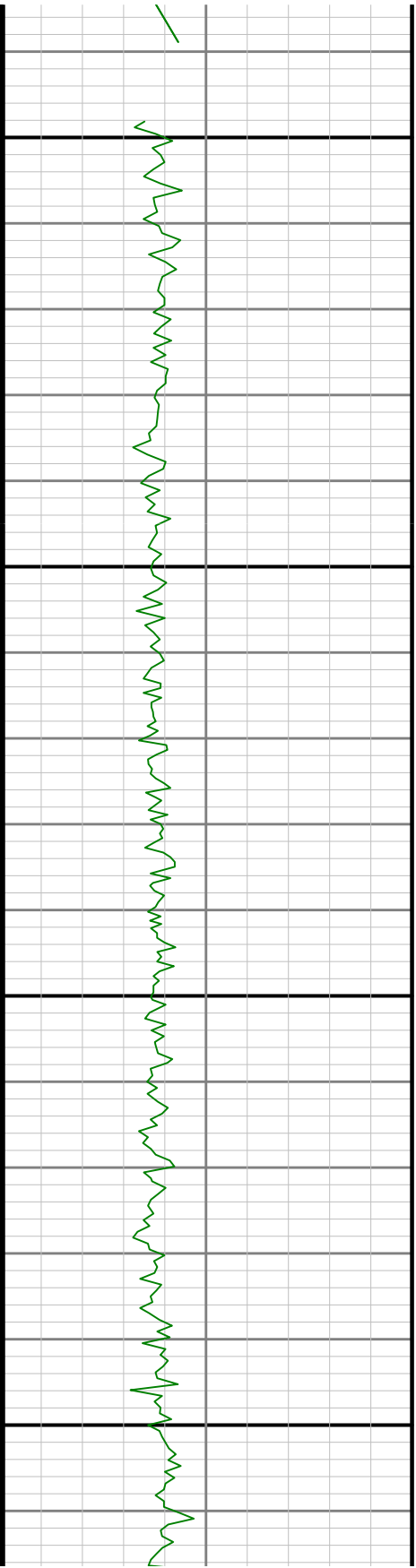
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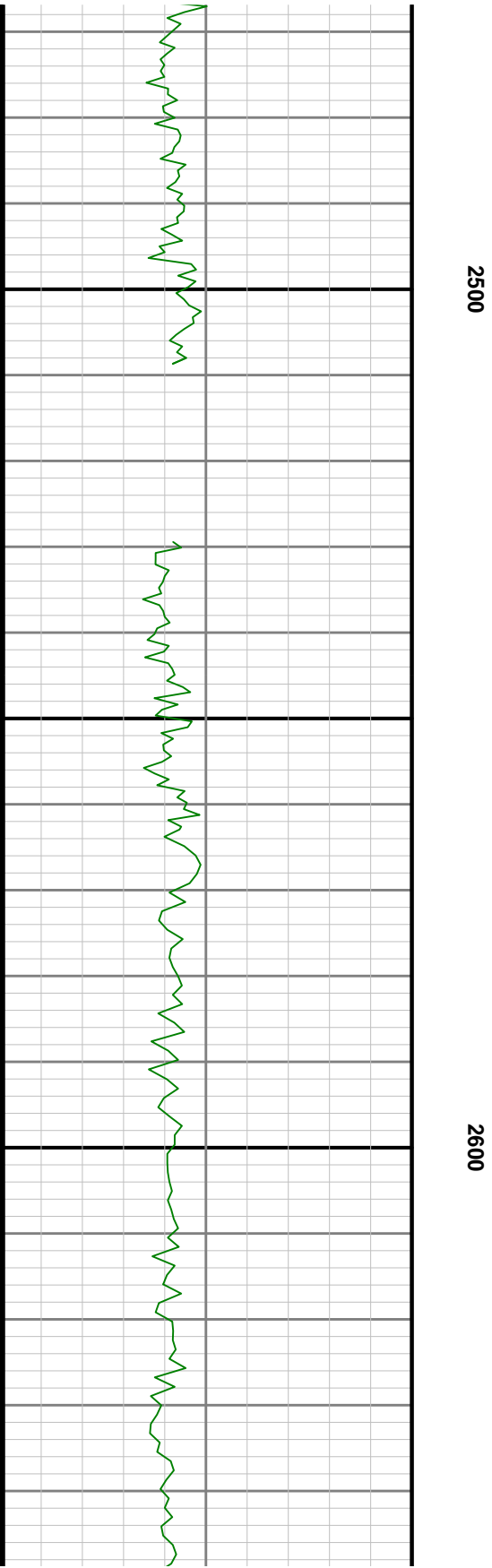


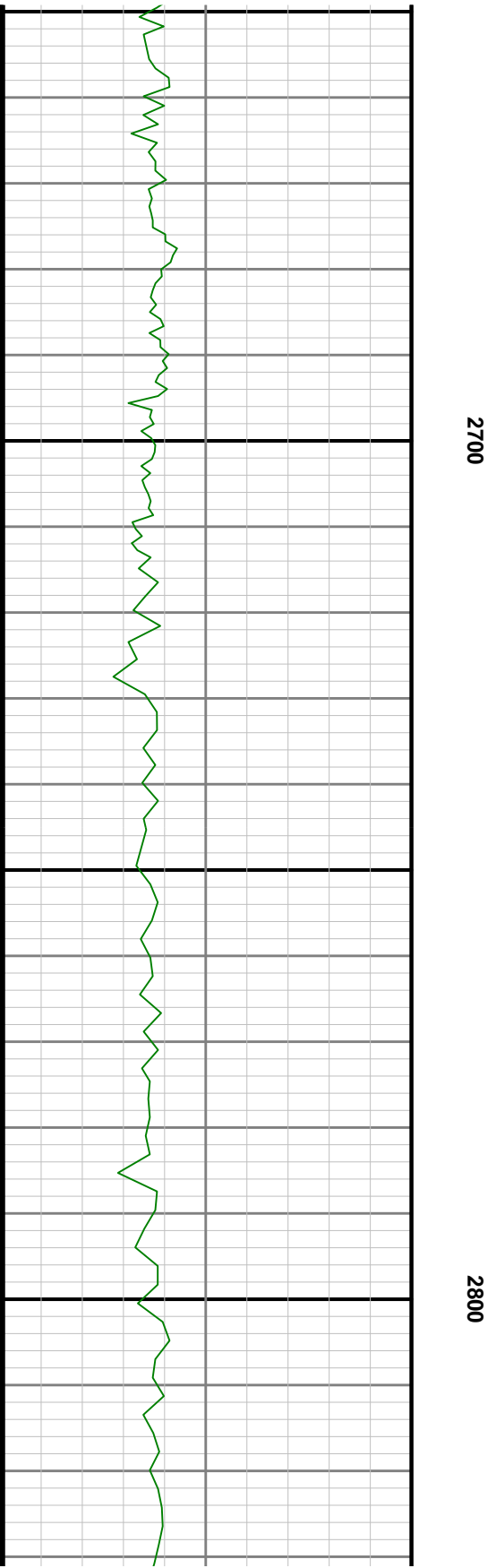


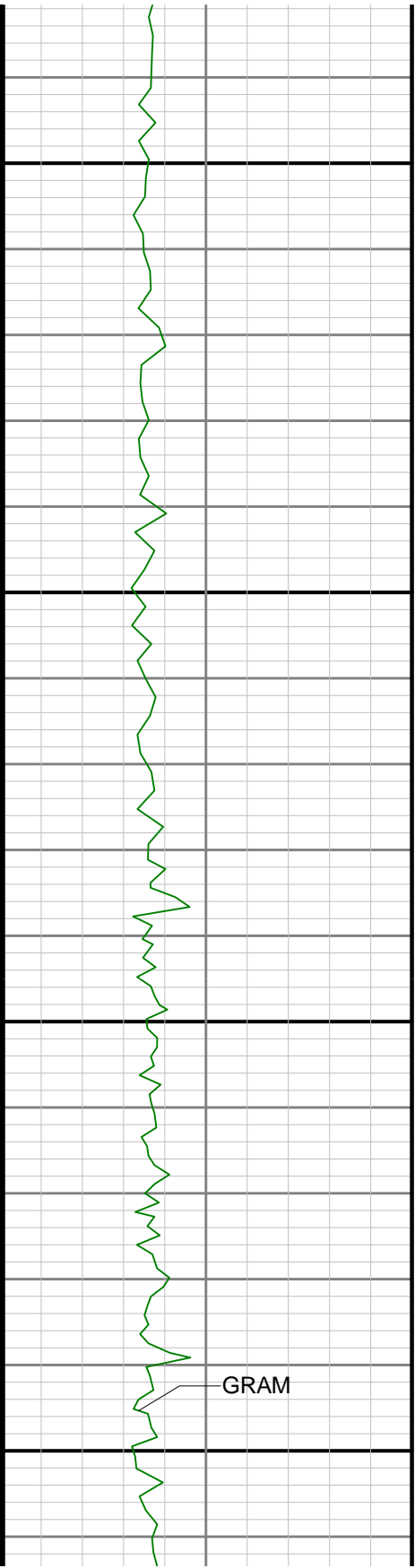
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2400





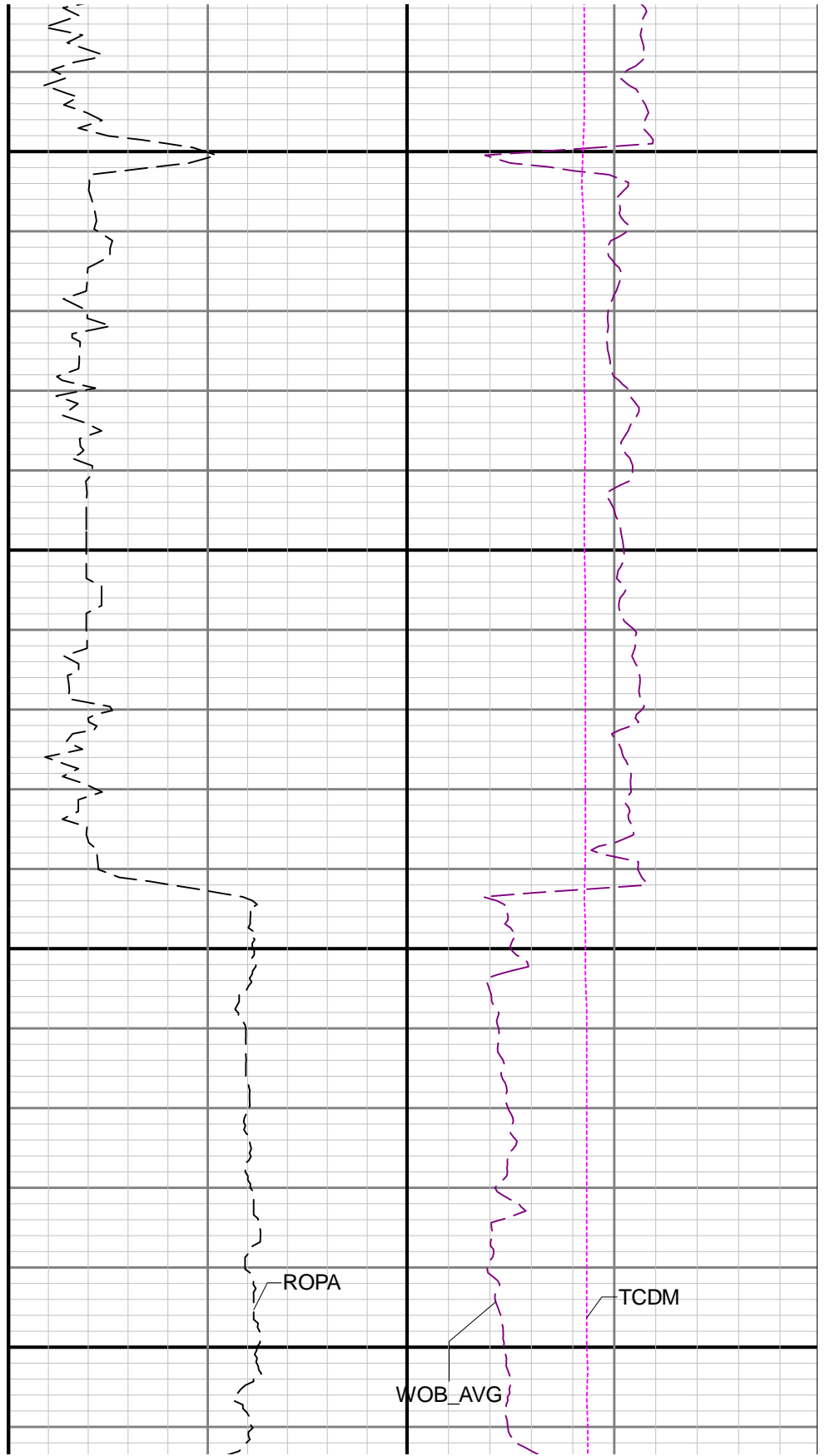




2900

3000

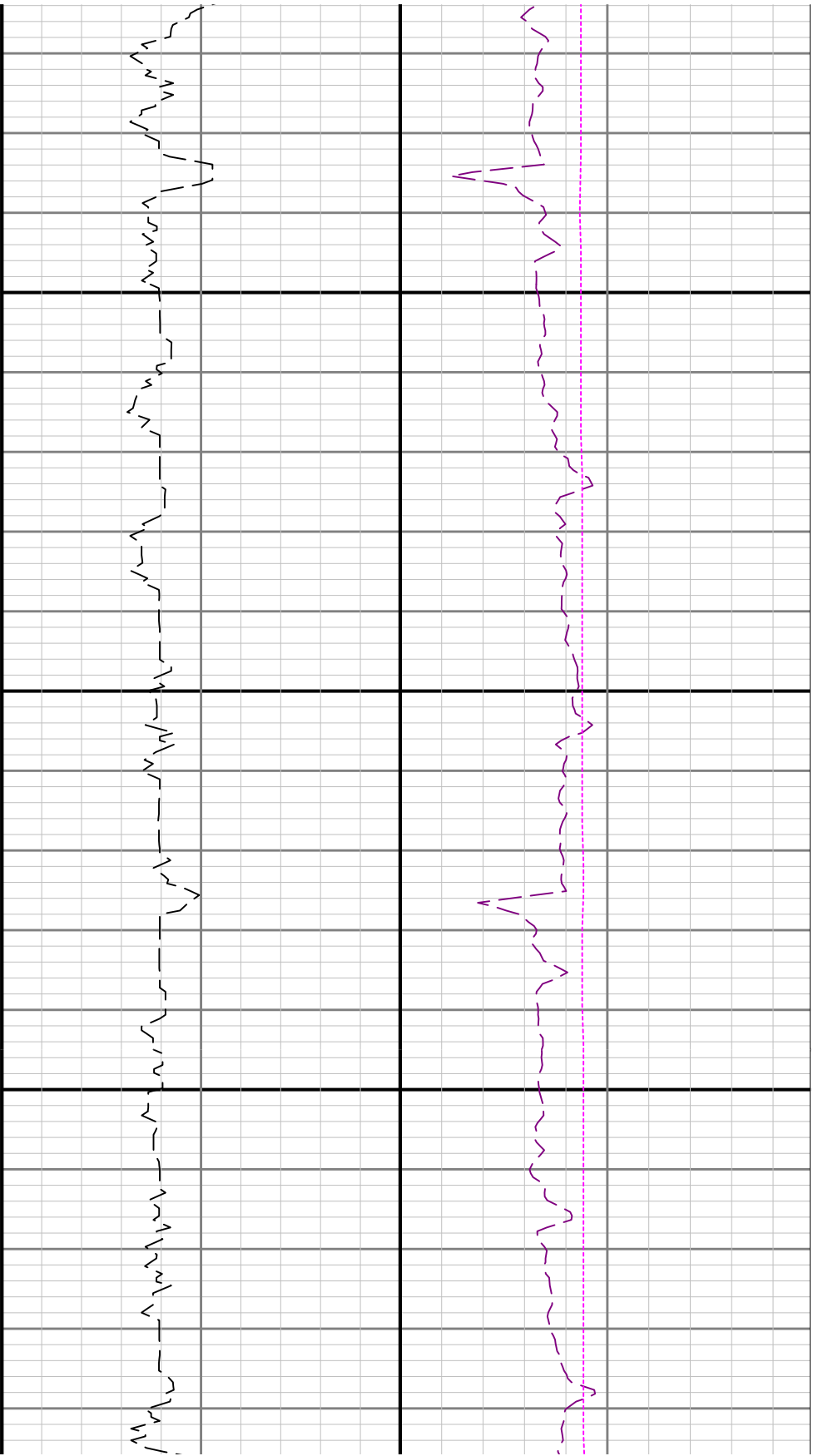
GRAM



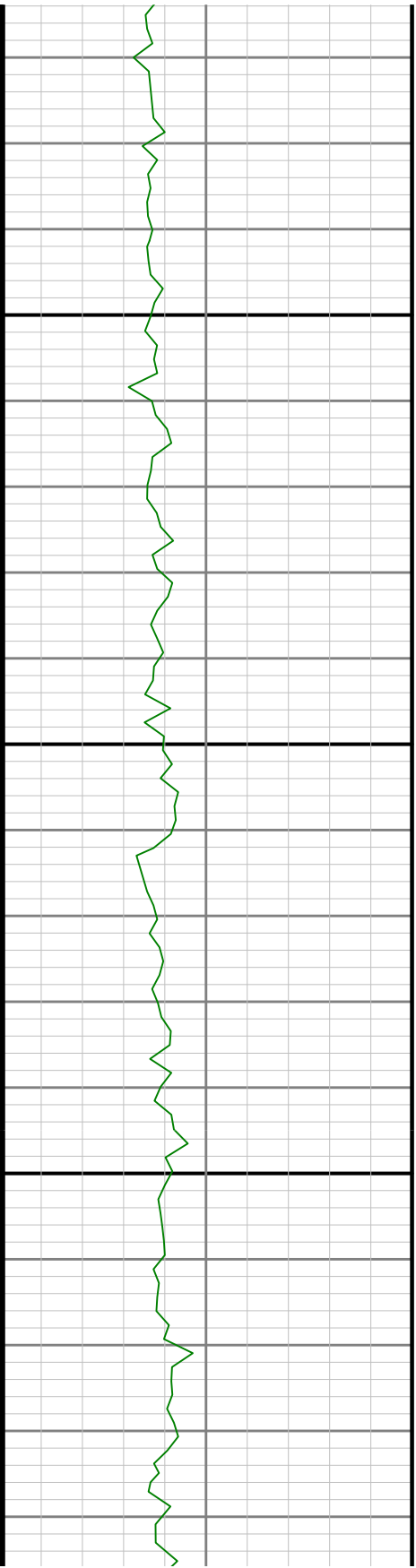
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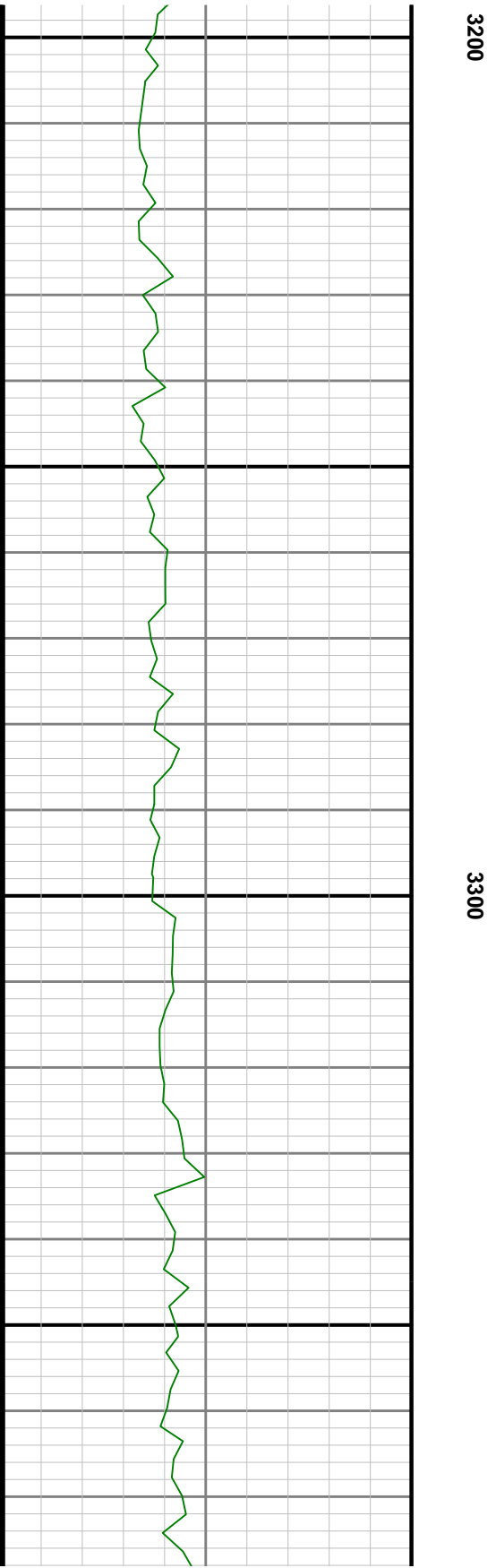
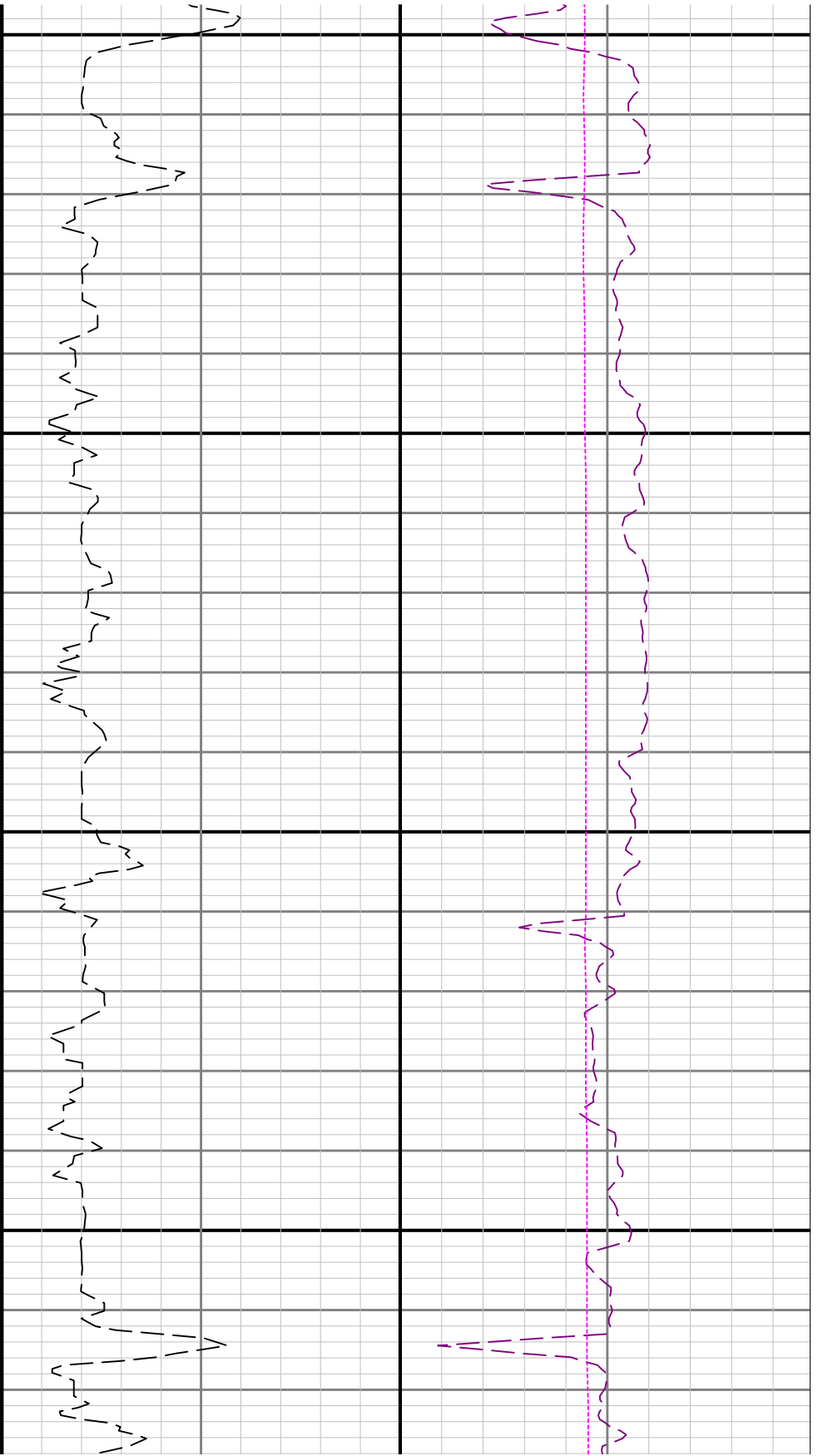
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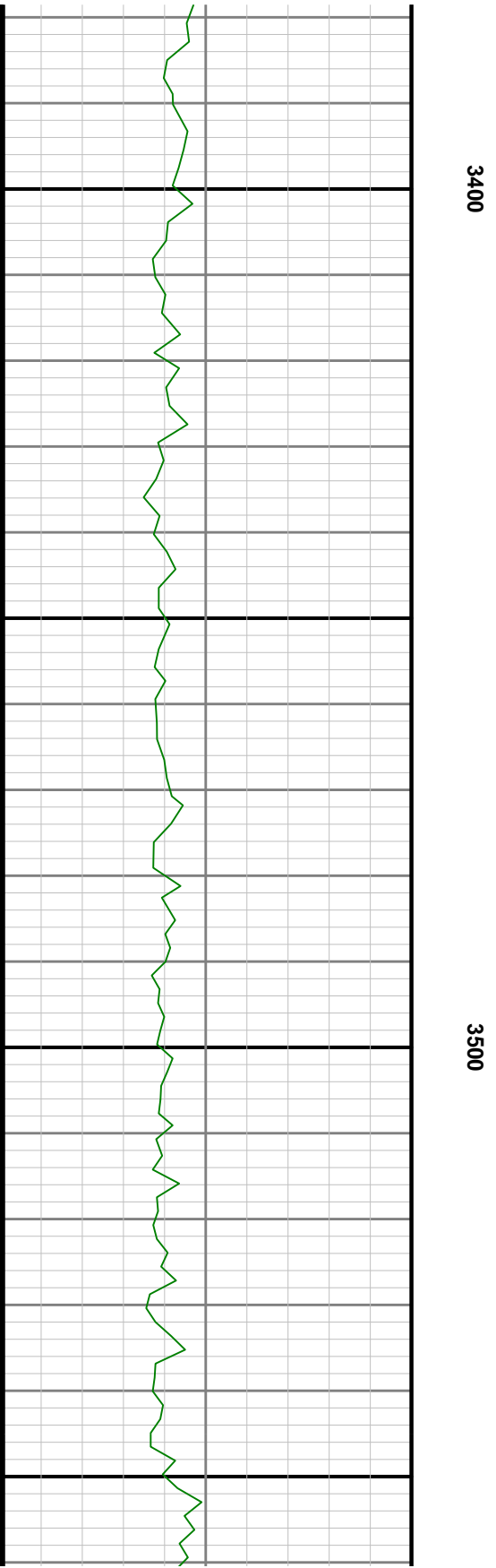
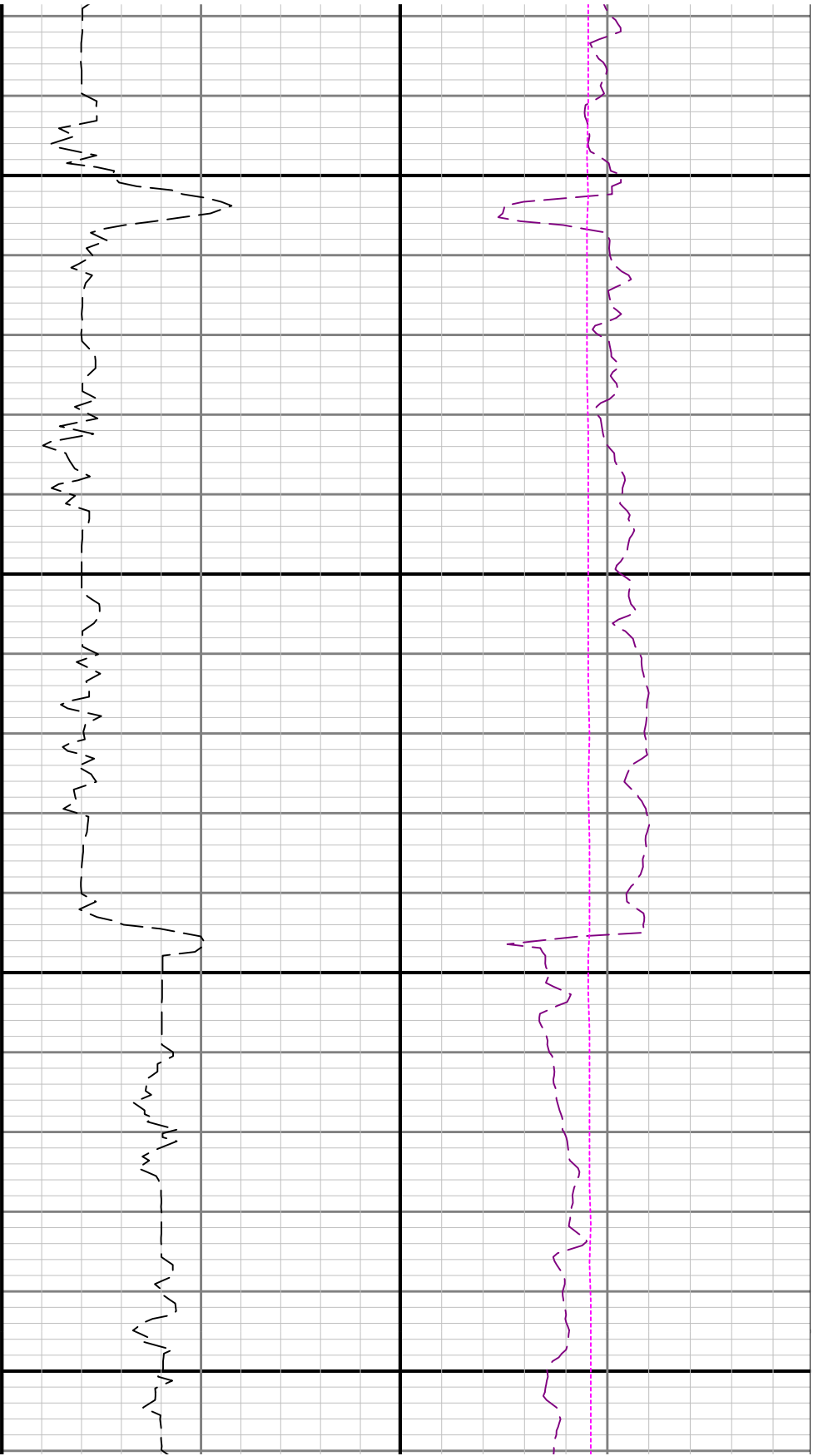
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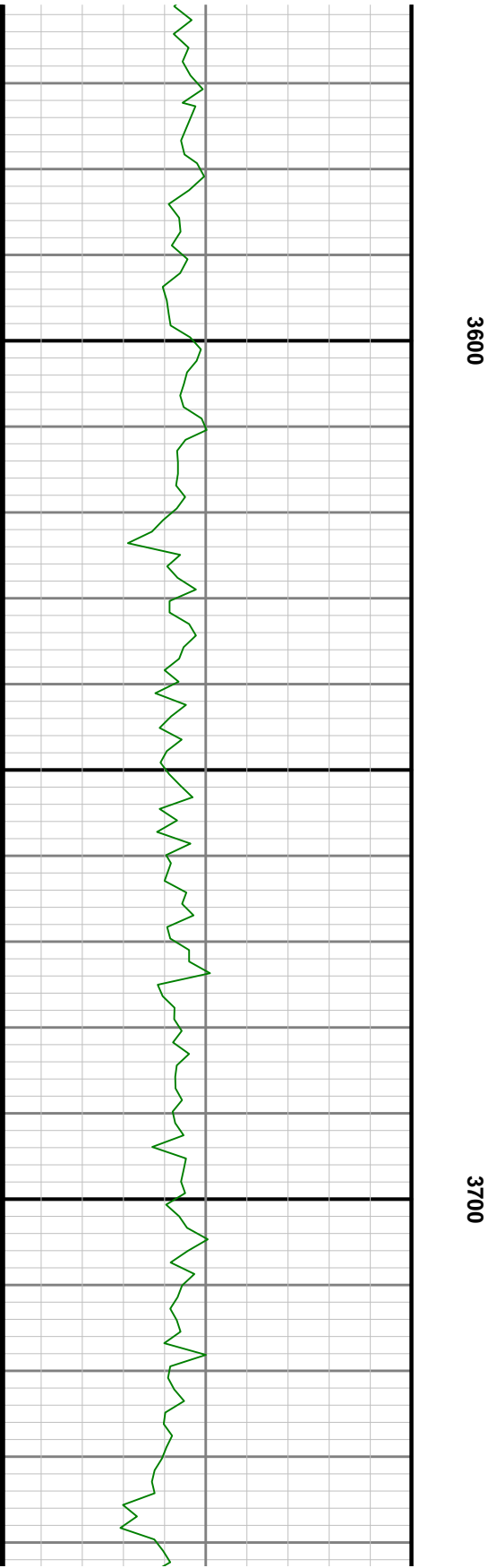
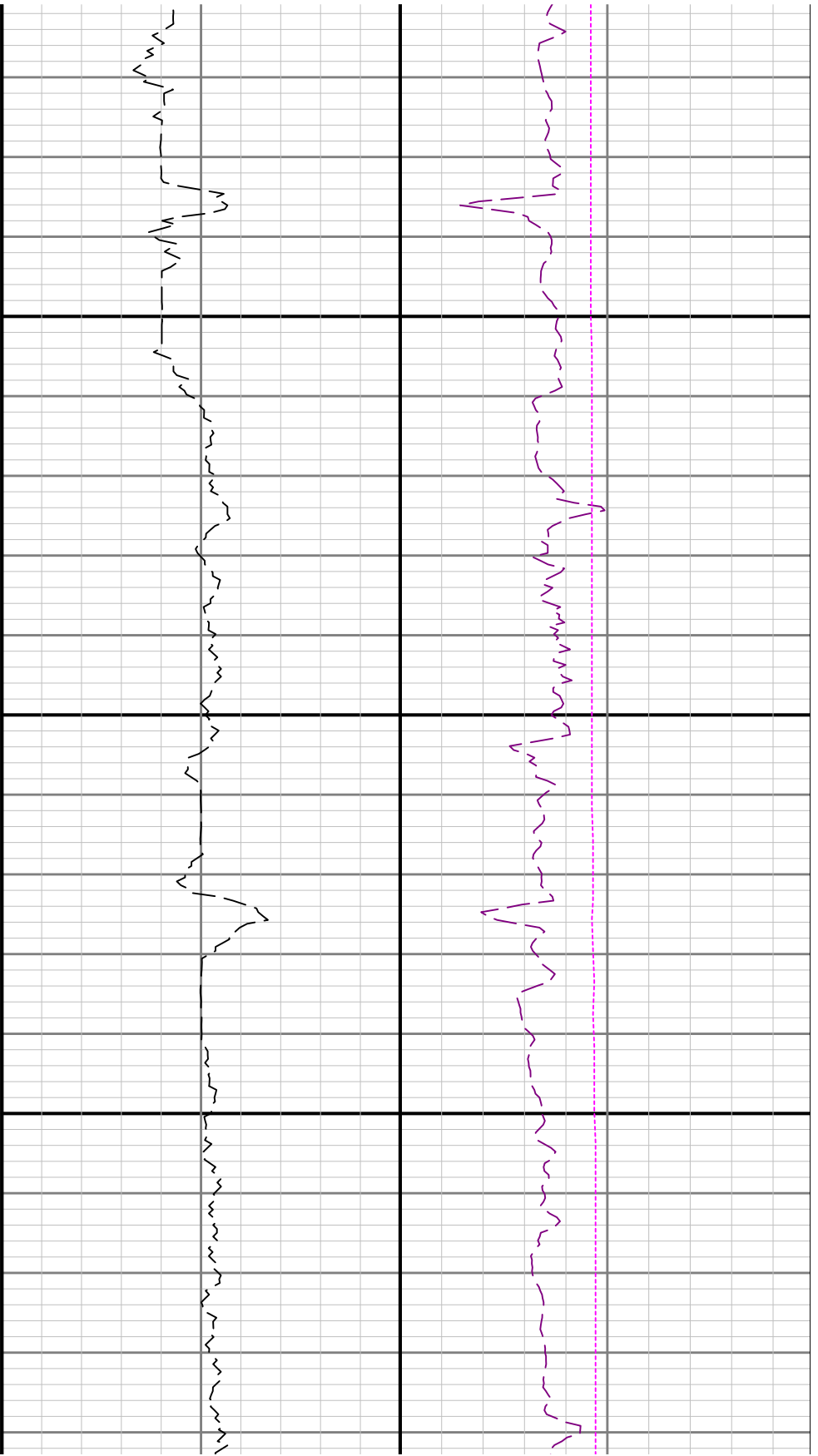


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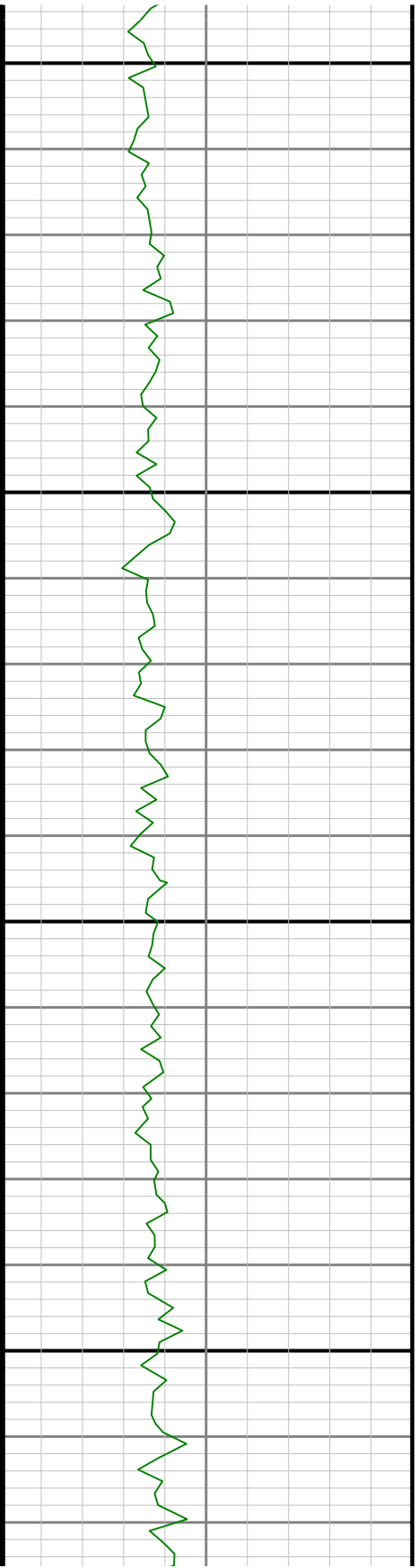


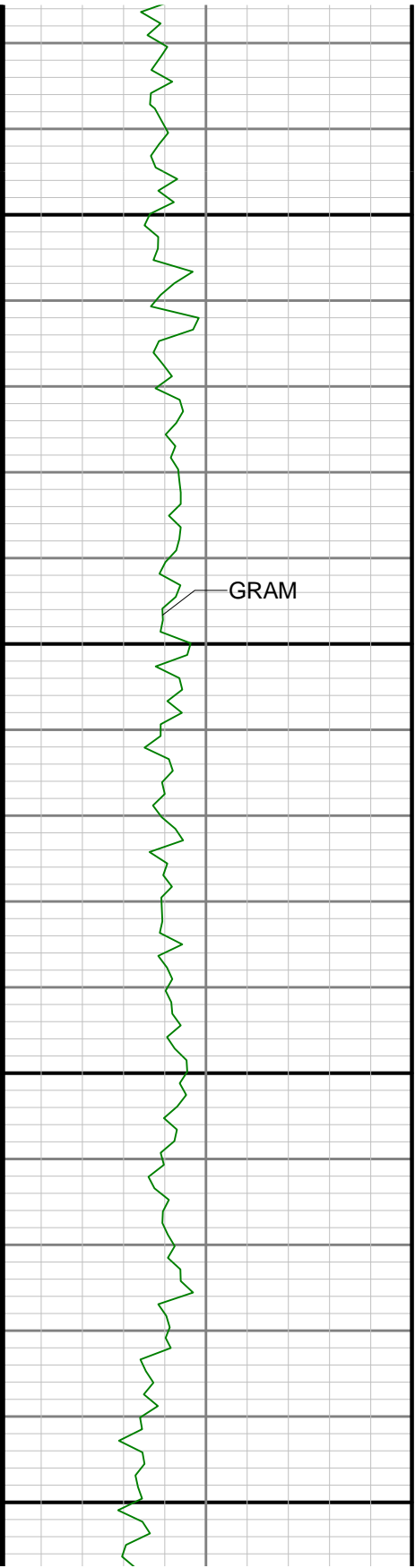




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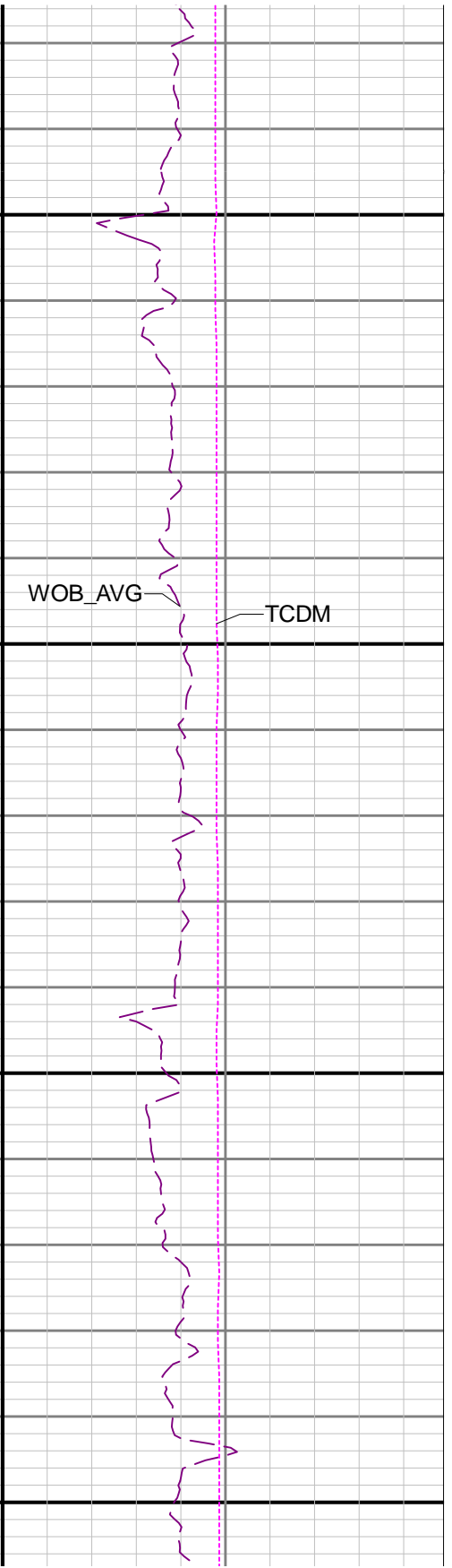
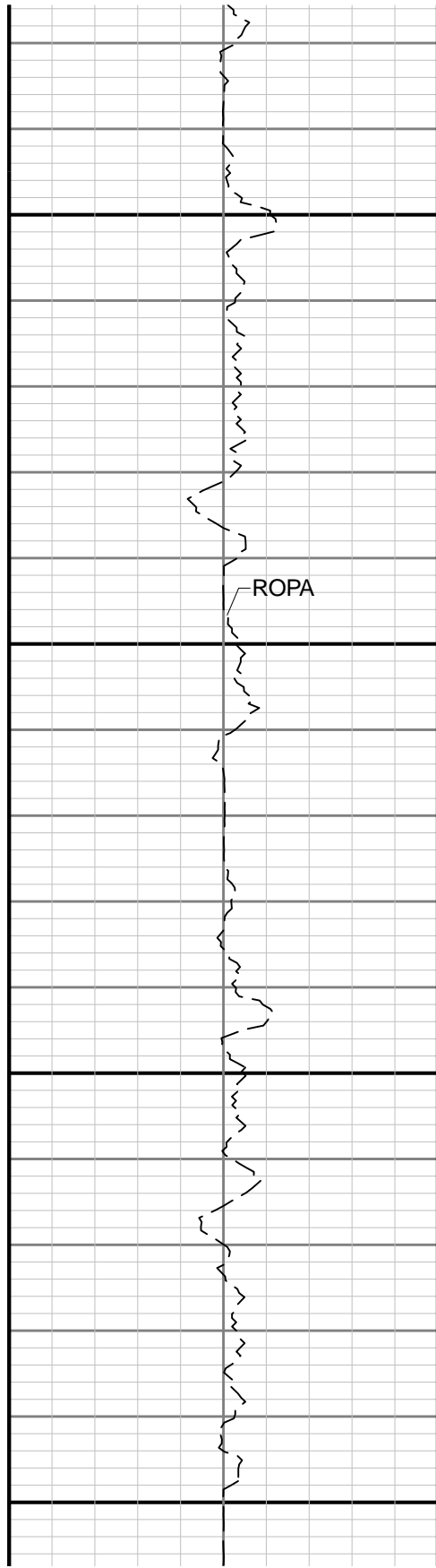
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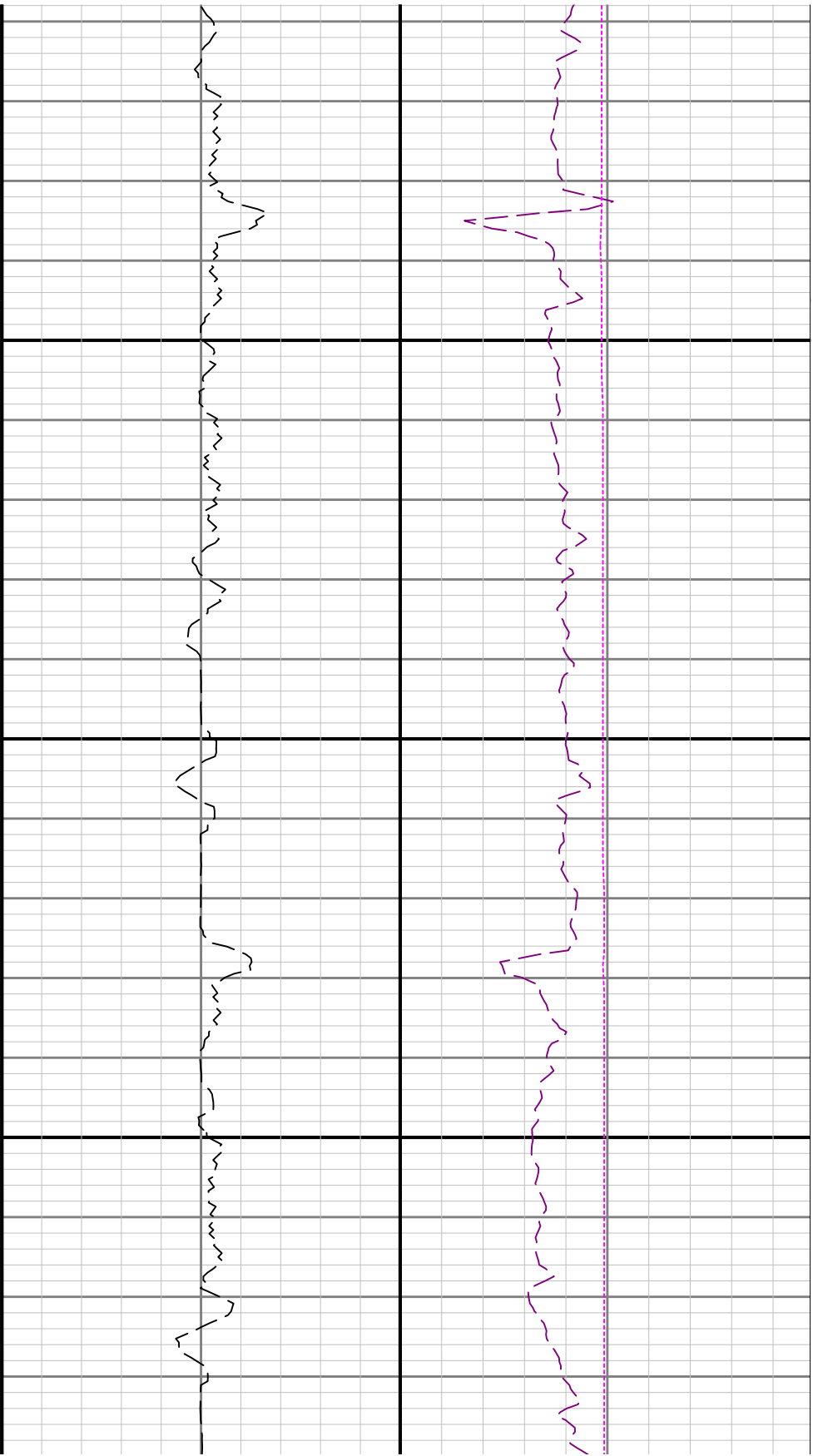




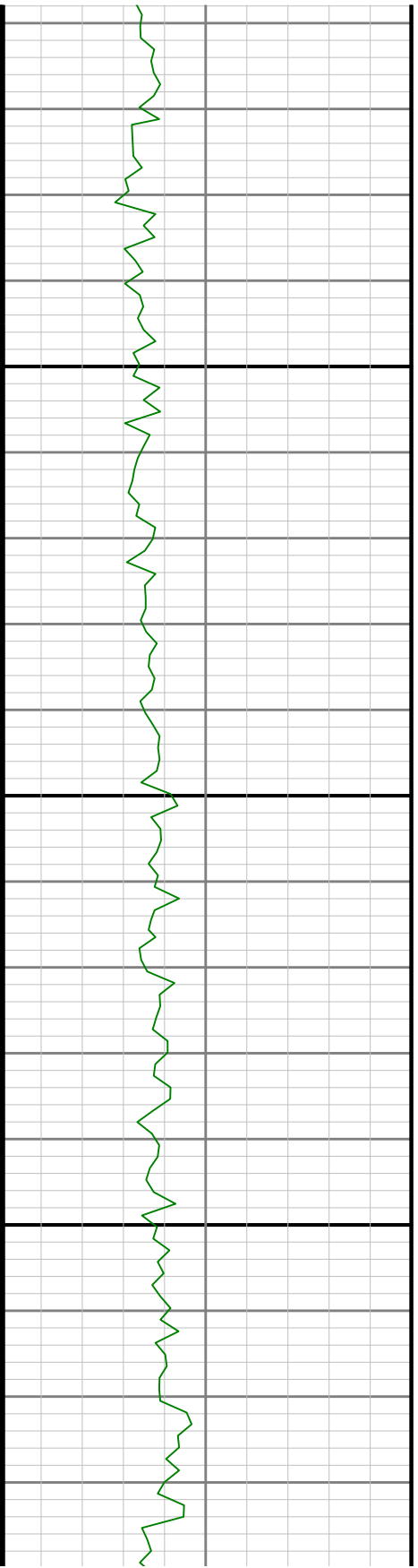
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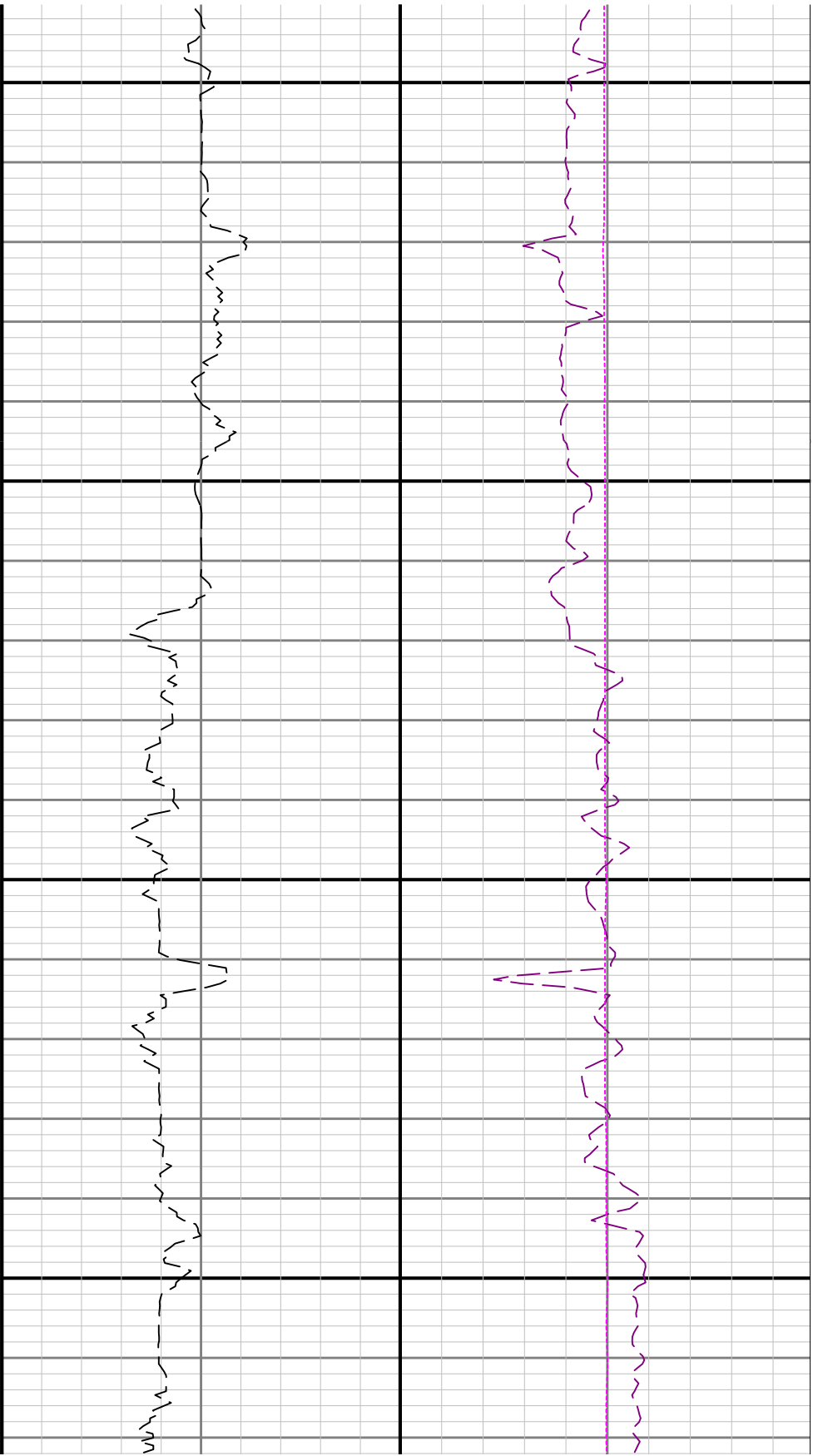
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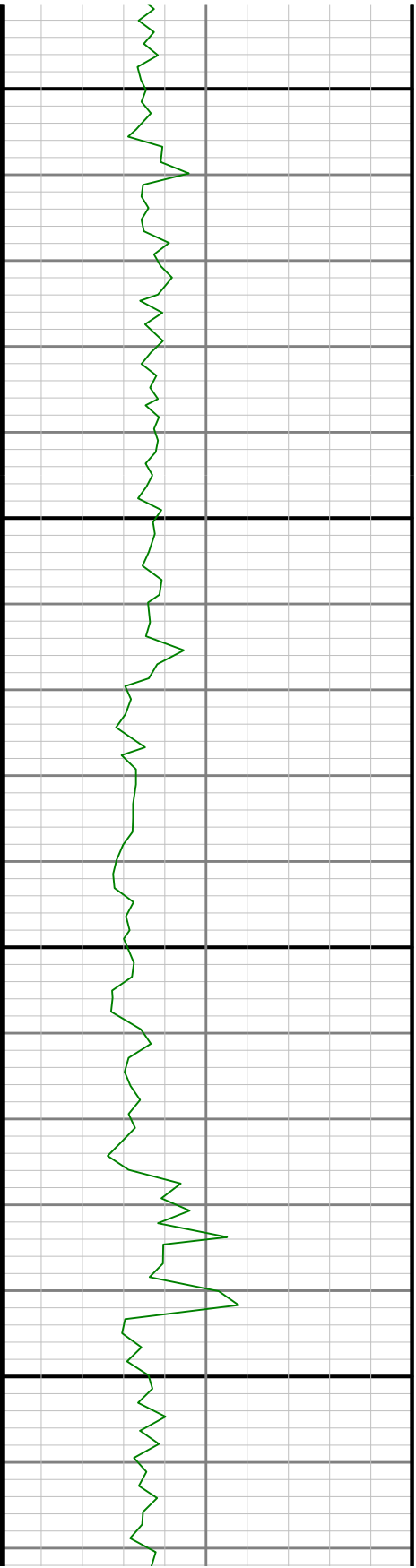
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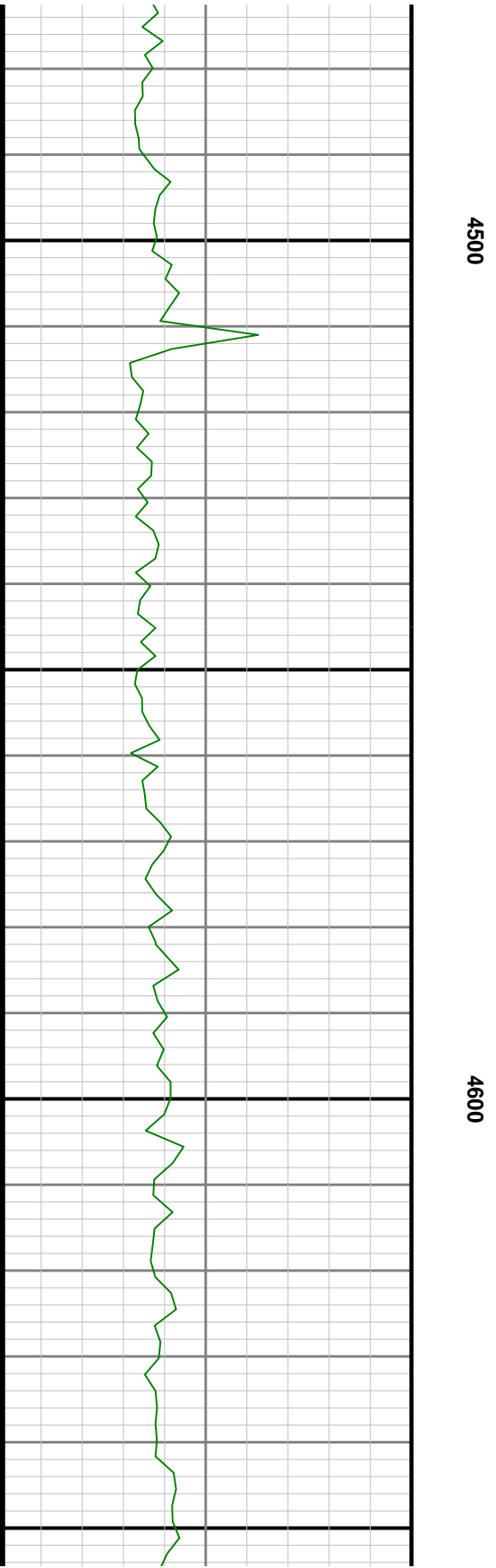
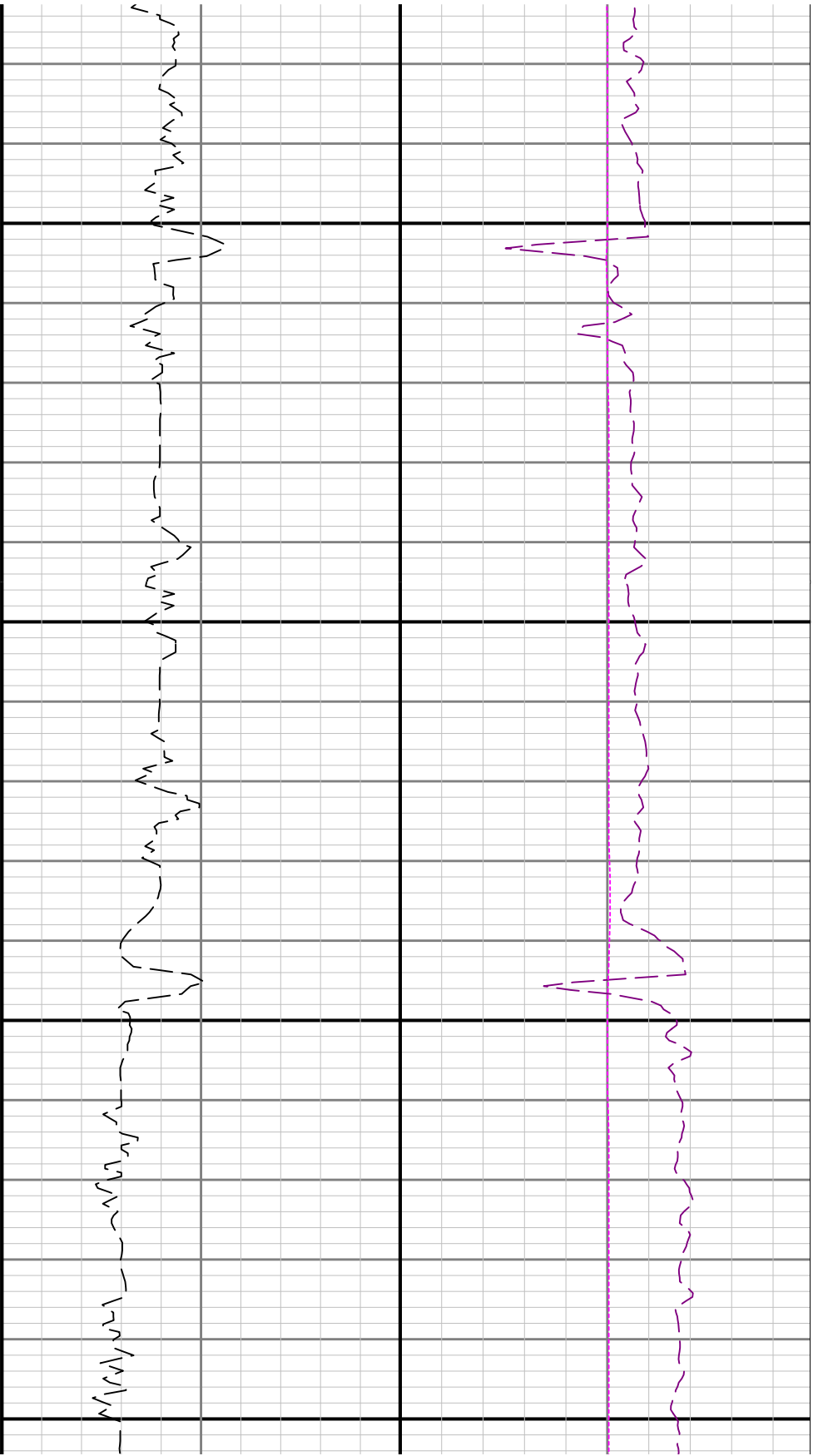


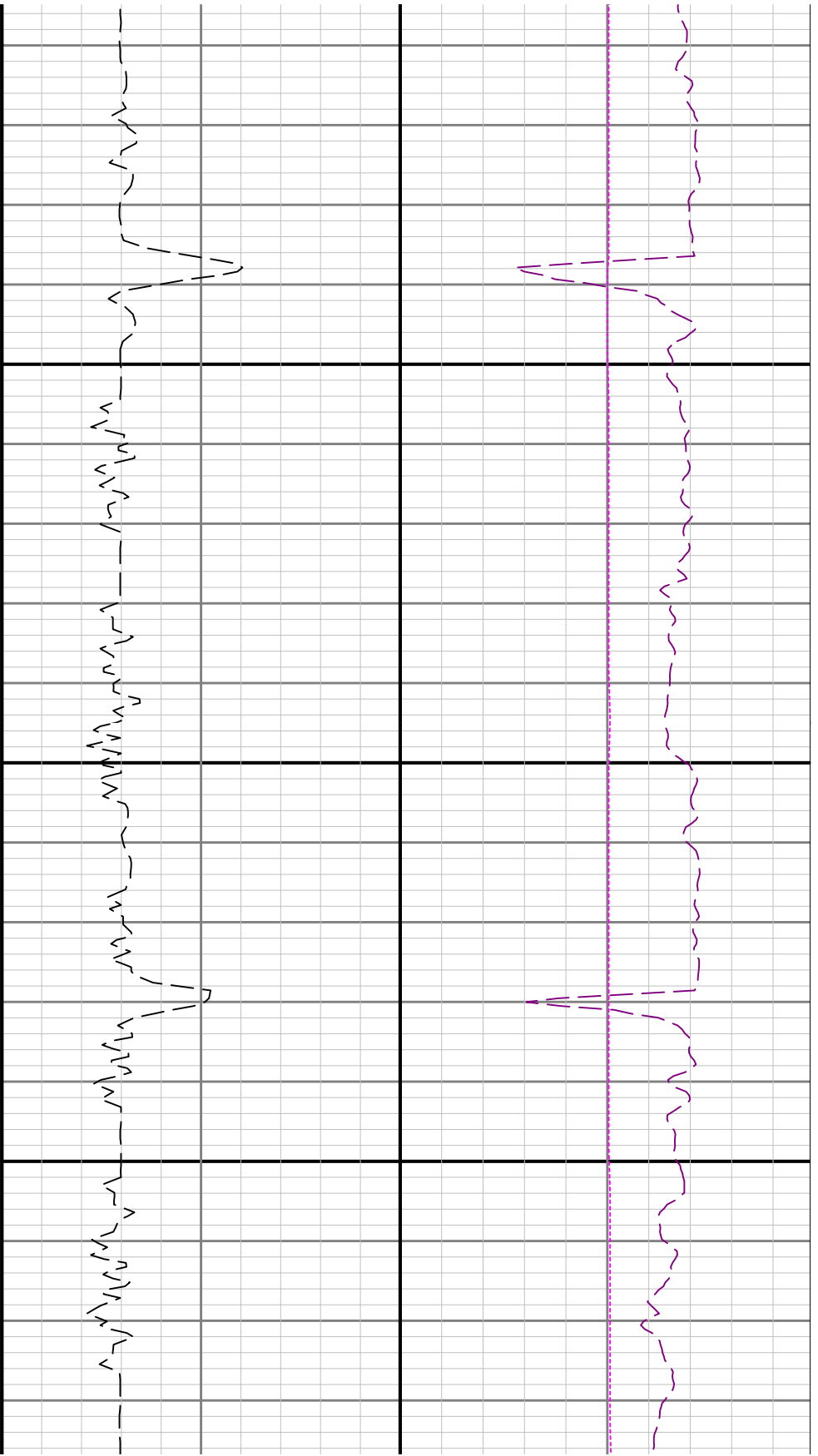


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4400

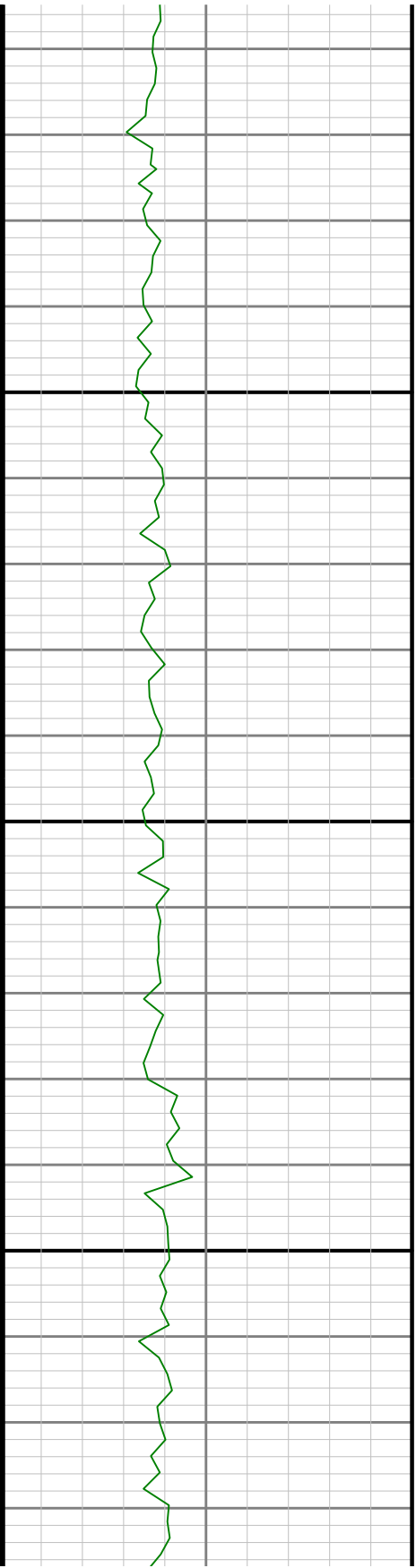


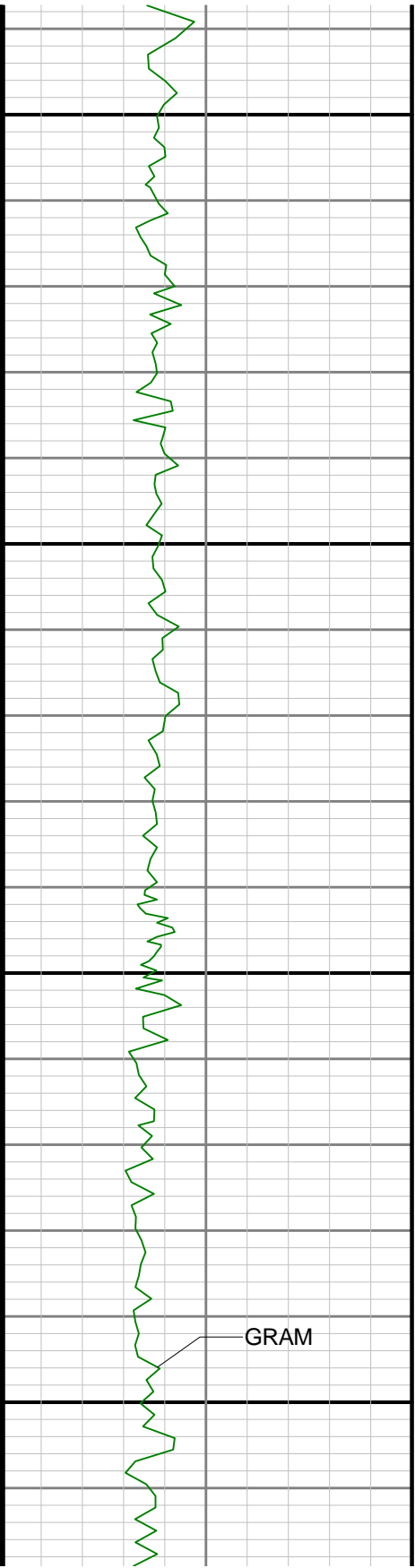




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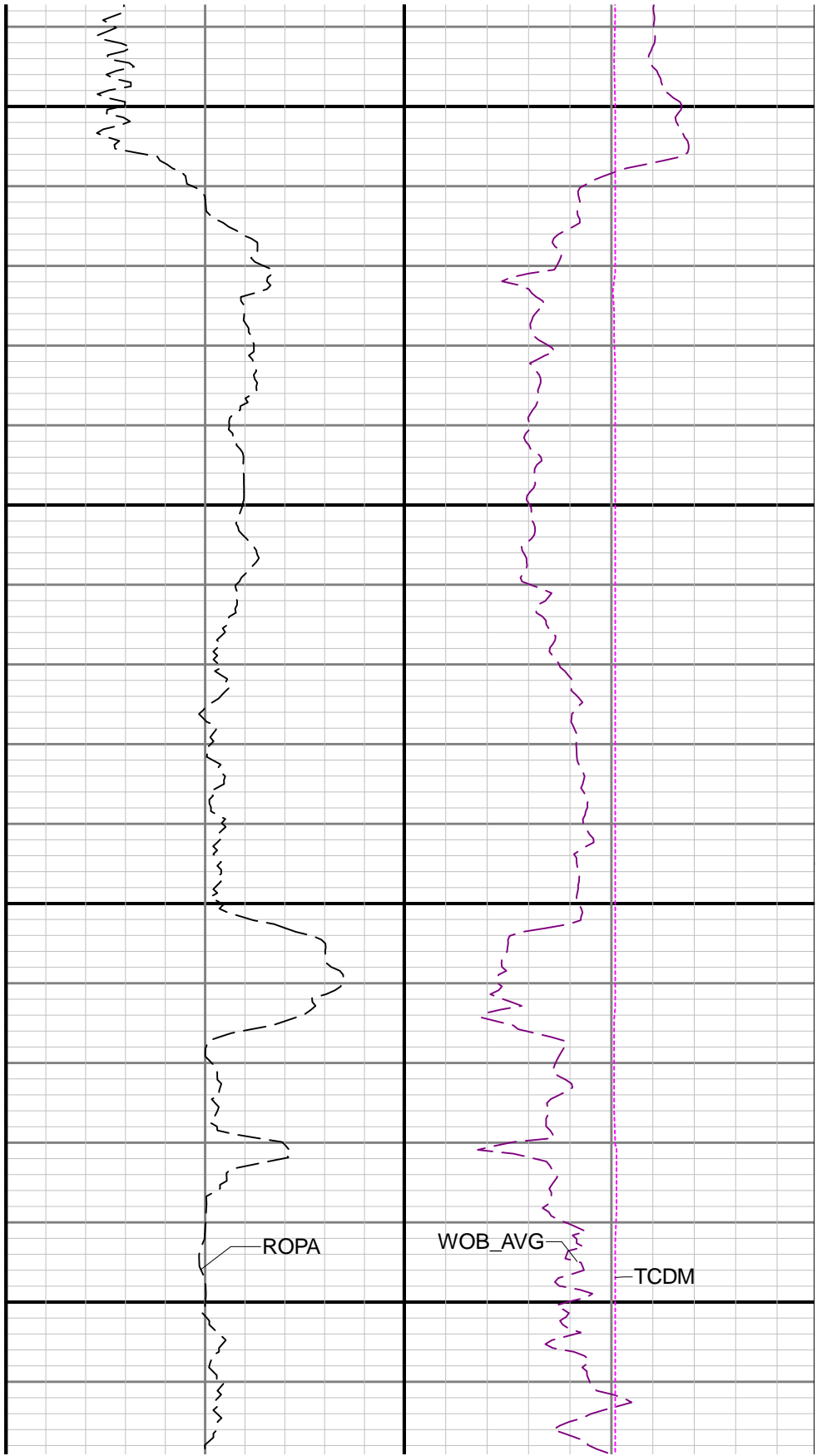




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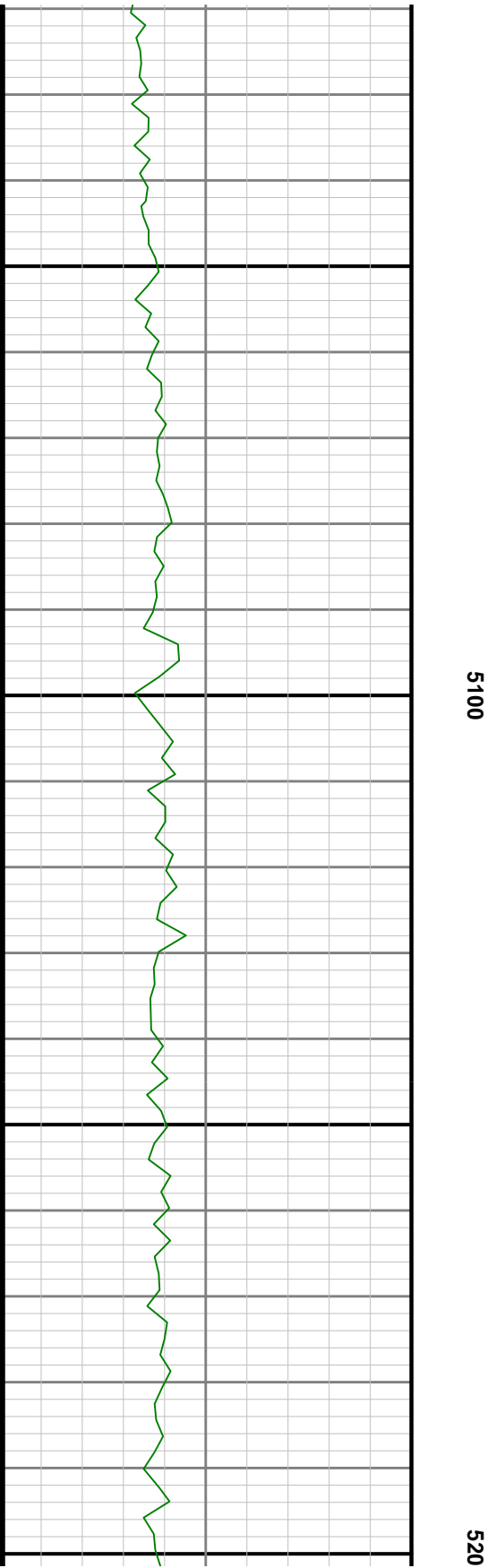
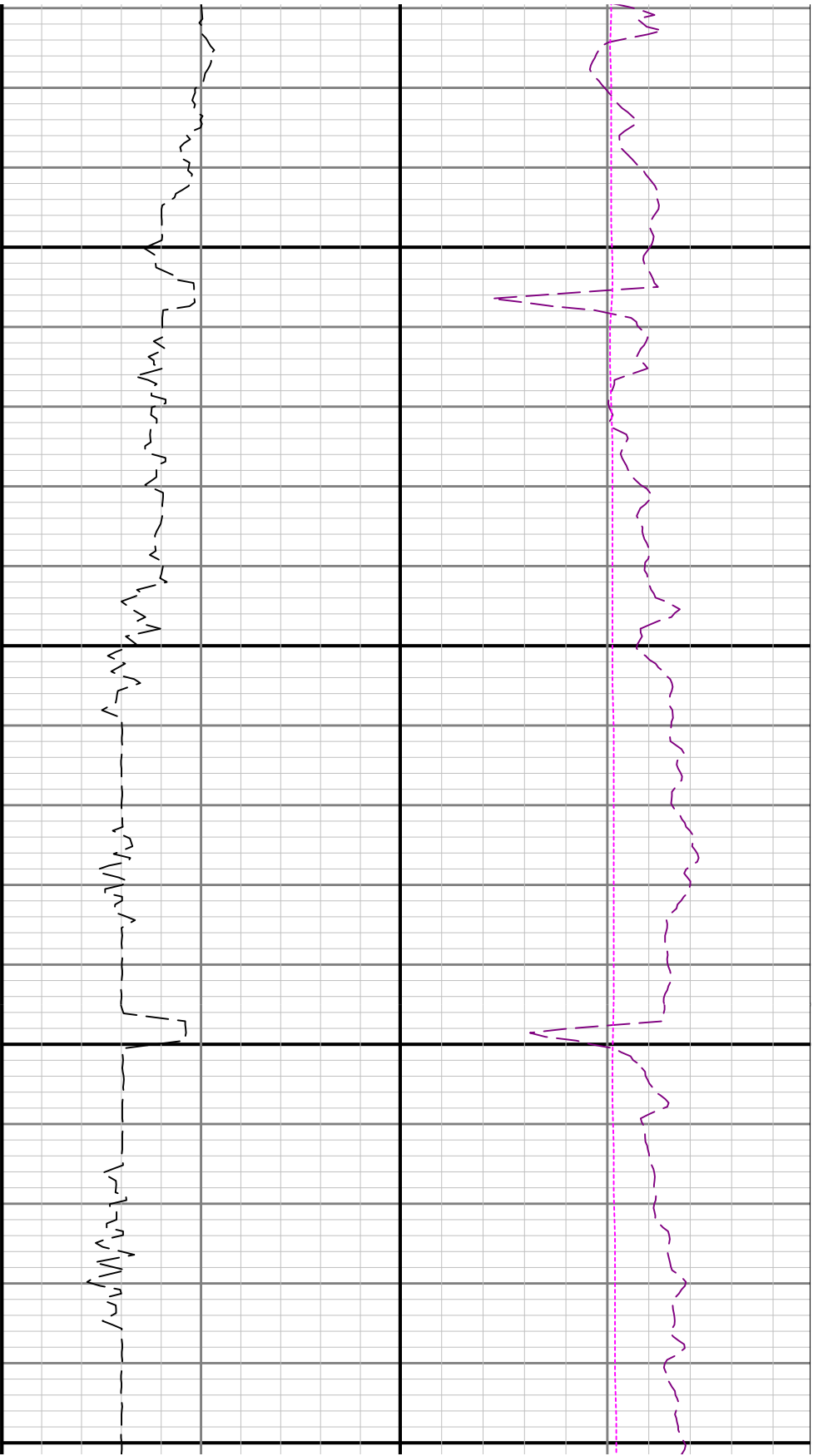
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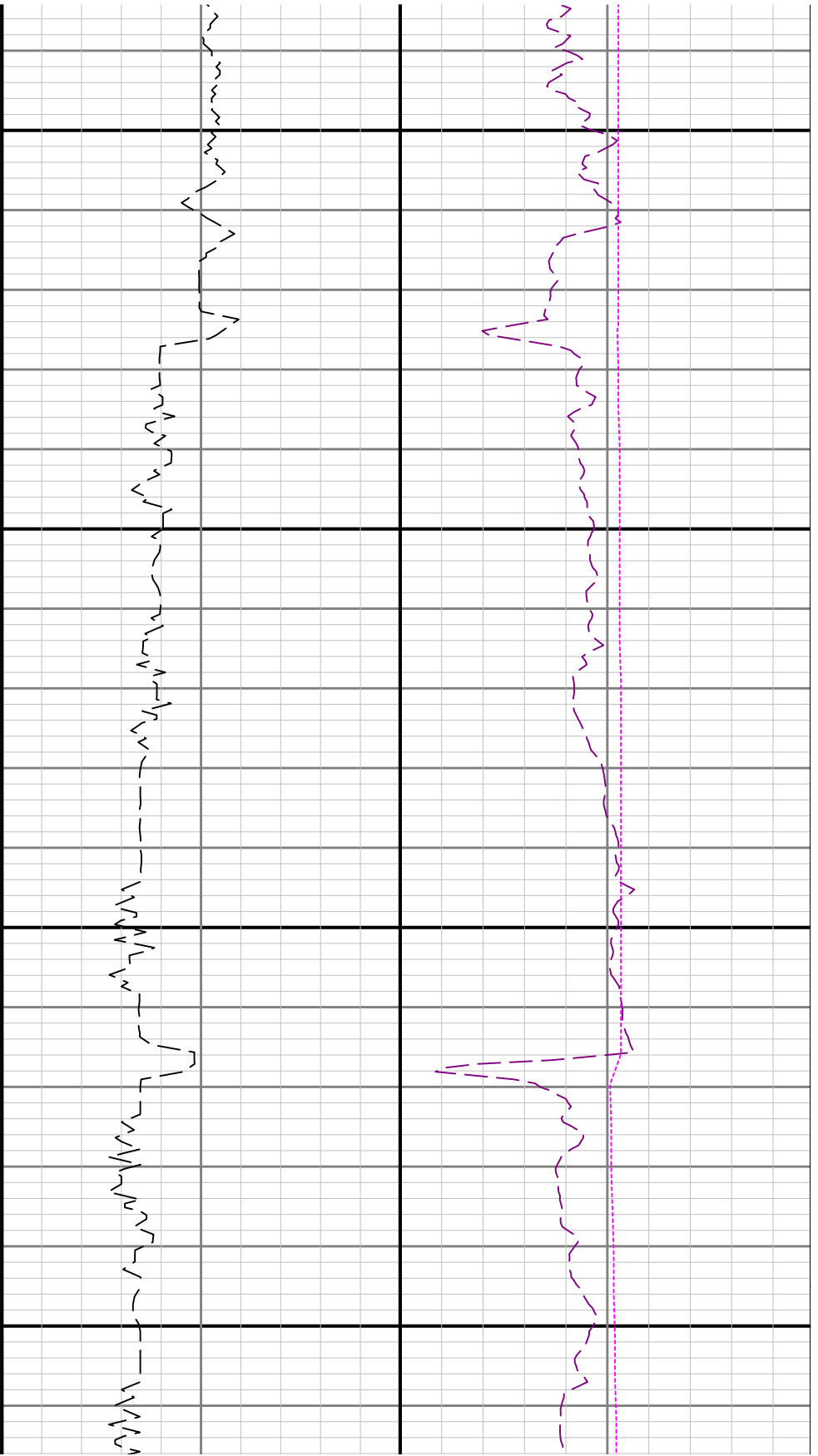


ROPA

WOB_AVG

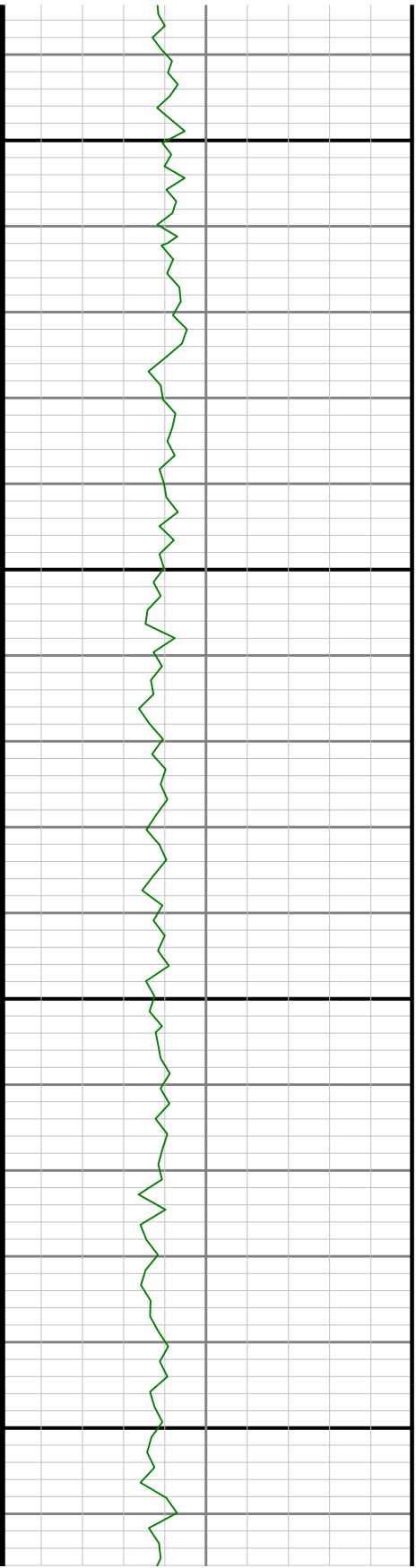
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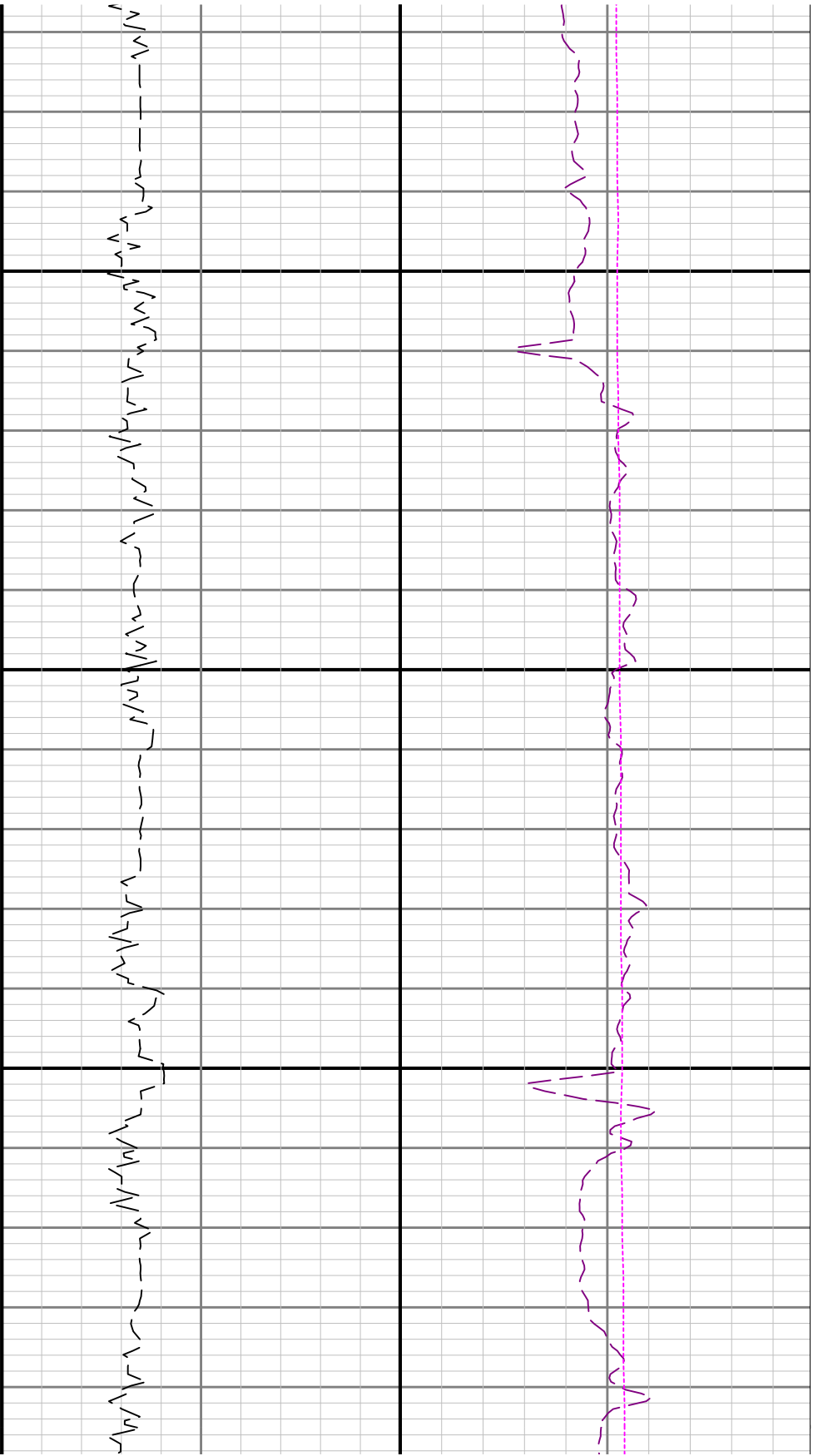




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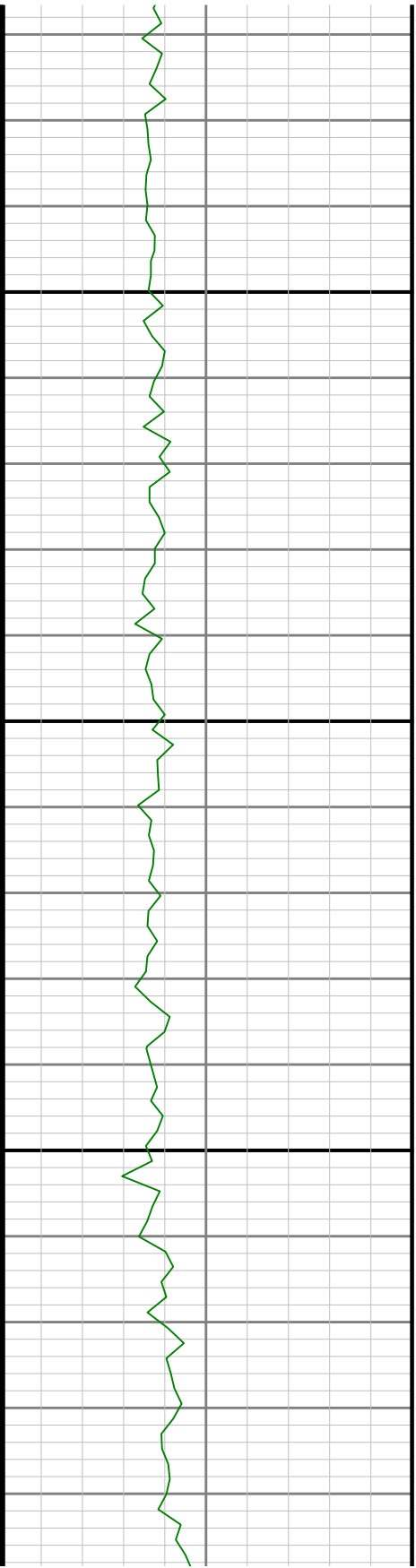
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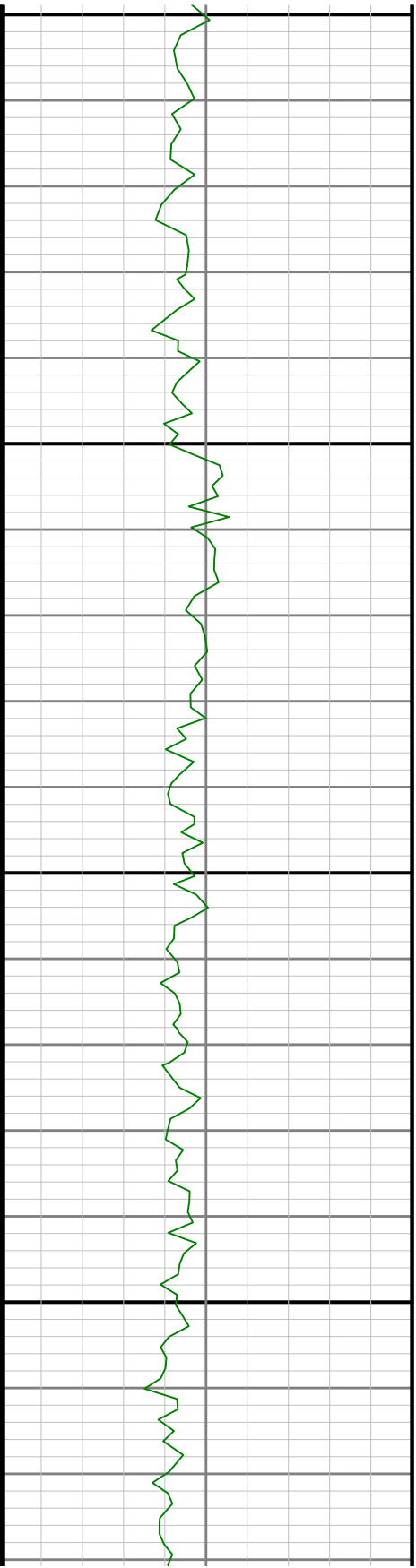




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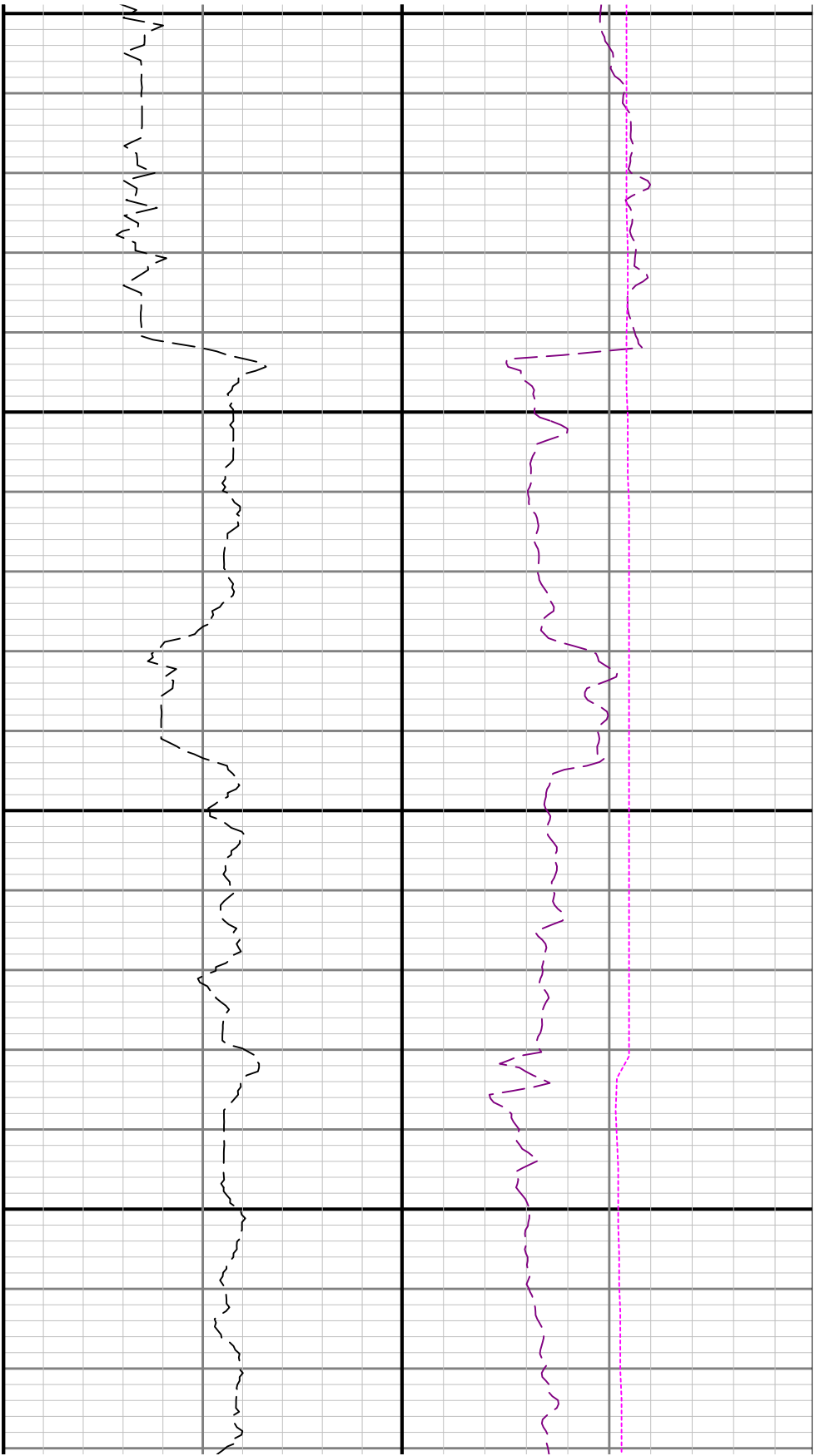
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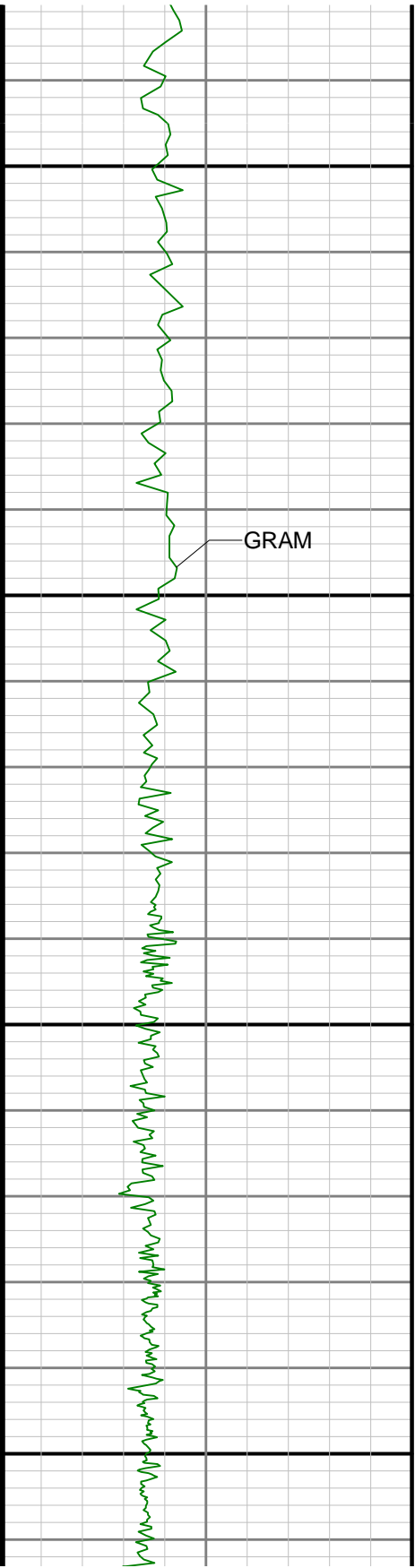




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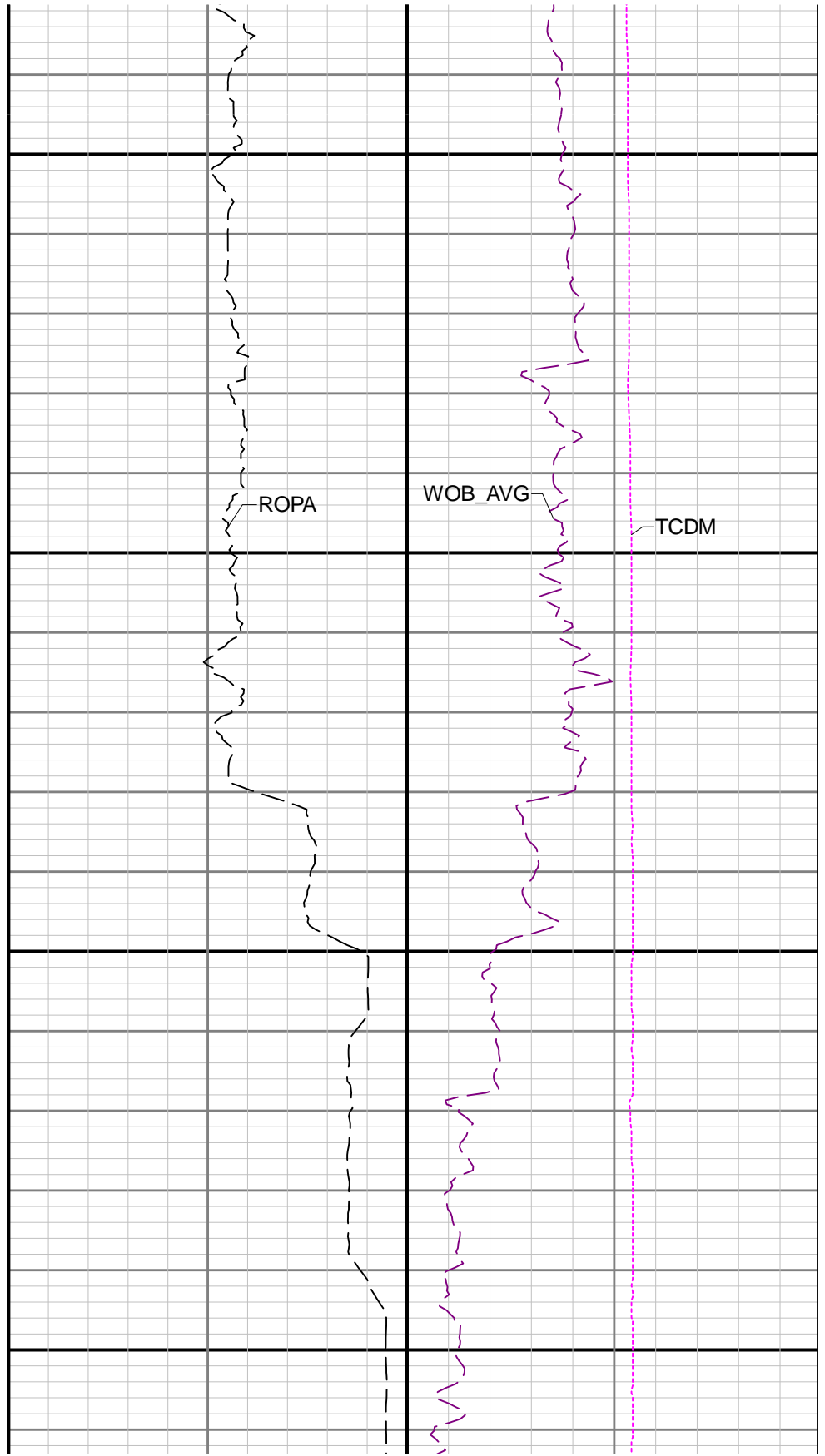
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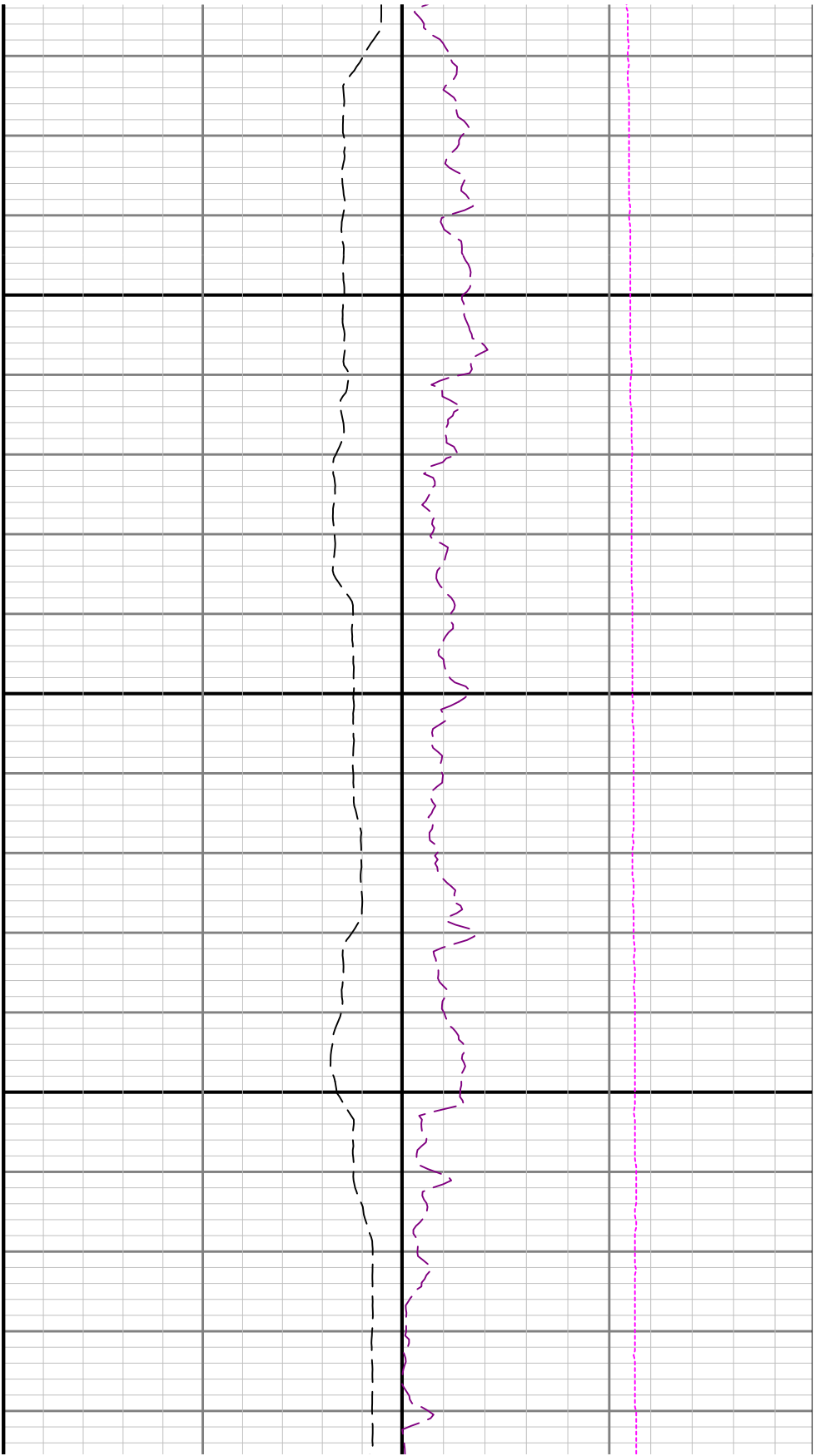




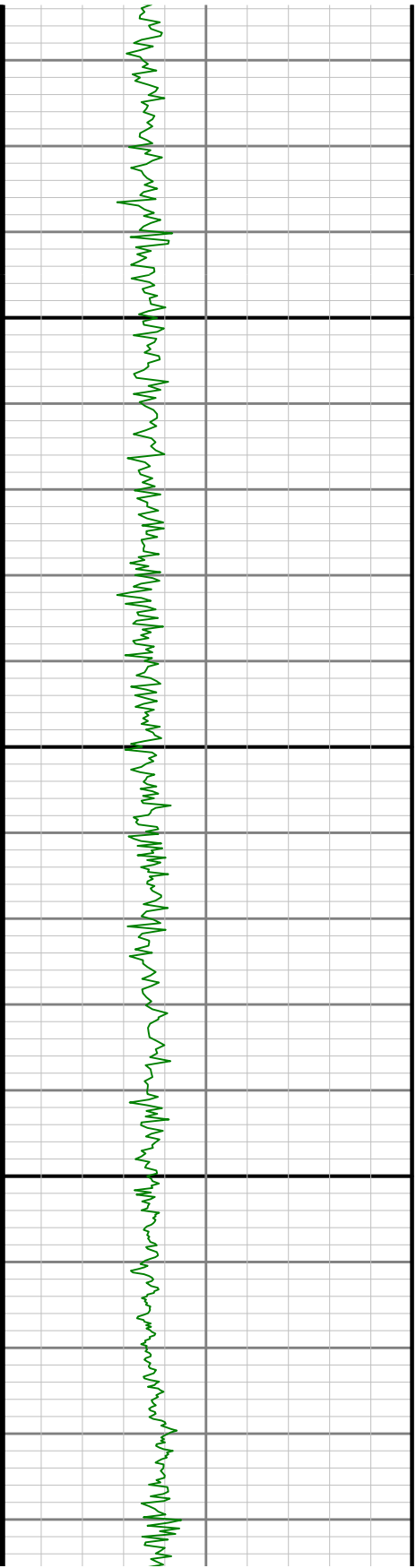
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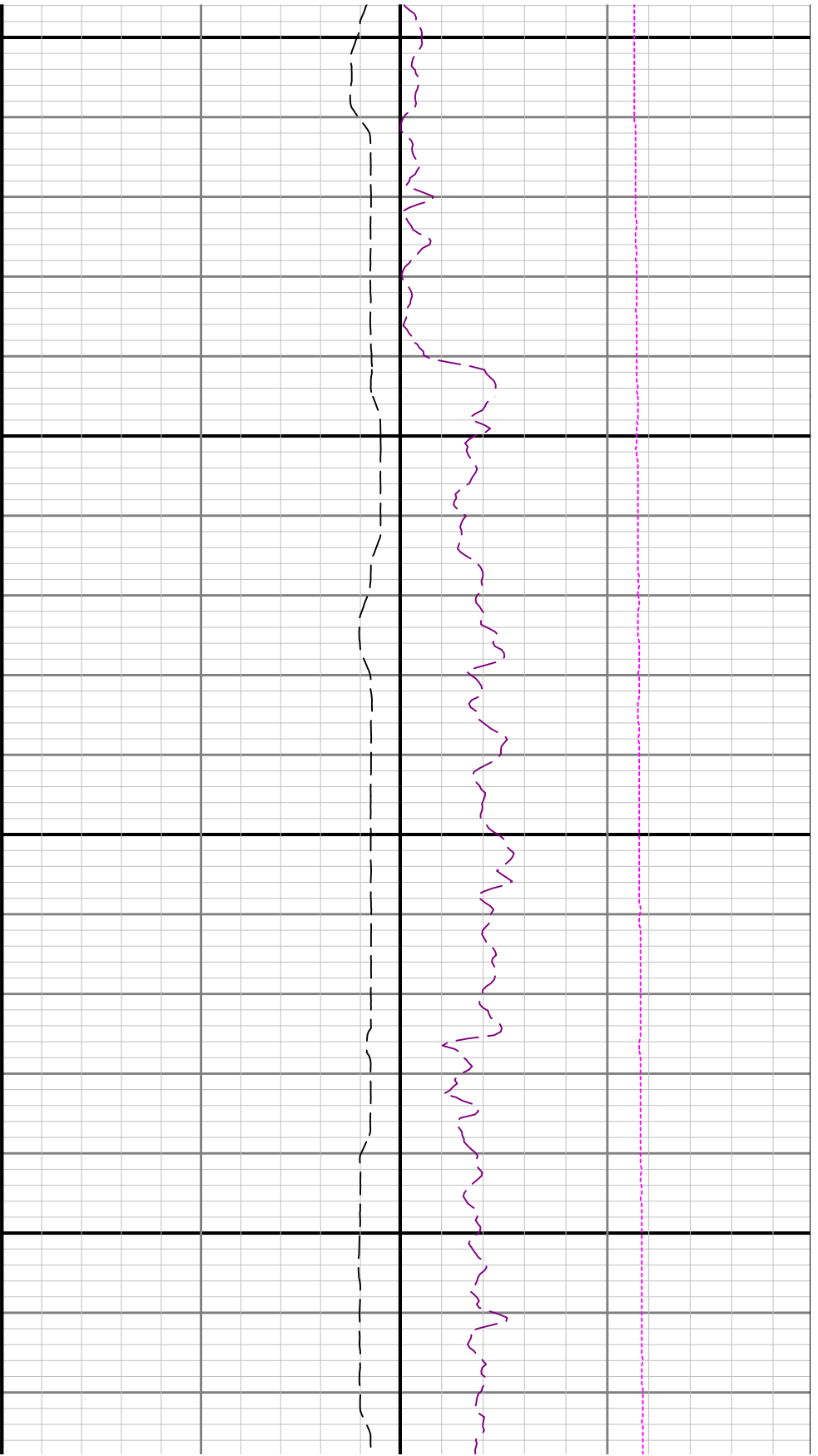
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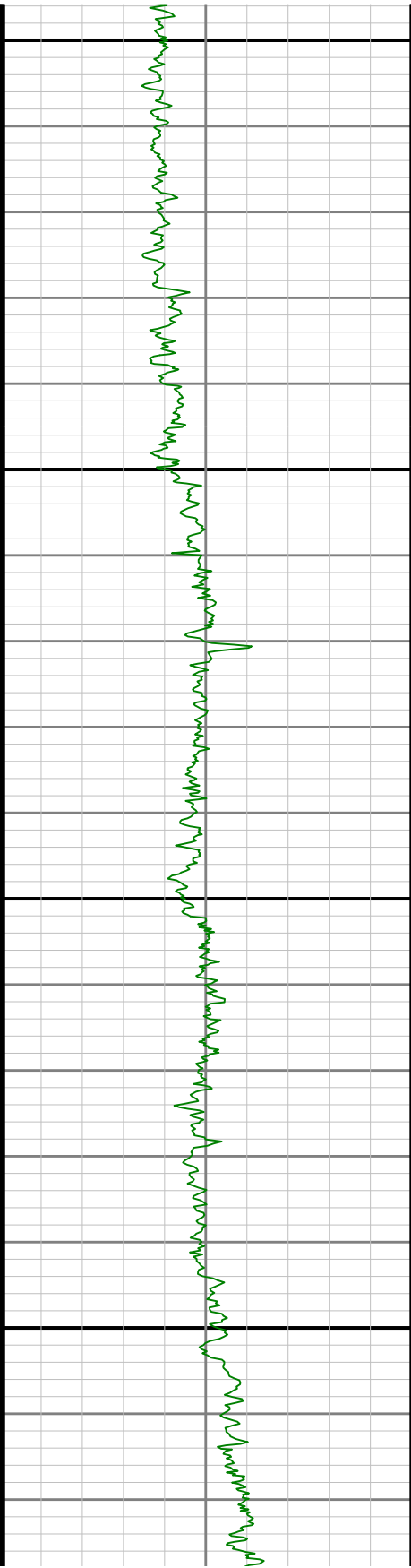
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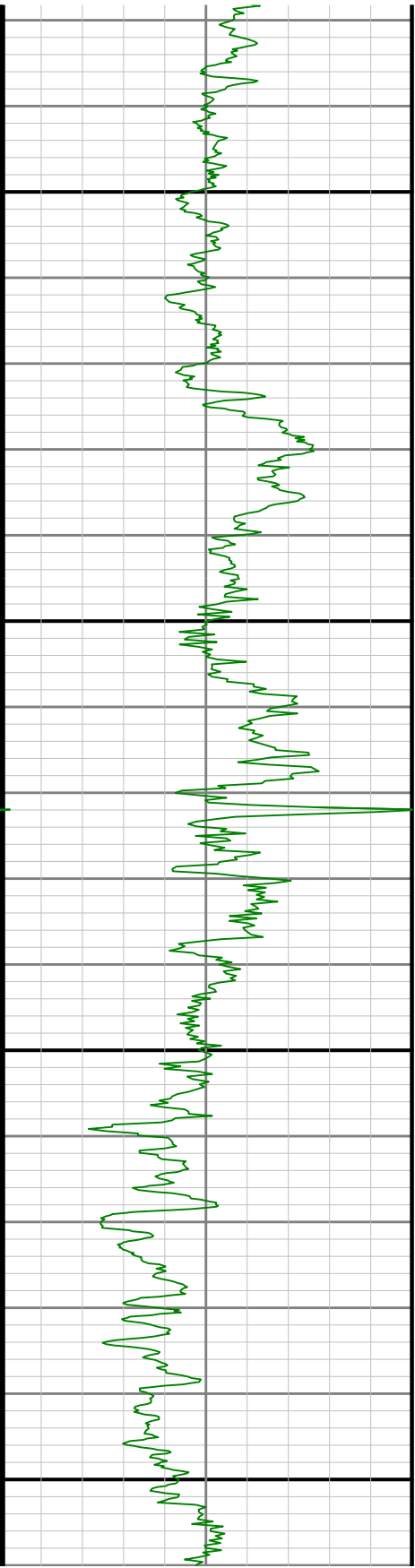




6300

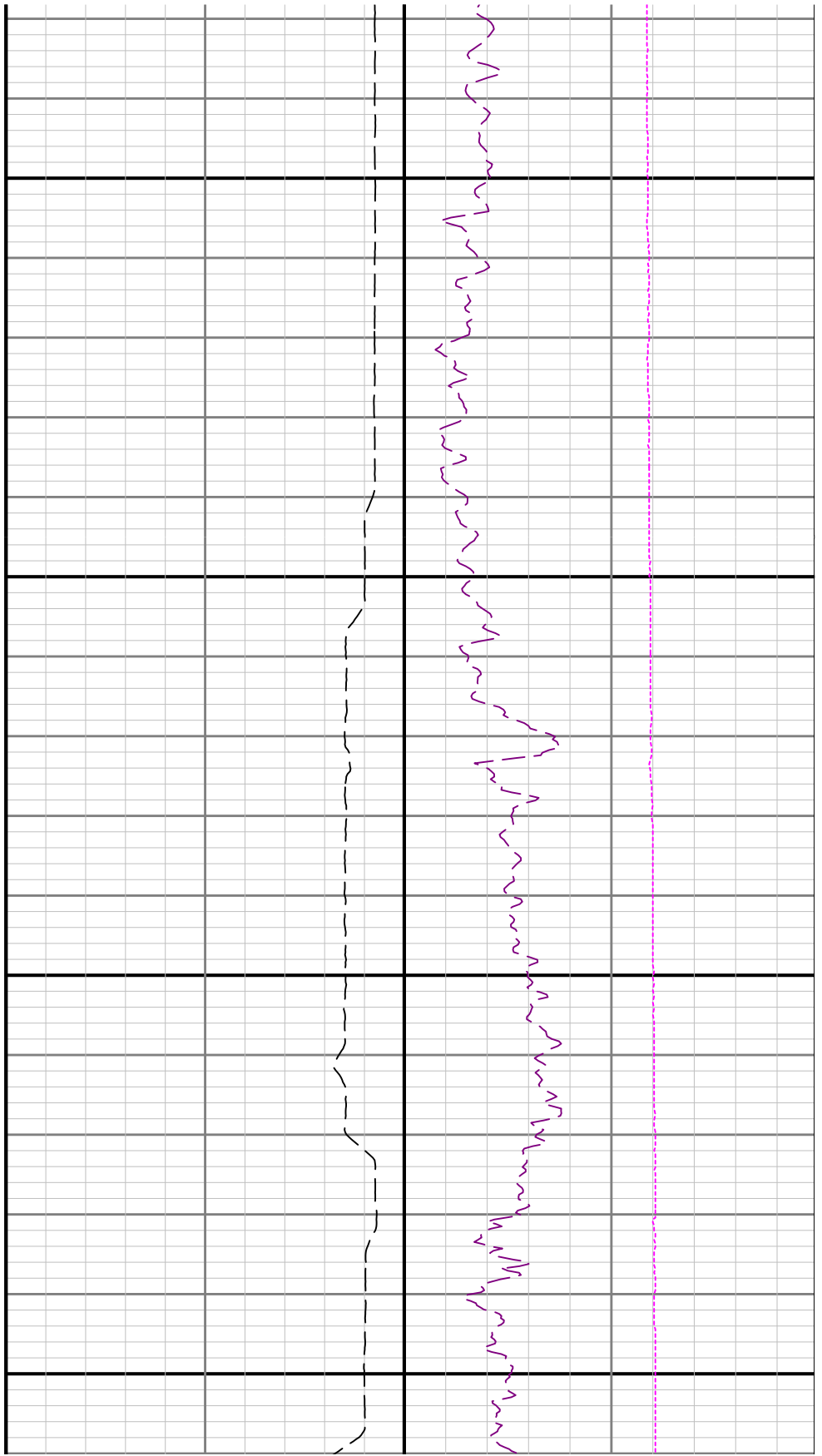
6400

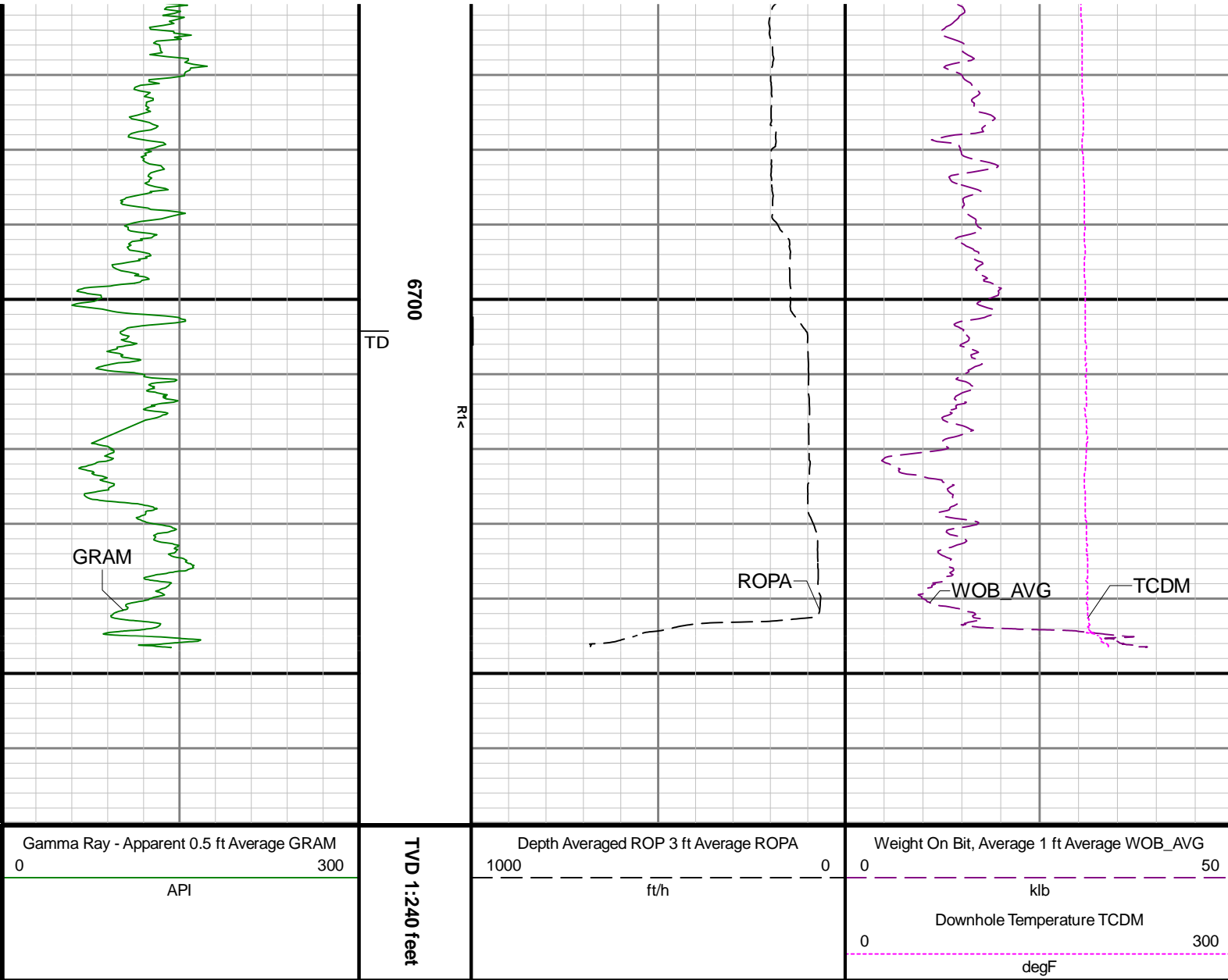




6600

6500





Directional Survey Summary

Latitude:	40° 11' 25.368" N	Longitude:	104° 28' 52.068" W
North Reference:	Grid	Drill Depth Zero:	Rig Floor
Vertical Datum is:	Mean Sea Level	Vertical Datum to DDZ: (ft)	4823.00
Vertical Section North: (ft)	0.00	Vertical Section East: (ft)	0.00
Vertical Section Azimuth: (deg)	353.88		
Grid Convergence: (deg)	-0.66	Magnetic Declination: (deg)	8.00
Total Correction: (deg)	7.34	TVD Calculation Method:	Minimum Curvature
Magnetic Correction:	Off	Local Magnetic Field: (nT)	52081
Local Magnetic Dip Angle: (deg)	66.59	Local Gravity Field: (m/s2)	9.800

Tie-In / Projection	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Temperature (degF)	North (ft)	East (ft)	True Vertical Depth (ft)	TVD Subsea (ft)	Vertical Section (ft)	Course Length (ft)	Dog Leg Severity (deg/100ft)	Build Rate (deg/100ft)	Turn Rate (deg/100ft)
Tie-In	0.00	0.00	0.00	N/A	0.00	0.00	0.00	-4823.00	0.00	0.00	0.00	0.00	0.00
	81.90	0.21	248.98	N/A	-0.05	-0.14	81.90	-4741.10	-0.04	81.90	0.26	0.26	-135.56

		176.30	0.13	281.26	N/A	-0.09	-0.41	176.30	-4646.70	-0.05	94.40	0.13	-0.08	34.19
		267.30	0.40	275.15	N/A	-0.05	-0.82	267.30	-4555.70	0.04	91.00	0.30	0.30	-6.71
		361.80	0.60	357.50	N/A	0.48	-1.17	361.80	-4461.20	0.60	94.50	0.71	0.21	87.14
		456.10	0.15	261.68	N/A	0.95	-1.32	456.09	-4366.91	1.09	94.30	0.67	-0.48	-101.61
		550.70	0.43	38.83	N/A	1.21	-1.22	550.69	-4272.31	1.33	94.60	0.58	0.30	144.98
		645.30	0.17	128.96	N/A	1.40	-0.89	645.29	-4177.71	1.49	94.60	0.49	-0.27	95.27
		739.80	0.36	136.96	N/A	1.09	-0.57	739.79	-4083.21	1.15	94.50	0.20	0.20	8.47
		834.40	0.15	80.34	N/A	0.90	-0.25	834.39	-3988.61	0.92	94.60	0.32	-0.22	-59.85
		928.90	0.31	48.81	N/A	1.09	0.06	928.89	-3894.11	1.07	94.50	0.21	0.17	-33.37
		1023.40	0.34	25.35	N/A	1.51	0.38	1023.39	-3799.61	1.46	94.50	0.14	0.03	-24.83
		1118.00	0.32	6.10	N/A	2.03	0.53	1117.99	-3705.01	1.96	94.60	0.12	-0.02	-20.35
		1212.50	0.17	356.63	N/A	2.43	0.55	1212.49	-3610.51	2.36	94.50	0.16	-0.16	-10.02
		1307.00	0.18	213.96	N/A	2.44	0.45	1306.99	-3516.01	2.38	94.50	0.35	0.01	-150.97
		1401.80	0.05	167.51	N/A	2.28	0.38	1401.79	-3421.21	2.23	94.80	0.16	-0.14	-49.00
		1496.30	0.05	270.44	N/A	2.24	0.35	1496.29	-3326.71	2.19	94.50	0.08	0.00	108.92
		1590.70	0.13	103.21	N/A	2.22	0.41	1590.69	-3232.31	2.16	94.40	0.19	0.08	-177.15
		1685.30	0.11	142.08	N/A	2.12	0.57	1685.28	-3137.72	2.05	94.60	0.09	-0.02	41.09
		1780.00	0.13	313.20	N/A	2.12	0.55	1779.98	-3043.02	2.05	94.70	0.25	0.02	180.70
		1874.70	0.08	354.88	N/A	2.26	0.46	1874.68	-2948.32	2.20	94.70	0.09	-0.05	44.01
		1932.00	0.23	3.90	N/A	2.42	0.47	1931.98	-2891.02	2.35	57.30	0.26	0.26	15.74
		1988.00	0.52	341.50	98.7	2.77	0.40	1987.98	-2835.02	2.71	56.00	0.57	0.52	-40.00
		2083.00	0.38	25.71	104.1	3.46	0.40	2082.98	-2740.02	3.40	95.00	0.38	-0.15	46.54
		2177.00	1.41	257.65	109.5	3.50	-0.60	2176.97	-2646.03	3.54	94.00	1.78	1.10	-136.23
		2272.00	4.95	260.33	117.6	2.56	-5.78	2271.81	-2551.19	3.16	95.00	3.73	3.73	2.82
		2367.00	7.76	267.34	117.6	1.57	-16.23	2366.22	-2456.78	3.29	95.00	3.06	2.96	7.38
		2461.00	10.31	264.12	120.3	0.41	-30.94	2459.05	-2363.95	3.71	94.00	2.76	2.71	-3.43
		2555.00	12.35	254.28	123.0	-3.17	-48.99	2551.22	-2271.78	2.07	94.00	2.98	2.17	-10.47
		2649.00	12.36	246.15	123.0	-9.96	-67.87	2643.05	-2179.95	-2.67	94.00	1.85	0.01	-8.65
		2744.00	13.47	247.90	125.7	-18.24	-87.42	2735.64	-2087.36	-8.81	95.00	1.24	1.17	1.84
		2839.00	13.24	248.61	128.4	-26.37	-107.80	2828.07	-1994.93	-14.73	95.00	0.30	-0.24	0.75
		2934.00	12.98	249.71	128.4	-34.04	-127.94	2920.60	-1902.40	-20.20	95.00	0.38	-0.27	1.16
		3122.00	14.28	249.51	131.1	-49.47	-169.46	3103.30	-1719.70	-31.13	188.00	0.69	0.69	-0.11
		3217.00	13.87	249.57	133.8	-57.55	-191.11	3195.45	-1627.55	-36.85	95.00	0.43	-0.43	0.06
		3311.00	13.68	251.92	133.8	-64.93	-212.23	3286.74	-1536.26	-41.94	94.00	0.63	-0.20	2.50
		3406.00	13.81	259.74	136.5	-70.44	-234.07	3379.03	-1443.97	-45.08	95.00	1.96	0.14	8.23
		3500.00	14.15	264.60	136.5	-73.52	-256.55	3470.25	-1352.75	-45.75	94.00	1.30	0.36	5.17
		3594.00	14.41	254.25	139.2	-77.78	-279.25	3561.36	-1261.64	-47.56	94.00	2.73	0.28	-11.01
		3689.00	14.21	246.42	139.2	-85.65	-301.32	3653.42	-1169.58	-53.04	95.00	2.05	-0.21	-8.24
		3784.00	14.38	247.35	141.9	-94.86	-322.89	3745.48	-1077.52	-59.89	95.00	0.30	0.18	0.98
		3878.00	13.71	246.72	141.9	-103.75	-343.89	3836.67	-986.33	-66.50	94.00	0.73	-0.71	-0.67
		3972.00	13.19	246.12	141.9	-112.50	-363.93	3928.09	-894.91	-73.06	94.00	0.57	-0.55	-0.64
		4067.00	13.11	247.48	144.6	-121.01	-383.80	4020.60	-802.40	-79.41	95.00	0.34	-0.08	1.43
		4161.00	13.23	246.56	144.6	-129.37	-403.51	4112.13	-710.87	-85.62	94.00	0.26	0.13	-0.98
		4256.00	13.12	247.17	147.3	-137.88	-423.42	4204.63	-618.37	-91.96	95.00	0.19	-0.12	0.64
		4351.00	13.17	246.30	147.3	-146.42	-443.27	4297.14	-525.86	-98.32	95.00	0.21	0.05	-0.92
		4445.00	13.10	247.03	147.3	-154.88	-462.88	4388.68	-434.32	-104.65	94.00	0.19	-0.07	0.78
		4539.00	13.04	247.96	150.0	-163.01	-482.52	4480.24	-342.76	-110.64	94.00	0.23	-0.06	0.99
		4634.00	13.03	247.23	150.0	-171.18	-502.33	4572.80	-250.20	-116.65	95.00	0.17	-0.01	-0.77
		4729.00	12.56	248.87	150.0	-179.05	-521.84	4665.44	-157.56	-122.39	95.00	0.63	-0.49	1.73
		4823.00	12.98	248.89	150.0	-186.54	-541.22	4757.11	-65.89	-127.77	94.00	0.45	0.45	0.02
		4918.00	11.69	245.25	152.7	-194.41	-559.92	4849.92	26.92	-133.61	95.00	1.58	-1.36	-3.83
		5012.00	12.42	246.81	152.7	-202.38	-577.86	4941.85	118.85	-139.62	94.00	0.85	0.78	1.66
		5107.00	13.04	248.24	152.7	-210.37	-597.20	5034.51	211.51	-145.50	95.00	0.73	0.65	1.51
		5201.00	12.83	247.37	152.7	-218.32	-616.68	5126.13	303.13	-151.33	94.00	0.30	-0.22	-0.93
		5296.00	11.88	252.99	155.4	-225.24	-635.77	5218.93	395.93	-156.17	95.00	1.61	-1.00	5.92
		5390.00	13.15	252.08	158.1	-231.36	-655.20	5310.69	487.69	-160.19	94.00	1.37	1.35	-0.97
		5485.00	12.96	246.24	158.1	-238.98	-675.23	5403.24	580.24	-165.63	95.00	1.40	-0.20	-6.15
		5579.00	13.48	251.92	160.8	-246.62	-695.30	5494.75	671.75	-171.09	94.00	1.49	0.55	6.04
		5674.00	13.28	257.51	158.1	-252.42	-716.48	5587.18	764.18	-174.60	95.00	1.38	-0.21	5.88
		5768.00	13.73	264.17	158.1	-255.89	-738.12	5678.58	855.58	-175.74	94.00	1.72	0.48	7.09
		5862.00	13.24	272.41	163.5	-256.57	-759.97	5770.00	947.00	-174.09	94.00	2.11	-0.52	8.77

	5957.00	13.93	271.09	155.4	-255.89	-782.27	5862.34	1039.34	-171.04	95.00	0.80	0.73	-1.39
	6051.00	14.25	258.24	158.1	-258.04	-804.92	5953.54	1130.54	-170.75	94.00	3.34	0.34	-13.67
	6146.00	13.27	249.09	163.5	-264.31	-826.55	6045.82	1222.82	-174.69	95.00	2.51	-1.03	-9.63
	6240.00	13.10	271.77	166.2	-267.84	-847.29	6137.40	1314.40	-175.98	94.00	5.47	-0.18	24.13
	6335.00	15.93	300.91	168.9	-260.80	-869.27	6229.48	1406.48	-166.64	95.00	8.14	2.98	30.67
	6430.00	21.55	318.45	171.6	-241.01	-892.07	6319.48	1496.48	-144.53	95.00	8.32	5.92	18.46
	6524.00	27.77	336.96	174.3	-207.86	-912.14	6404.99	1581.99	-109.43	94.00	10.48	6.62	19.69
	6619.00	35.68	346.50	177.0	-160.45	-927.30	6485.79	1662.79	-60.67	95.00	9.84	8.33	10.04
	6713.00	46.14	349.11	179.7	-100.34	-940.14	6556.73	1733.73	0.46	94.00	11.27	11.13	2.78
	6808.00	53.62	347.82	182.5	-29.23	-954.70	6617.91	1794.91	72.72	95.00	7.94	7.87	-1.36
	6902.00	62.17	348.77	182.5	48.68	-970.81	6667.82	1844.82	151.90	94.00	9.14	9.10	1.01
	6997.00	69.45	350.23	185.2	133.83	-986.56	6706.72	1883.72	238.24	95.00	7.79	7.66	1.54
	7092.00	78.12	354.98	185.2	224.19	-998.20	6733.24	1910.24	329.33	95.00	10.31	9.13	5.00
	7186.00	89.14	359.93	187.9	317.34	-1002.30	6743.66	1920.66	422.39	94.00	12.84	11.72	5.27
	7280.00	89.85	357.78	185.2	411.31	-1004.17	6744.49	1921.49	516.03	94.00	2.41	0.76	-2.29
	7375.00	89.85	0.30	190.6	506.29	-1005.77	6744.74	1921.74	610.63	95.00	2.65	0.00	2.65
	7469.00	89.32	358.75	196.0	600.28	-1006.54	6745.42	1922.42	704.17	94.00	1.74	-0.56	-1.65
	7564.00	90.06	2.81	201.4	695.25	-1005.25	6745.93	1922.93	798.46	95.00	4.34	0.78	4.27
	7658.00	89.38	2.97	204.1	789.13	-1000.51	6746.39	1923.39	891.30	94.00	0.74	-0.72	0.17
	7752.00	91.54	5.23	204.1	882.88	-993.79	6745.64	1922.64	983.79	94.00	3.33	2.30	2.40
	7847.00	91.35	359.22	206.8	977.73	-990.11	6743.24	1920.24	1077.71	95.00	6.33	-0.20	-6.33
	7941.00	90.43	354.13	206.8	1071.53	-995.56	6741.78	1918.78	1171.56	94.00	5.50	-0.98	-5.41
	8035.00	89.29	357.66	209.5	1165.27	-1002.29	6742.01	1919.01	1265.48	94.00	3.95	-1.21	3.76
	8130.00	89.72	0.62	209.5	1260.25	-1003.71	6742.83	1919.83	1360.07	95.00	3.15	0.45	3.12
	8224.00	89.78	357.43	209.5	1354.22	-1005.31	6743.24	1920.24	1453.68	94.00	3.39	0.06	-3.39
	8319.00	90.03	0.24	209.5	1449.19	-1007.24	6743.40	1920.40	1548.31	95.00	2.97	0.26	2.96
	8413.00	89.91	359.48	212.2	1543.19	-1007.47	6743.45	1920.45	1641.80	94.00	0.82	-0.13	-0.81
	8508.00	89.97	359.92	214.9	1638.19	-1007.97	6743.55	1920.55	1736.31	95.00	0.47	0.06	0.46
	8603.00	89.94	0.43	214.9	1733.19	-1007.68	6743.62	1920.62	1830.74	95.00	0.54	-0.03	0.54
	8698.00	90.49	0.61	214.9	1828.18	-1006.82	6743.26	1920.26	1925.10	95.00	0.61	0.58	0.19
	8792.00	90.03	0.90	217.6	1922.17	-1005.58	6742.84	1919.84	2018.42	94.00	0.58	-0.49	0.31
	8887.00	90.03	0.03	220.3	2017.17	-1004.81	6742.79	1919.79	2112.80	95.00	0.92	0.00	-0.92
	8981.00	89.91	358.94	220.3	2111.16	-1005.67	6742.84	1919.84	2206.35	94.00	1.16	-0.13	-1.15
	9076.00	89.05	358.80	223.0	2206.14	-1007.54	6743.70	1920.70	2300.98	95.00	0.92	-0.91	-0.15
	9170.00	89.66	0.73	223.0	2300.13	-1007.93	6744.76	1921.76	2394.48	94.00	2.15	0.65	2.05
	9265.00	89.94	0.25	223.0	2395.12	-1007.11	6745.09	1922.09	2488.84	95.00	0.58	0.29	-0.51
	9359.00	90.62	359.80	223.0	2489.12	-1007.07	6744.63	1921.63	2582.30	94.00	0.87	0.72	-0.48
	9454.00	89.48	359.58	225.7	2584.12	-1007.59	6744.55	1921.55	2676.81	95.00	1.22	-1.20	-0.23
	9548.00	90.31	0.26	223.0	2678.12	-1007.72	6744.72	1921.72	2770.29	94.00	1.14	0.88	0.72
	9643.00	91.26	359.94	223.0	2773.11	-1007.55	6743.42	1920.42	2864.72	95.00	1.06	1.00	-0.34
	9737.00	90.25	359.50	225.7	2867.10	-1008.01	6742.18	1919.18	2958.22	94.00	1.17	-1.07	-0.47
	9832.00	89.88	0.31	228.4	2962.09	-1008.17	6742.07	1919.07	3052.70	95.00	0.94	-0.39	0.85
	9926.00	90.86	359.77	228.4	3056.09	-1008.10	6741.46	1918.46	3146.15	94.00	1.19	1.04	-0.57
	10021.00	89.32	359.89	228.4	3151.09	-1008.39	6741.31	1918.31	3240.63	95.00	1.63	-1.62	0.13
	10116.00	90.34	359.41	225.7	3246.08	-1008.97	6741.60	1918.60	3335.15	95.00	1.19	1.07	-0.51
	10211.00	90.31	359.87	228.4	3341.08	-1009.56	6741.06	1918.06	3429.67	95.00	0.49	-0.03	0.48
	10305.00	90.52	0.09	231.1	3435.08	-1009.60	6740.38	1917.38	3523.13	94.00	0.32	0.22	0.23
	10400.00	90.28	359.27	231.1	3530.07	-1010.13	6739.71	1916.71	3617.65	95.00	0.90	-0.25	-0.86
	10495.00	90.25	359.57	231.1	3625.07	-1011.09	6739.27	1916.27	3712.20	95.00	0.32	-0.03	0.32
	10589.00	90.15	359.54	233.8	3719.06	-1011.82	6738.95	1915.95	3805.74	94.00	0.11	-0.11	-0.03
	10684.00	90.55	0.68	233.8	3814.06	-1011.64	6738.37	1915.37	3900.17	95.00	1.27	0.42	1.20
	10778.00	90.40	359.47	236.5	3908.05	-1011.51	6737.59	1914.59	3993.62	94.00	1.30	-0.16	-1.29
	10873.00	90.37	359.79	236.5	4003.05	-1012.13	6736.95	1913.95	4088.14	95.00	0.34	-0.03	0.34
	10968.00	90.52	359.96	236.5	4098.05	-1012.33	6736.21	1913.21	4182.62	95.00	0.24	0.16	0.18
	11062.00	90.34	359.33	236.5	4192.04	-1012.92	6735.50	1912.50	4276.14	94.00	0.70	-0.19	-0.67
	11156.00	90.28	359.13	236.5	4286.03	-1014.18	6735.00	1912.00	4369.73	94.00	0.22	-0.06	-0.21
	11251.00	89.82	358.06	239.2	4381.00	-1016.51	6734.91	1911.91	4464.41	95.00	1.23	-0.48	-1.13
	11346.00	90.28	358.01	239.2	4475.95	-1019.77	6734.83	1911.83	4559.16	95.00	0.49	0.48	-0.05
	11440.00	90.68	359.14	241.9	4569.91	-1022.10	6734.04	1911.04	4652.83	94.00	1.28	0.43	1.20
	11535.00	90.40	358.95	241.9	4664.89	-1023.69	6733.15	1910.15	4747.44	95.00	0.36	-0.29	-0.20
	11630.00	90.46	359.29	241.9	4759.88	-1025.15	6732.43	1909.43	4842.05	95.00	0.36	0.06	0.36

	11819.00	90.40	359.05	239.2	4948.86	-1027.88	6731.02	1908.02	5030.23	189.00	0.13	-0.03	-0.13
	11913.00	90.25	358.83	241.9	5042.84	-1029.62	6730.48	1907.48	5123.87	94.00	0.28	-0.16	-0.23
	12008.00	90.37	359.18	241.9	5137.82	-1031.27	6729.97	1906.97	5218.49	95.00	0.39	0.13	0.37
	12197.00	90.86	359.01	241.9	5326.79	-1034.26	6727.94	1904.94	5406.69	189.00	0.27	0.26	-0.09
	12291.00	90.62	359.18	241.9	5420.77	-1035.74	6726.73	1903.73	5500.29	94.00	0.31	-0.26	0.18
	12386.00	90.55	359.61	239.2	5515.76	-1036.74	6725.76	1902.76	5594.85	95.00	0.46	-0.07	0.45
	12481.00	90.55	359.78	241.9	5610.75	-1037.25	6724.84	1901.84	5689.36	95.00	0.18	-0.00	0.18
	12575.00	89.72	358.42	241.9	5704.74	-1038.73	6724.62	1901.62	5782.96	94.00	1.69	-0.88	-1.45
	12670.00	90.34	357.49	239.2	5799.67	-1042.12	6724.57	1901.57	5877.72	95.00	1.18	0.65	-0.98
	12765.00	89.23	359.52	239.2	5894.63	-1044.60	6724.93	1901.93	5972.41	95.00	2.44	-1.17	2.14
	12859.00	90.49	358.73	241.9	5988.62	-1046.03	6725.16	1902.16	6066.01	94.00	1.58	1.34	-0.84
	12954.00	89.94	0.17	239.2	6083.61	-1046.94	6724.80	1901.80	6160.56	95.00	1.62	-0.58	1.52
	13048.00	90.37	359.88	239.2	6177.61	-1046.90	6724.55	1901.55	6254.02	94.00	0.55	0.46	-0.31
	13143.00	90.31	0.05	239.2	6272.61	-1046.96	6723.98	1900.98	6348.48	95.00	0.19	-0.06	0.18
	13332.00	90.55	0.18	239.2	6461.60	-1046.58	6722.57	1899.57	6536.36	189.00	0.14	0.13	0.07
	13426.00	90.31	359.76	239.2	6555.60	-1046.63	6721.86	1898.86	6629.82	94.00	0.51	-0.26	-0.45
	13521.00	90.83	0.37	241.9	6650.60	-1046.52	6720.92	1897.92	6724.26	95.00	0.84	0.55	0.64
	13710.00	90.40	359.70	239.2	6839.58	-1046.41	6718.89	1895.89	6912.16	189.00	0.42	-0.23	-0.35
	13805.00	90.52	0.17	239.2	6934.58	-1046.51	6718.12	1895.12	7006.63	95.00	0.51	0.13	0.49
	13888.00	90.34	1.05	231.1	7017.57	-1045.63	6717.50	1894.50	7089.05	83.00	1.08	-0.22	1.06
	13983.00	90.52	355.53	231.1	7112.49	-1048.46	6716.79	1893.79	7183.73	95.00	5.81	0.19	-5.81
	14078.00	92.86	346.17	233.8	7206.13	-1063.54	6713.98	1890.98	7278.45	95.00	10.15	2.46	-9.85
	14172.00	90.25	345.52	233.8	7297.23	-1086.52	6711.43	1888.43	7371.48	94.00	2.86	-2.78	-0.69
	14267.00	90.09	352.99	233.8	7390.50	-1104.22	6711.15	1888.15	7466.10	95.00	7.86	-0.17	7.86
	14361.00	90.15	354.76	233.8	7483.96	-1114.25	6710.95	1887.95	7560.10	94.00	1.88	0.06	1.88
	14456.00	90.12	356.99	236.5	7578.71	-1121.08	6710.73	1887.73	7655.04	95.00	2.35	-0.03	2.35
	14551.00	90.31	359.69	241.9	7673.66	-1123.83	6710.37	1887.37	7749.74	95.00	2.85	0.20	2.84
	14645.00	90.25	4.96	239.2	7767.55	-1120.02	6709.91	1886.91	7842.69	94.00	5.61	-0.06	5.61
	14740.00	90.06	5.21	241.9	7862.17	-1111.60	6709.65	1886.65	7935.87	95.00	0.33	-0.20	0.26
	14834.00	90.15	5.60	244.6	7955.76	-1102.75	6709.48	1886.48	8027.98	94.00	0.43	0.10	0.41
	14929.00	90.06	7.01	244.6	8050.18	-1092.31	6709.31	1886.31	8120.75	95.00	1.49	-0.09	1.48
	15023.00	90.12	7.21	247.3	8143.46	-1080.68	6709.16	1886.16	8212.26	94.00	0.22	0.06	0.21
	15117.00	90.15	6.25	247.3	8236.81	-1069.66	6708.94	1885.94	8303.90	94.00	1.02	0.03	-1.02
	15212.00	90.25	6.79	247.3	8331.19	-1058.88	6708.61	1885.61	8396.60	95.00	0.58	0.11	0.57
	15306.00	90.25	6.15	250.0	8424.59	-1048.28	6708.20	1885.20	8488.34	94.00	0.68	-0.00	-0.68
	15401.00	90.25	5.20	250.0	8519.12	-1038.89	6707.78	1884.78	8581.33	95.00	1.00	0.00	-1.00
	15495.00	90.06	3.67	250.0	8612.84	-1031.62	6707.53	1884.53	8673.73	94.00	1.64	-0.20	-1.63
	15590.00	90.18	1.39	250.0	8707.74	-1027.43	6707.33	1884.33	8767.65	95.00	2.40	0.13	-2.40
	15684.00	90.09	1.13	252.7	8801.72	-1025.36	6707.11	1884.11	8860.87	94.00	0.29	-0.10	-0.28
	15779.00	89.94	0.78	252.7	8896.70	-1023.78	6707.08	1884.08	8955.15	95.00	0.40	-0.16	-0.37
	15873.00	90.49	358.99	252.7	8990.70	-1023.97	6706.73	1883.73	9048.62	94.00	1.99	0.59	-1.90
	15968.00	90.28	357.72	252.7	9085.66	-1026.69	6706.09	1883.09	9143.33	95.00	1.35	-0.22	-1.34
	16062.00	90.18	358.63	252.7	9179.61	-1029.69	6705.71	1882.71	9237.07	94.00	0.97	-0.11	0.97
	16157.00	90.25	359.30	255.4	9274.59	-1031.40	6705.36	1882.36	9331.69	95.00	0.71	0.07	0.71
	16251.00	90.12	359.30	255.4	9368.58	-1032.55	6705.05	1882.05	9425.27	94.00	0.14	-0.14	0.00
	16345.00	90.15	359.72	255.4	9462.58	-1033.35	6704.83	1881.83	9518.82	94.00	0.45	0.03	0.45
	16440.00	90.12	359.44	258.1	9557.57	-1034.05	6704.61	1881.61	9613.35	95.00	0.30	-0.03	-0.29
	16535.00	90.15	358.28	258.1	9652.55	-1035.94	6704.38	1881.38	9707.98	95.00	1.22	0.03	-1.22
	16629.00	89.63	5.45	255.4	9746.44	-1032.88	6704.56	1881.56	9801.01	94.00	7.65	-0.55	7.63
	16708.00	90.18	8.61	255.4	9824.84	-1023.22	6704.70	1881.70	9877.93	79.00	4.06	0.70	4.00
Projection	16732.00	90.18	8.61	N/A	9848.57	-1019.62	6704.62	1881.62	9901.14	24.00	0.00	-0.02	0.27