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Crew								
Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Alex Osborne	2016-08-28	2016-09-02	Hans Cary	2016-08-28	2016-09-02	Lenn Bennett	2016-08-28	2016-09-02
Scott Sims	2016-08-28	2016-09-01	Matthew Leopold	2016-08-31	2016-09-02			

Mud Resistivity Record				Surface				Downhole		
Date / Time	Run No.	Measured Depth (ft)	Surface Temp (degF)	Rm (ohm.m)	Rmf (ohm.m)	Rmc (ohm.m)	BHCT (degF)	Rm @ BHCT (ohm.m)	Rmf @ BHCT (ohm.m)	Rmc @ BHCT (ohm.m)
2016-08-29 10:07	1	1500.00	80.0	100.000	100.000	N/A	80.0	100.000	N/A	N/A
2016-08-30 14:00	1	2866.53	90.0	100.000	100.000	N/A	125.7	71.804	N/A	N/A
2016-08-31 05:01	1	5731.76	120.0	100.000	100.000	N/A	160.8	74.770	N/A	N/A
2016-08-31 14:00	1	7245.00	135.0	100.000	100.000	N/A	188.0	71.945	N/A	N/A
2016-09-01 04:00	1	9469.79	135.0	100.000	100.000	N/A	201.4	67.180	N/A	N/A


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	OnTrak	12701100	Pressure	1.17	54.47	7.000	2.250
1	OnTrak	12701100	Gamma (double)	2.06	55.36	7.000	2.250
1	OnTrak	12701100	Resistivity (4tx)	6.10	59.40	7.000	2.250
1	OnTrak	12701100	Directional (mag)	11.89	65.19	7.000	2.250

Service and Tool Mnemonics		
Mnemonic	Name	Description
OTK	OnTrak	Sensor Sub (Azimuthal Gamma Ray, Multiple Propagation Resistivity, Pressure, Vibration & Directional)
BCPM	BCPM	Bi-Directional Communication and Power Module, OnTrak Platform








Comments	
1	Baker Hughes run 1 utilized a 6.75 inch OnTrak (Multiple Propagation Resistivity, Gamma Ray and Directional) tool behind a 8.5 inch bit and steerable assembly from 1884 to 10828 feet MD (1884 to 5787 feet TVD).
2	A sliding indicator is shown to the right edge of track 2 as a heavy line. The indicator has been depth-shifted to the Resistivity sensor offset to correspond with Resistivity data acquired while sliding.
3	Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to a lack of control by Baker Hughes logging engineers depth calibrations and measurements could not be independently verified.

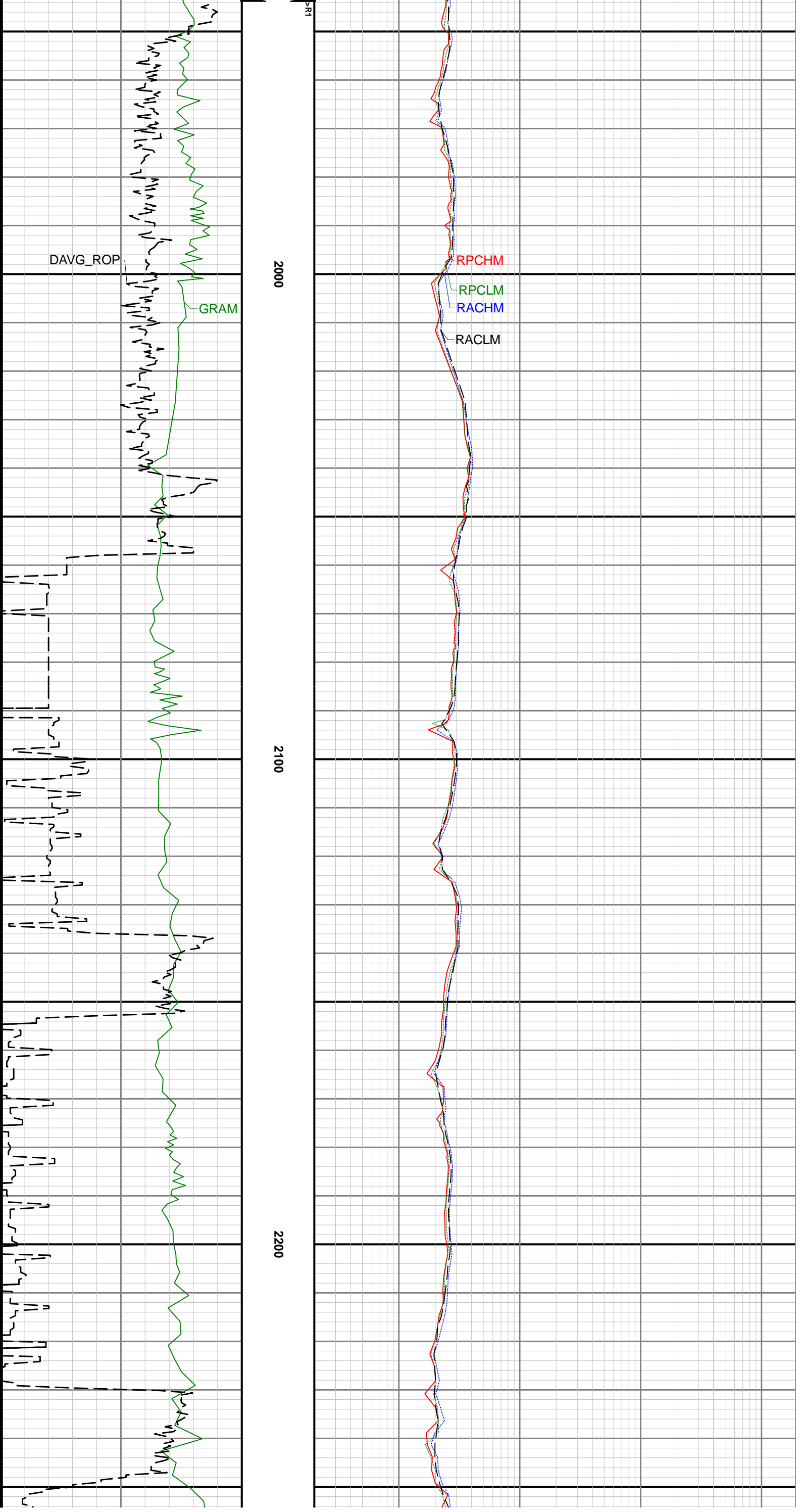
Remarks				
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1920.00	8.750	1	The Interval from 1888 to 1944 feet MD (1888 to 1944 feet TVD) has no surface data due to the Gamma Ray and MPR sensor to bit offset.
2	10790.00	8.750	1	The interval from 10770 to 10828 feet MD (5787 feet TVD) has no Gamma or MPR data due to sensor offset from bit.

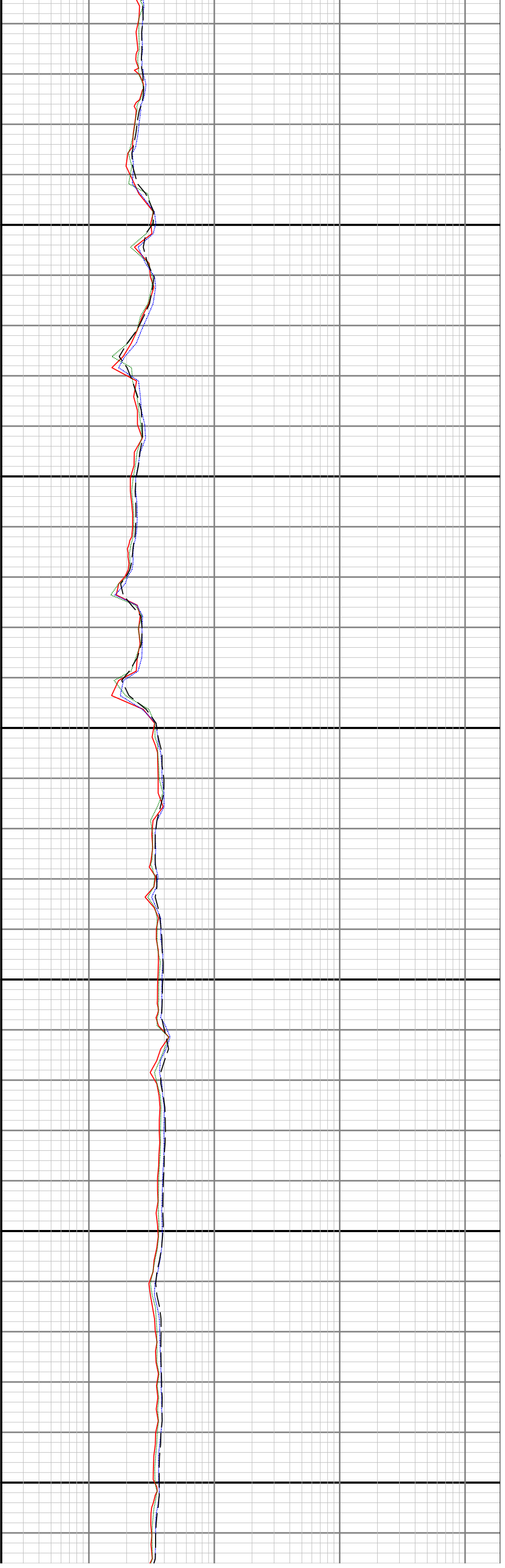
Curve Mnemonics		
Presented Curves	Description	Units
DAVG_ROP	Depth Averaged ROP	ft/h
GRAM	Gamma Ray - Apparent	API
RACHM	Resistivity Attenuation - Corrected - 2MHz	ohm.m
RACLM	Resistivity Attenuation - Corrected - 400kHz	ohm.m
RPCHM	Resistivity Phase - Corrected - 2MHz	ohm.m
RPCLM	Resistivity Phase - Corrected - 400kHz	ohm.m

	Company	Noble Energy			
	Well	Harper LD21-655			
	Interval	Date From:	2016-08-30 14:05:02	Top:	1885.00
	Created	Date To:	2016-08-31 12:10:37	Bottom:	5826.00
		2016-09-02	04:42		

Gamma Ray - Apparent		TVD 1:240 feet	Resistivity Phase - Corrected - 2MHz			
0150			0.22000			
API			ohm.m			
Rate of Penetration of bit			Resistivity Phase - Corrected - 400kHz			
10000ft/h			0.22000			
			ohm.m			
			Resistivity Attenuation - Corrected - 2MHz			
			0.22000			
			ohm.m			
			Resistivity Attenuation - Corrected - 400kHz			
			0.22000			
			ohm.m			

			1900				
				   			

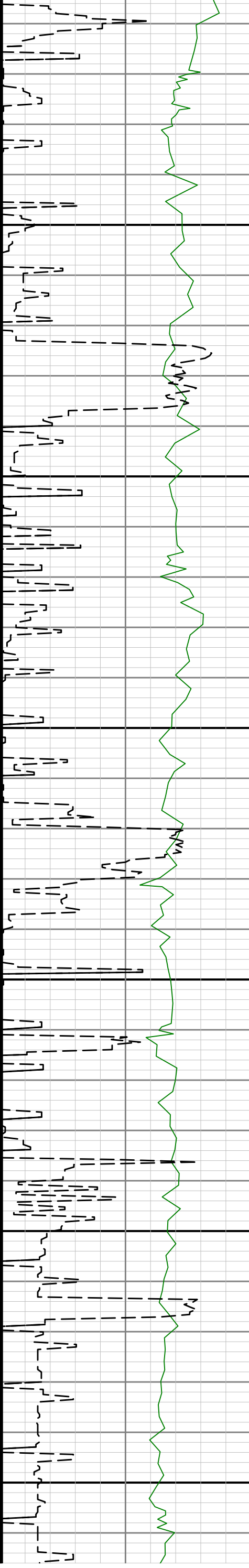


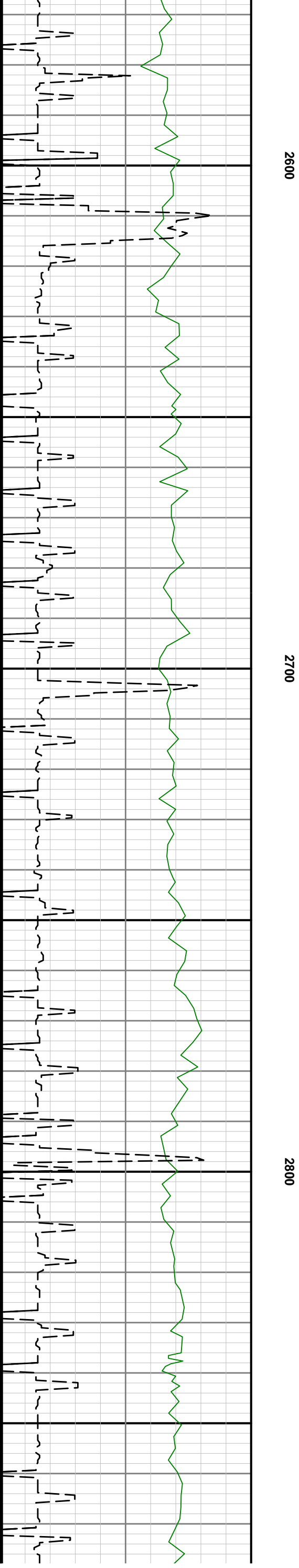
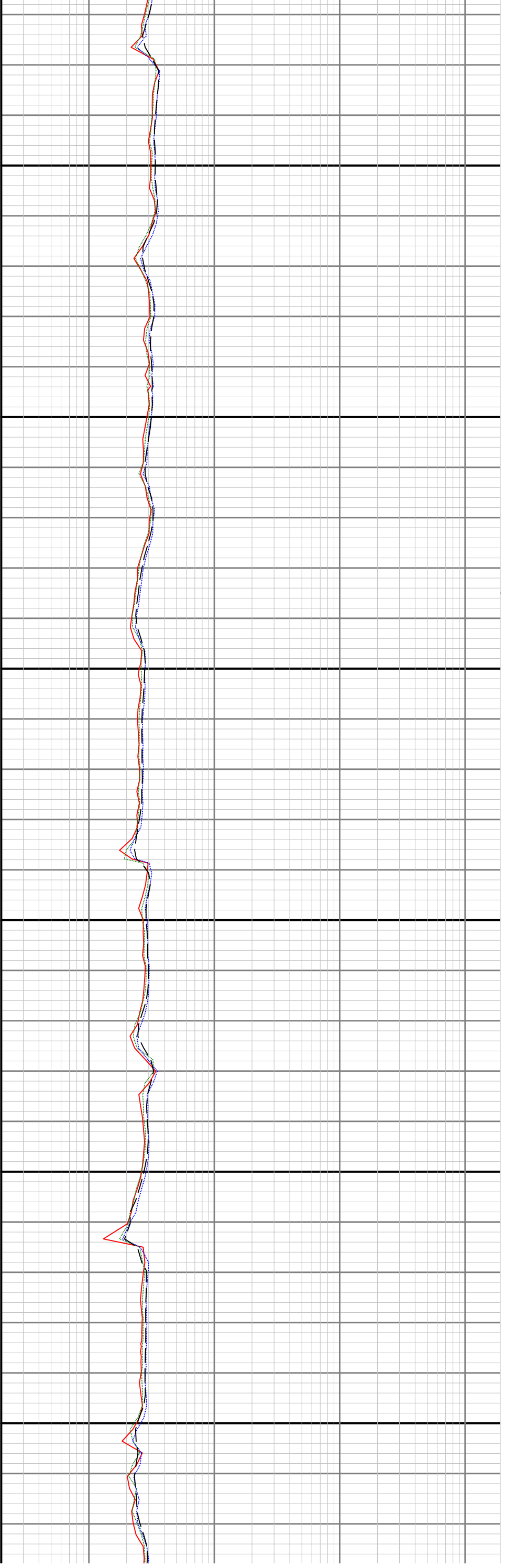


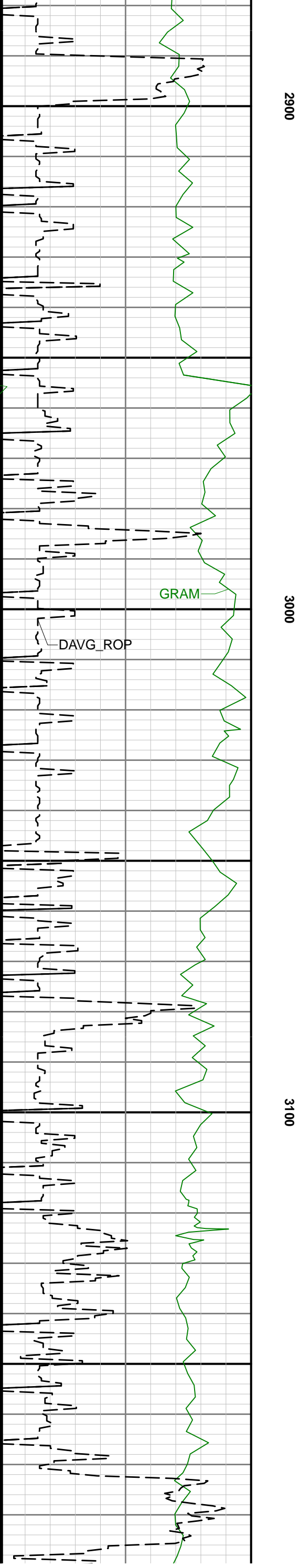
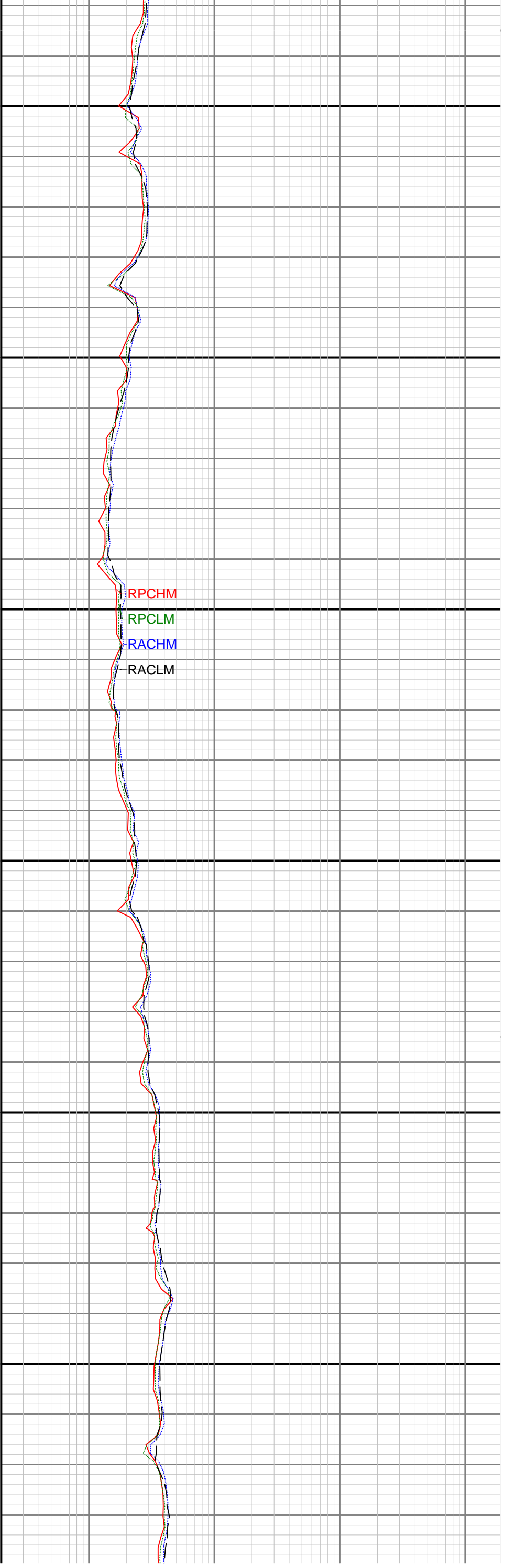
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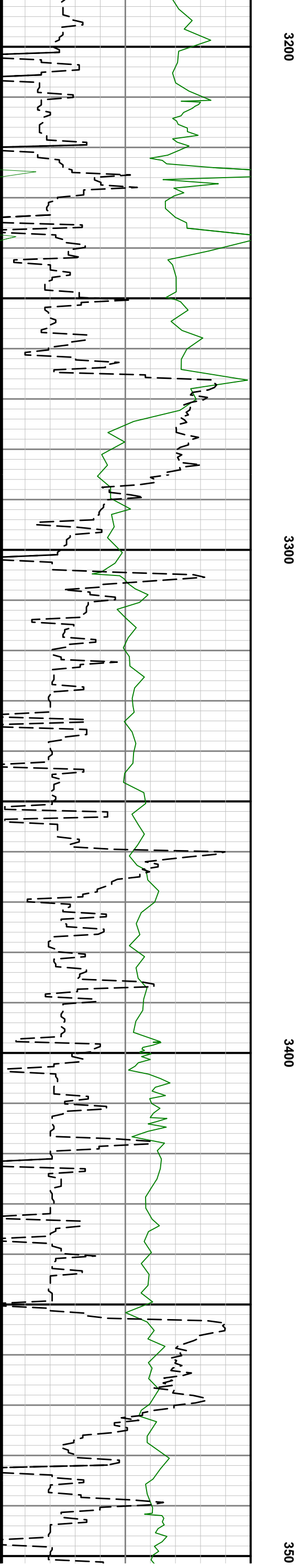
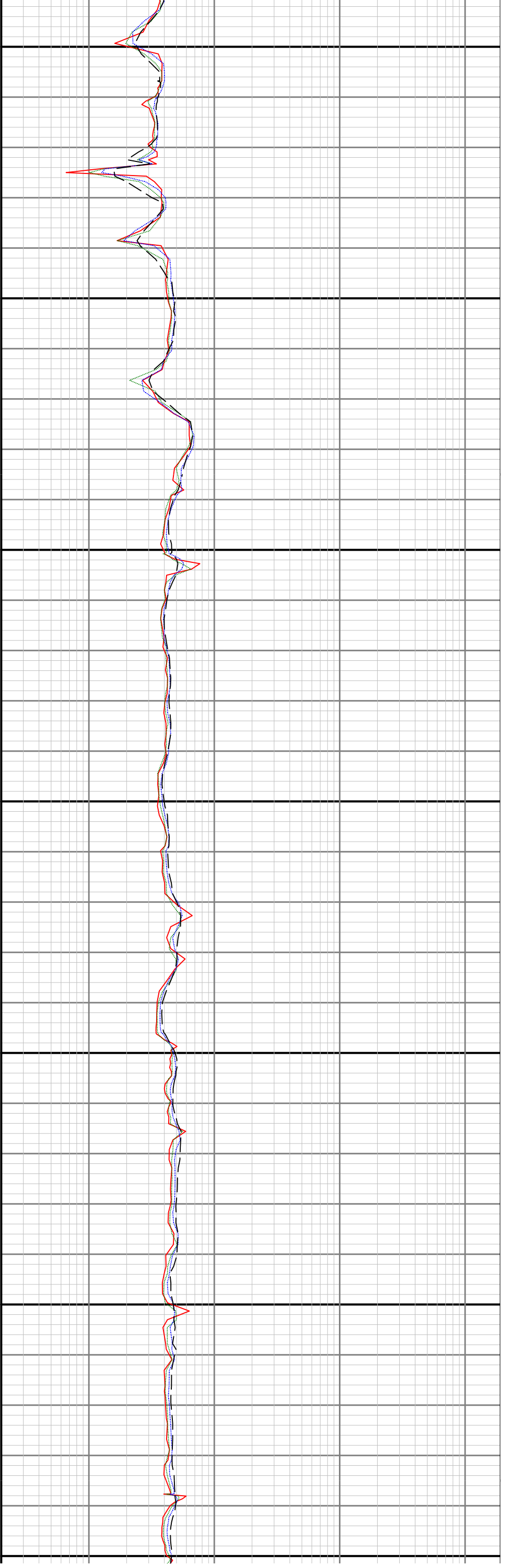
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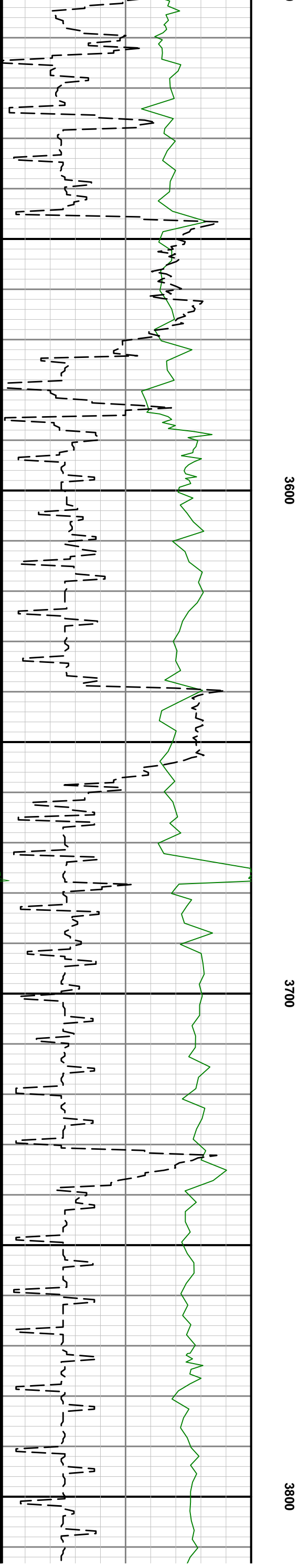
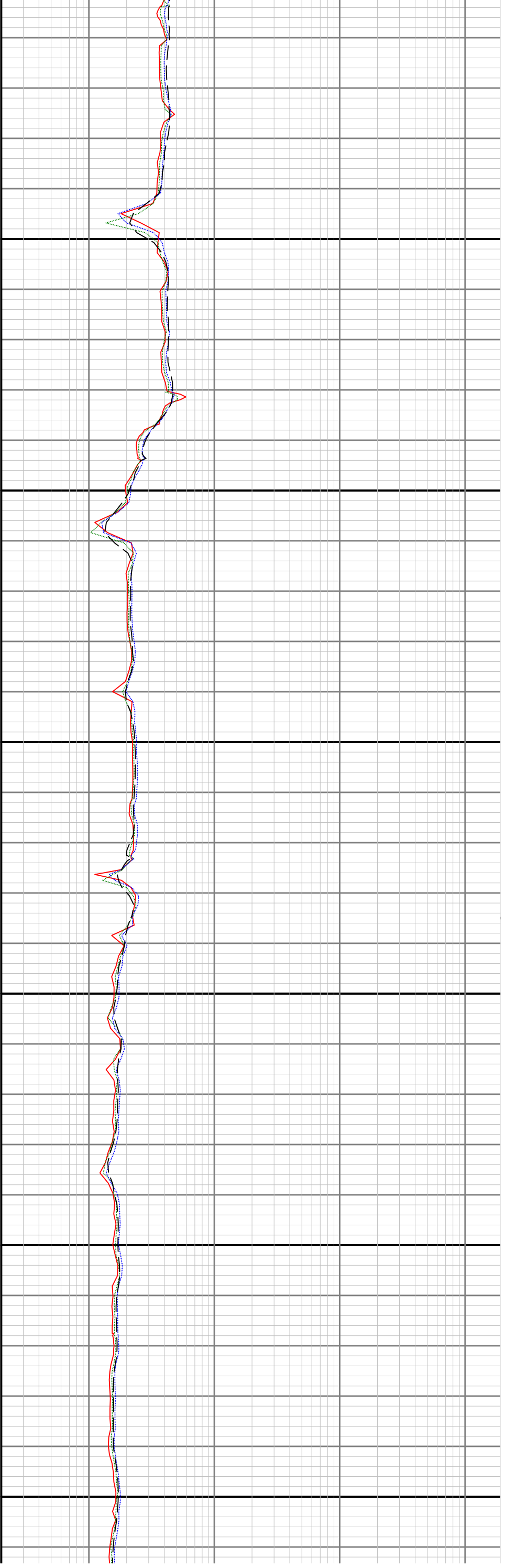
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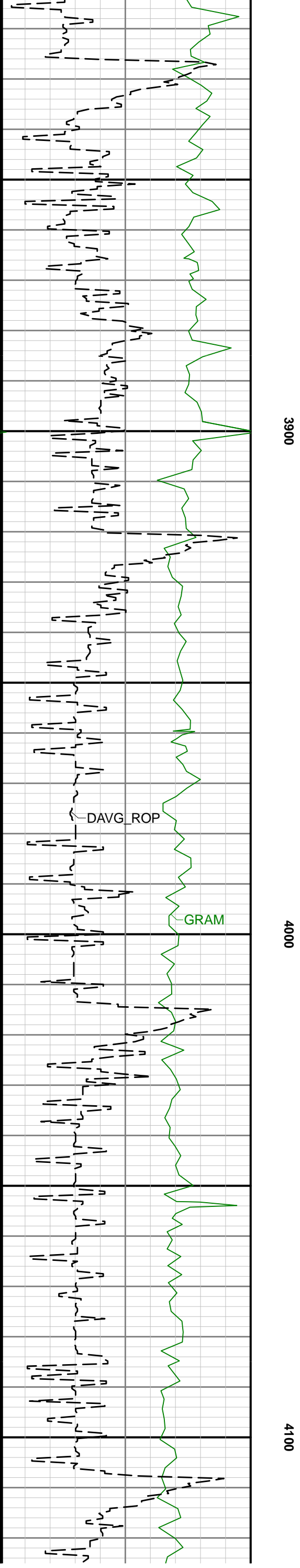
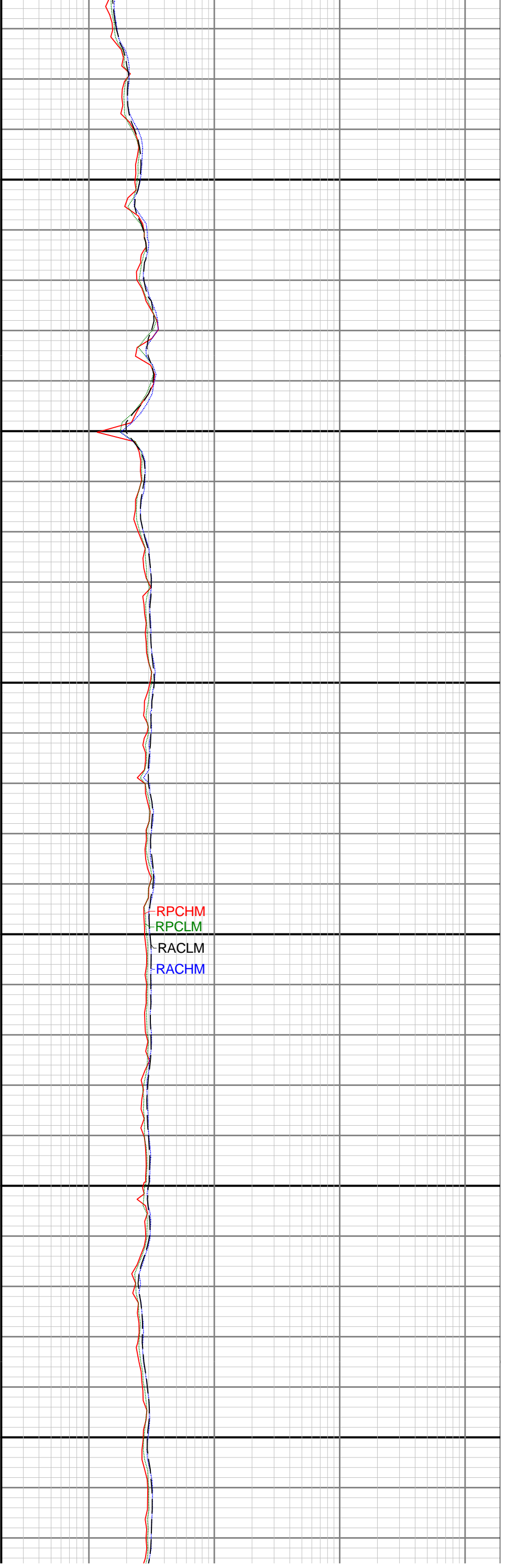


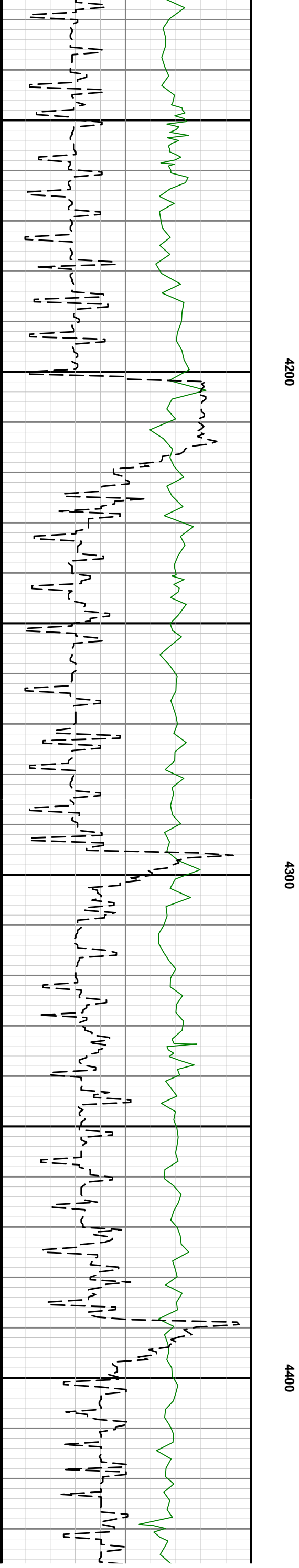
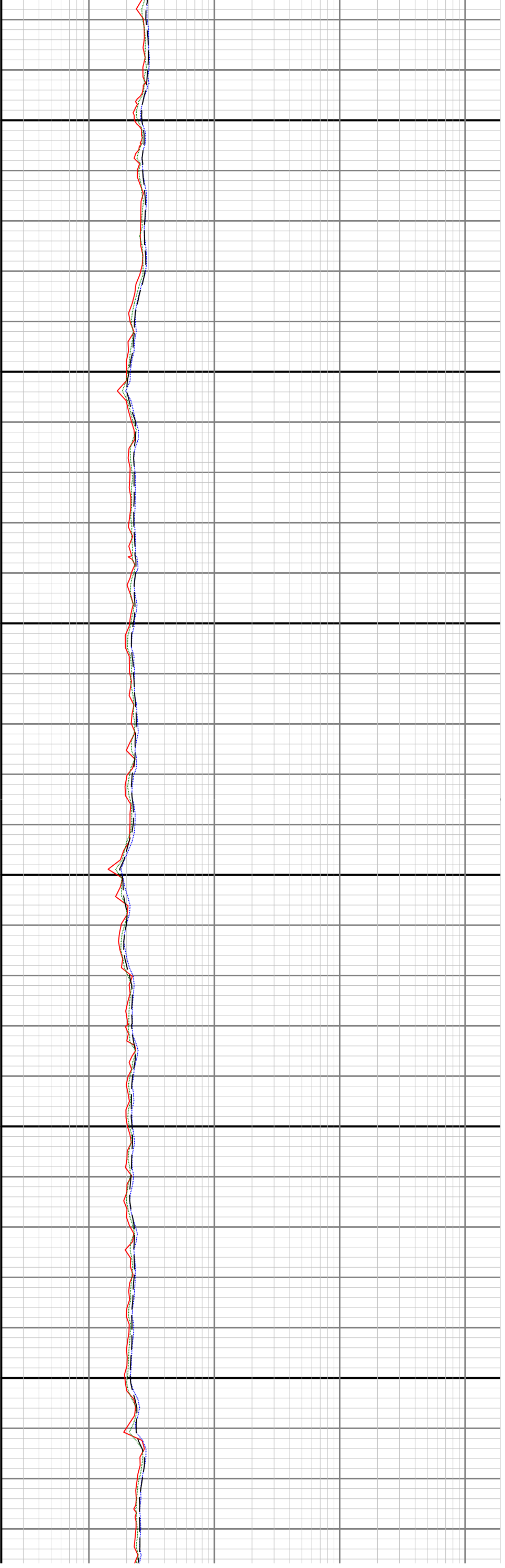


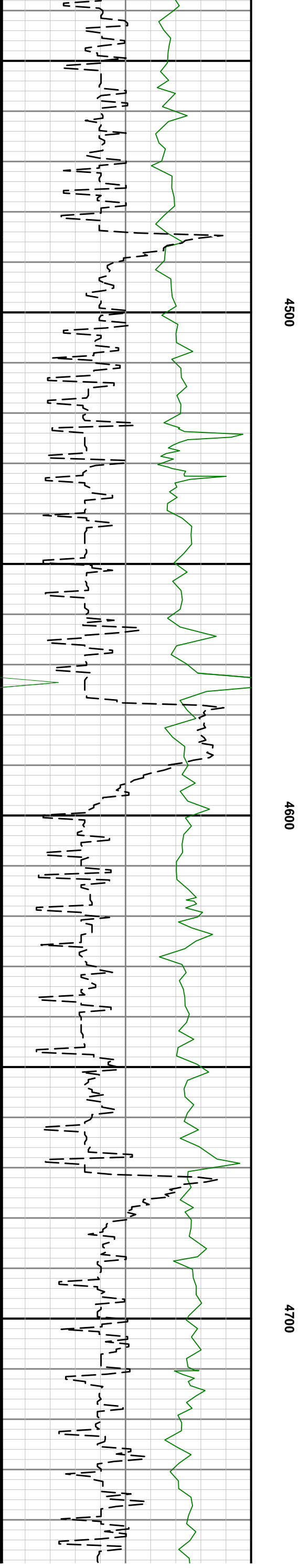
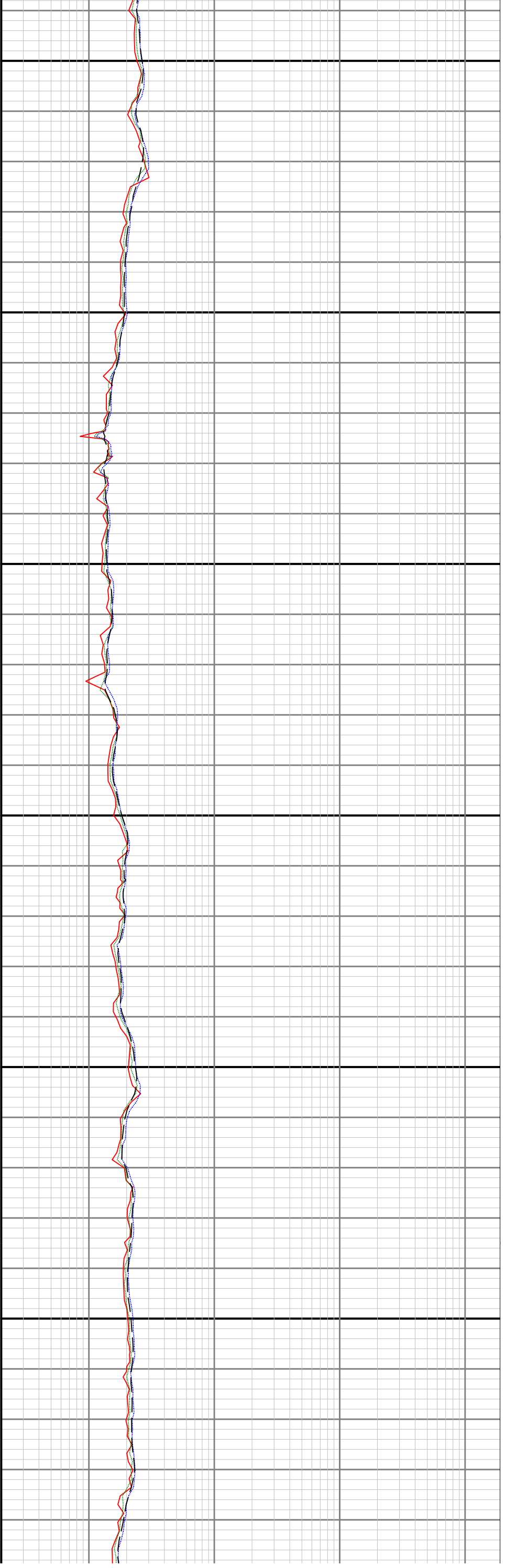


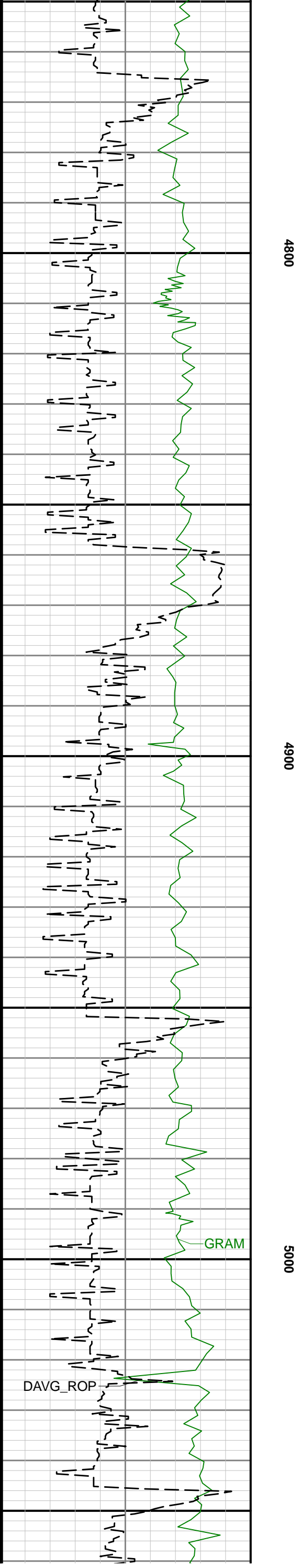
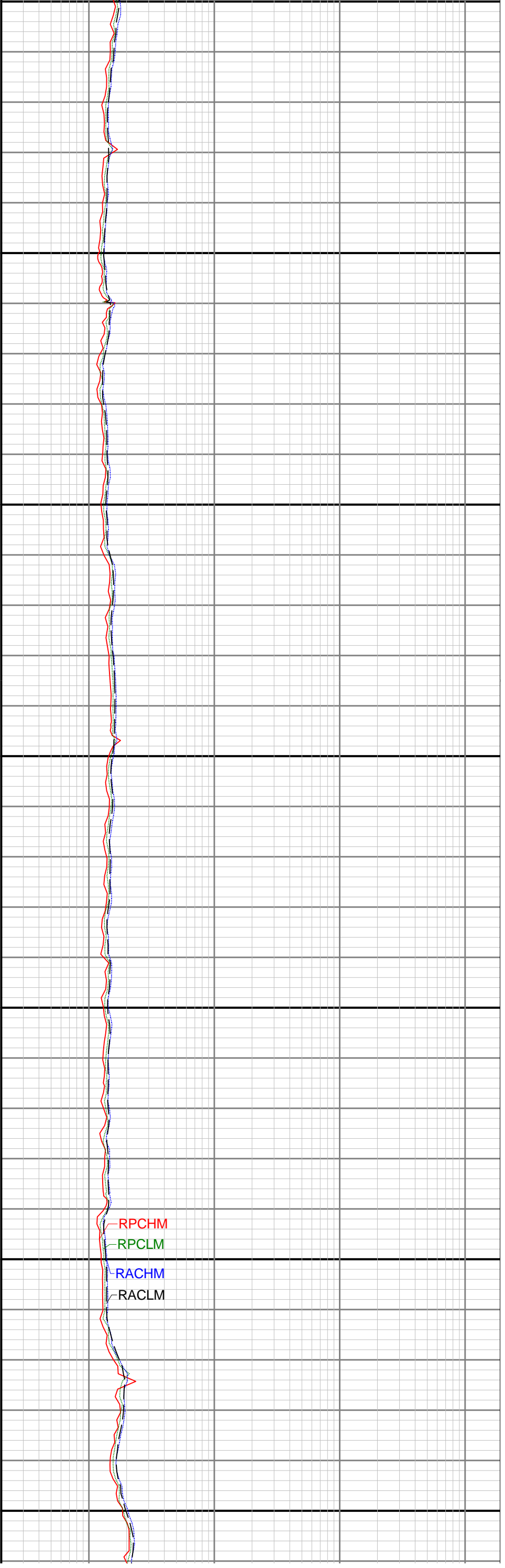


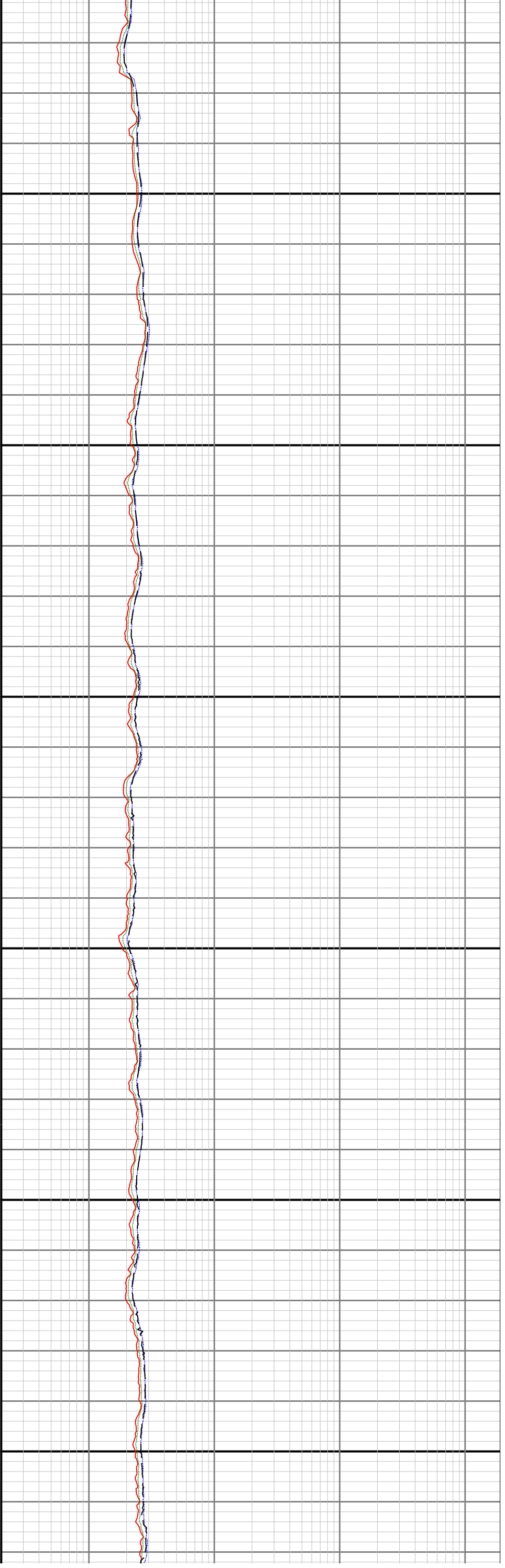








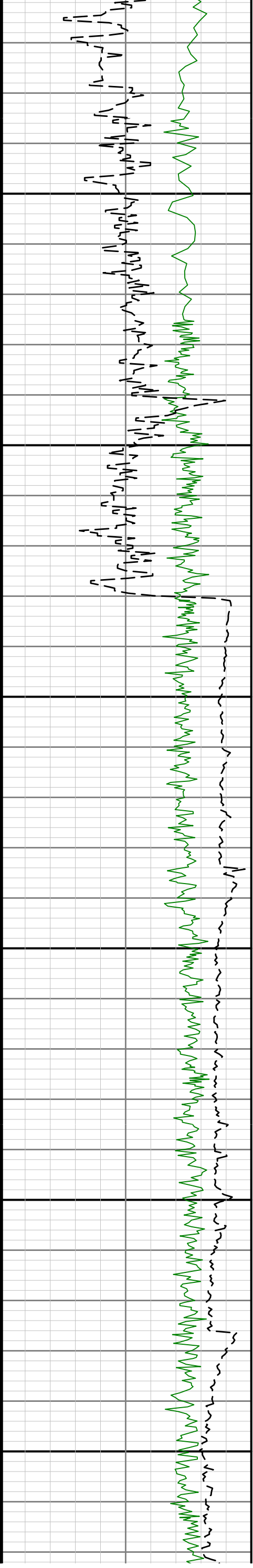


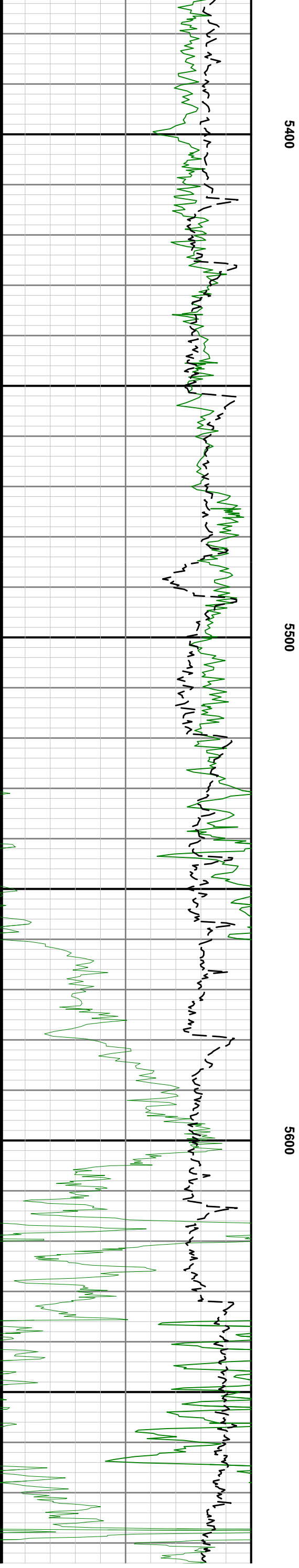
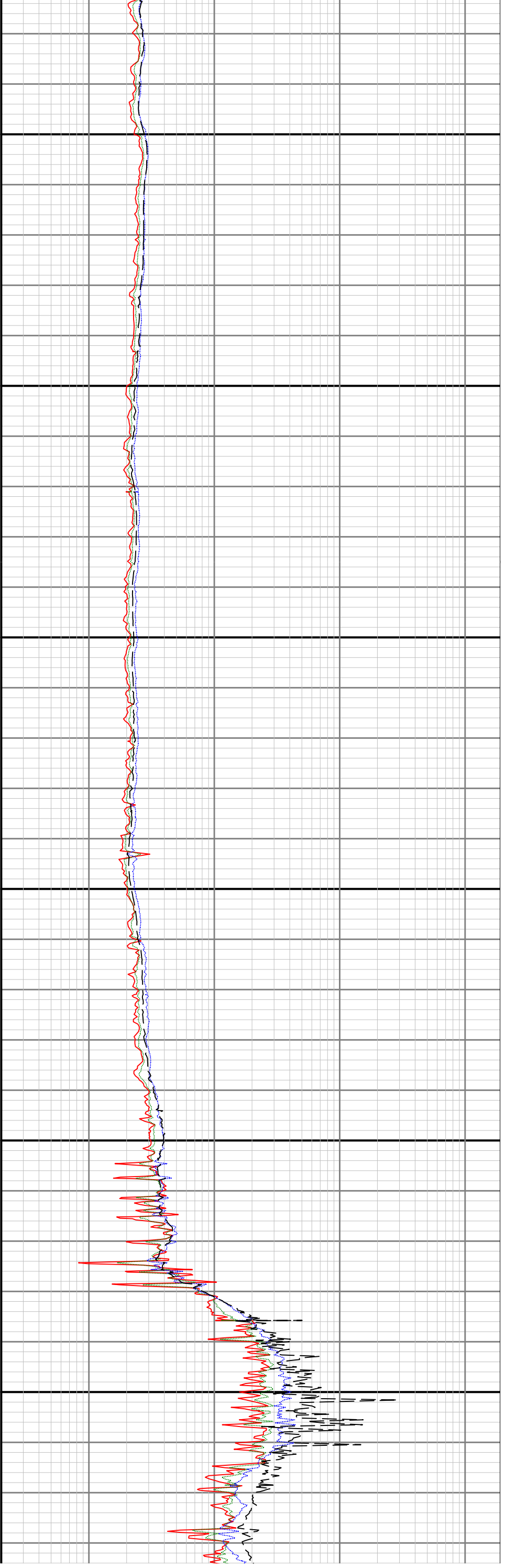


5100

5200

5300





	1879.00	0.52	166.43	N/A	-4.87	-0.52	1878.98	1.08	95.00	0.24	-0.21	10.43
	1927.00	0.36	124.05	N/A	-5.17	-0.34	1926.98	0.94	48.00	0.73	-0.33	-88.29
	1977.00	0.36	55.60	109.5	-5.17	-0.08	1976.98	0.68	50.00	0.81	0.00	-136.90
	2072.00	1.65	186.25	N/A	-6.36	0.01	2071.96	0.72	95.00	2.00	1.36	137.53
	2166.00	3.77	193.74	N/A	-10.71	-0.87	2165.85	2.10	94.00	2.28	2.26	7.97
	2261.00	6.38	188.22	N/A	-18.97	-2.36	2260.47	4.55	95.00	2.79	2.75	-5.81
	2355.00	7.70	179.23	N/A	-30.43	-3.03	2353.77	6.53	94.00	1.83	1.40	-9.56
	2450.00	6.51	177.52	N/A	-42.18	-2.71	2448.03	7.57	95.00	1.27	-1.25	-1.80
	2544.00	6.58	179.84	N/A	-52.89	-2.46	2541.42	8.57	94.00	0.29	0.07	2.47
	2639.00	6.61	179.08	N/A	-63.80	-2.36	2635.79	9.73	95.00	0.10	0.03	-0.80
	2733.00	6.59	177.64	N/A	-74.60	-2.05	2729.17	10.68	94.00	0.18	-0.02	-1.53
	2828.00	6.35	176.57	N/A	-85.29	-1.51	2823.57	11.38	95.00	0.28	-0.25	-1.13
	2922.00	6.95	176.96	N/A	-96.16	-0.90	2916.93	12.03	94.00	0.64	0.64	0.41
	3017.00	6.73	174.14	N/A	-107.43	-0.03	3011.26	12.47	95.00	0.42	-0.23	-2.97
	3112.00	6.31	172.64	N/A	-118.15	1.21	3105.64	12.48	95.00	0.48	-0.44	-1.58
	3206.00	5.85	184.71	N/A	-128.05	1.48	3199.12	13.36	94.00	1.44	-0.49	12.84
	3301.00	7.00	190.50	N/A	-138.56	0.03	3293.52	16.02	95.00	1.39	1.21	6.09
	3395.00	7.03	191.15	N/A	-149.84	-2.13	3386.82	19.47	94.00	0.09	0.03	0.69
	3490.00	8.60	189.33	N/A	-162.55	-4.41	3480.93	23.20	95.00	1.67	1.65	-1.92
	3584.00	9.92	180.27	N/A	-177.59	-5.58	3573.71	26.11	94.00	2.09	1.40	-9.64
	3679.00	8.91	171.06	N/A	-193.04	-4.48	3667.43	26.80	95.00	1.91	-1.06	-9.69
	3773.00	8.58	172.32	N/A	-207.18	-2.41	3760.34	26.39	94.00	0.41	-0.35	1.34
	3868.00	8.03	172.78	N/A	-220.78	-0.63	3854.34	26.19	95.00	0.58	-0.58	0.48
	3963.00	7.51	172.28	N/A	-233.52	1.04	3948.47	26.01	95.00	0.55	-0.55	-0.53
	4057.00	7.22	171.17	N/A	-245.44	2.77	4041.70	25.67	94.00	0.34	-0.31	-1.18
	4152.00	6.88	171.44	N/A	-256.97	4.53	4135.98	25.25	95.00	0.36	-0.36	0.28
	4247.00	7.77	177.20	N/A	-269.01	5.70	4230.20	25.50	95.00	1.21	0.94	6.06
	4341.00	7.23	177.85	N/A	-281.27	6.23	4323.40	26.39	94.00	0.58	-0.57	0.69
	4435.00	6.86	179.50	N/A	-292.79	6.50	4416.69	27.45	94.00	0.45	-0.39	1.76
	4530.00	6.53	182.15	N/A	-303.86	6.35	4511.04	28.89	95.00	0.48	-0.35	2.79
	4625.00	7.05	179.22	N/A	-315.09	6.22	4605.37	30.31	95.00	0.66	0.55	-3.08
	4719.00	7.28	176.66	N/A	-326.80	6.65	4698.64	31.24	94.00	0.42	0.24	-2.72
	4814.00	6.60	175.95	N/A	-338.26	7.38	4792.94	31.84	95.00	0.72	-0.72	-0.75
	4908.00	7.21	173.04	N/A	-349.50	8.48	4886.26	32.05	94.00	0.75	0.65	-3.10
	5003.00	6.64	171.99	N/A	-360.86	9.97	4980.57	31.89	95.00	0.61	-0.60	-1.11
	5097.00	6.20	170.80	N/A	-371.25	11.54	5073.98	31.53	94.00	0.49	-0.47	-1.27
	5192.00	5.59	169.46	N/A	-380.86	13.20	5168.48	30.99	95.00	0.66	-0.64	-1.41
	5286.00	13.06	223.69	N/A	-393.08	6.69	5261.31	38.88	94.00	11.46	7.95	57.69
	5381.00	22.64	251.69	N/A	-406.64	-18.19	5351.79	65.16	95.00	13.28	10.08	29.47
	5476.00	31.26	263.80	N/A	-415.07	-60.16	5436.45	107.82	95.00	10.72	9.07	12.75
	5570.00	36.76	267.32	N/A	-419.02	-112.55	5514.35	160.32	94.00	6.21	5.85	3.74
	5665.00	44.15	265.61	N/A	-422.89	-174.02	5586.59	221.82	95.00	7.87	7.78	-1.80
	5759.00	52.35	261.63	N/A	-430.83	-243.62	5649.14	291.87	94.00	9.27	8.72	-4.23
	5854.00	57.86	261.74	N/A	-442.09	-320.69	5703.47	369.72	95.00	5.80	5.80	0.12
	5948.00	62.70	264.01	N/A	-452.17	-401.66	5750.06	451.32	94.00	5.56	5.15	2.41
	6043.00	72.02	267.79	N/A	-458.34	-489.01	5786.60	538.80	95.00	10.47	9.81	3.98
	6137.00	77.95	267.94	N/A	-461.71	-579.70	5810.94	629.26	94.00	6.31	6.31	0.16
	6232.00	86.95	268.57	N/A	-464.57	-673.73	5823.41	723.00	95.00	9.50	9.47	0.66
	6327.00	90.18	268.16	N/A	-467.28	-768.65	5825.79	817.59	95.00	3.43	3.40	-0.43
	6421.00	90.43	267.87	N/A	-470.54	-862.59	5825.29	911.28	94.00	0.41	0.27	-0.31
	6516.00	91.02	267.65	N/A	-474.25	-957.51	5824.09	1005.99	95.00	0.66	0.62	-0.23
	6610.00	91.54	266.56	N/A	-479.00	-1051.37	5821.99	1099.76	94.00	1.28	0.55	-1.16
	6705.00	90.68	266.75	N/A	-484.54	-1146.19	5820.15	1194.59	95.00	0.93	-0.91	0.20
	6800.00	90.96	266.13	N/A	-490.44	-1240.99	5818.79	1289.44	95.00	0.72	0.29	-0.65
	6894.00	90.43	267.13	N/A	-495.96	-1334.82	5817.65	1383.28	94.00	1.20	-0.56	1.06
	6989.00	91.20	266.83	N/A	-500.97	-1429.68	5816.30	1478.07	95.00	0.87	0.81	-0.32
	7083.00	90.34	267.51	N/A	-505.61	-1523.55	5815.04	1571.86	94.00	1.17	-0.91	0.72
	7178.00	91.23	266.99	N/A	-510.17	-1618.43	5813.73	1666.63	95.00	1.08	0.94	-0.55
	7272.00	90.34	267.85	N/A	-514.40	-1712.33	5812.45	1760.38	94.00	1.32	-0.95	0.91
	7367.00	91.39	268.17	N/A	-517.70	-1807.26	5811.01	1855.05	95.00	1.16	1.11	0.34
	7462.00	89.85	267.98	N/A	-520.89	-1902.20	5809.98	1949.72	95.00	1.63	-1.62	-0.20
	7556.00	89.97	266.49	N/A	-525.42	-1996.09	5810.13	2043.50	94.00	1.59	0.13	-1.59
	7651.00	90.22	265.30	N/A	-532.22	-2090.84	5809.97	2138.41	95.00	1.28	0.26	-1.25
	7745.00	89.23	267.14	N/A	-538.42	-2184.63	5810.43	2232.28	94.00	2.22	-1.05	1.96
	7840.00	89.32	266.61	N/A	-543.60	-2279.48	5811.63	2327.09	95.00	0.57	0.09	-0.56
	7935.00	89.88	266.34	N/A	-549.44	-2374.30	5812.29	2421.95	95.00	0.65	0.59	-0.28
	8029.00	90.89	269.69	N/A	-552.69	-2468.22	5811.66	2515.62	94.00	3.72	1.07	3.56
	8124.00	92.31	269.91	N/A	-553.02	-2563.18	5809.01	2609.98	95.00	1.51	1.49	0.23
	8218.00	90.59	270.79	N/A	-552.45	-2657.15	5806.63	2703.25	94.00	2.06	-1.83	0.94
	8313.00	91.85	271.23	N/A	-550.78	-2752.11	5804.61	2797.38	95.00	1.40	1.33	0.46
	8408.00	90.83	270.89	N/A	-549.02	-2847.07	5802.38	2891.49	95.00	1.13	-1.07	-0.36
	8502.00	91.29	270.30	N/A	-548.04	-2941.04	5800.65	2984.72	94.00	0.80	0.49	-0.63
	8597.00	89.08	270.16	N/A	-547.66	-3036.04	5800.34	3079.03	95.00	2.33	-2.33	-0.15
	8692.00	89.35	269.54	N/A	-547.91	-3131.03	5801.64	3173.41	95.00	0.71	0.28	-0.65
	8786.00	89.35	269.21	N/A	-548.94	-3225.01	5802.71	3266.89	94.00	0.35	0.00	-0.35
	8881.00	90.77	269.55	N/A	-549.96	-3320.01	5802.61	3361.36	95.00	1.54	1.49	0.36
	8975.00	90.99	269.08	N/A	-551.09	-3413.99	5801.16	3454.84	94.00	0.55	0.23	-0.50
	9070.00	91.36	268.20	N/A	-553.34	-3508.94	5799.22	3549.41	95.00	1.00	0.39	-0.93
	9165.00	90.80	269.37	N/A	-555.36	-3603.90	5797.42	3643.97	95.00	1.37	-0.59	1.23
	9259.00	91.57	268.80	N/A	-556.86	-3697.87	5795.48	3737.47	94.00	1.02	0.82	-0.61
	9354.00	91.85	268.16	N/A	-559.37	-3792.79	5792.65	3832.05	95.00	0.74	0.29	-0.67
	9448.00	89.38	267.19	N/A	-563.19	-3886.70	5791.64	3925.77	94.00	2.82	-2.63	-1.03
	9543.00	89.85	267.07	N/A	-567.94	-3981.58	5792.28	4020.56	95.00	0.51	0.49	-0.13
	9637.00	89.85	266.98	N/A	-572.82	-4075.45	5792.52	4114.37	94.00	0.10	0.00	-0.10
	9732.00	89.94	266.67	N/A	-578.08	-4170.30	5792.70	4209.19	95.00	0.34	0.09	-0.33
	9826.00	90.77	266.38	N/A	-583.78	-4264.13	5792.11	4303.05	94.00	0.94	0.88	-0.31
	9921.00	90.34	267.88	N/A	-588.54	-4359.00	5791.19	4397.83	95.00	1.64	-0.45	1.58
	10015.00	90.96	267.66	N/A	-592.20	-4452.93	5790.13	4491.54	94.00	0.70	0.66	-0.23
	10110.00	89.08	266.46	N/A	-597.07	-4547.79	5790.09	4586.34	95.00	2.35	-1.98	-1.26
	10205.00	90.25	267.64	N/A	-601.96	-4642.66	5790.65	4681.14	95.00	1.75	1.23	1.24
	10299.00	91.14	267.38	N/A	-606.04	-4736.57	5789.51	4774.88	94.00	0.99	0.95	-0.28
	10394.00	90.28	268.55	N/A	-609.41	-4831.50	5788.33	4869.56	95.00	1.53	-0.91	1.23
	10488.00	90.37	268.10	N/A	-612.16	-4925.45	5787.80	4963.21	94.00	0.49	0.10	-0.48
	10538.00	90.68	266.90	N/A	-614.34	-4975.40	5787.34	5013.07	50.00	2.48	0.62	-2.40
	10678.00	89.17	267.23	N/A	-621.51	-5115.22	5787.52	5152.77	140.00	1.10	-1.08	0.24
	10761.00	90.40	267.13	N/A	-625.59	-5198.11	5787.83	5235.59	83.00	1.49	1.48	-0.12
Projection	10828.00	90.40	26									