

BAKER HUGHES										LWD COMPOSITE LOG																																																											
Scale: 1:240 TVD Depth Reference: Driller's Depth										Multiple Propagation Resistivity Gamma Ray																																																											
										Company: Noble Energy					Well: RILEY LD19-715					Field: WELD COUNTY																																																	
										County: Weld County					State: Colorado																																																						
										Status: Final Print					Surface Location: Latitude: 40° 41' 10" N Longitude: 105° 41' 00" W UTM: N/A SEC: 19					Other Services: Wellbore Survey																																																	
										API No: 0512343478 Job ID: 8132073					Permanent Datum (P.D.): Ground Level Log Measured From: Rig Floor					Elevation: 4820.00 ft Above P.D. 30.00 ft KB: N/A DF: 4850.00 ft GL: 4820.00 ft																																																	
Dates										Interval Logged										Magnetic Field Reference																																																	
Date From: 2016-10-15 Date To: 2016-10-16 Spud Date: 2016-10-12										Top: (ft) 1900.00 Bottom: (ft) 5921.00										Azi Reference North: Grid Total Magnetic Field Strength: (nT) Mag to Reference North Correction: (deg)																																																	
Borehole Record										Casing Record																																																											
Hole Size (in)										From (ft)										To (ft)										Size (in)										Weight (lb/ft)										From (ft)										To (ft)									
13.500										30.00										1940.00										9.625										36.00										30.00										1930.00									
8.500										1940.00										10928.00																																																	

"These interpretations and analyses ("Interpretations") are opinions provided by Baker Hughes Oilfield Operations, Inc ("Baker Hughes"), based upon industry practice, empirical relationships, assumptions and measurements, (many of which may be provided by the customer). The Interpretations are not infallible and may be subject to different opinions. Vjwu."Dcmgt"Jwijgu"fqgu"pqv"ycttcpv"vjgkt"ceewtce{."eqttgevpguu."qt"eqorngvgpguu."qt"vjcv"vjg"ewuvqogtøu"cpflqt"cp{"vjktf"rctv{øu"tgnkcepg"qp"uwej"Kpvgtrtgvcvkqpu"yknn"ceeqornkuj"cp{"rctvkewnct"tguwnvu0"Vjg"ewuvqogt"cuuwogu"hwnn"responsibility for the use of the Interpretations and for decisions based thereon and the customer agrees to release, defend and indemnify Baker Hughes, its parent, subsidiaries and affiliated or related entities, and subcontractors, together with its and their officers, directors, employees, agents and invitees against, any and all claims, losses, damages, or expenses sustained by the customer or any third party arising out of reliance upon or use of the Interpretations, without regard to the cause(s) thereof, including without limitation any form of negligence on the part of Baker Hughes. Unless other contract terms have been agreed to by the parties, each party's liabilities and qdnkicvkqpu"ujcnn"dg"iqxgtpgf"d{"Dcmgt"Jwijgu"Kpeqtrqtcvgføu"Yqtnfykfg"Vgtou"cpf"Eqpfkvkqpu0\$""

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 (h)
						Top (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	8.500	PDC	2.00	Motor	1877.62	7286.53	1940.00	7344.88	2016-10-13 22:46	2016-10-15 14:05	39.92
2	2	8.500	PDC	2.00	Motor	7288.74	10996.00	7344.88	11052.00	2016-10-15 21:42	2016-10-18 02:36	45.32

Crew

Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite
Adam Slaght		2016-10-12	2016-10-18	Justin Leach		2016-10-12	2016-10-18	Matthew Leopold		2016-10-12	2016-10-18
Steven Cano		2016-10-12	2016-10-18								

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2016-10-13 01:35	1	1940.00	Oil Based Mud	9.8	11	N/A	22.0	81.4/18.6	Active Pit	21866	0.00
2016-10-14 10:54	1	4032.42	Oil Based Mud	9.3	9	N/A	24.0	80.9/19.1	Active Pit	23000	0.00
2016-10-14 18:15	1	5445.48	Oil Based Mud	9.3	8	N/A	22.0	83.3/16.7	Active Pit	22500	0.00
2016-10-15 08:00	1	6676.51	Oil Based Mud	9.2	8	N/A	18.0	83.2/16.8	Active Pit	25000	0.00
2016-10-15 18:35	2	7343.00	Oil Based Mud	9.2	8	N/A	18.0	83.2/16.8	Active Pit	25000	0.00
2016-10-16 06:00	2	7615.18	Oil Based Mud	9.2	8	N/A	17.6	84.4/15.6	Active Pit	24000	0.00
2016-10-17 06:05	2	9873.13	Oil Based Mud	9.3	9	N/A	18.0	84.3/15.7	Active Pit	23000	0.00

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)
2016-10-13 06:13		1	1940.00	79.0	100.000	100.000	100.000	96.0	100.000	100.000	100.000

Equipment and Service Data

Run No	Tool	Serial Number	Measurement	Sensor	Bit	Max	Min

No.		Number		Offset (ft)	Offset (ft)	O.D. (in)	I.D. (in)
1	OnTrak	12473598	Pressure	1.02	57.45	6.750	0.000
1	OnTrak	12473598	Gamma (double)	1.91	58.34	6.750	0.000
1	OnTrak	12473598	Resistivity (4tx)	5.95	62.38	6.750	0.000
1	OnTrak	12473598	Directional (mag)	11.74	68.17	6.750	0.000
2	NaviGamma	11912316	Gamma (single)	7.85	56.14	6.750	2.750
2	NaviGamma	11912316	VSS	11.23	59.52	6.750	2.750
2	NaviGamma	11912316	Directional (mag)	11.23	59.52	6.750	2.750

Service and Tool Mnemonics

Mnemonic	Name	Description
OTK	OnTrak	Sensor Sub (Inc, Azi, Temp, Azimuthal GR, Res, AP, VSS), OnTrak Platform
BCPM	BCPM	Bi-Directional Communication and Power Module, OnTrak Platform
GAM	NaviGamma	Probe Based Gamma Module, NaviTrak Platform

Comments

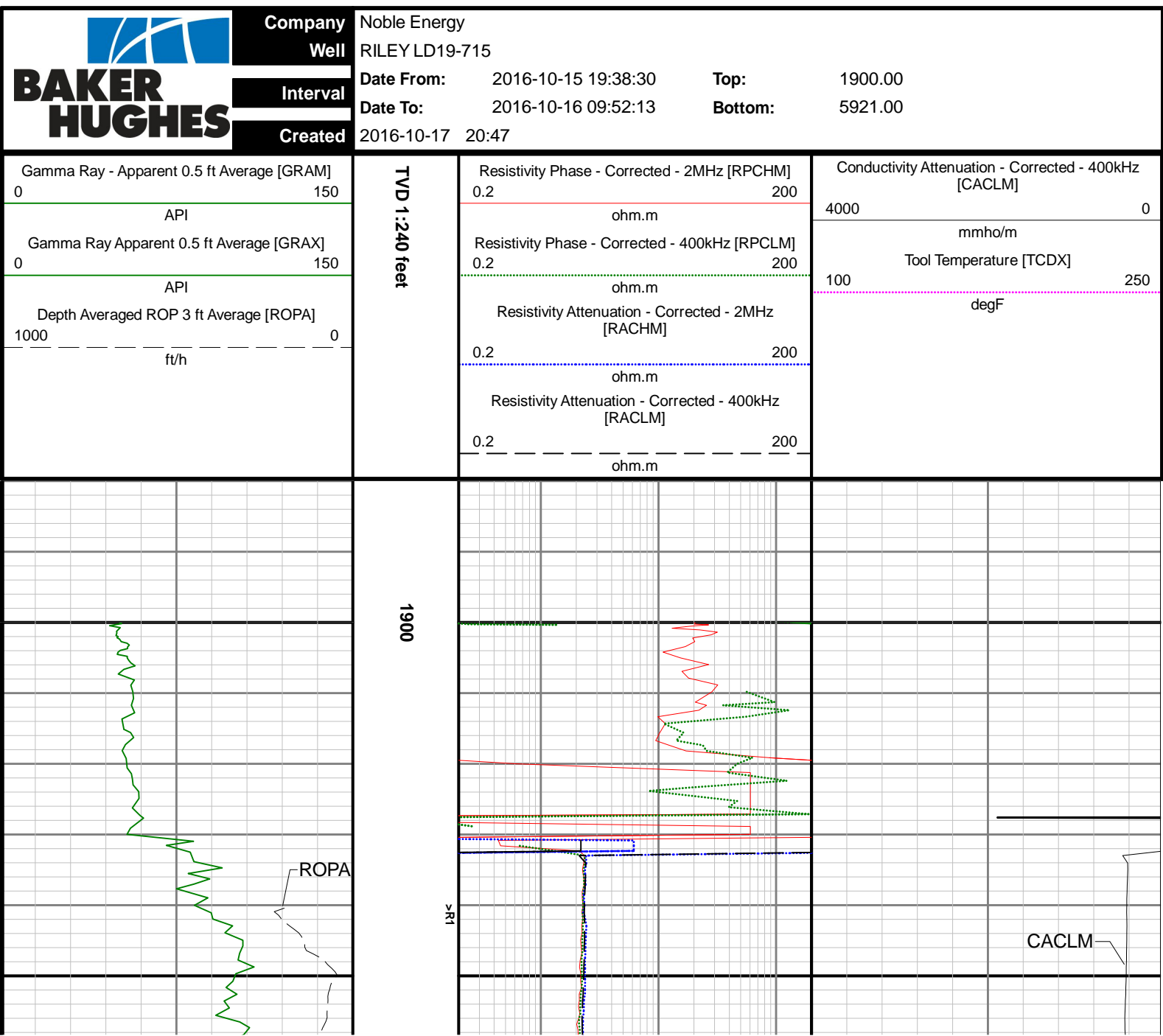
1	Baker Hughes logging services run behind an 8 1/2 inch bit from 1940 to 10928 feet MD (1939 to 5904 feet TVD).
2	Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.

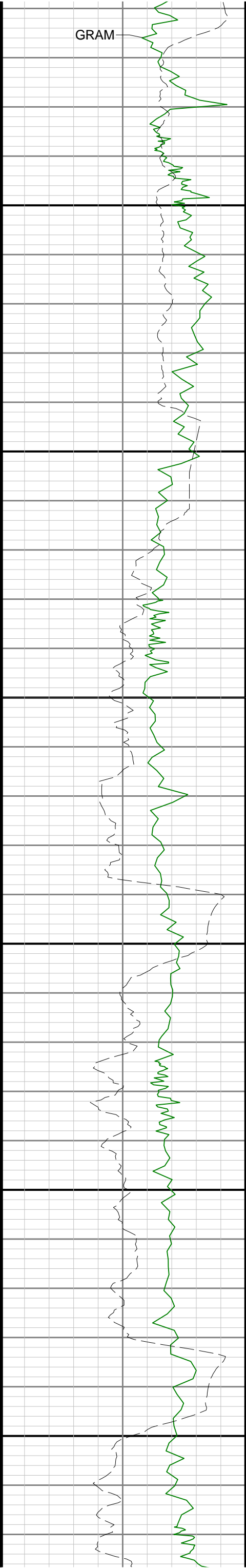
Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	7300.00	8.500	2	Multiple Propagation Resistivity services ended with run 1.
2	11015.00	8.500	2	The interval from 10996 to 11052 ft MD (5860 feet TVD) has no gamma ray data due to sensor to bit offset.

Curve Mnemonics

Presented Curves	Description	Units
CACLM	Conductivity Attenuation - Corrected - 400kHz	mmho/m
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
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 3 ft Average	ft/h
GRAM	Gamma Ray - Apparent 0.5 ft Average	API
GRAX	Gamma Ray - Apparent 0.5 ft Average	API

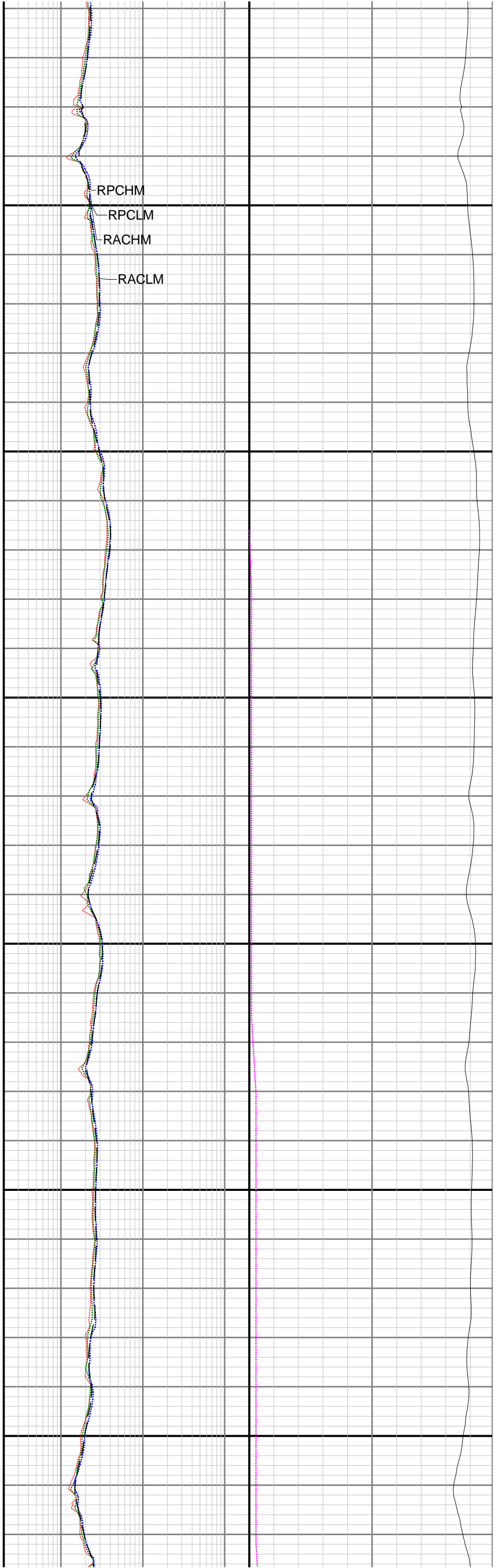




2000

2100

2200

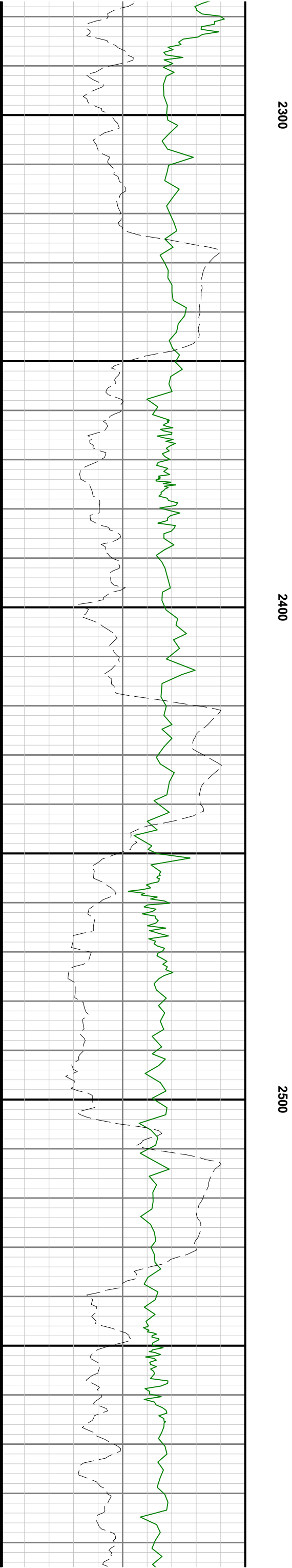
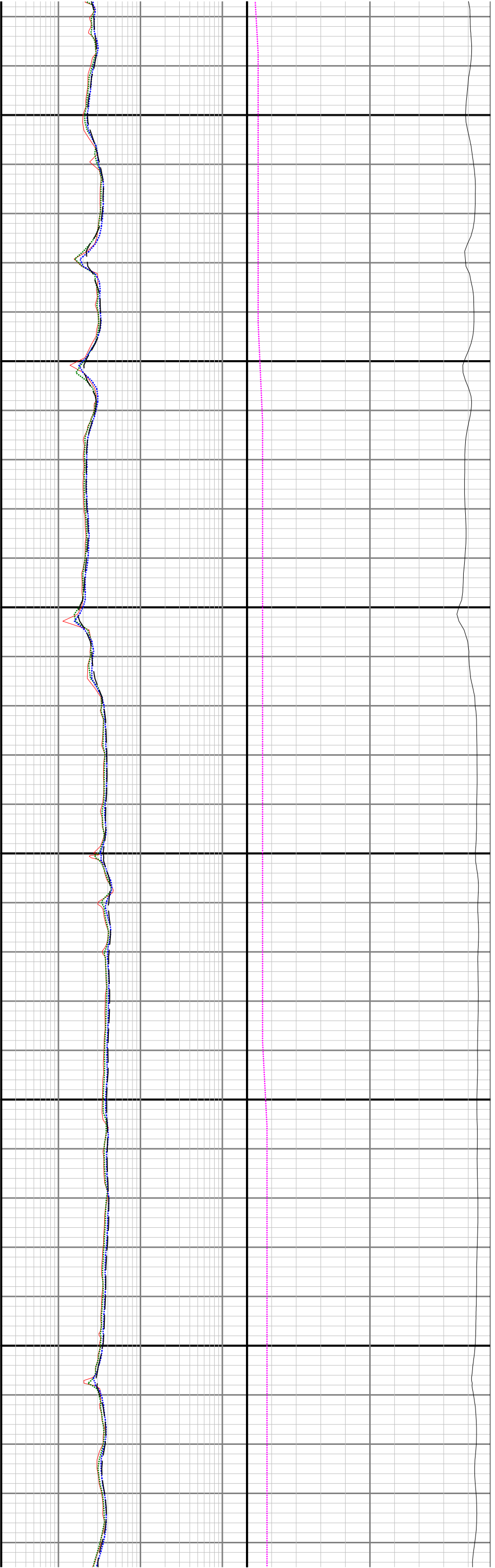


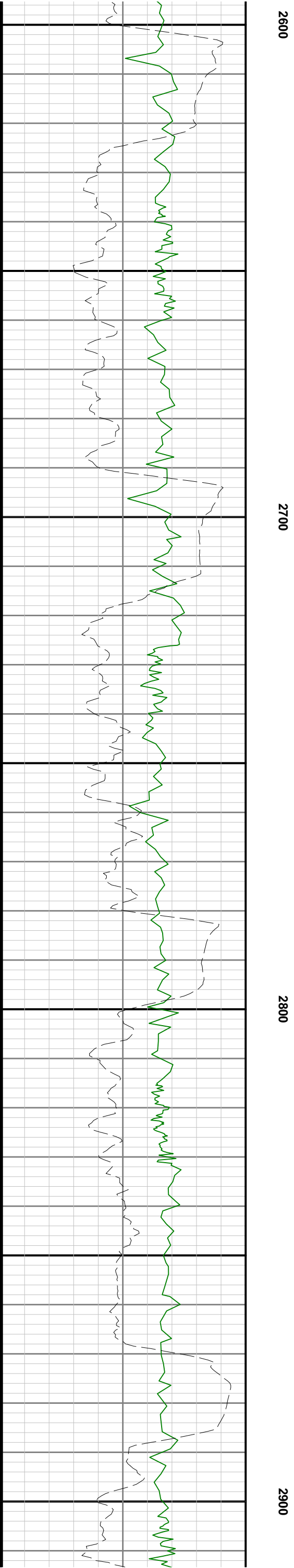
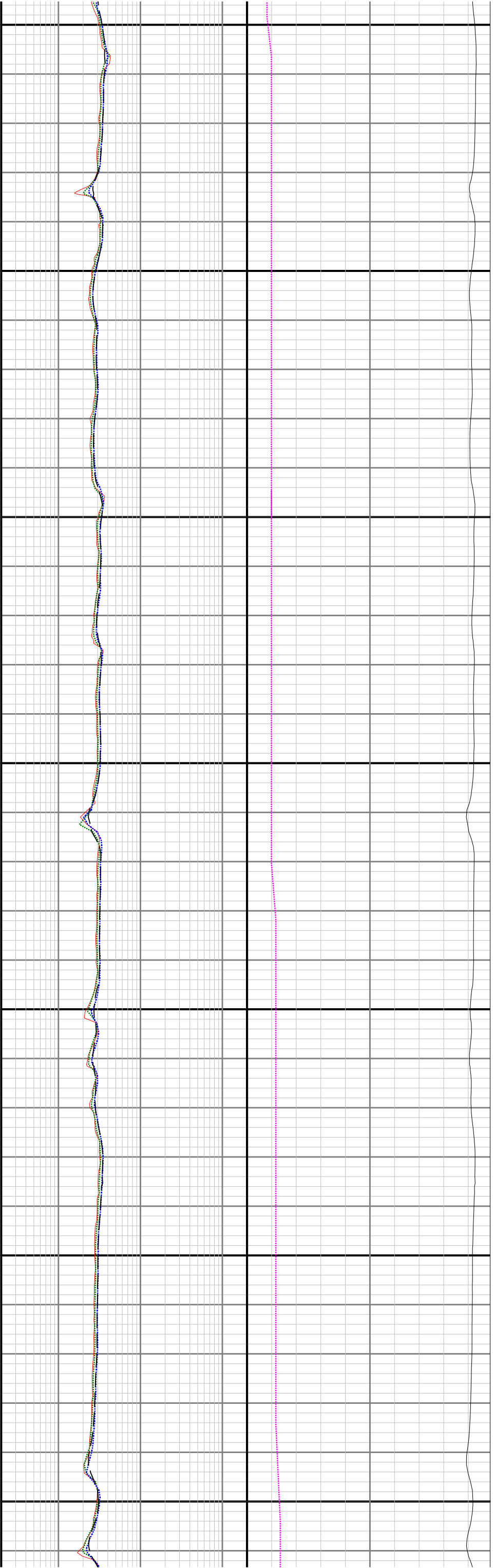
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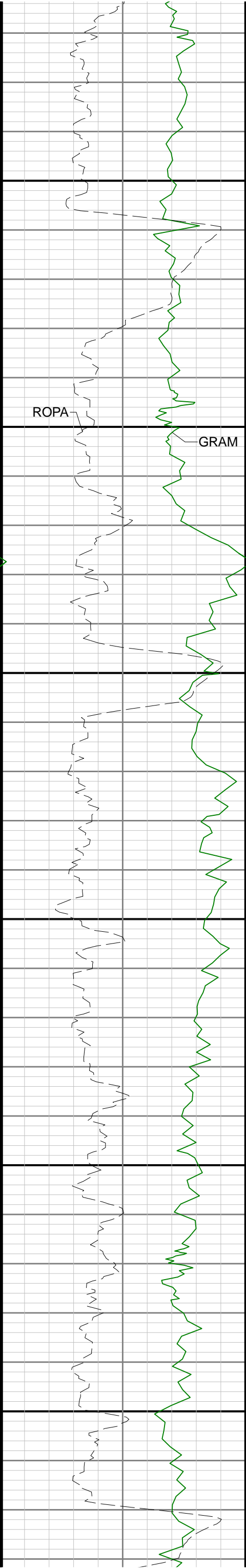
RPCLM

RACHM

RACLM



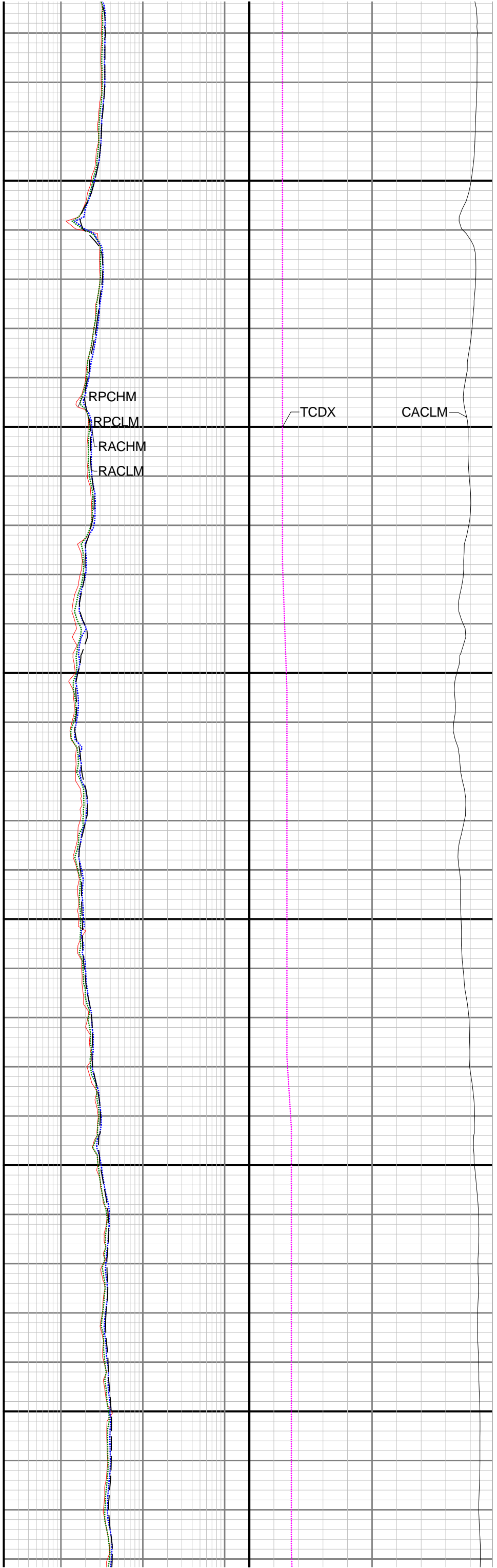


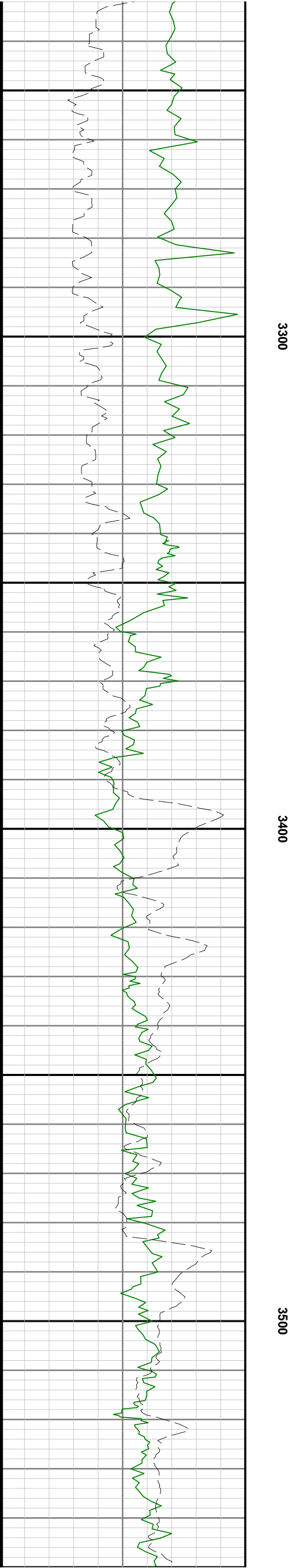


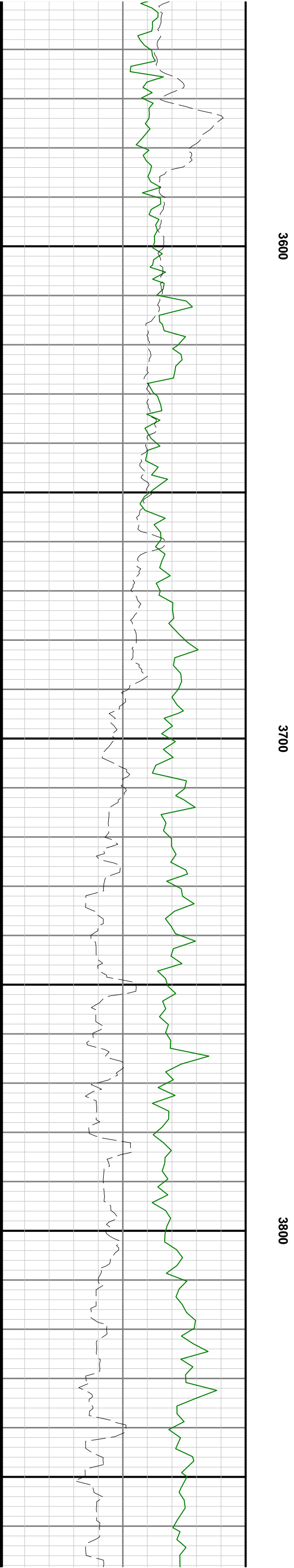
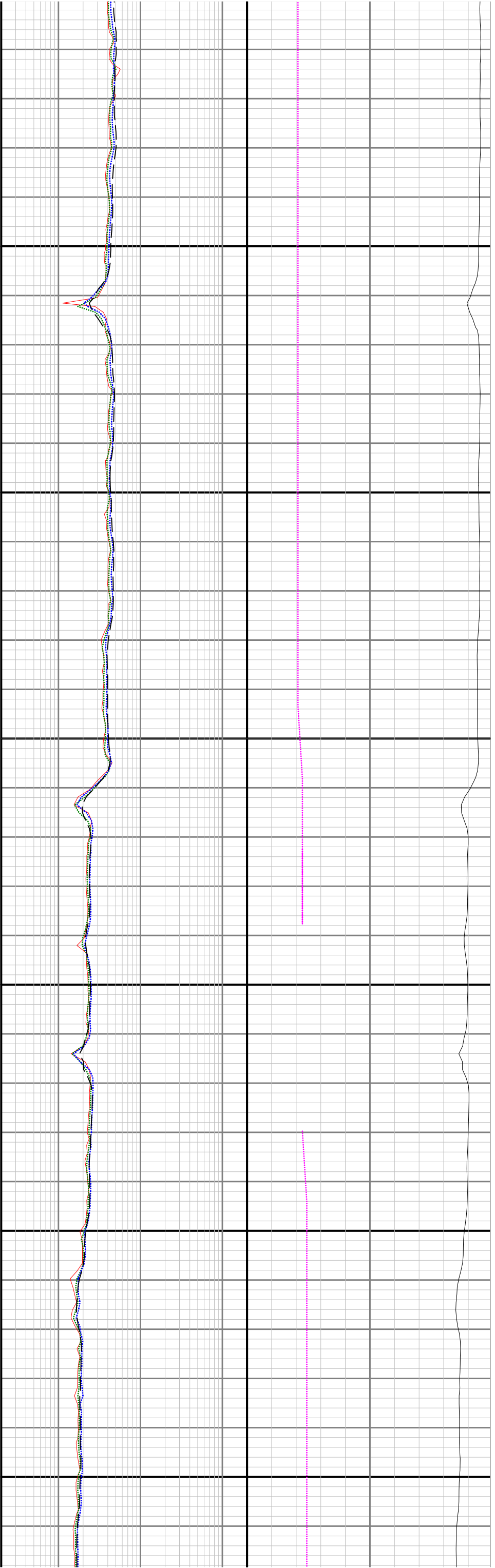
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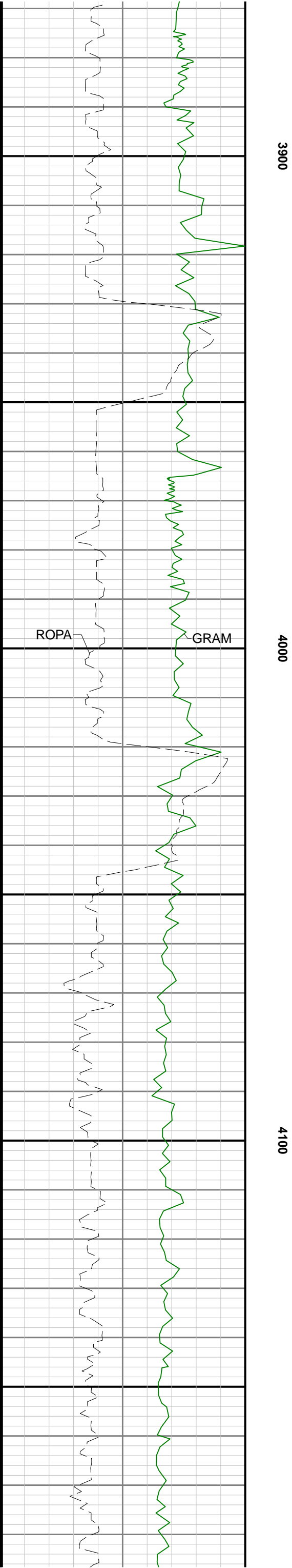
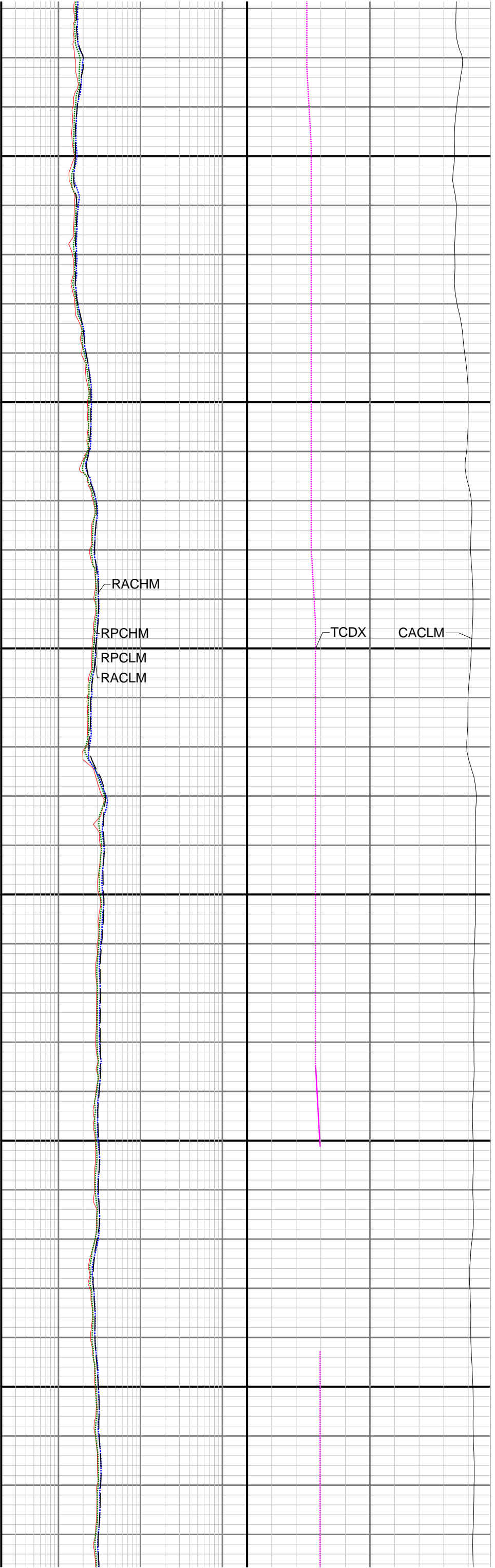
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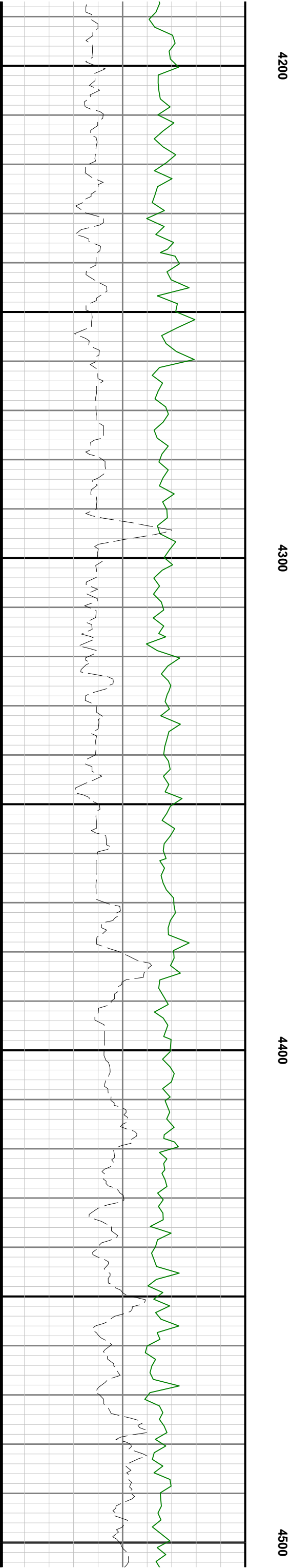
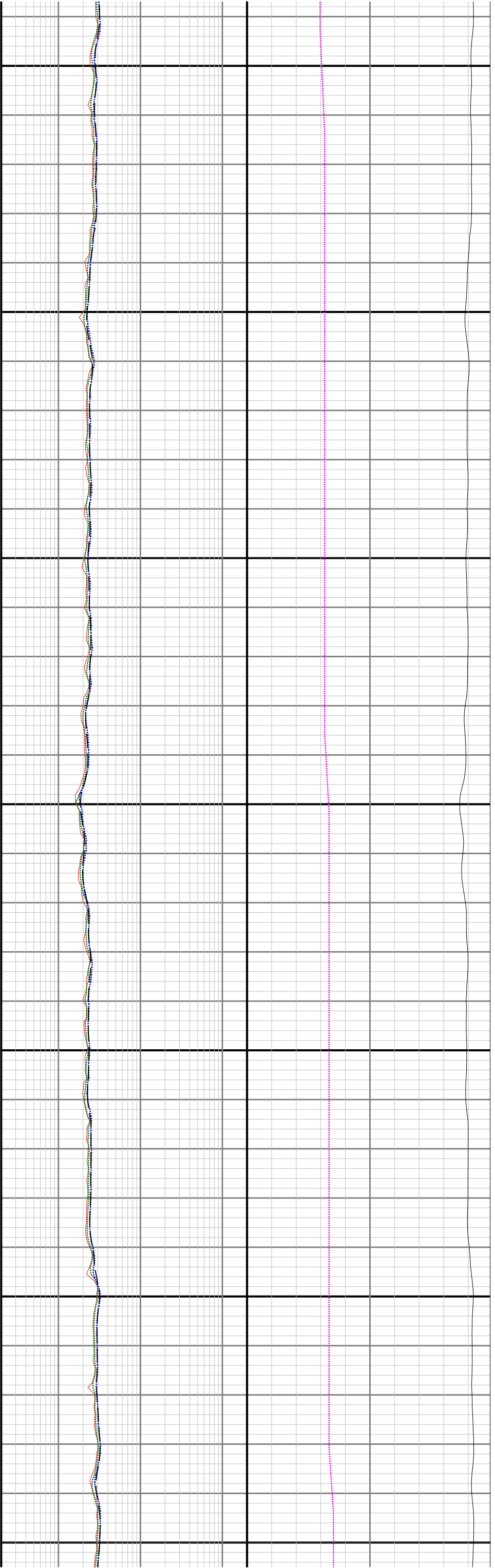
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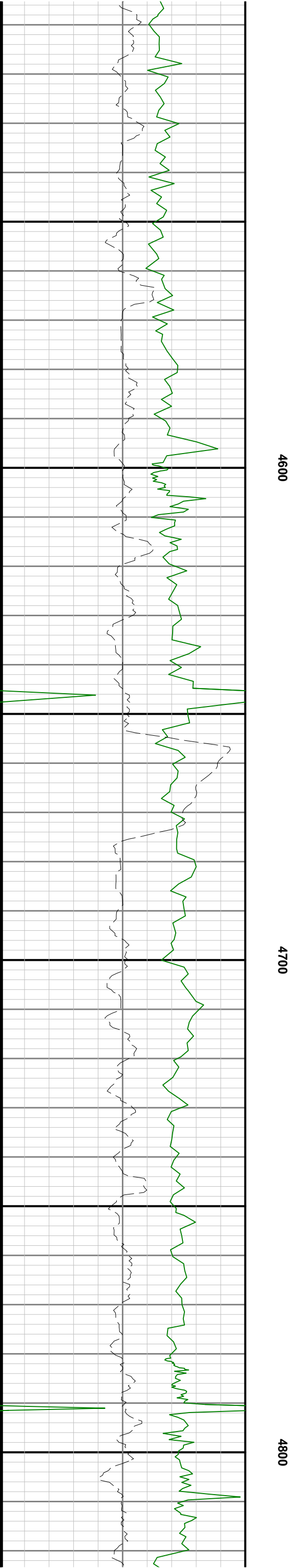


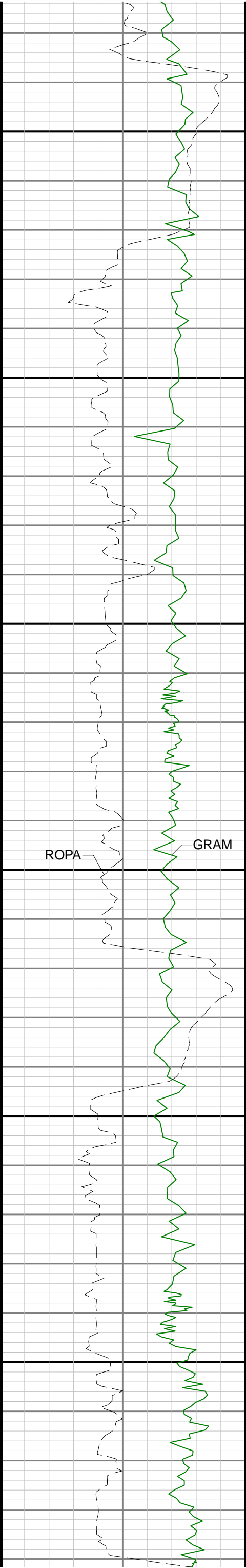








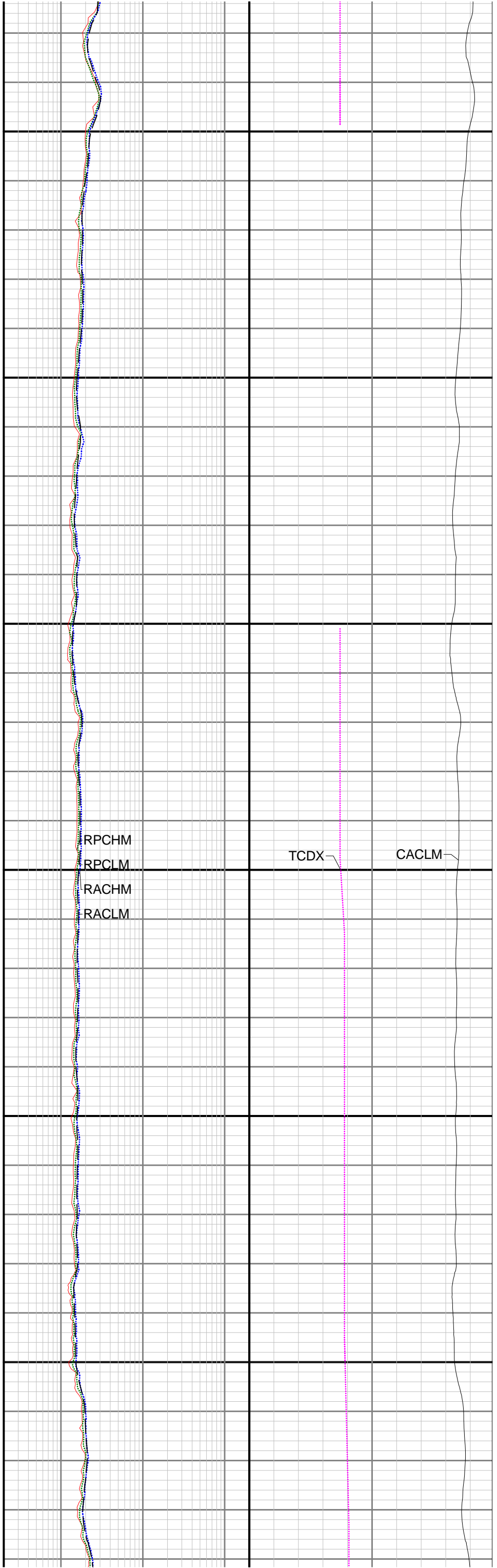




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5000

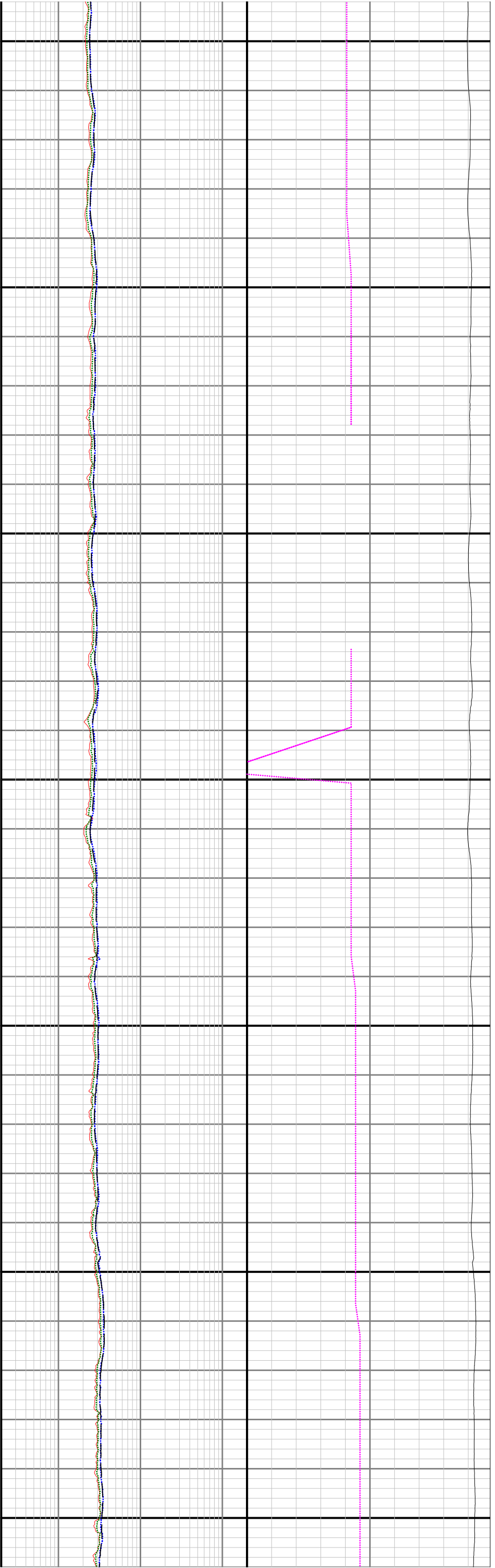
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RPCHM
RPCLM
RACHM
RACLM

TCDX

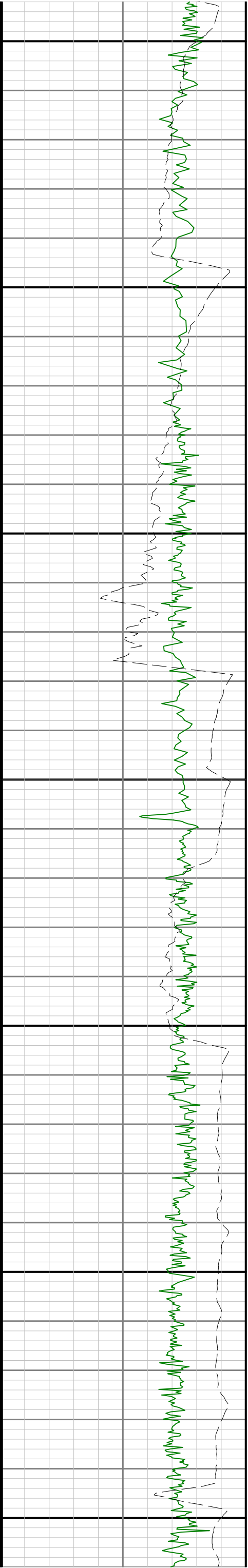
CACLM

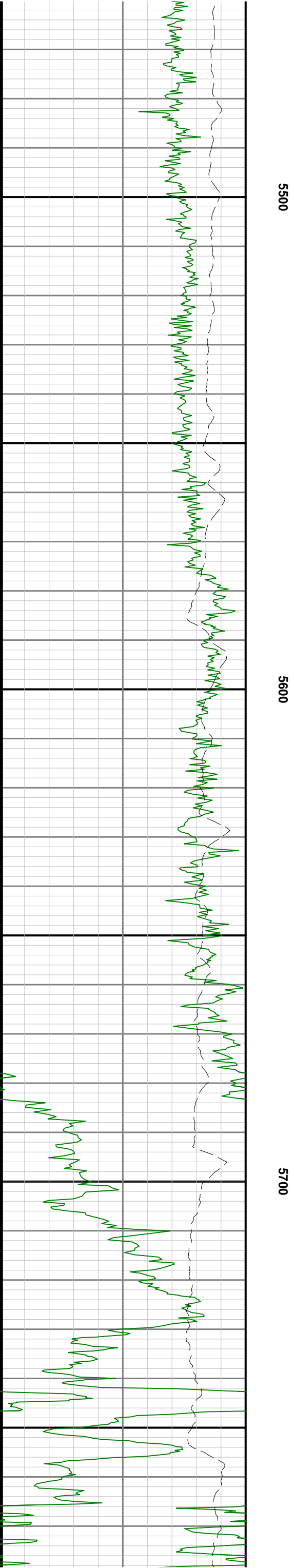
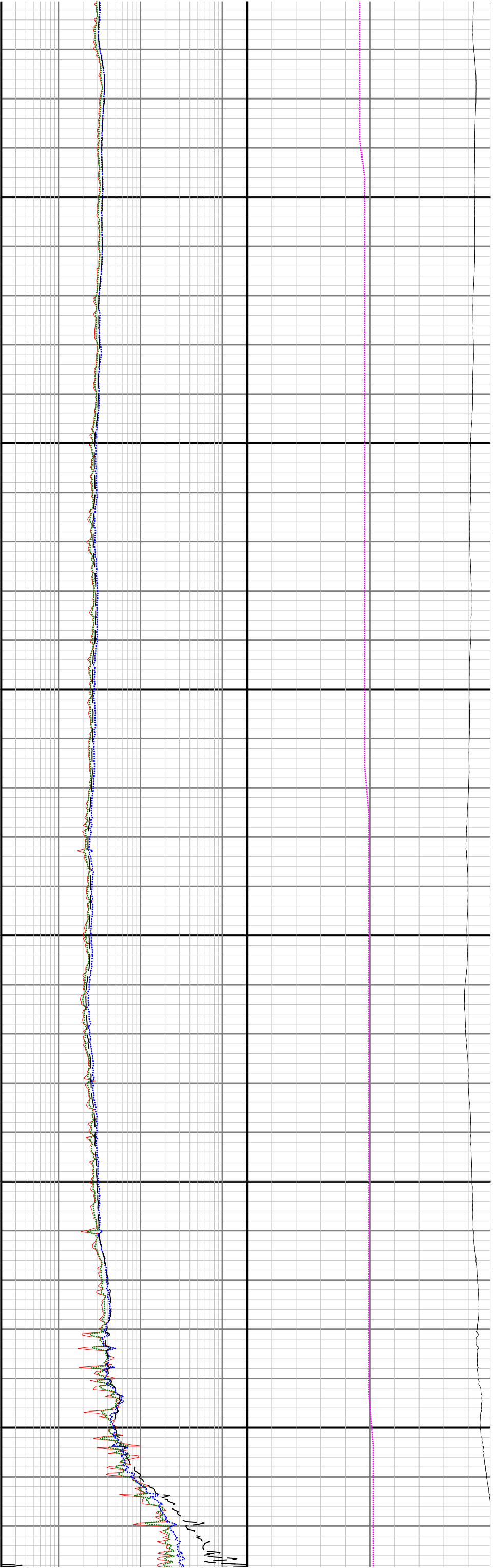


5200

5300

5400





	1653.00	6.25	208.89	N/A	-3.33	-0.37	1664.97	-3.33	94.00	0.24	0.91	-30.79
	1780.00	0.70	209.81	N/A	-4.26	-0.77	1779.97	-4.32	95.00	0.44	0.44	1.18
	1874.00	1.47	172.11	N/A	-5.95	-0.89	1873.95	-6.00	94.00	1.08	0.82	-40.11
	1923.00	1.82	172.34	N/A	-7.34	-0.70	1922.93	-7.33	49.00	0.71	0.71	0.47
	1974.00	3.10	162.26	N/A	-9.46	-0.17	1973.88	-9.29	51.00	2.64	2.51	-19.76
	2069.00	3.99	166.64	N/A	-15.12	1.38	2068.70	-14.51	95.00	0.98	0.94	4.61
	2163.00	5.96	160.95	N/A	-22.92	3.73	2162.34	-21.64	94.00	2.16	2.10	-6.05
	2258.00	7.81	156.21	N/A	-33.49	7.94	2256.65	-31.11	95.00	2.04	1.95	-4.99
	2352.00	10.67	150.03	N/A	-46.87	14.87	2349.43	-42.76	94.00	3.22	3.04	-6.57
	2447.00	13.18	140.72	N/A	-62.88	26.12	2442.38	-56.08	95.00	3.32	2.64	-9.80
	2541.00	15.58	131.14	N/A	-79.48	42.42	2533.44	-68.94	94.00	3.59	2.55	-10.19
	2636.00	17.26	122.98	N/A	-95.55	63.85	2624.57	-80.20	95.00	3.00	1.77	-8.59
	2730.00	18.96	116.97	N/A	-110.07	89.16	2713.92	-89.15	94.00	2.68	1.81	-6.39
	2825.00	20.41	110.49	N/A	-122.87	118.44	2803.38	-95.59	95.00	2.76	1.53	-6.82
	2920.00	20.83	105.90	N/A	-133.30	150.20	2892.30	-99.19	95.00	1.76	0.44	-4.83
	3014.00	22.29	100.46	N/A	-141.11	183.81	2979.73	-99.85	94.00	2.63	1.55	-5.79
	3109.00	23.21	95.96	N/A	-146.33	220.15	3067.34	-97.40	95.00	2.07	0.97	-4.74
	3204.00	23.17	95.10	N/A	-149.93	257.39	3154.67	-93.19	95.00	0.36	-0.04	-0.91
	3298.00	22.40	93.03	N/A	-152.52	293.69	3241.33	-88.19	94.00	1.18	-0.82	-2.20
	3393.00	22.75	92.95	N/A	-154.43	330.11	3329.05	-82.48	95.00	0.37	0.37	-0.08
	3487.00	20.99	92.15	N/A	-155.99	365.09	3416.29	-76.75	94.00	1.90	-1.87	-0.85
	3582.00	19.50	90.41	N/A	-156.75	397.95	3505.41	-70.66	95.00	1.69	-1.57	-1.83
	3676.00	18.32	90.68	N/A	-157.03	428.41	3594.34	-64.61	94.00	1.26	-1.26	0.29
	3771.00	18.44	90.71	N/A	-157.40	458.36	3684.49	-58.74	95.00	0.13	0.13	0.03
	3865.00	18.66	90.37	N/A	-157.68	488.27	3773.61	-52.81	94.00	0.26	0.23	-0.36
	3960.00	18.75	90.88	N/A	-158.01	518.73	3863.59	-46.80	95.00	0.20	0.09	0.54
	4055.00	17.14	94.12	N/A	-159.25	547.96	3953.97	-41.94	95.00	1.99	-1.69	3.41
	4149.00	16.25	104.36	N/A	-163.51	574.53	4044.03	-40.59	94.00	3.26	-0.95	10.89
	4244.00	16.08	106.81	N/A	-170.61	600.00	4135.27	-42.24	95.00	0.74	-0.18	2.58
	4338.00	16.11	107.27	N/A	-178.25	624.91	4225.59	-44.54	94.00	0.14	0.03	0.49
	4433.00	15.98	107.02	N/A	-185.99	650.00	4316.89	-46.90	95.00	0.15	-0.14	-0.26
	4528.00	15.69	107.33	N/A	-193.64	674.77	4408.28	-49.24	95.00	0.32	-0.31	0.33
	4622.00	15.49	107.39	N/A	-201.18	698.88	4498.82	-51.60	94.00	0.21	-0.21	0.06
	4716.00	15.39	107.47	N/A	-208.68	722.76	4589.43	-53.98	94.00	0.11	-0.11	0.09
	4811.00	16.92	110.55	N/A	-217.31	747.73	4680.68	-57.24	95.00	1.85	1.61	3.24
	4905.00	16.60	111.22	N/A	-226.98	773.05	4770.68	-61.43	94.00	0.40	-0.34	0.71
	4999.00	18.04	108.46	N/A	-236.44	799.38	4860.42	-65.22	94.00	1.76	1.53	-2.94
	5094.00	17.20	110.01	N/A	-245.91	826.53	4950.96	-68.84	95.00	1.01	-0.88	1.63
	5188.00	17.96	111.91	N/A	-256.07	853.04	5040.57	-73.28	94.00	1.01	0.81	2.02
	5283.00	17.07	113.21	N/A	-267.03	879.44	5131.17	-78.51	95.00	1.02	-0.94	1.37
	5377.00	27.52	105.32	N/A	-278.24	913.17	5218.04	-82.47	94.00	11.54	11.12	-8.39
	5472.00	35.87	101.72	N/A	-289.72	961.68	5298.81	-83.62	95.00	9.01	8.79	-3.79
	5566.00	39.72	94.56	N/A	-297.70	1018.63	5373.11	-79.60	94.00	6.20	4.10	-7.62
	5661.00	43.07	77.06	N/A	-292.84	1080.73	5444.61	-61.94	95.00	12.65	3.53	-18.42
	5755.00	46.73	60.52	N/A	-268.72	1142.04	5511.41	-25.61	94.00	12.99	3.89	-17.60
	5850.00	46.02	43.66	N/A	-226.81	1195.94	5577.20	26.59	95.00	12.85	-0.75	-17.75
	5944.00	43.66	26.94	N/A	-173.22	1234.13	5644.09	86.94	94.00	12.77	-2.51	-17.79
	6039.00	47.27	11.24	N/A	-109.54	1255.87	5710.91	153.74	95.00	12.35	3.80	-16.53
	6134.00	55.45	358.90	N/A	-35.90	1261.94	5770.32	227.04	95.00	13.28	8.61	-12.99
	6228.00	62.85	347.03	N/A	43.87	1251.77	5818.62	302.96	94.00	13.38	7.87	-12.63
	6323.00	70.14	342.11	N/A	127.73	1228.52	5856.50	380.16	95.00	9.02	7.67	-5.18
	6417.00	75.39	344.77	N/A	213.76	1202.97	5884.35	459.00	94.00	6.20	5.59	2.83
	6512.00	80.31	348.70	N/A	304.11	1181.70	5904.35	542.96	95.00	6.57	5.18	4.14
	6607.00	89.45	351.84	N/A	397.26	1165.75	5912.82	630.77	95.00	10.17	9.62	3.31
	6701.00	90.99	353.58	N/A	490.50	1153.82	5912.46	719.49	94.00	2.47	1.64	1.85
	6796.00	89.23	353.79	N/A	584.92	1143.37	5912.27	809.68	95.00	1.87	-1.85	0.22
	6890.00	89.38	353.66	N/A	678.35	1133.10	5913.41	898.94	94.00	0.21	0.16	-0.14
	6985.00	89.75	355.31	N/A	772.90	1123.97	5914.13	989.53	95.00	1.78	0.39	1.74
	7079.00	90.74	357.40	N/A	866.70	1117.99	5913.73	1080.05	94.00	2.46	1.05	2.22
	7174.00	91.97	357.45	N/A	961.58	1113.72	5911.49	1171.97	95.00	1.30	1.29	0.05
	7269.00	92.65	356.21	N/A	1056.35	1108.48	5907.66	1263.58	95.00	1.49	0.72	-1.31
	7365.00	91.88	355.52	N/A	1152.03	1101.56	5903.86	1355.73	96.00	1.08	-0.80	-0.72
	7459.00	90.00	354.85	N/A	1245.68	1093.67	5902.32	1445.70	94.00	2.12	-2.00	-0.71
	7554.00	87.87	356.71	N/A	1340.40	1086.68	5904.09	1536.90	95.00	2.98	-2.24	1.96
	7648.00	87.97	356.67	N/A	1434.18	1081.26	5907.50	1627.51	94.00	0.11	0.11	-0.04
	7743.00	88.34	356.91	N/A	1528.98	1075.94	5910.56	1719.14	95.00	0.46	0.39	0.25
	7837.00	88.68	356.91	N/A	1622.81	1070.87	5913.00	1809.87	94.00	0.36	0.36	0.00
	7932.00	88.12	357.74	N/A	1717.67	1066.44	5915.65	1901.74	95.00	1.05	-0.59	0.87
	8027.00	87.88	358.39	N/A	1812.56	1063.24	5918.97	1993.89	95.00	0.73	-0.25	0.68
	8121.00	90.12	359.07	N/A	1906.51	1061.15	5920.61	2085.36	94.00	2.49	2.38	0.72
	8216.00	90.89	358.93	N/A	2001.49	1059.50	5919.77	2177.93	95.00	0.82	0.81	-0.15
	8311.00	91.63	358.90	N/A	2096.45	1057.70	5917.68	2270.44	95.00	0.78	0.78	-0.03
	8405.00	92.84	359.39	N/A	2190.37	1056.30	5914.02	2362.02	94.00	1.39	1.29	0.52
	8500.00	91.79	358.36	N/A	2285.27	1054.43	5910.18	2454.46	95.00	1.55	-1.11	-1.08
	8594.00	90.34	356.87	N/A	2379.17	1050.52	5908.43	2545.50	94.00	2.21	-1.54	-1.59
	8689.00	91.02	356.69	N/A	2474.01	1045.18	5907.31	2637.16	95.00	0.74	0.72	-0.19
	8784.00	92.31	357.66	N/A	2568.85	1040.50	5904.55	2728.96	95.00	1.70	1.36	1.02
	8878.00	90.77	359.17	N/A	2662.78	1037.91	5902.02	2820.30	94.00	2.29	-1.64	1.61
	8973.00	88.80	356.35	N/A	2757.69	1034.19	5902.38	2912.37	95.00	3.62	-2.07	-2.97
	9068.00	89.48	356.45	N/A	2852.49	1028.23	5903.80	3003.86	95.00	0.72	0.72	0.11
	9163.00	90.12	358.16	N/A	2947.38	1023.76	5904.13	3095.76	95.00	1.92	0.67	1.80
	9257.00	90.25	359.25	N/A	3041.35	1021.64	5903.83	3187.24	94.00	1.17	0.14	1.16
	9352.00	90.49	359.56	N/A	3136.35	1020.65	5903.22	3279.95	95.00	0.41	0.25	0.33
	9447.00	91.14	0.09	N/A	3231.34	1020.36	5901.86	3372.81	95.00	0.88	0.68	0.56
	9541.00	91.63	0.13	N/A	3325.31	1020.54	5899.59	3464.77	94.00	0.52	0.52	0.04
	9636.00	92.56	0.69	N/A	3420.24	1021.22	5896.12	3557.77	95.00	1.14	0.98	0.59
	9730.00	91.48	0.98	N/A	3514.17	1022.59	5892.81	3649.94	94.00	1.19	-1.15	0.31
	9825.00	92.12	0.99	N/A	3609.11	1024.22	5889.82	3743.14	95.00	0.67	0.67	0.01
	9920.00	92.34	0.71	N/A	3704.03	1025.63	5886.13	3836.28	95.00	0.37	0.23	-0.29
	10015.00	89.66	359.75	N/A	3799.00	1026.01	5884.47	3929.27	95.00	3.00	-2.82	-1.01
	10110.00	88.92	359.22	N/A	3893.99	1025.16	5885.65	4022.00	95.00	0.96	-0.78	-0.56
	10204.00	89.23	359.44	N/A	3987.97	1024.06	5887.16	4113.71	94.00	0.40	0.33	0.23
	10298.00	89.91	359.52	N/A	4081.96	1023.21	5887.87	4205.47	94.00	0.73	0.72	0.09
	10393.00	90.34	359.58	N/A	4176.96	1022.46	5887.66	4298.24	95.00	0.46	0.45	0.06
	10487.00	91.17	359.22	N/A	4270.95	1021.48	5886.42	4389.97	94.00	0.96	0.88	-0.38
	10582.00	91.26	358.36	N/A	4365.90	1019.47	5884.41</					