

Schlumberger

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3-17D

Field: Wildcat

County: Morgan

State: Colorado

Schlumberger

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3-17D

Field: Wildcat

County: Morgan

State: Colorado

Schlumberger

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3-17D

Field: Wildcat

County: Morgan

State: Colorado

Schlumberger

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3-17D

Field: Wildcat

County: Morgan

State: Colorado

Schlumberger

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3-17D

Field: Wildcat

County: Morgan

State: Colorado

County: Morgan Field: Wildcat Location: SENE/4 Sec. 17, T3N, R55W Well: Windy Hill 3-17D Company: Windy Hill Gas Storage, LLC			
<h2>Natural Gamma-Ray Spectrometry Tool</h2>			
LOCATION			
SENE/4 Sec. 17, T3N, R55W 1826' FSL & 2290' FEL		Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft	
Permanent Datum:	Ground Level	Elev.: 5350 ft	
Log Measured From:	Kelly Bushing	18.0 ft above Perm. Datum	
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section 17	Township 3N	Range 55W

County: Morgan Field: Wildcat Location: SENE/4 Sec. 17, T3N, R55W Well: Windy Hill 3-17D Company: Windy Hill Gas Storage, LLC			
<h2>Natural Gamma-Ray Spectrometry Tool</h2>			
LOCATION			
SENE/4 Sec. 17, T3N, R55W 1826' FSL & 2290' FEL		Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft	
Permanent Datum:	Ground Level	Elev.: 5350 ft	
Log Measured From:	Kelly Bushing	18.0 ft above Perm. Datum	
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section 17	Township 3N	Range 55W

County: Morgan Field: Wildcat Location: SENE/4 Sec. 17, T3N, R55W Well: Windy Hill 3-17D Company: Windy Hill Gas Storage, LLC			
<h2>Natural Gamma-Ray Spectrometry Tool</h2>			
LOCATION			
SENE/4 Sec. 17, T3N, R55W 1826' FSL & 2290' FEL		Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft	
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	Ground Level _____ Kelly Bushing _____ Kelly Bushing _____	Elev.: 5350 ft 18.0 ft above Perm. Datum	
API Serial No.	Section 17	Township 3N	Range 55W

County: Morgan Field: Wildcat Location: SENE/4 Sec. 17, T3N, R55W Well: Windy Hill 3-17D Company: Windy Hill Gas Storage, LLC			
<h2>Natural Gamma-Ray Spectrometry Tool</h2>			
LOCATION			
SENE/4 Sec. 17, T3N, R55W 1826' FSL & 2290' FEL		Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft	
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	Ground Level _____ Kelly Bushing _____ Kelly Bushing _____	Elev.: 5350 ft 18.0 ft above Perm. Datum	
API Serial No.	Section 17	Township 3N	Range 55W

County: Morgan Field: Wildcat Location: SENE/4 Sec. 17, T3N, R55W Well: Windy Hill 3-17D Company: Windy Hill Gas Storage, LLC			
<h2>Natural Gamma-Ray Spectrometry Tool</h2>			
LOCATION			
SENE/4 Sec. 17, T3N, R55W 1826' FSL & 2290' FEL		Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft	
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	Ground Level _____ Kelly Bushing _____ Kelly Bushing _____	Elev.: 5350 ft 18.0 ft above Perm. Datum	
API Serial No.	Section 17	Township 3N	Range 55W

County: Morgan Field: Wildcat Location: SENE/4 Sec. 17, T3N, R55W Well: Windy Hill 3-17D Company: Windy Hill Gas Storage, LLC			
<h2>Natural Gamma-Ray Spectrometry Tool</h2>			
LOCATION			
SENE/4 Sec. 17, T3N, R55W 1826' FSL & 2290' FEL		Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft	
Permanent Datum:	Ground Level	Elev.: 5350 ft	
Log Measured From:	Kelly Bushing	18.0 ft above Perm. Datum	
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section 17	Township 3N	Range 55W








LOCATION			
SENE/4 Sec. 17, T3N, R56W 1826' FSL & 2290' FEL	Elev.: K.B. 5368 ft G.L. 5350 ft D.F. 5367 ft		
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	Ground Level _____ Kelly Bushing _____ Kelly Bushing _____	Elev.: 5350 ft	18.0 ft above Perm. Datum
API Serial No.	Section 17	Township 3N	Range 55W

[illegible]

Logging Date	12-Aug-2007				
Run Number	1				
Depth Driller	5433 ft				
Schlumberger Depth	5427 ft				
Bottom Log Interval	5419 ft				
Top Log Interval	476 ft				
Casing Driller Size @ Depth	13.375 in @ 463 ft			@	
Casing Schlumberger	476 ft				
Bit Size	12.250 in				
Type Fluid In Hole	KCL Polymer				
Density	9.8 lbm/gal		51 s		
Fluid Loss	PH				
Source Of Sample	Flowline				
RM @ Measured Temperature	0.560 ohm.m @ 130 degF			@	
RMF @ Measured Temperature	0.448 ohm.m @ 130 degF			@	
RMC @ Measured Temperature	0.672 ohm.m @ 130 degF			@	
Source RMF	RMC		Calculated		
RM @ MRT	RMF @ MRT	0.522 @ 140	0.417 @ 140	@	@
Maximum Recorded Temperatures	140 degF				
Circulation Stopped	Time	12-Aug-2007	8:30		
Logger On Bottom	Time	12-Aug-2007	11:30		
Unit Number	Location	3003	Fort Morgan, CO		
Recorded By	Matt Baldwin				
Witnessed By	Lynn Brewer				

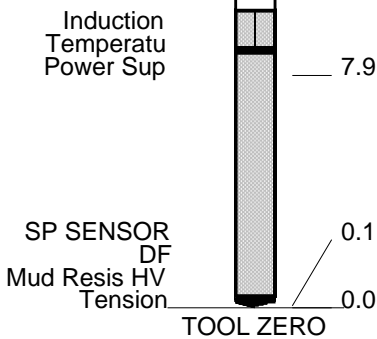
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density	Viscosity		
Fluid Loss	PH		
Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF	RMC		
RM @ MRT	RMF @ MRT	@	@
Maximum Recorded Temperatures			
Circulation Stopped	Time		
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

OTHER SERVICES1	OTHER SERVICES2
OS1: PEX	OS1:
OS2: Caliper	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in hole	
Tool run as per tool sketch	
Matrix changes noted on logs.	

Rig: Unit 234					
Thank you for using Schlumberger Wireline					
Crew: Sam Hopper & David Marquez					
RUN 1			RUN 2		
SERVICE ORDER #:		11634009	SERVICE ORDER #:		
PROGRAM VERSION:		15C0-309	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
GSR-U WITM (DTS)-A					
DOWNHOLE EQUIPMENT					
LEH-QT LEH-QT		55.1			
DTC-H ECH-KC DTCH0-A DTCH1-A	CTEM TelStatus ToolStatu	51.3 49.2			
DSLT-FTB DSLCL-B ECH-KH SLS-W		49.2			
					
		36.7 36.0 35.7 33.0 32.8 32.0			
	USN UHN USF UHF				
	LSF LHF LHN LSN				
					
	DSLT Aux.	28.6			
DTA-A ECH-KE DTA-A		28.6			
NGT-C NGD-A 1745 NGH-B	Detector	23.3			
		24.6			

NGC-C
NGCH-A

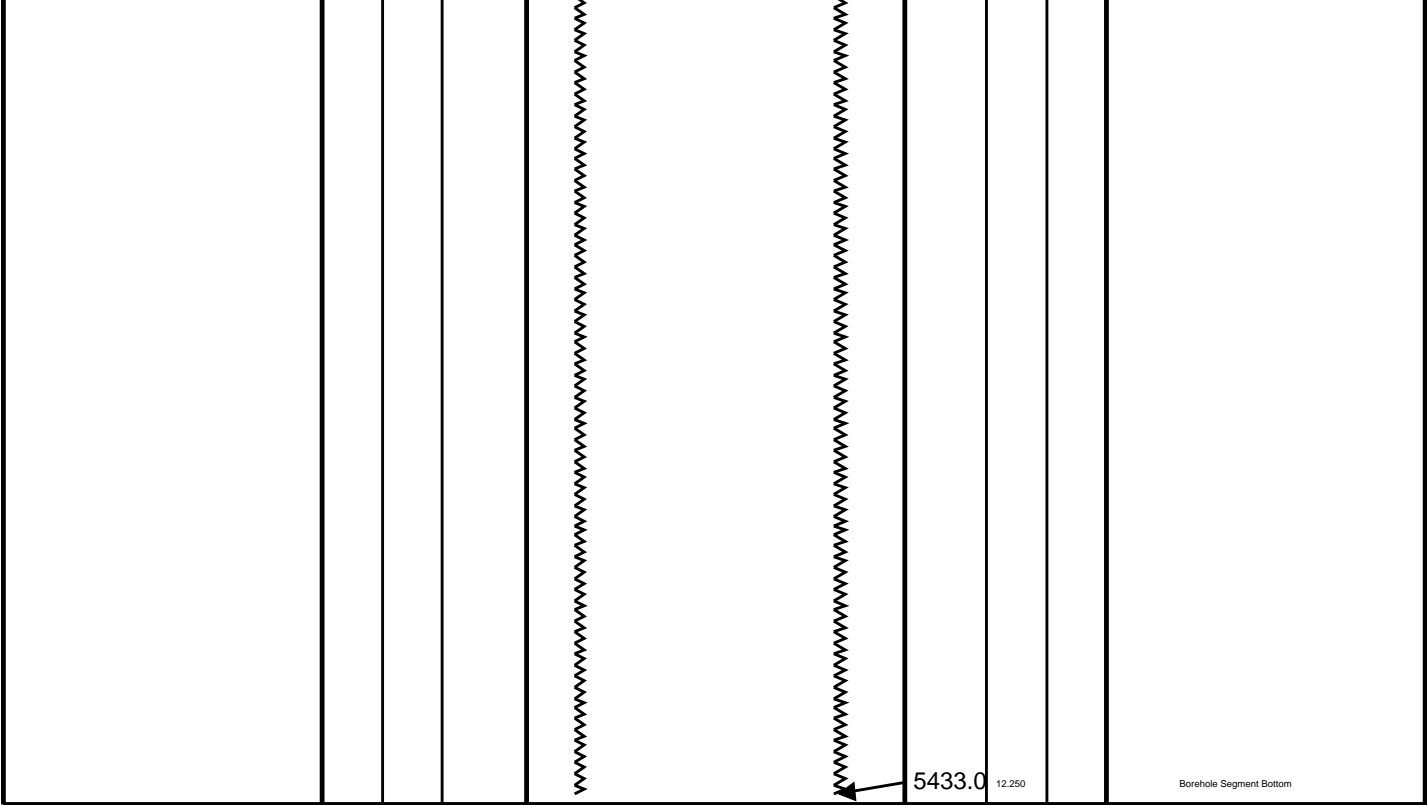
AIT-H
AHIS-BA 372
AHRM-A



16.0

MAXIMUM STRING DIAMETER 4.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Production String	(in)		(ft)	Well Schematic	(ft)	(in)		Casing String
	OD	ID			MD	OD	ID	
					0.0	13.375		Casing String, 52.5 lbm/ft
					476.0	13.375		Casing Shoe
					476.0	12.250		Borehole Segment



5433.0

12.250

Borehole Segment Bottom

ALL DEPTHS AS PER DRILLER

Schlumberger

NGT Ratios
100’=5"

MAXIS Field Log

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3–17D

Input DLIS Files

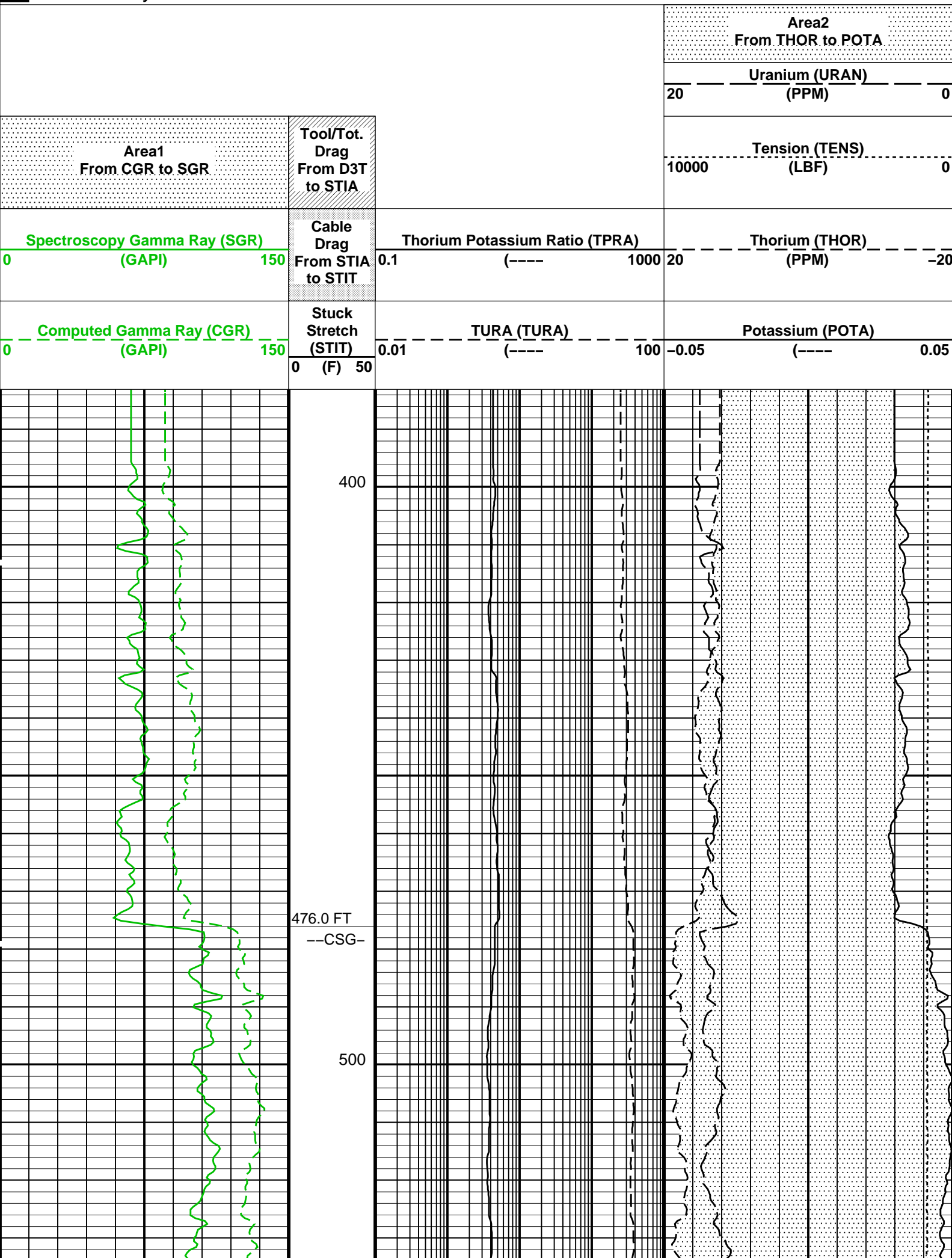
DEFAULT	AIT_NGS_SONIC_012LUP	FN:11	PRODUCER	12–Aug–2007 12:03	5430.0 FT	379.0 FT
---------	----------------------	-------	----------	-------------------	-----------	----------

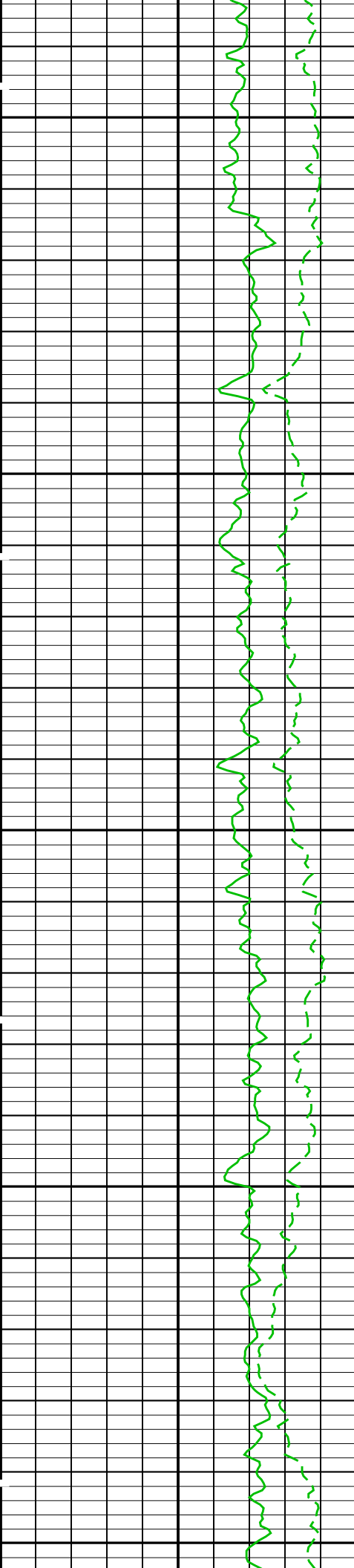
Output DLIS Files

DEFAULT	AIT_NGS_SONIC_022PUP	FN:21	PRODUCER	12–Aug–2007 13:28	5430.0 FT	383.0 FT
---------	----------------------	-------	----------	-------------------	-----------	----------

OP System Version: 15C0–309
MCM

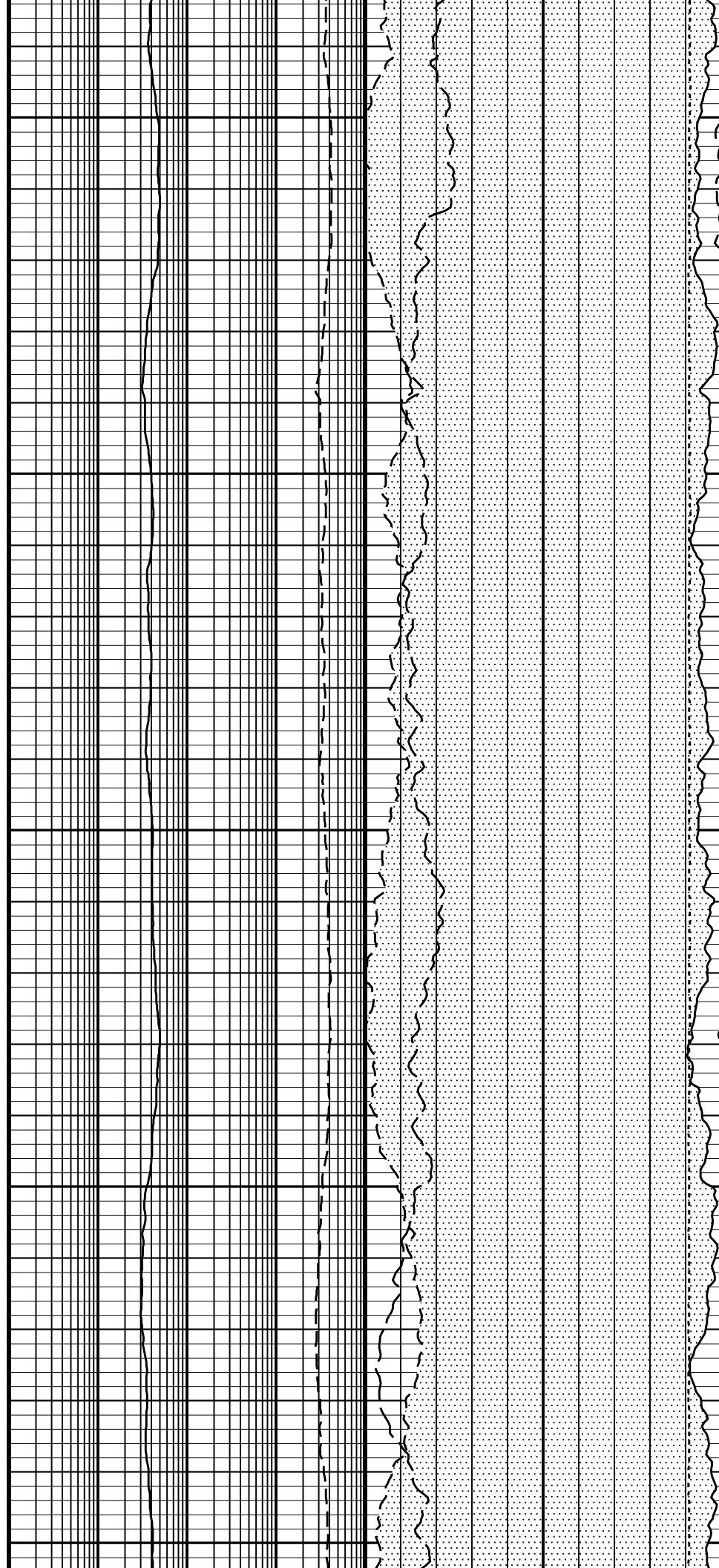
AIT–H	SRPC–3357–Q2_2007	NGT–C	15C0–309
DTA–A	SRPC–3357–Q2_2007	DSL–FTB	15C0–309
DTC–H	15C0–309		

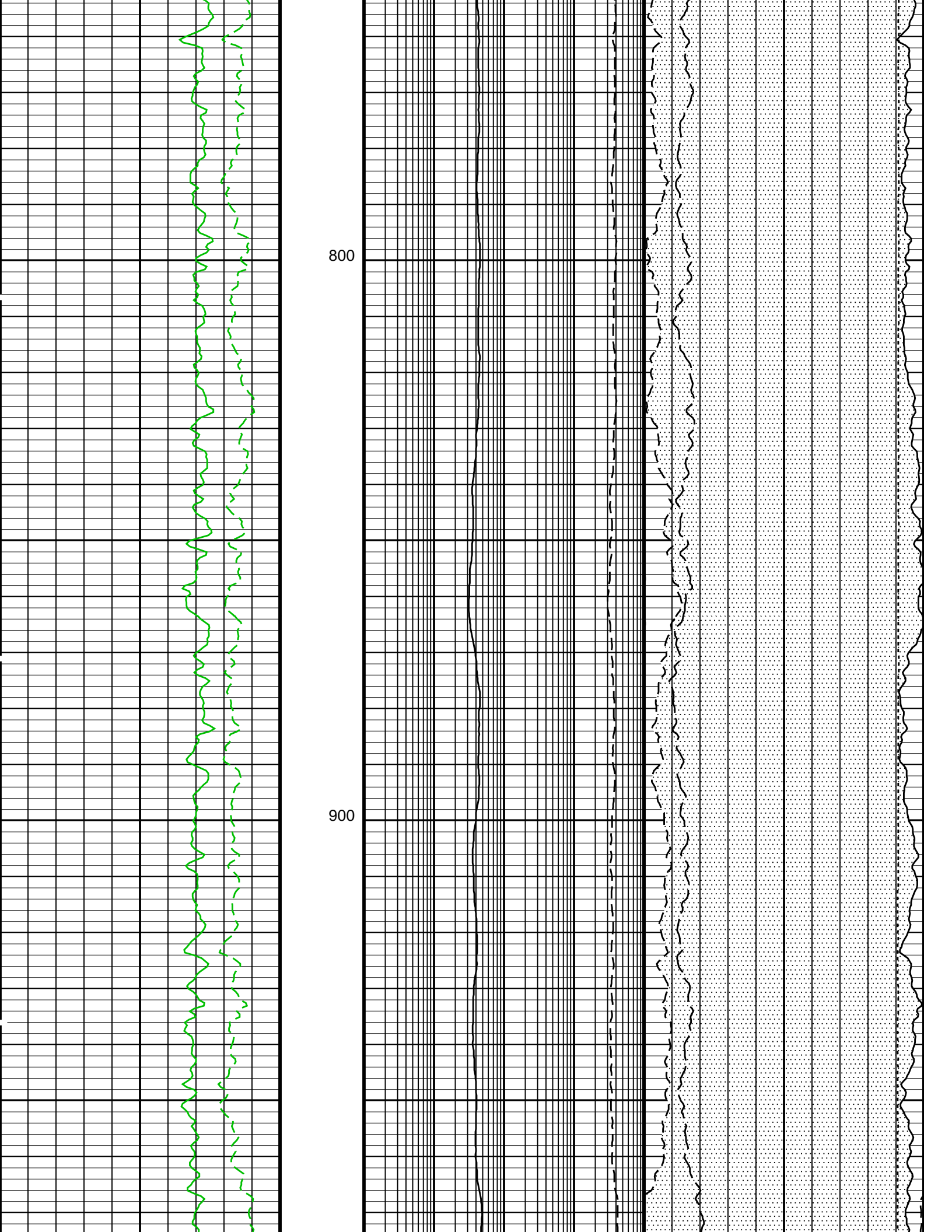


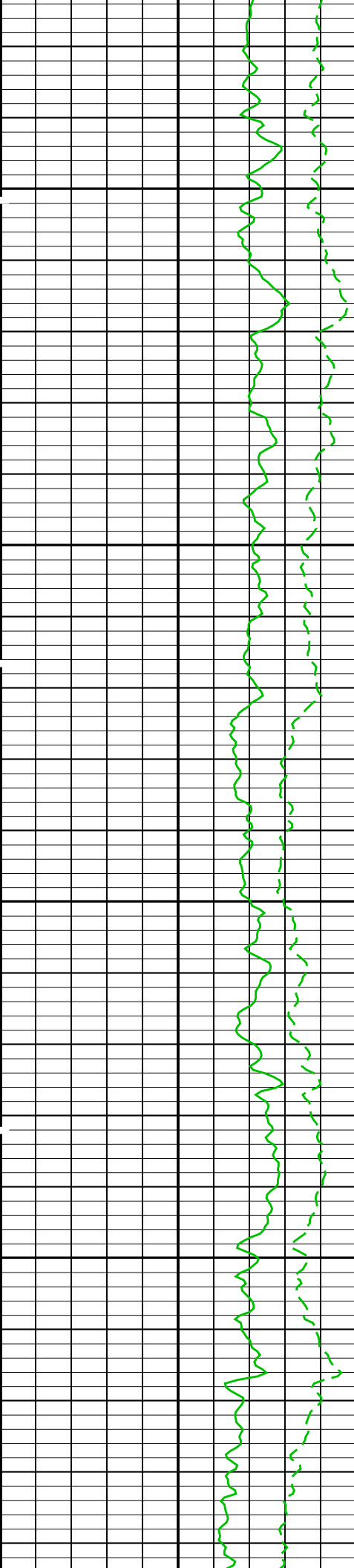


600

700

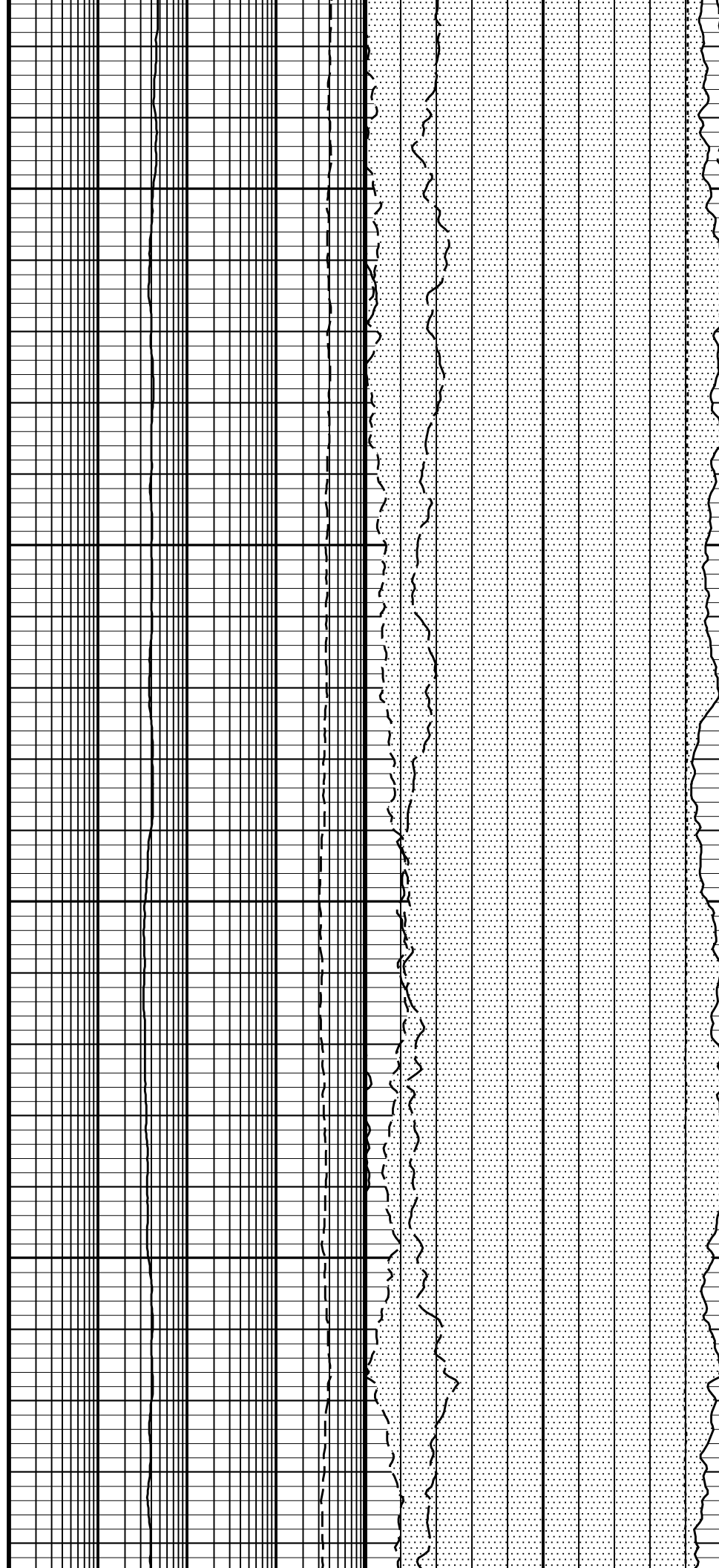


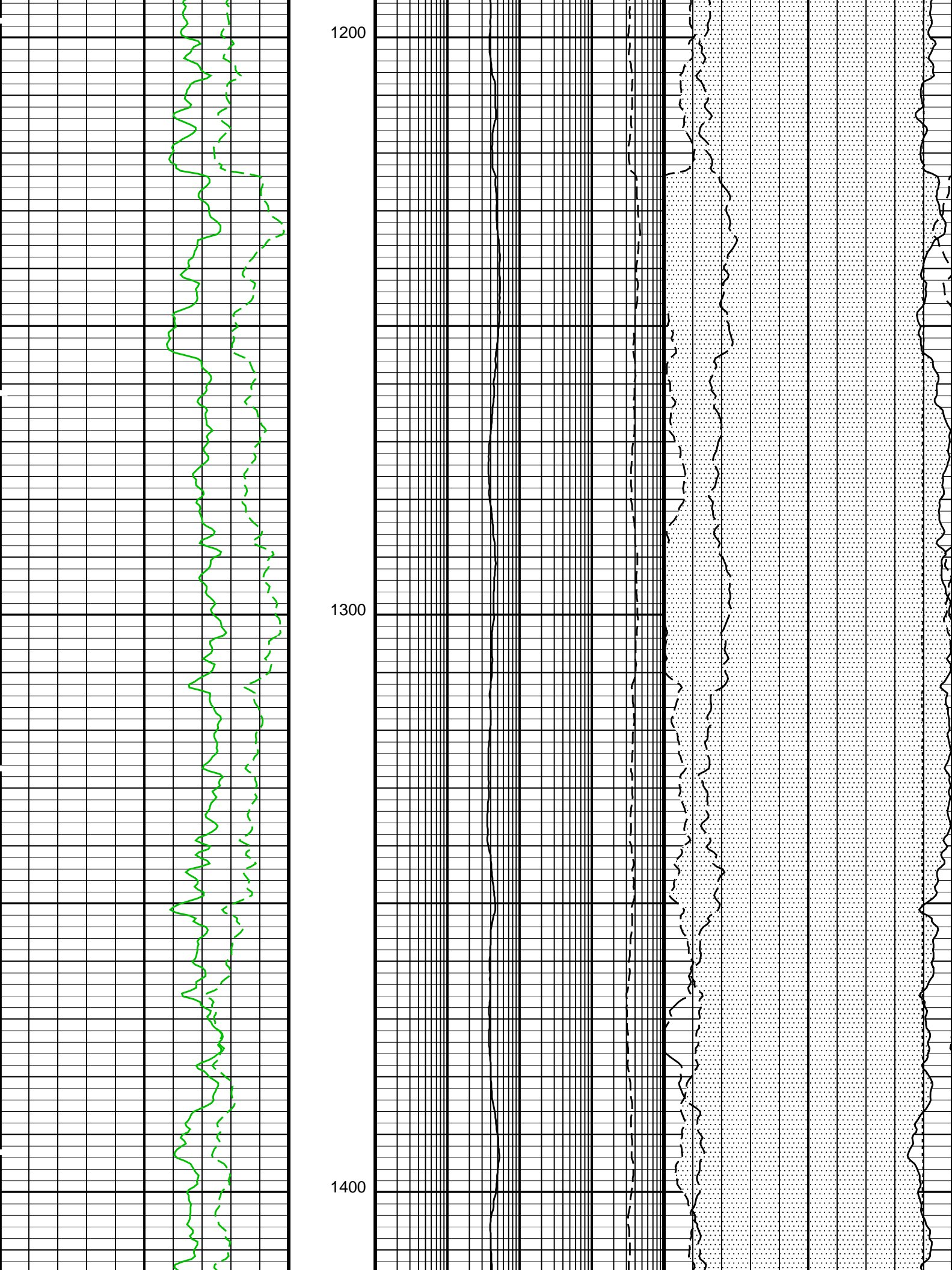


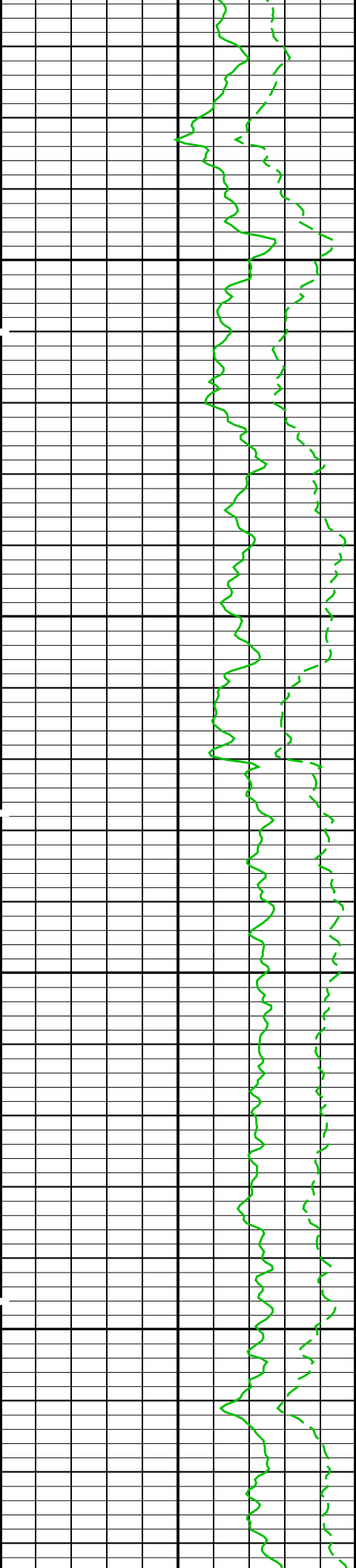


1000

1100

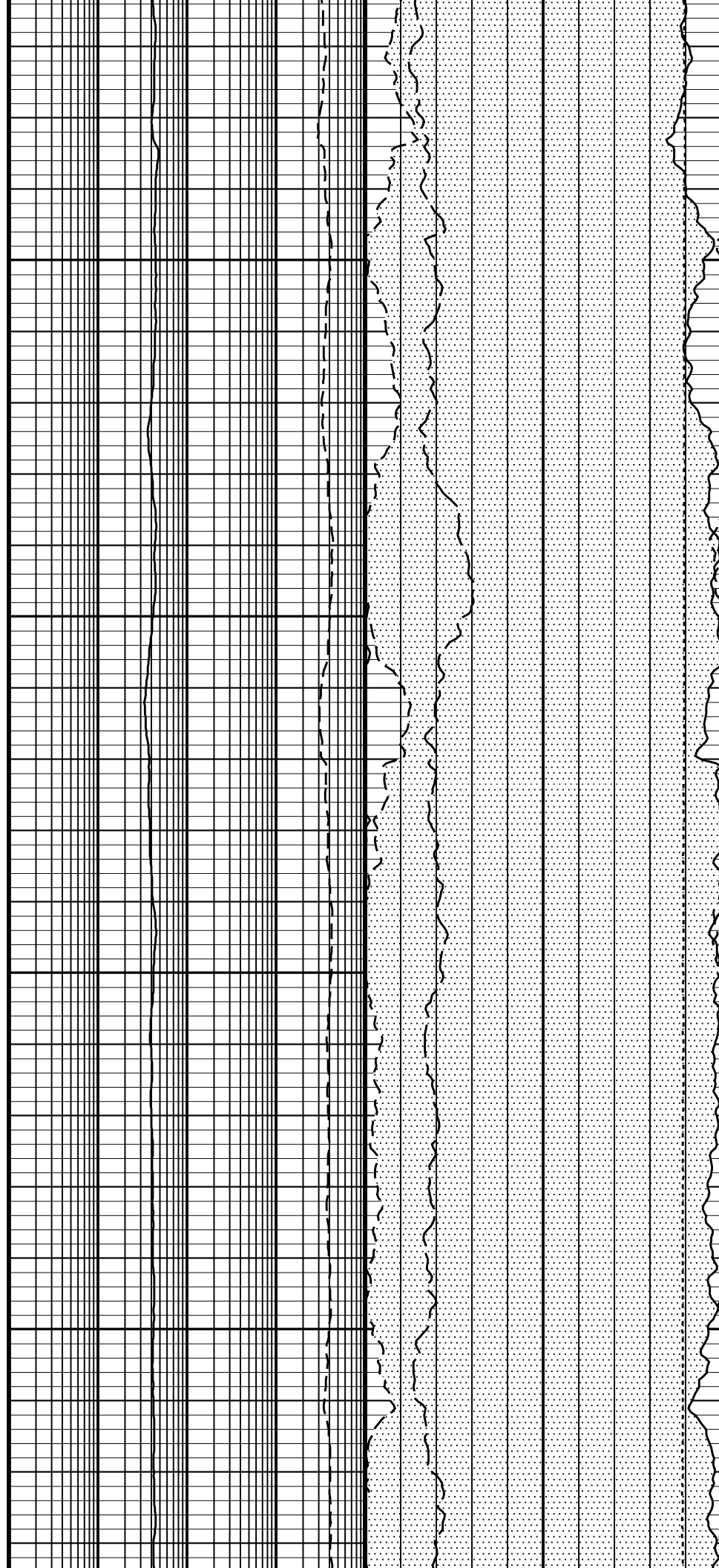


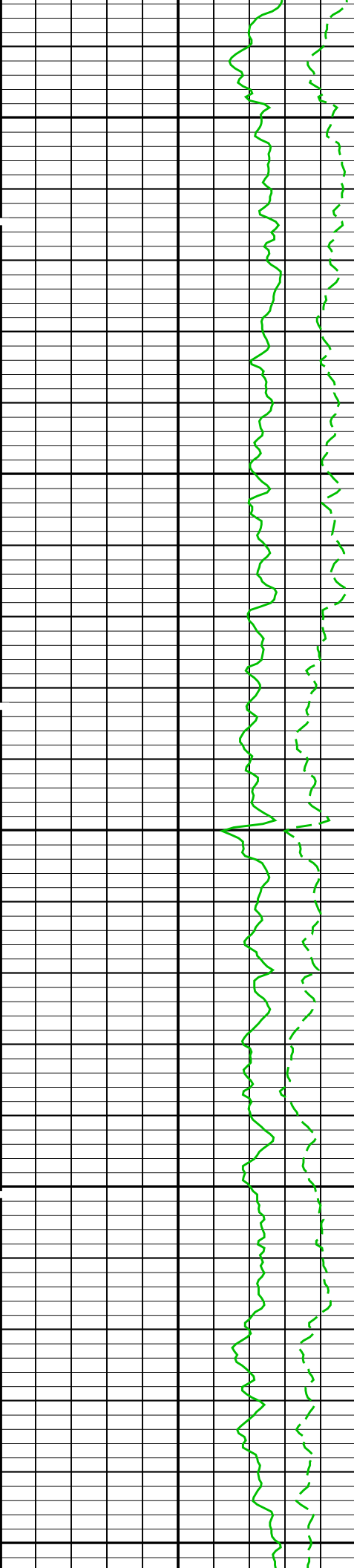




1500

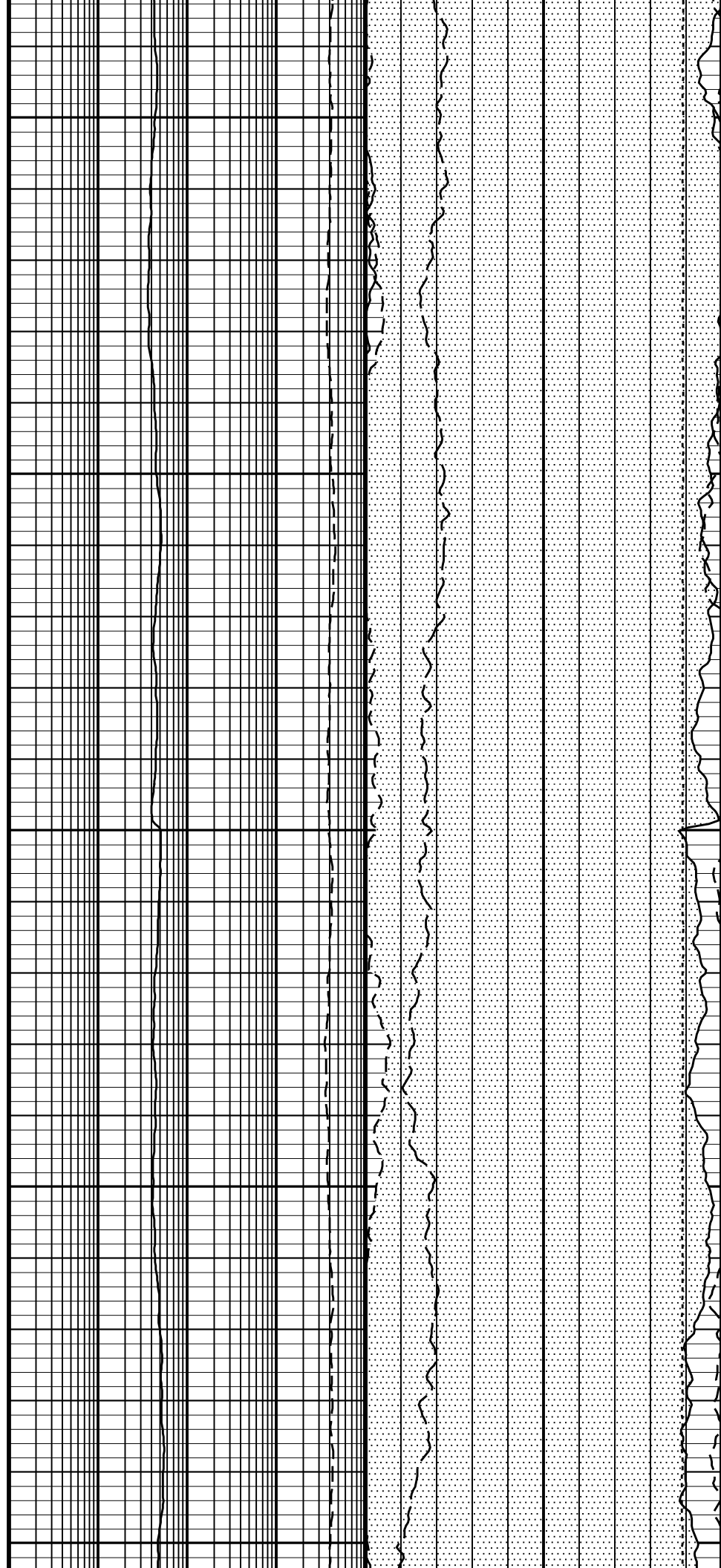
1600

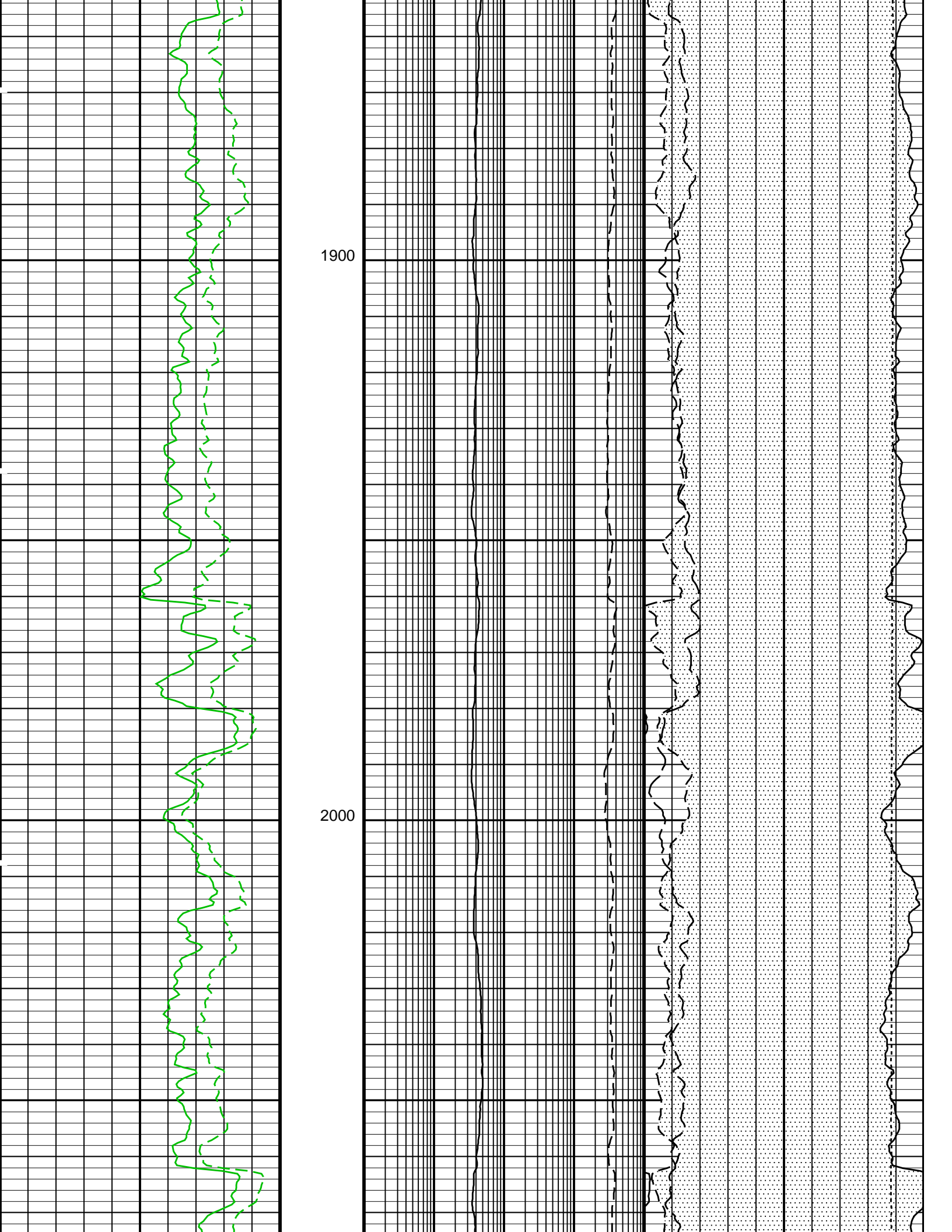


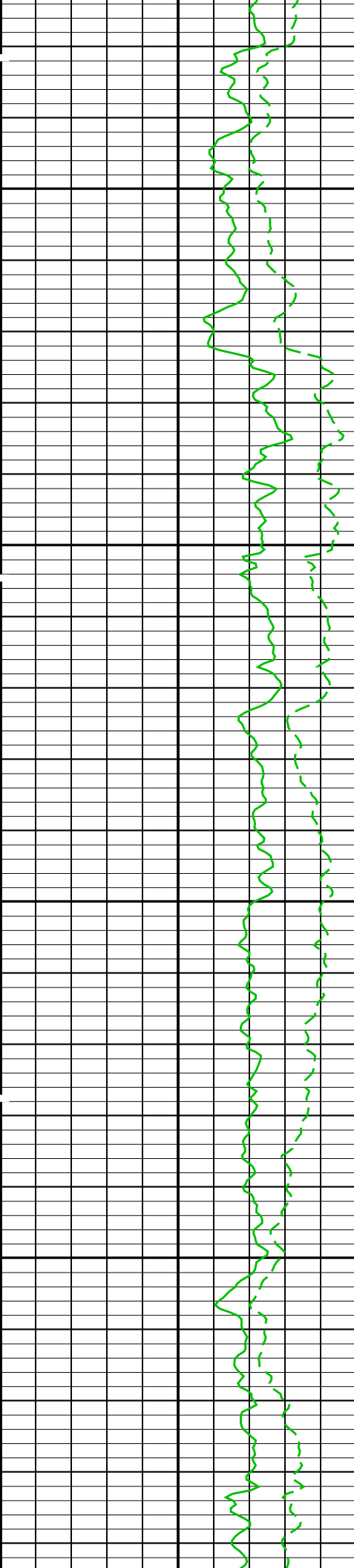


1700

1800



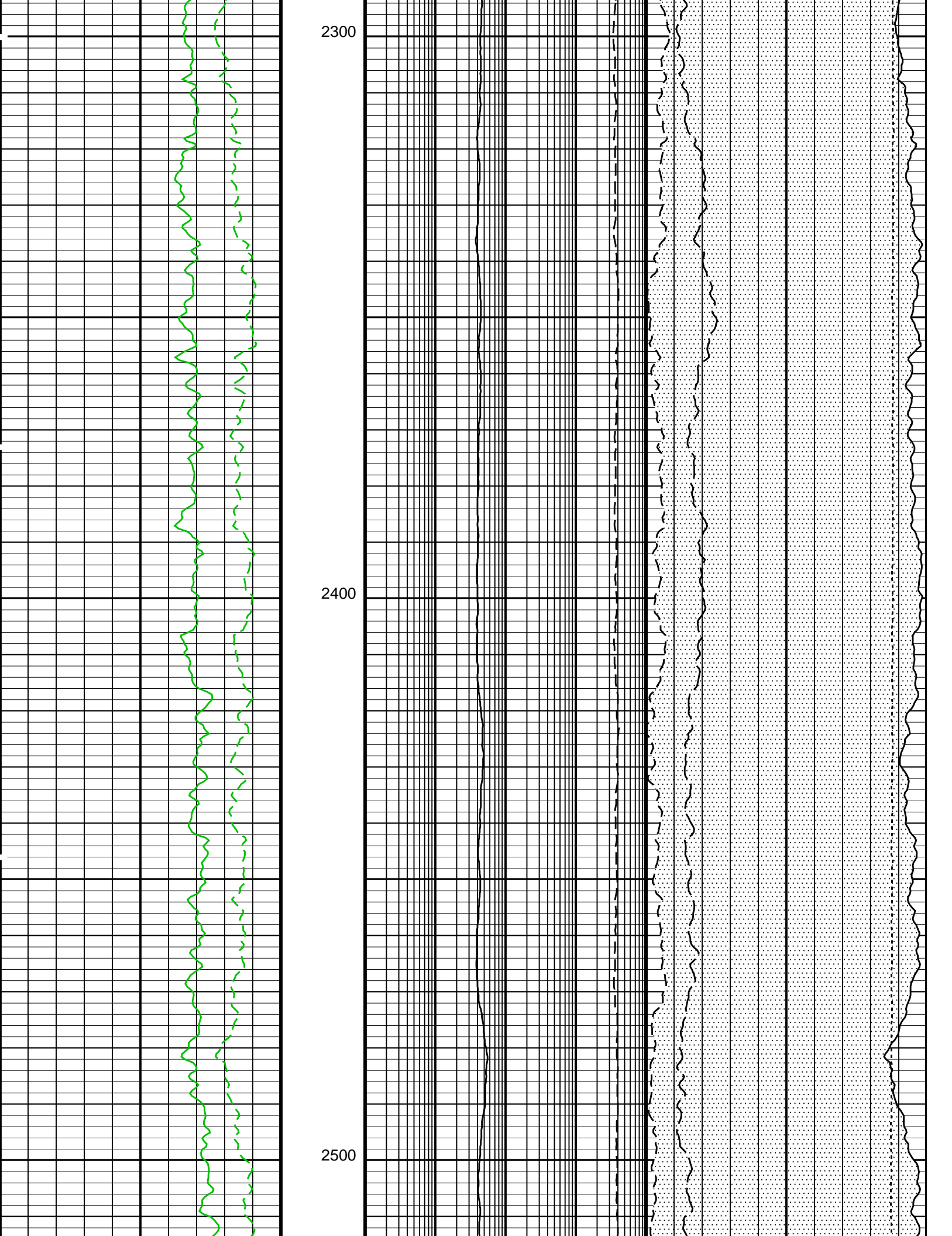


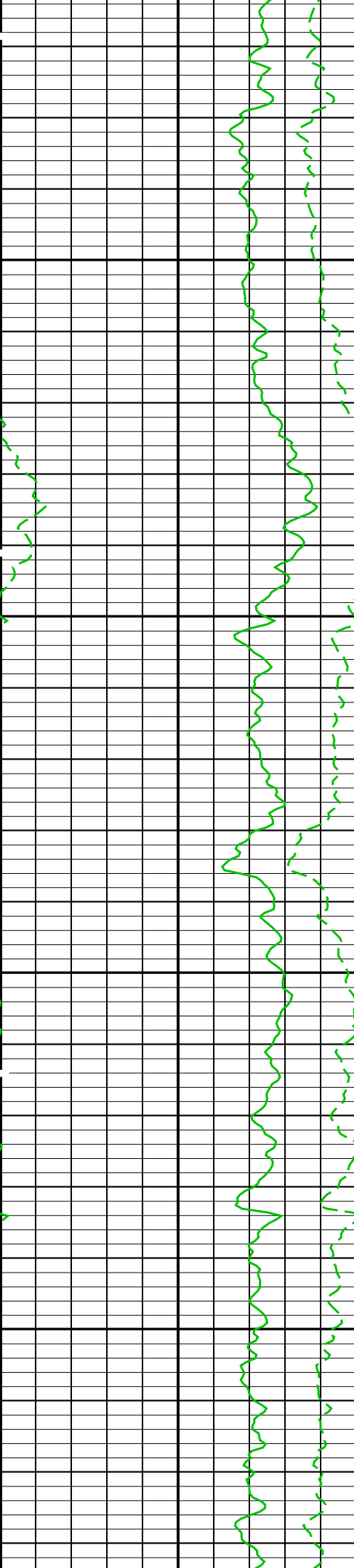


2100

2200

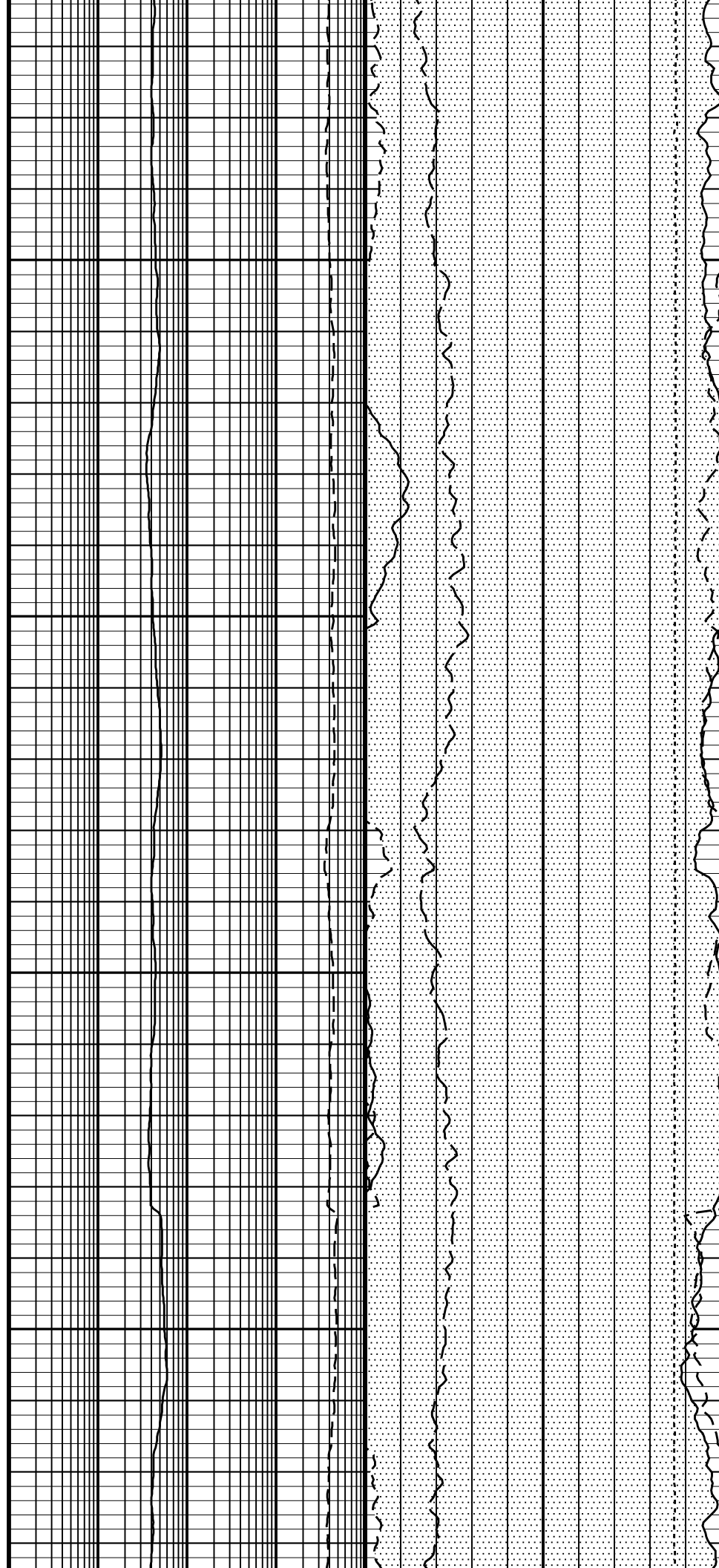


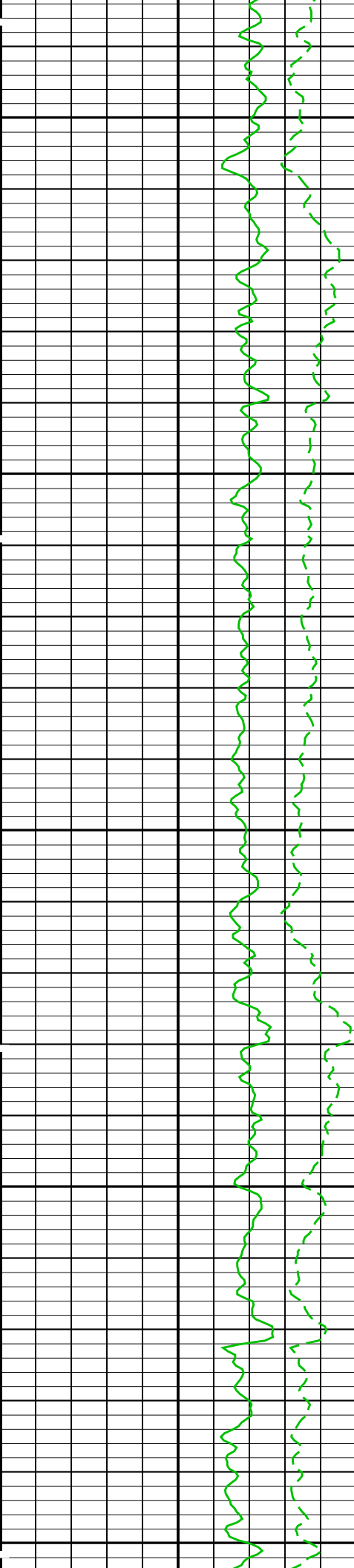




2600

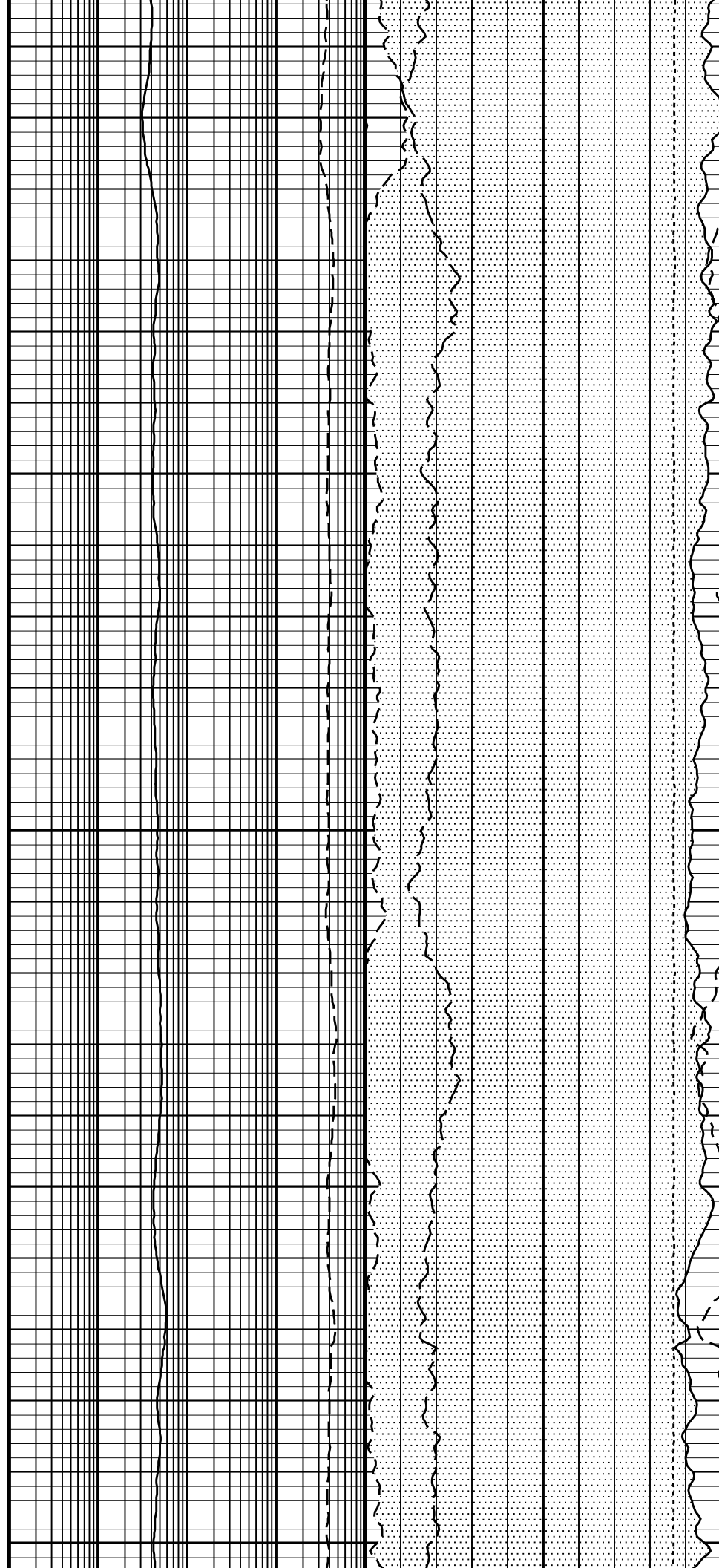
2700

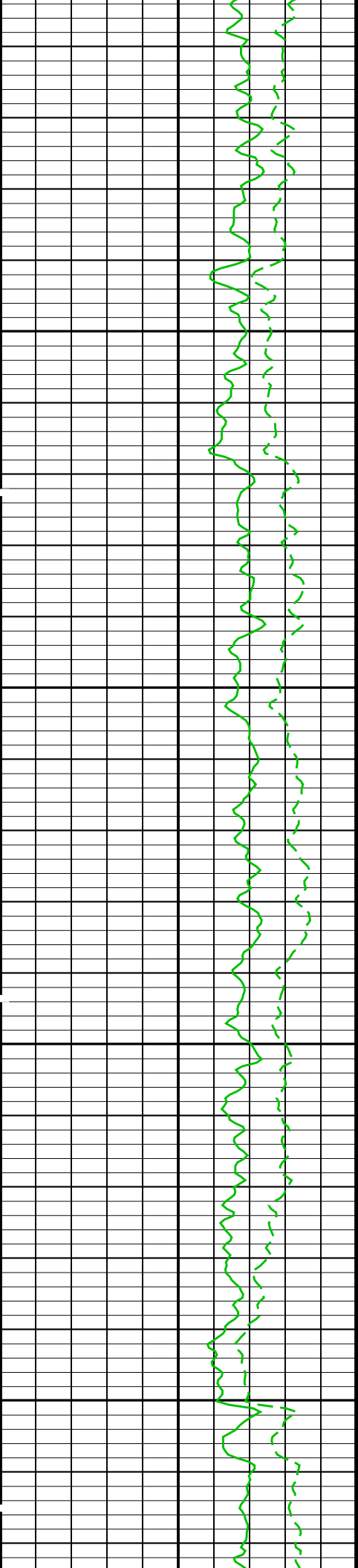




2800

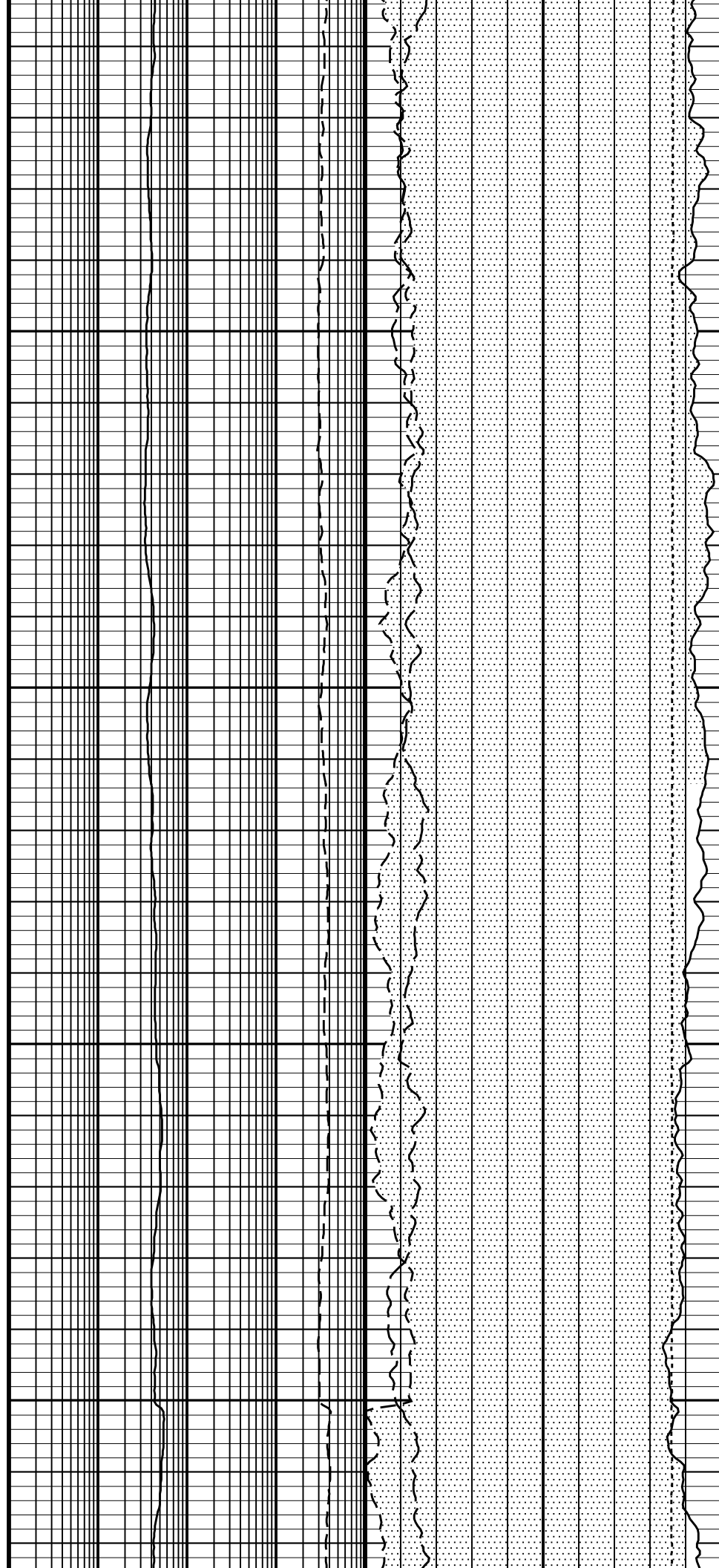
2900

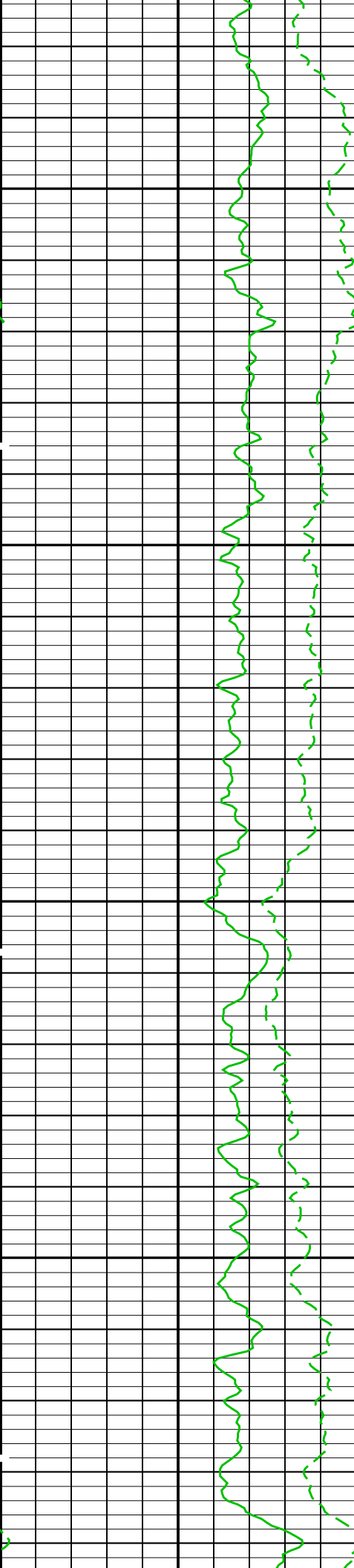




3000

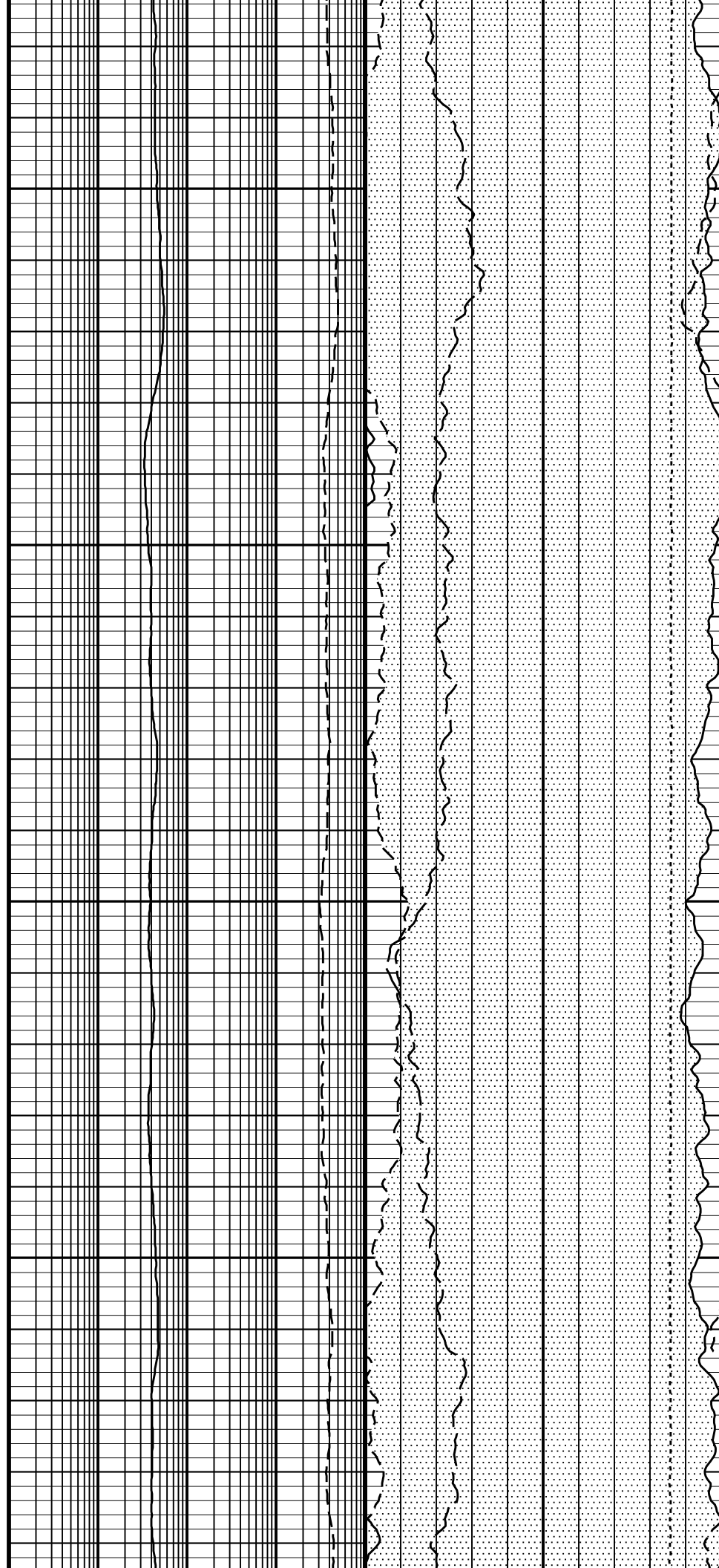
3100

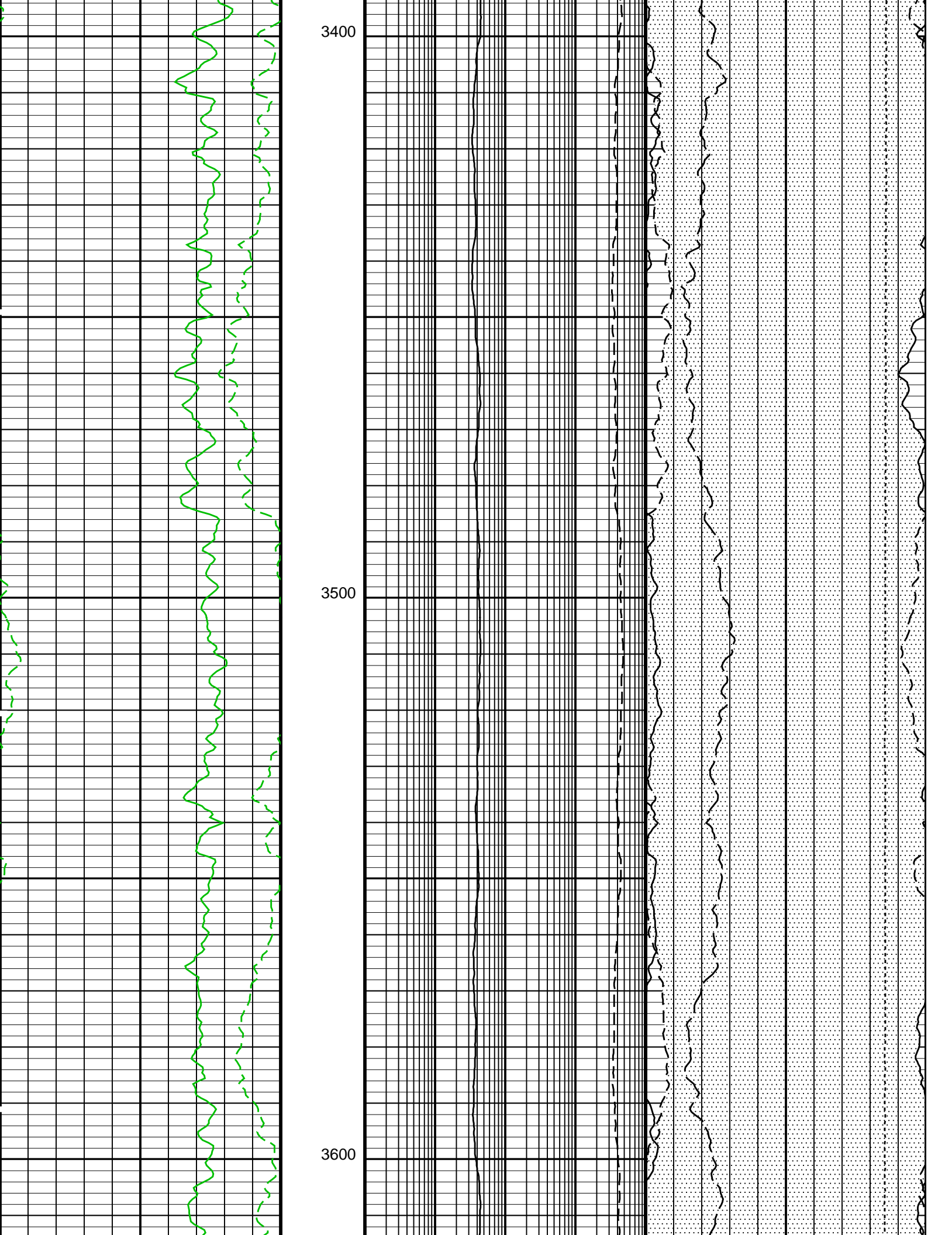


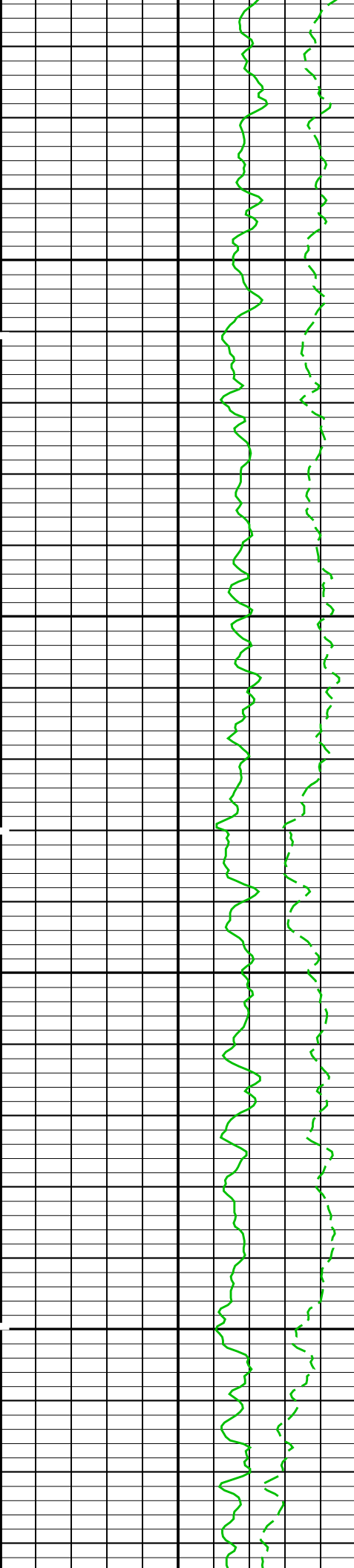


3200

3300

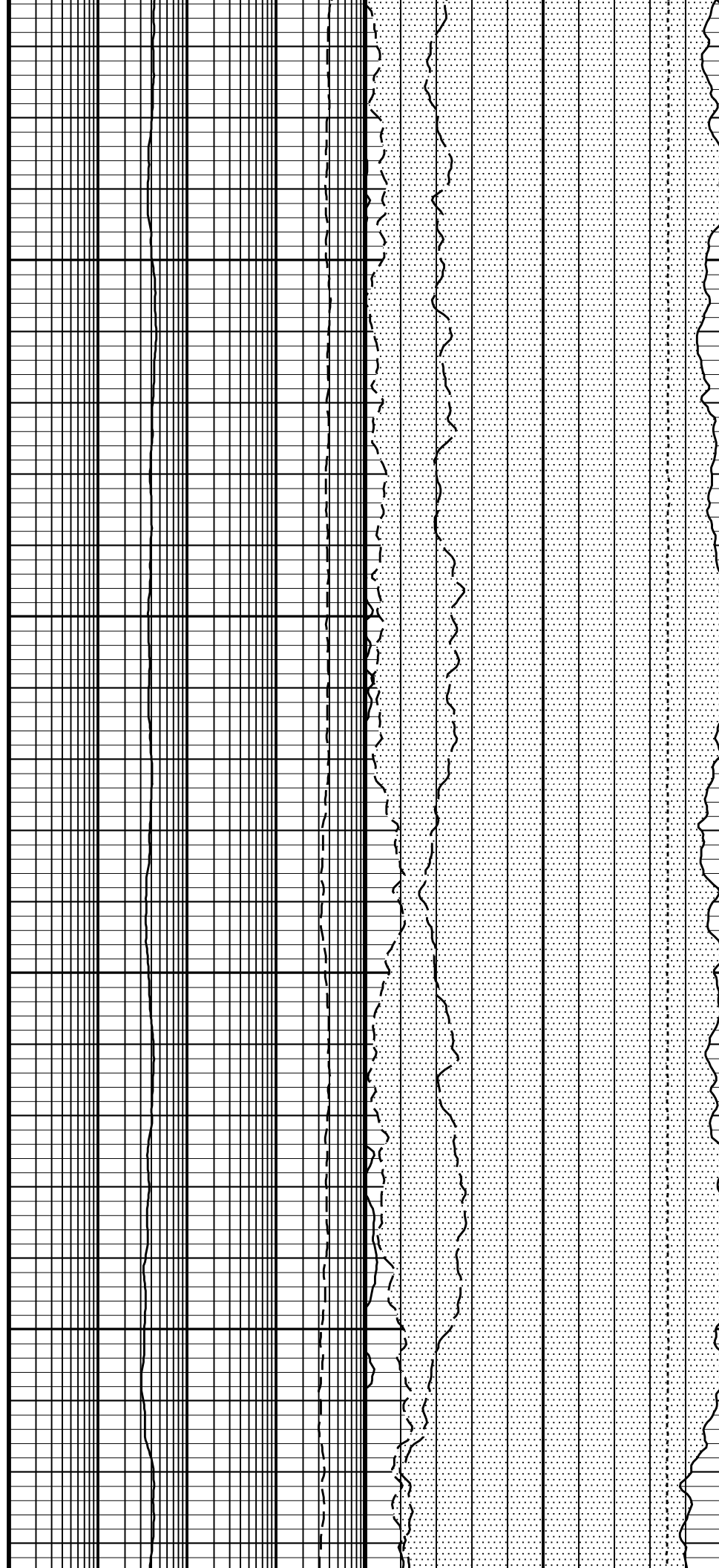


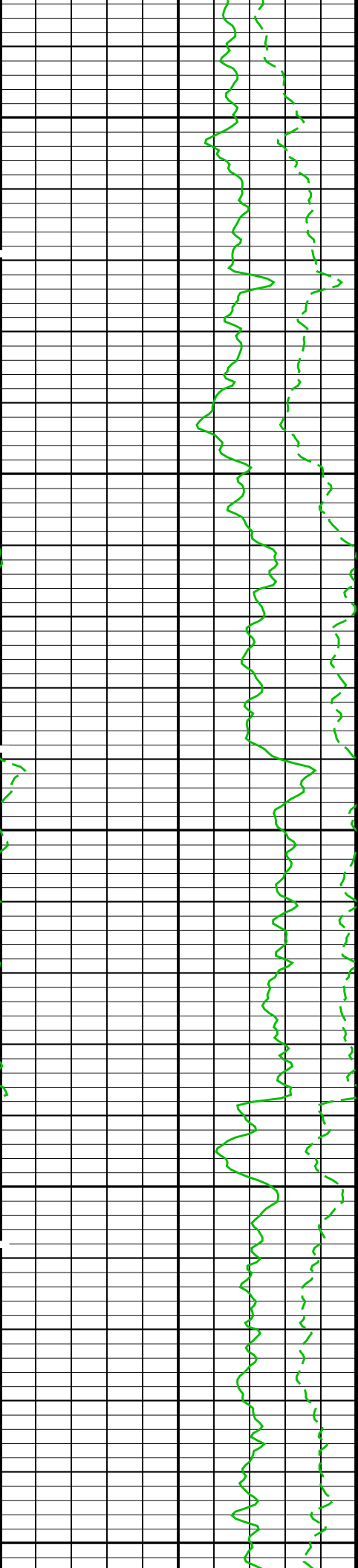




3700

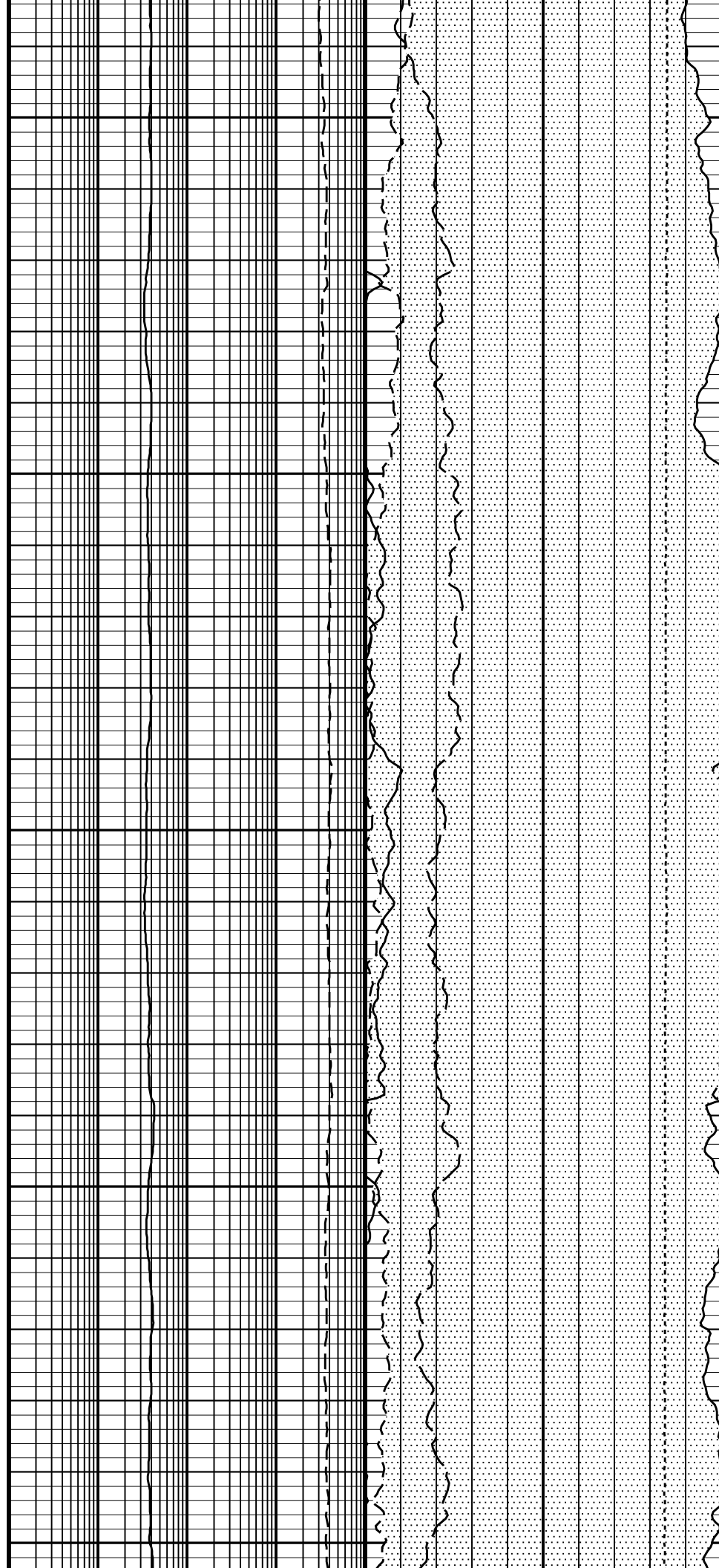
3800

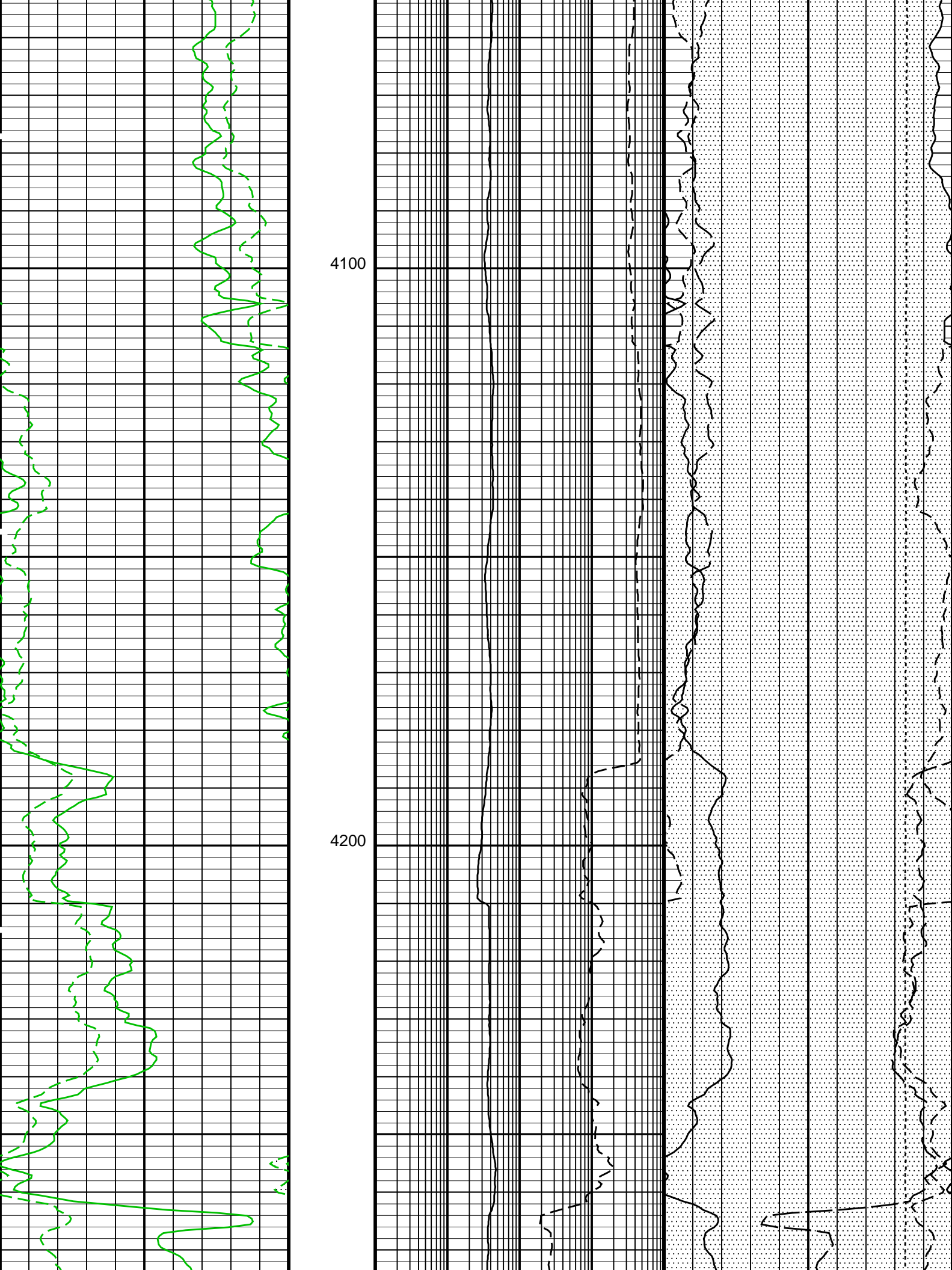


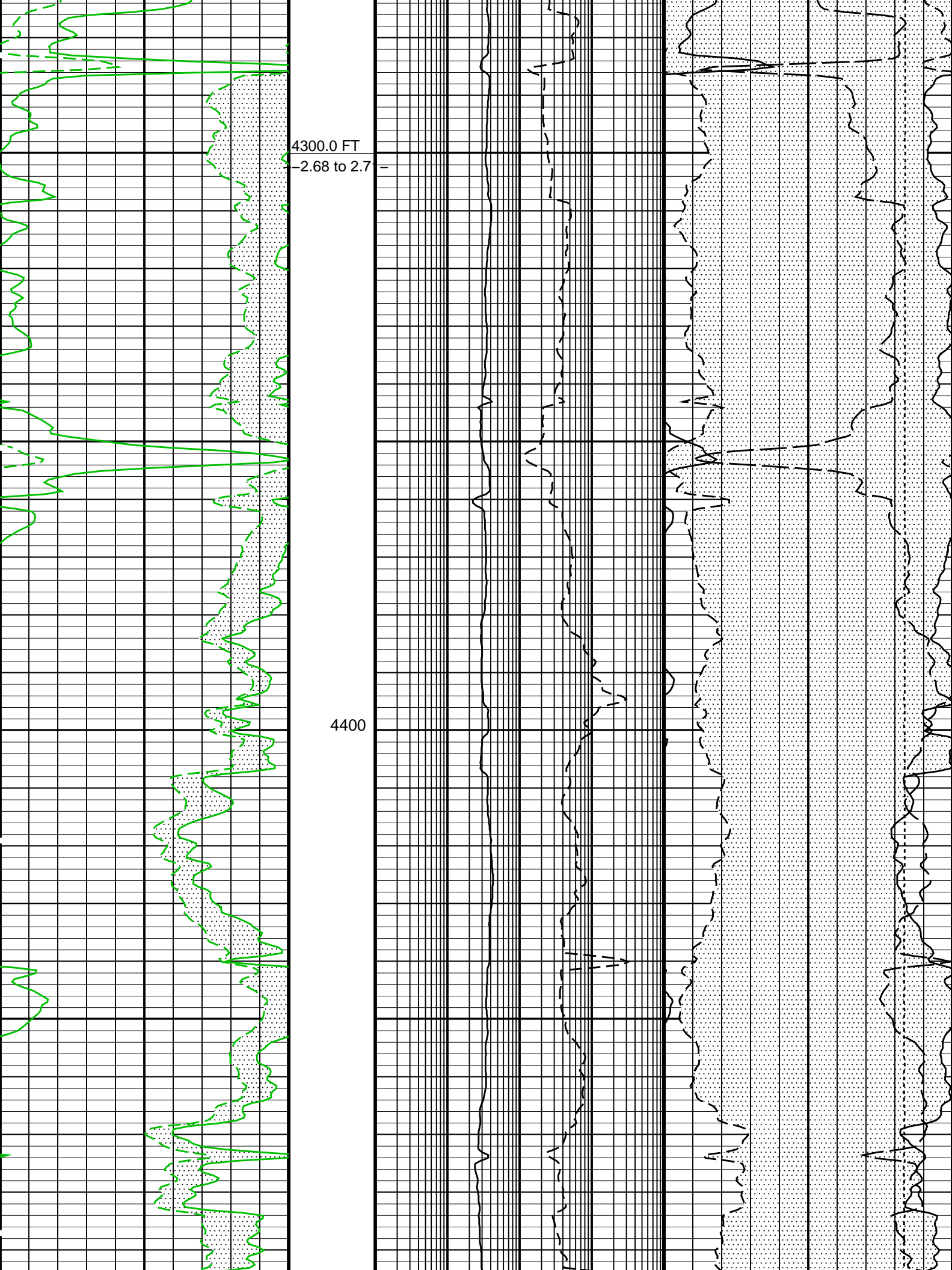


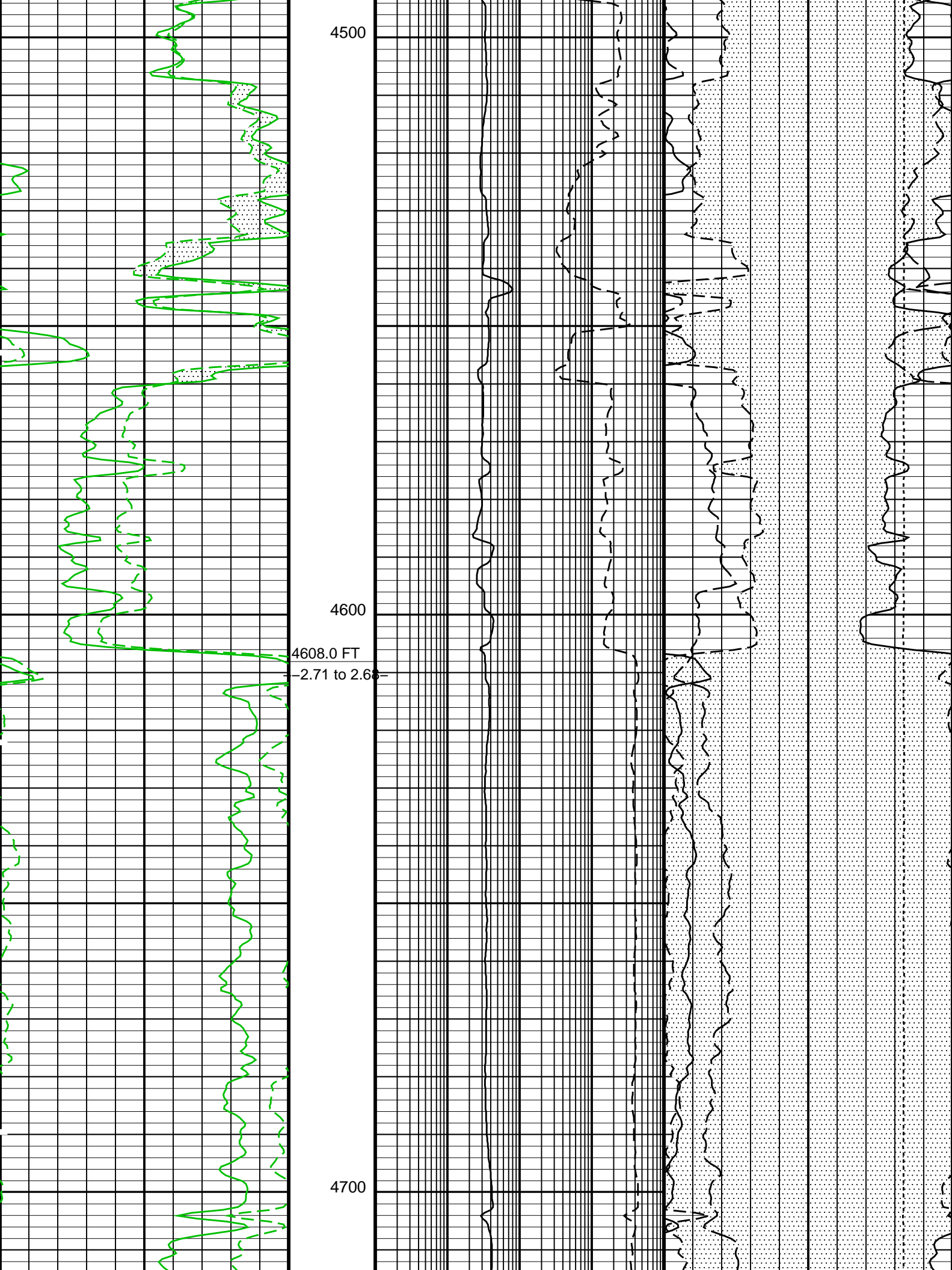
3900

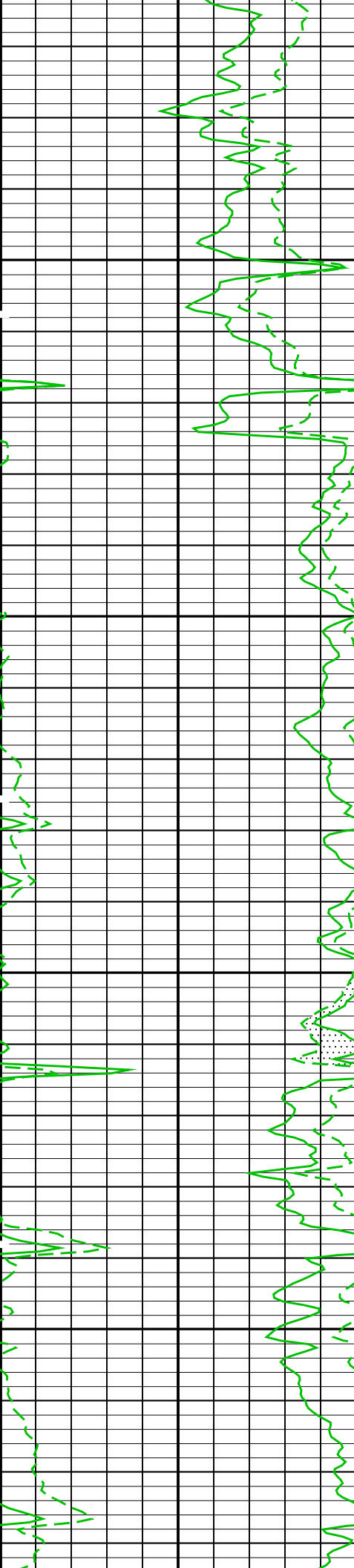
4000





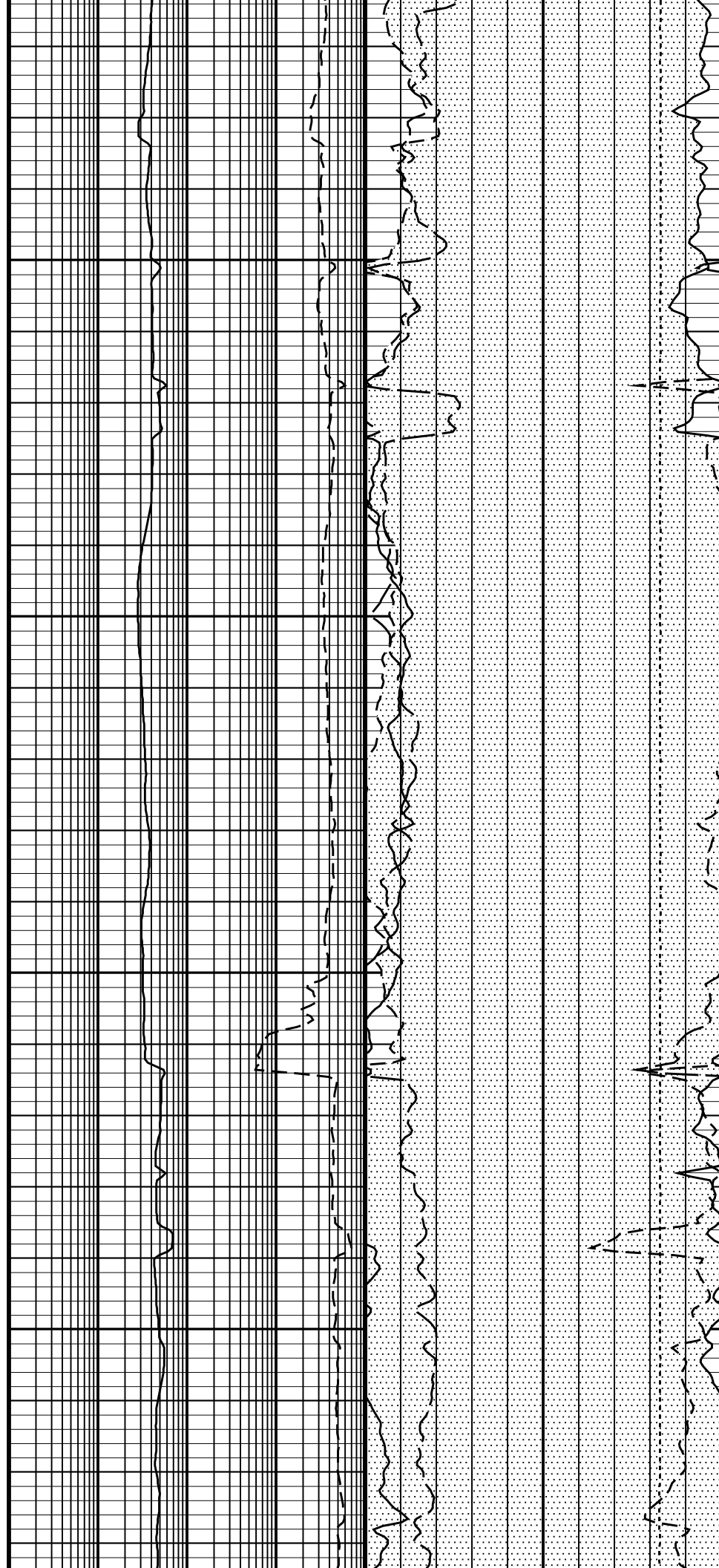


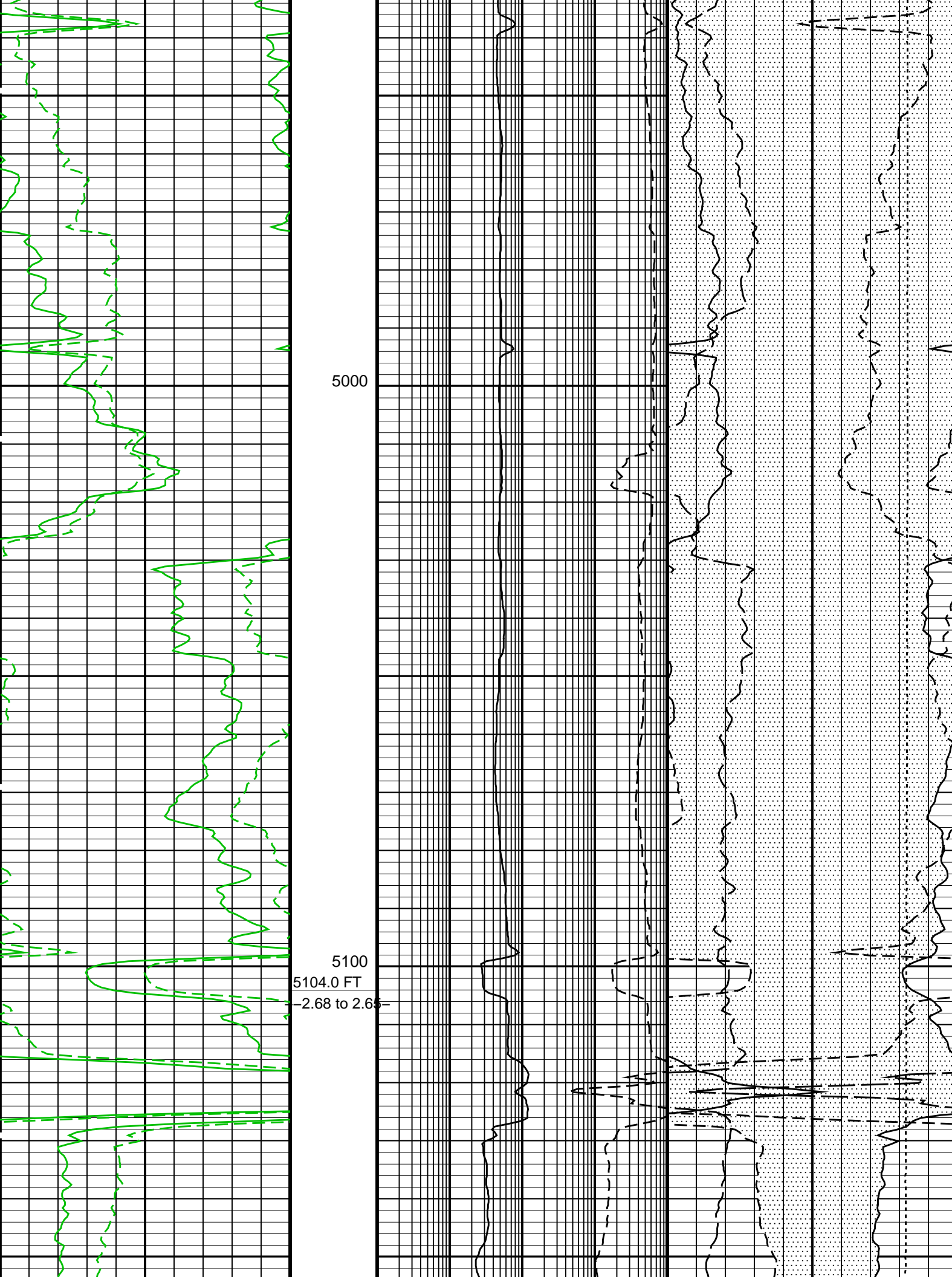


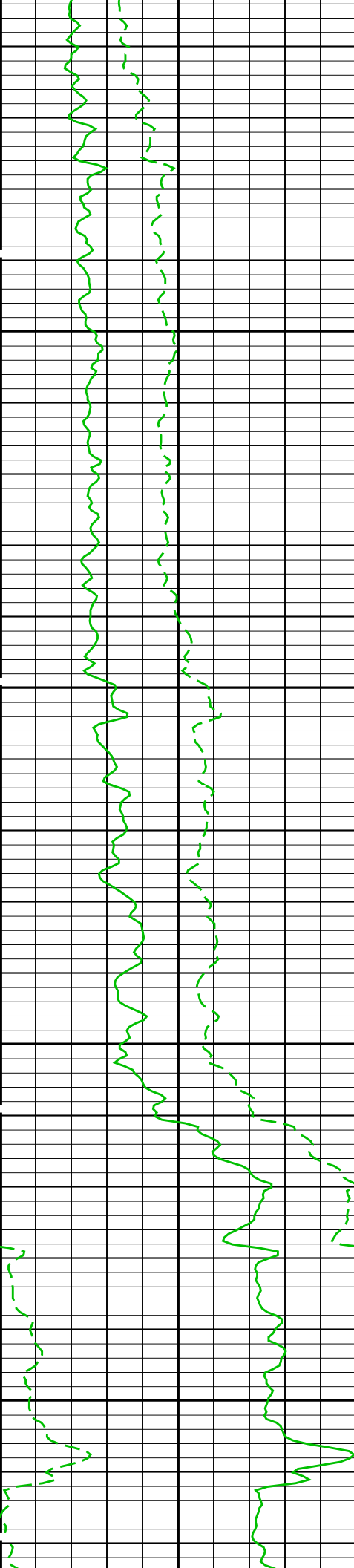


4800

4900

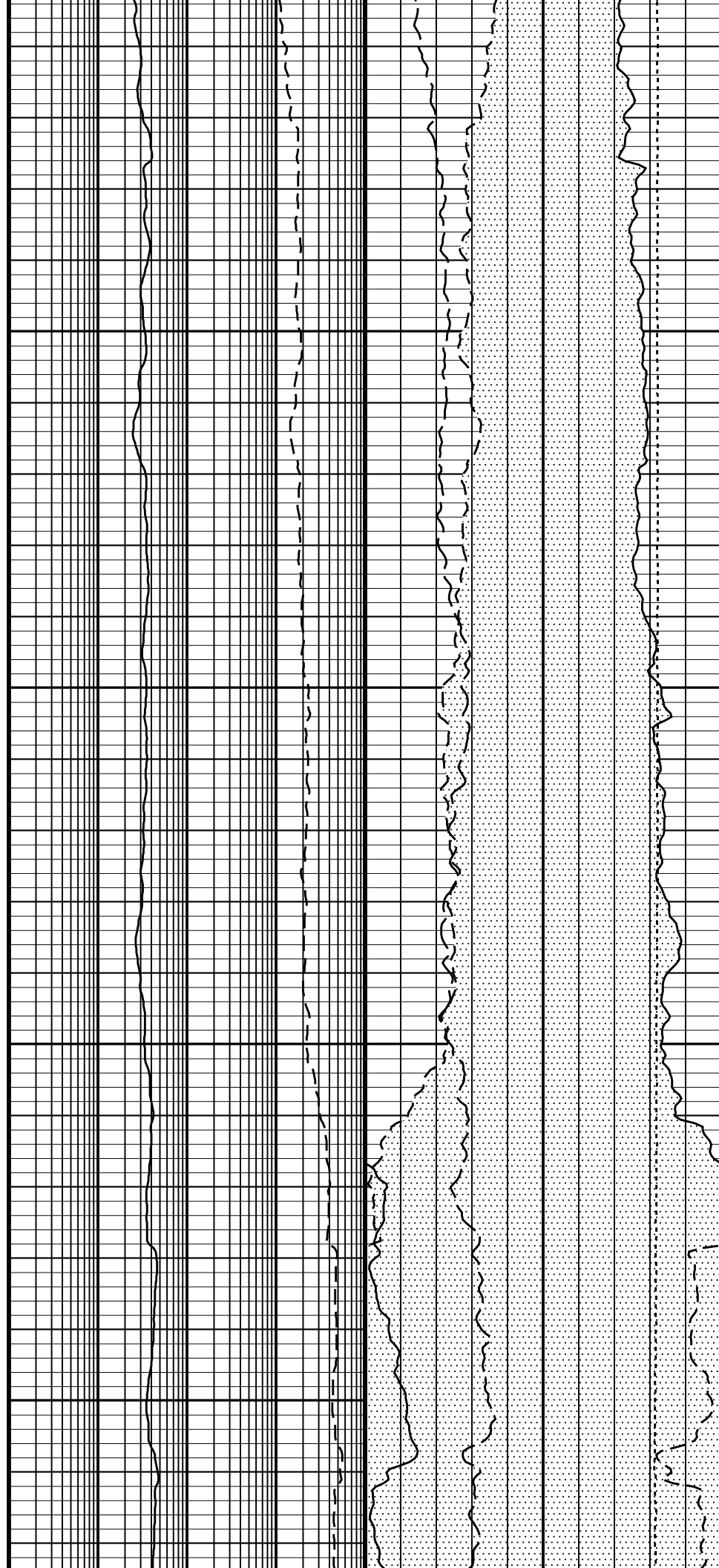


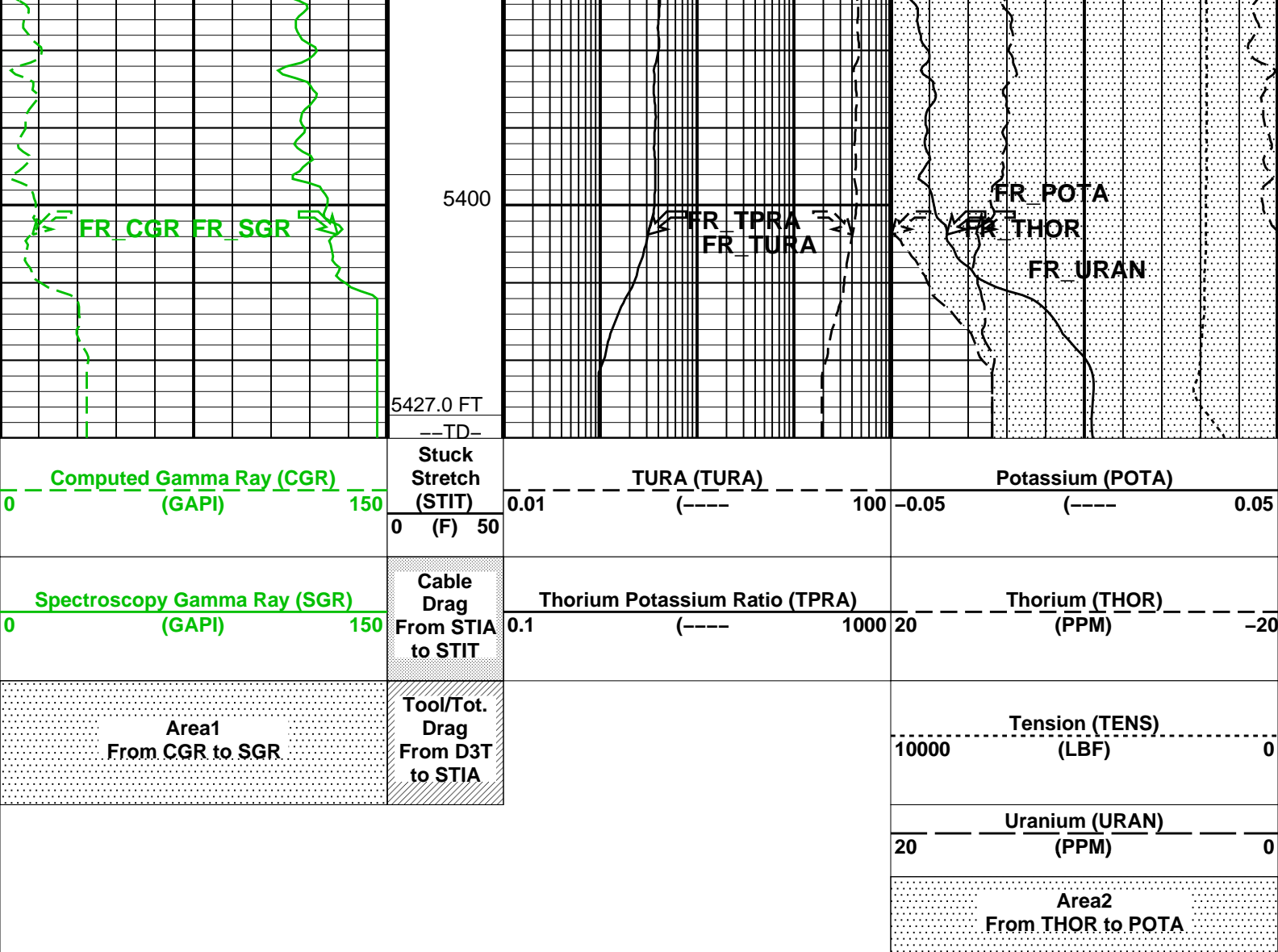




5200

5300





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
NGT-C: Natural Gamma Spectroscopy - C		
CBAR	Constant Barite	1
CGMI	Spectro Computed Gamma Ray Minimum	0 GAPI
CGSH	Spectro Computed Gamma Ray Shale	100 GAPI
KMIN	Potassium Minimum	0
KSHA	Potassium Shale	0.02
NFO	NGT Filtering Option	KALMAN
PMUD	Potassium Mud	0 %
SGMI	Spectro Gamma Ray Minimum	0 GAPI
SGSH	Spectro Gamma Ray Shale	100 GAPI
TMIN	Thorium Minimum	0 PPM
TSHA	Thorium Shale	12 PPM
UMIN	Uranium Minimum	0 PPM
USHA	Uranium Shale	3 PPM
STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	2.5 FT
TDD	Total Depth - Driller	5433.00 FT
TDL	Total Depth - Logger	5427.00 FT
System and Miscellaneous		
BS	Bit Size	12.250 IN
DFD	Drilling Fluid Density	9.80 LB/G
DO	Depth Offset for Playback	0.0 FT
DORL	Depth Offset for Repeat Analysis	2.0 FT
PP	Playback Processing	RECOMPUTE

Format: NGTRatios Vertical Scale: 5" per 100'

Graphics File Created: 12-Aug-2007 13:28

OP System Version: 15C0-309

MCM

AIT-H	SRPC-3357-Q2_2007	NGT-C	15C0-309
DTA-A	SRPC-3357-Q2_2007	DSLT-FTB	15C0-309
DTC-H	15C0-309		

Input DLIS Files

DEFAULT	AIT_NGS_SONIC_012LUP	FN:11	PRODUCER	12-Aug-2007 12:03	5430.0 FT	379.0 FT
---------	----------------------	-------	----------	-------------------	-----------	----------

Output DLIS Files

DEFAULT	AIT_NGS_SONIC_022PUP	FN:21	PRODUCER	12-Aug-2007 13:28
---------	----------------------	-------	----------	-------------------

Schlumberger

NGT Yields
100'=5"

MAXIS Field Log

Company: Windy Hill Gas Storage, LLC

Well: Windy Hill 3-17D

Input DLIS Files

DEFAULT	AIT_NGS_SONIC_012LUP	FN:11	PRODUCER	12-Aug-2007 12:03	5430.0 FT	379.0 FT
---------	----------------------	-------	----------	-------------------	-----------	----------

Output DLIS Files

DEFAULT	AIT_NGS_SONIC_022PUP	FN:21	PRODUCER	12-Aug-2007 13:28	5430.0 FT	383.0 FT
---------	----------------------	-------	----------	-------------------	-----------	----------

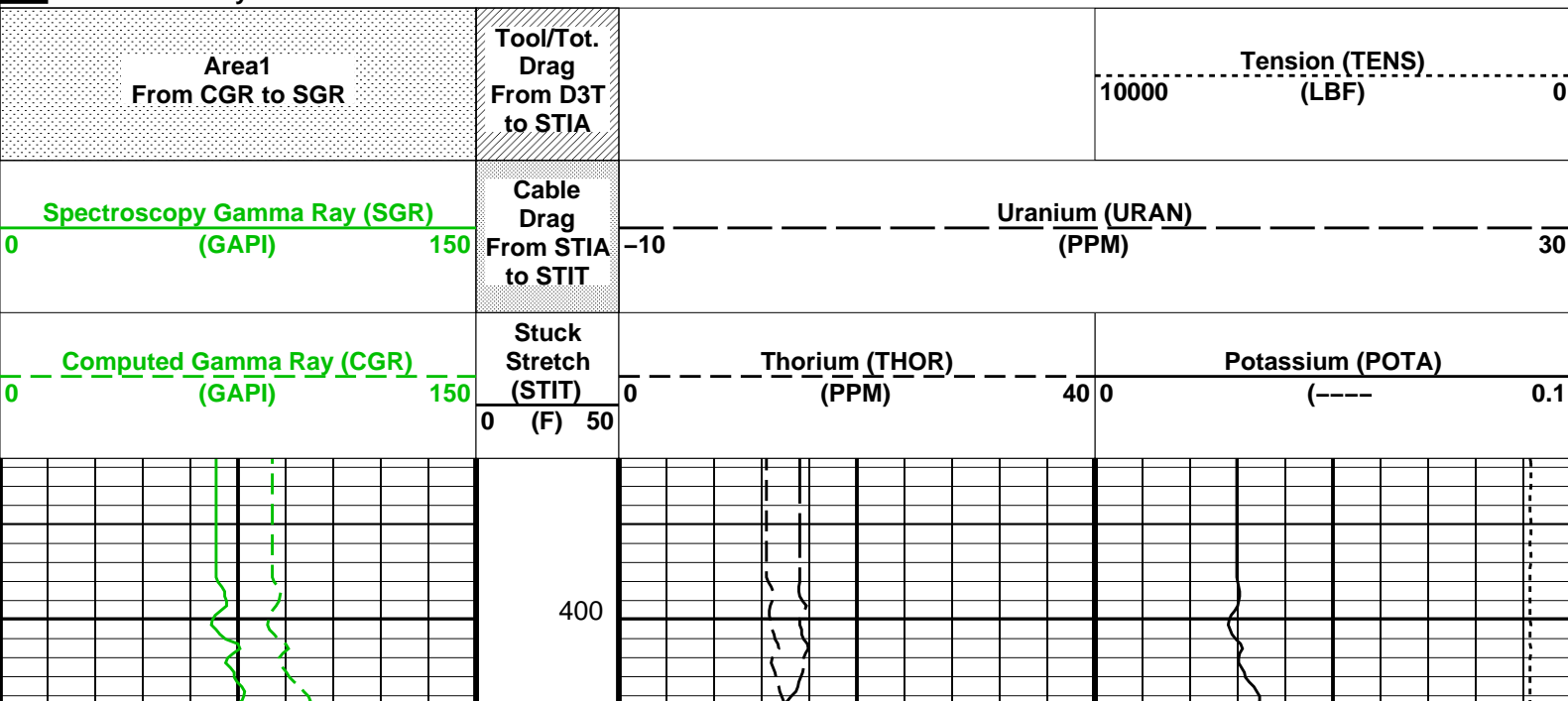
OP System Version: 15C0-309

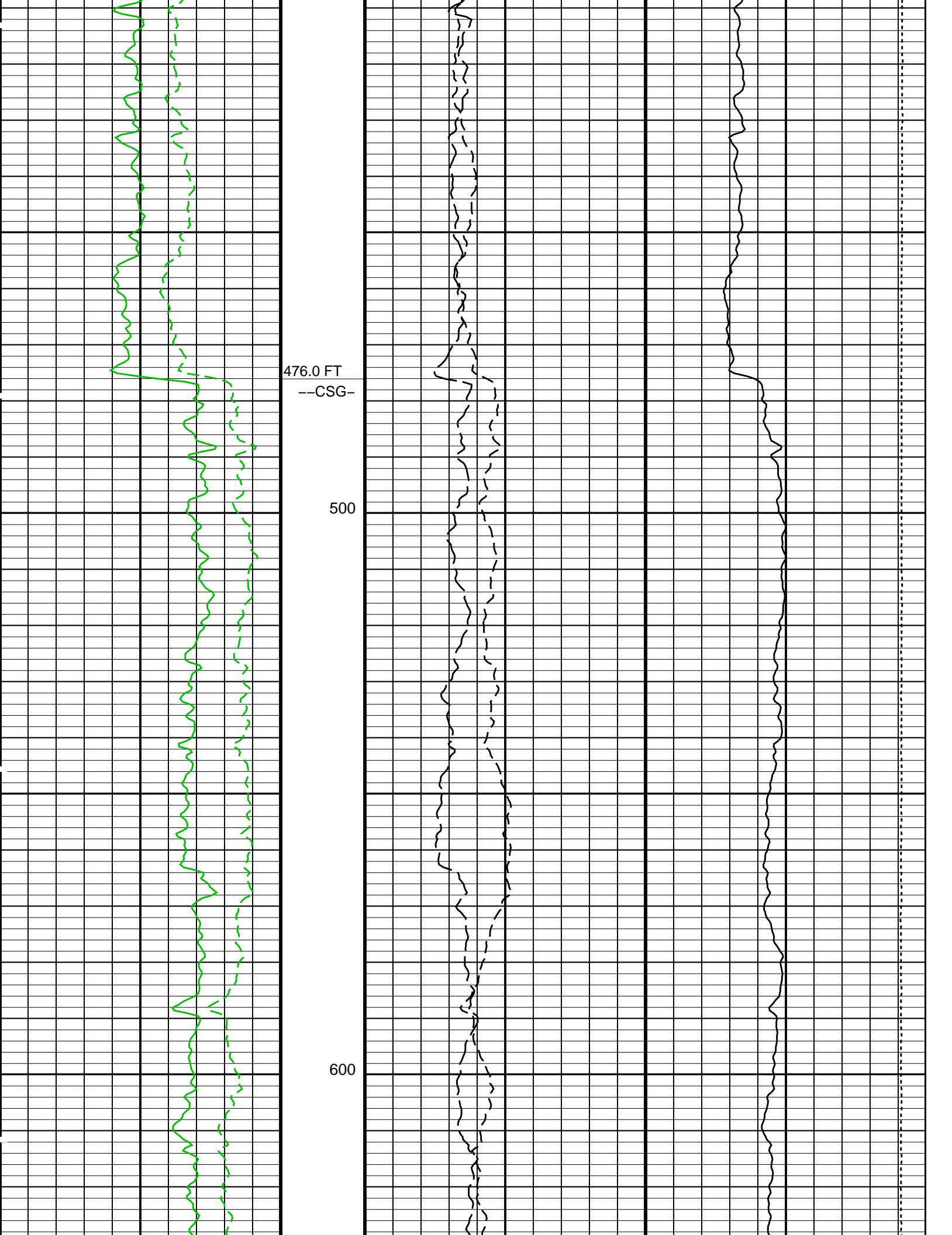
MCM

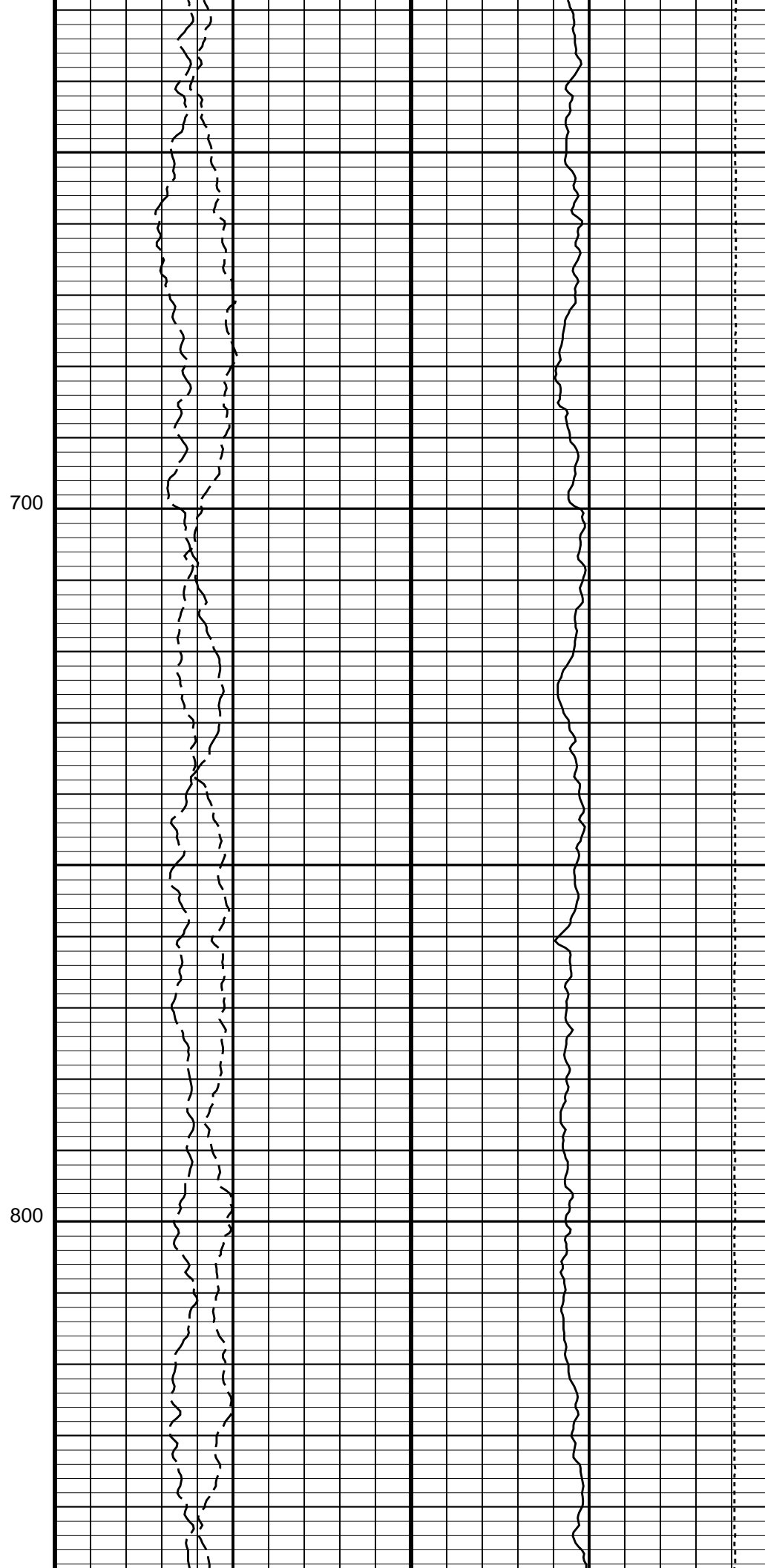
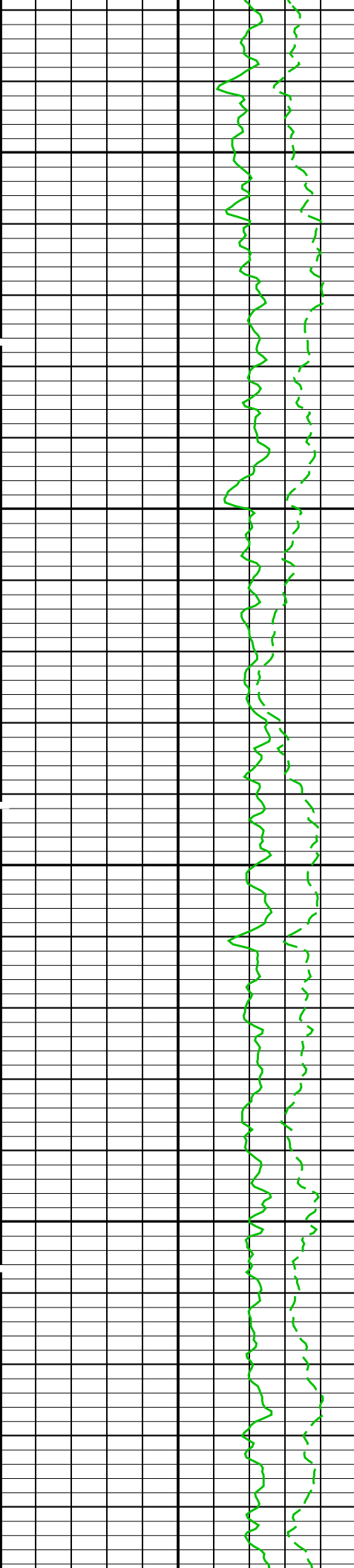
AIT-H	SRPC-3357-Q2_2007	NGT-C	15C0-309
DTA-A	SRPC-3357-Q2_2007	DSLT-FTB	15C0-309
DTC-H	15C0-309		

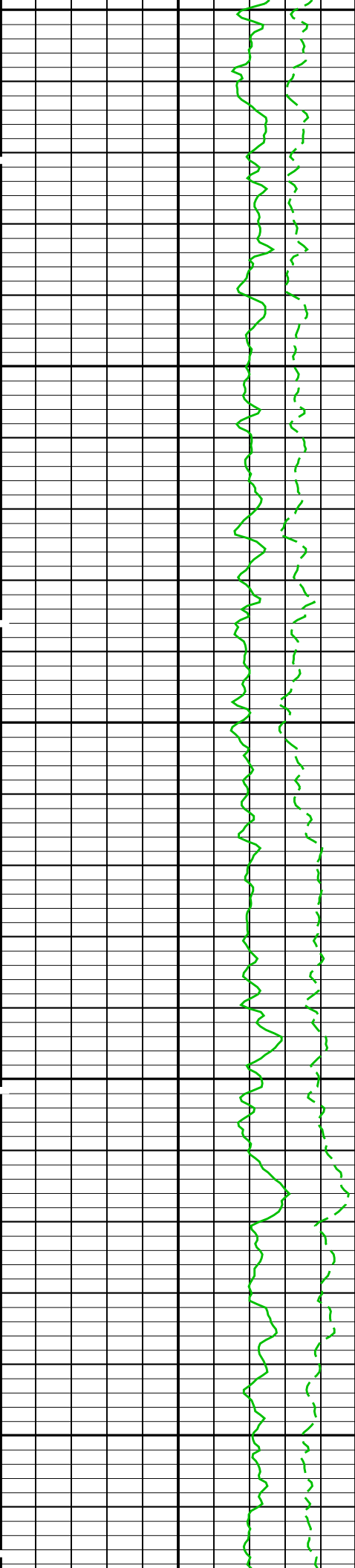
PIP SUMMARY

Time Mark Every 60 S



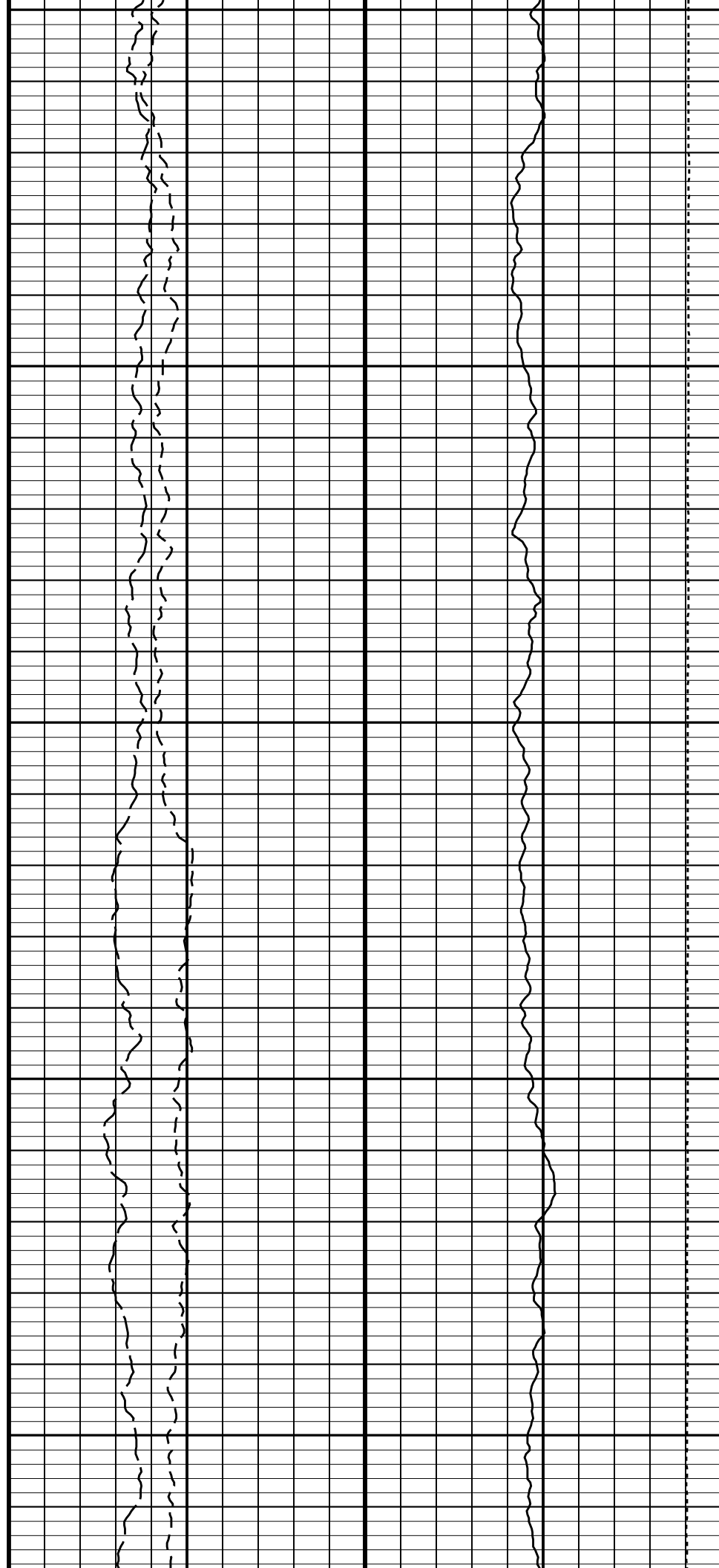


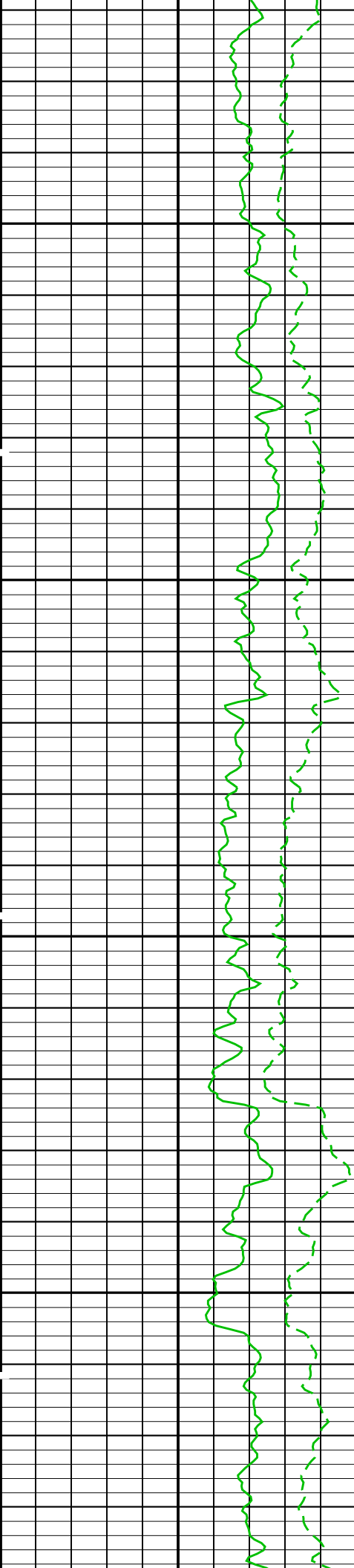




900

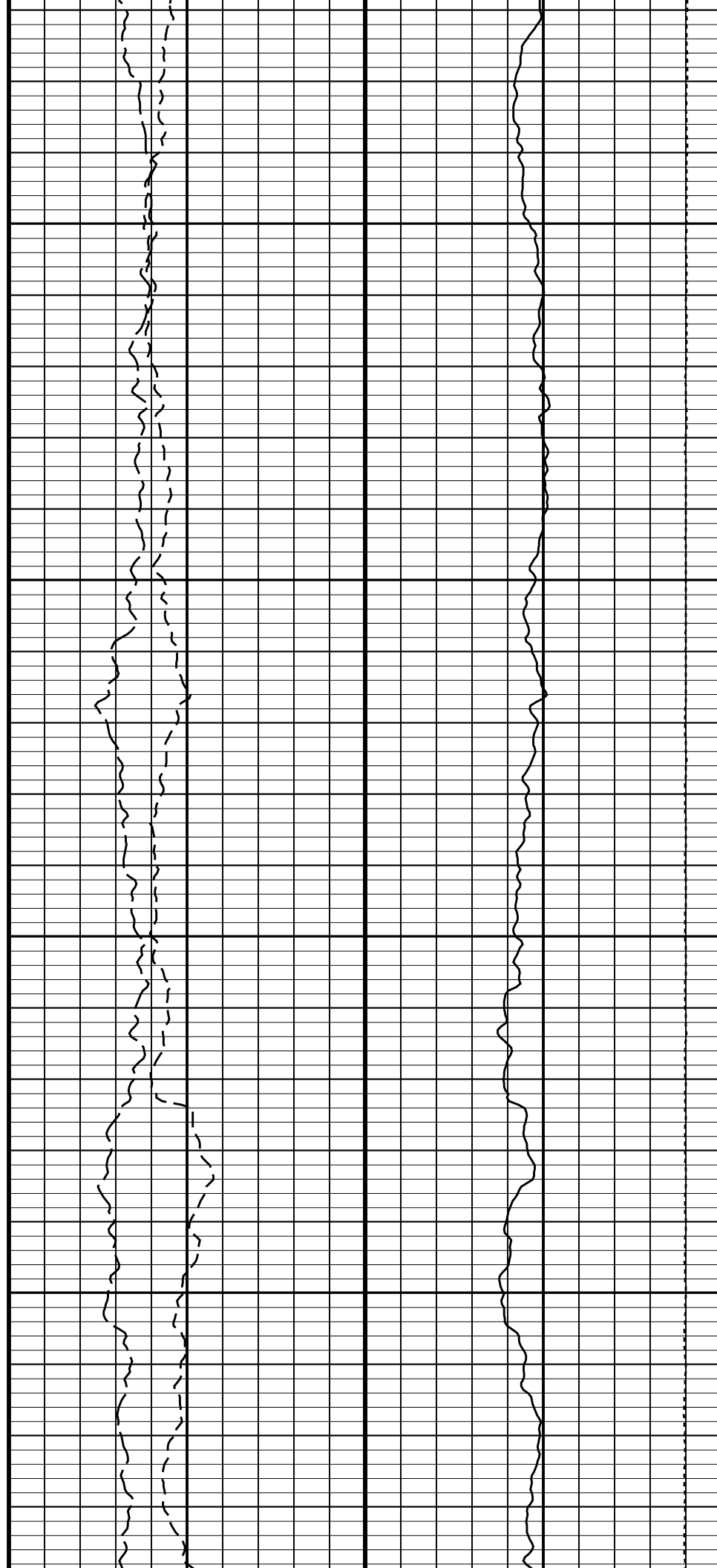
1000

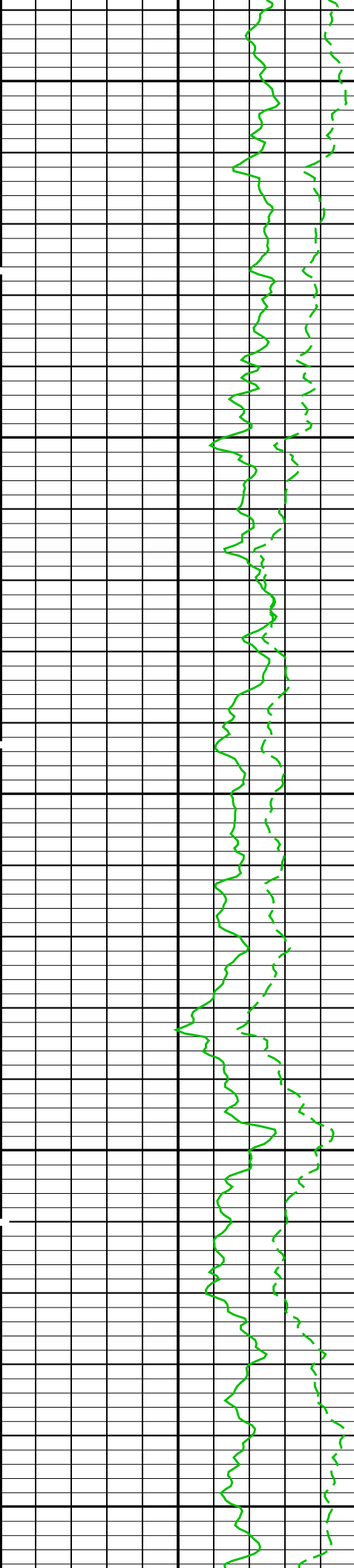




1100

1200

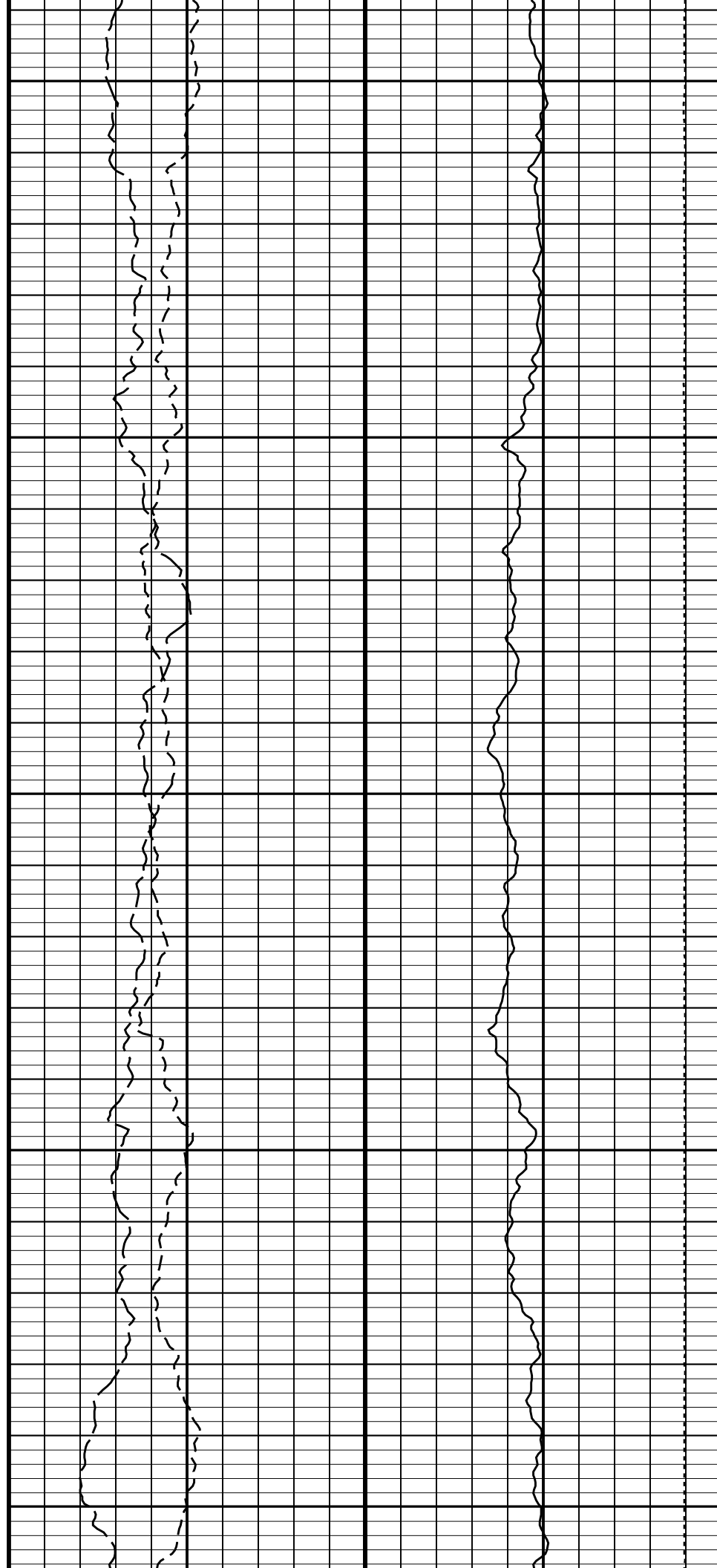


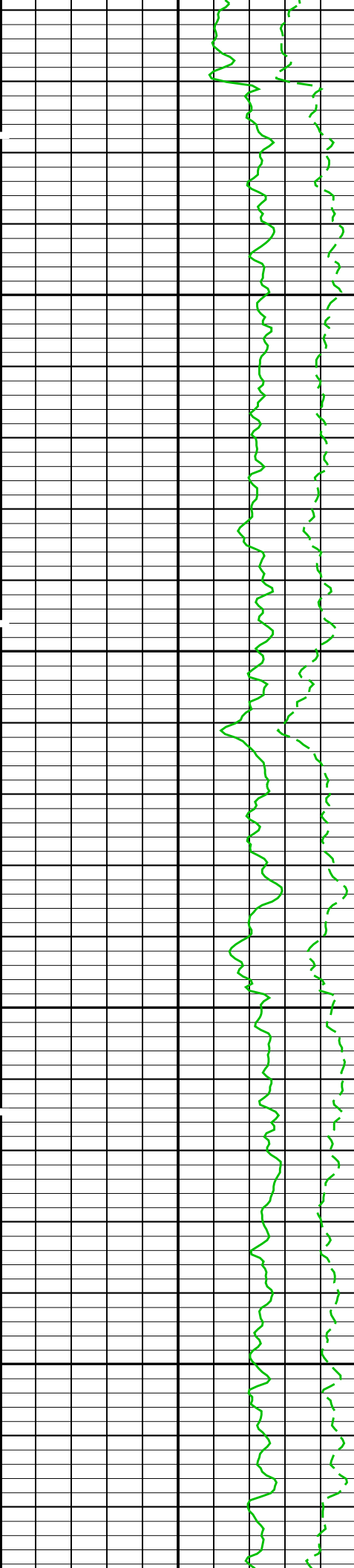


1300

1400

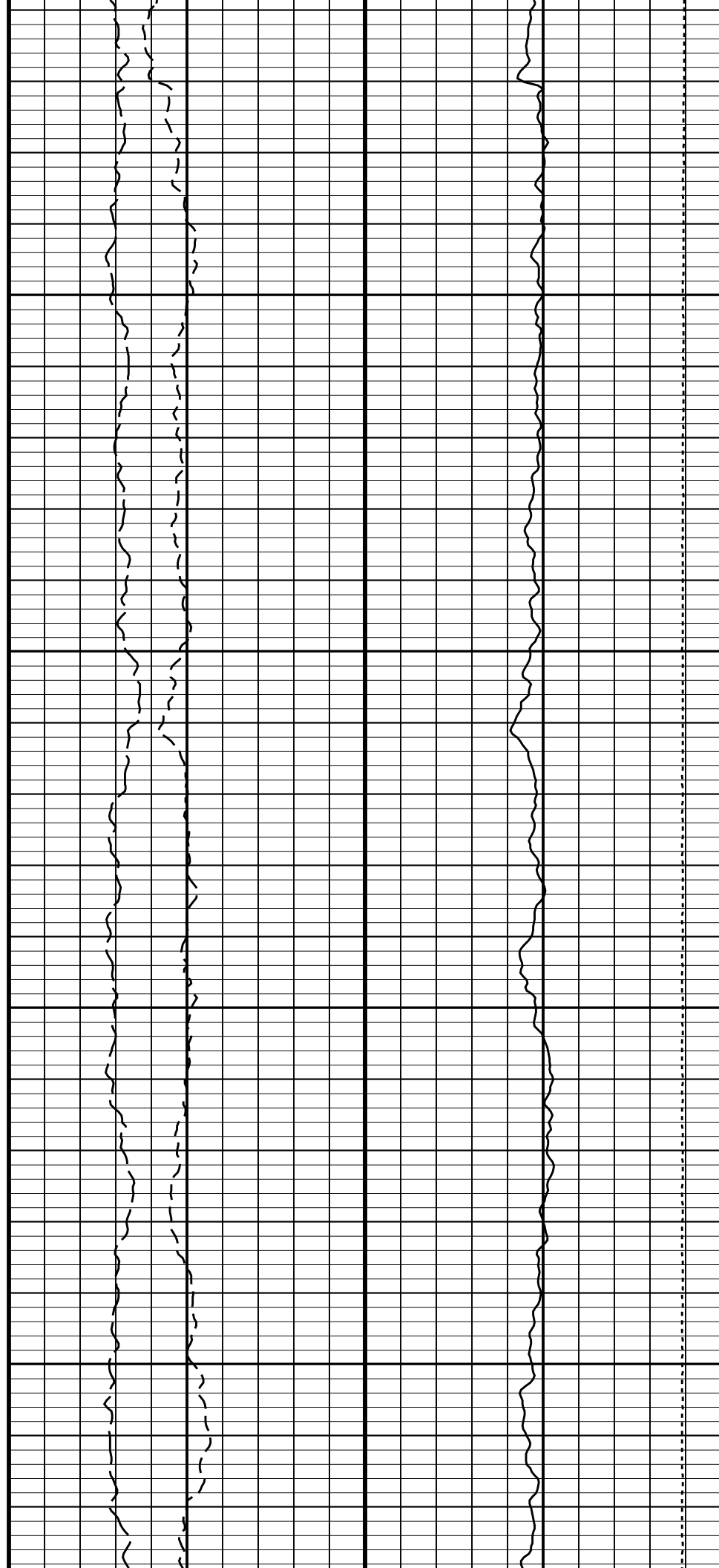
1500

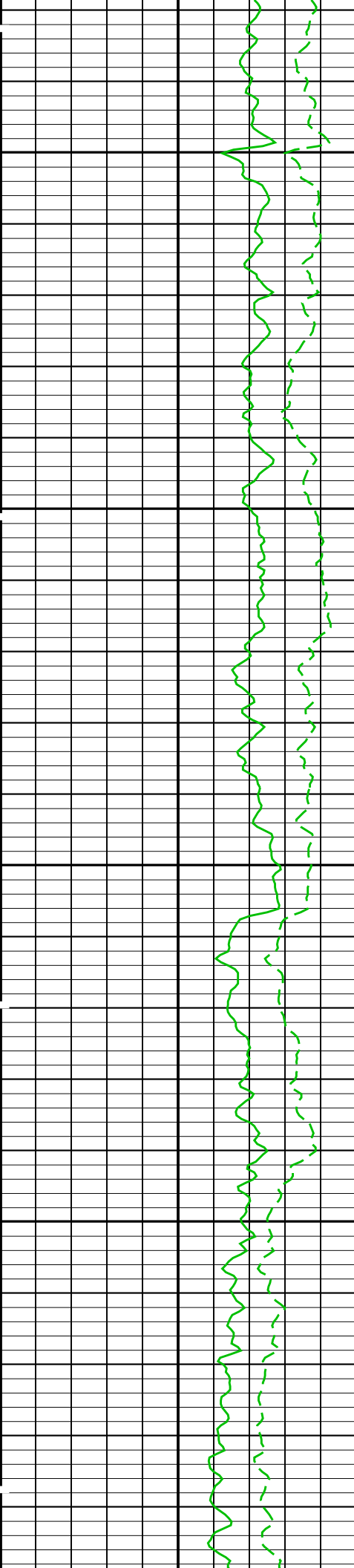




1600

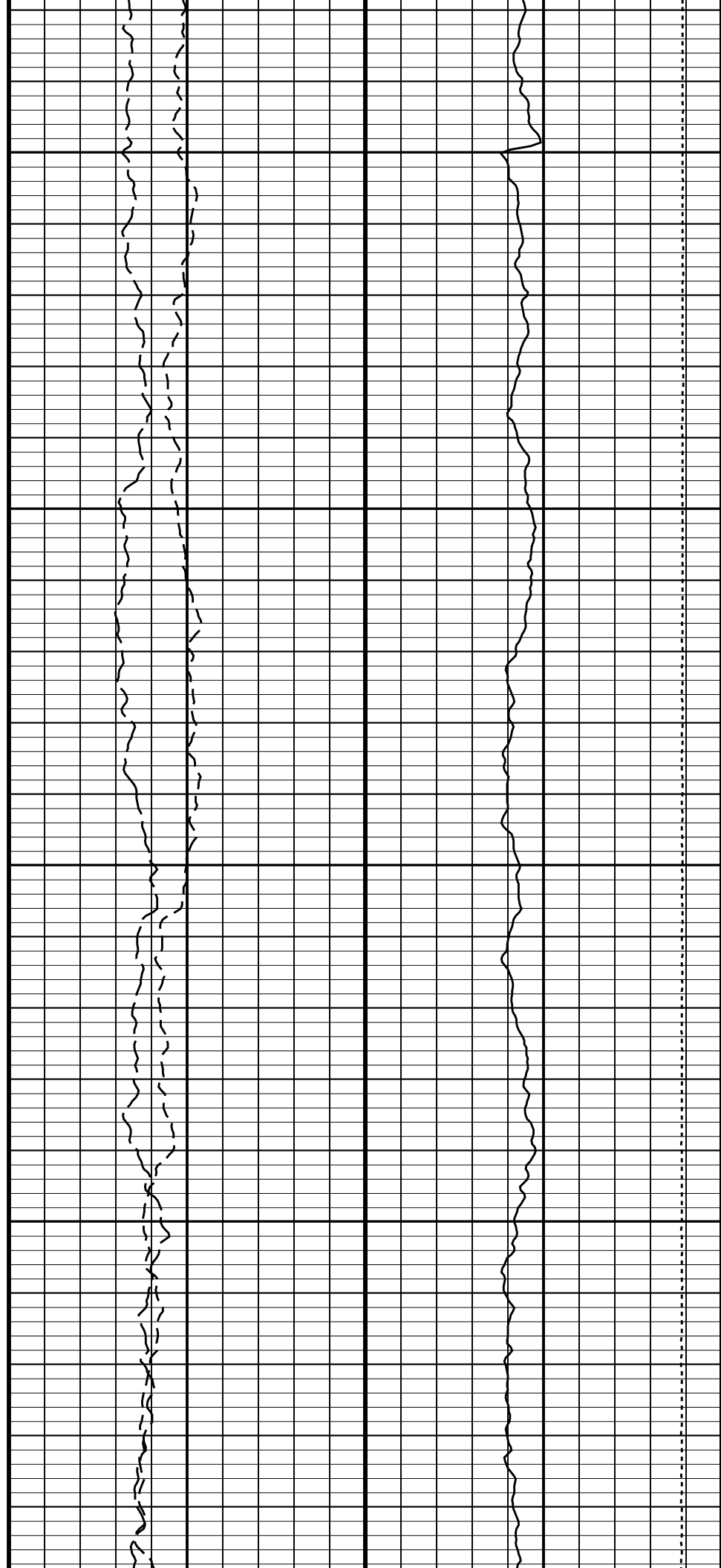
1700

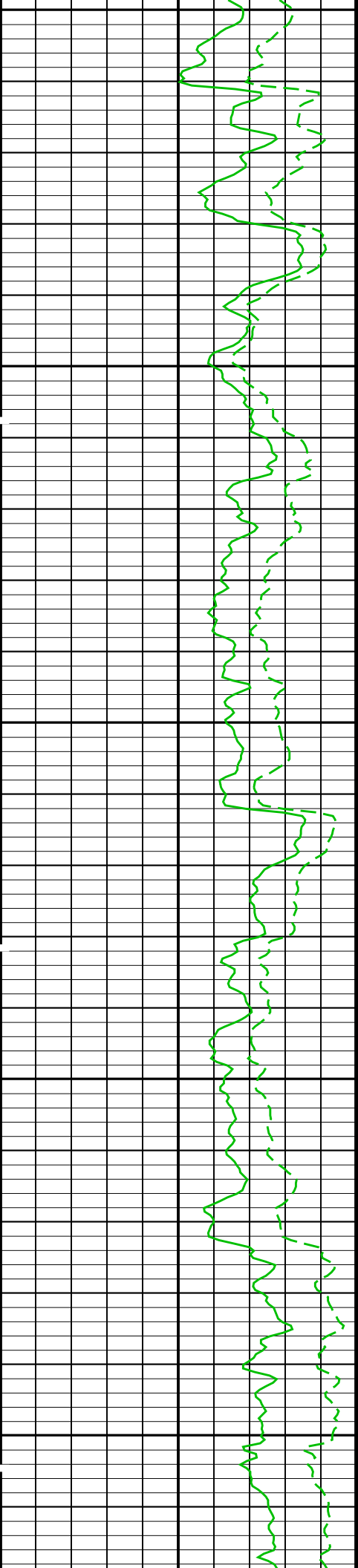




1800

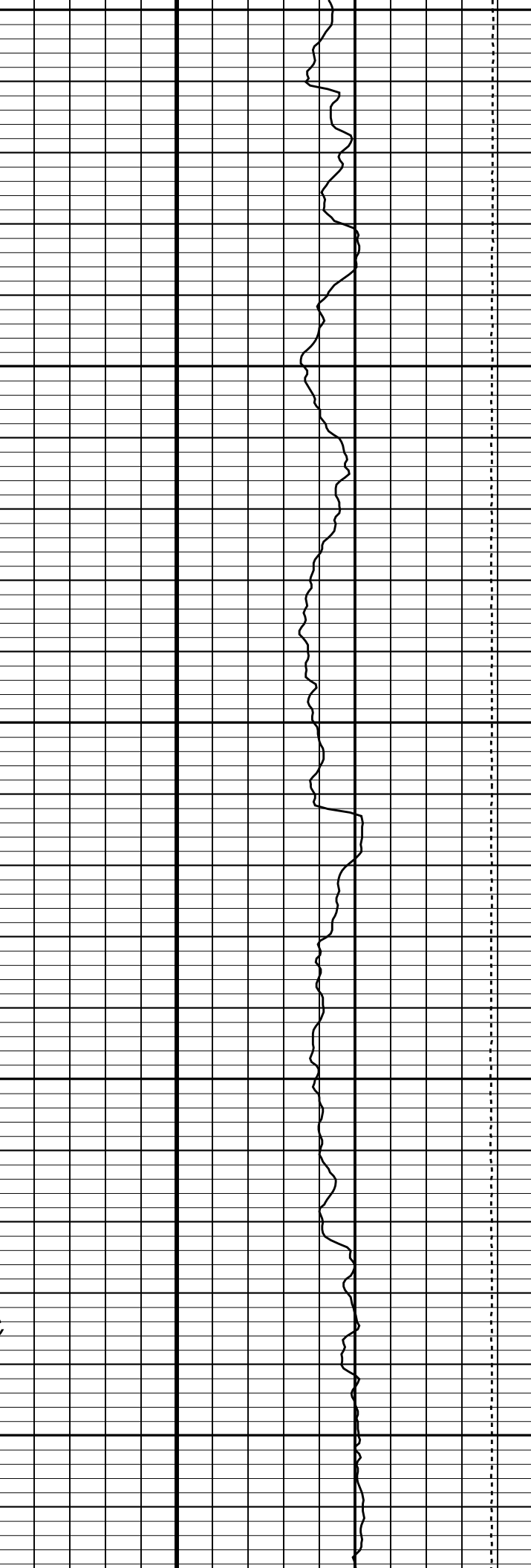
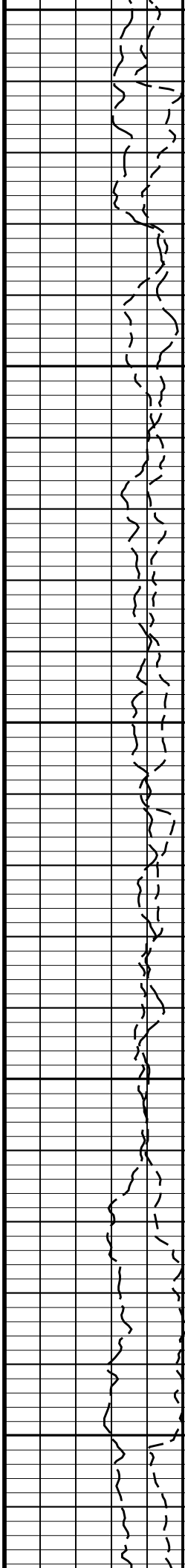
1900

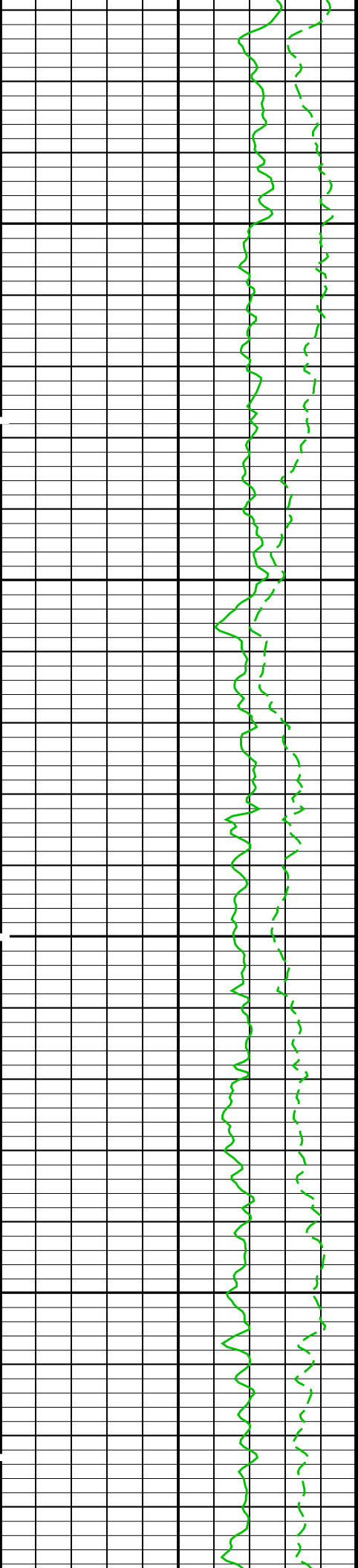




2000

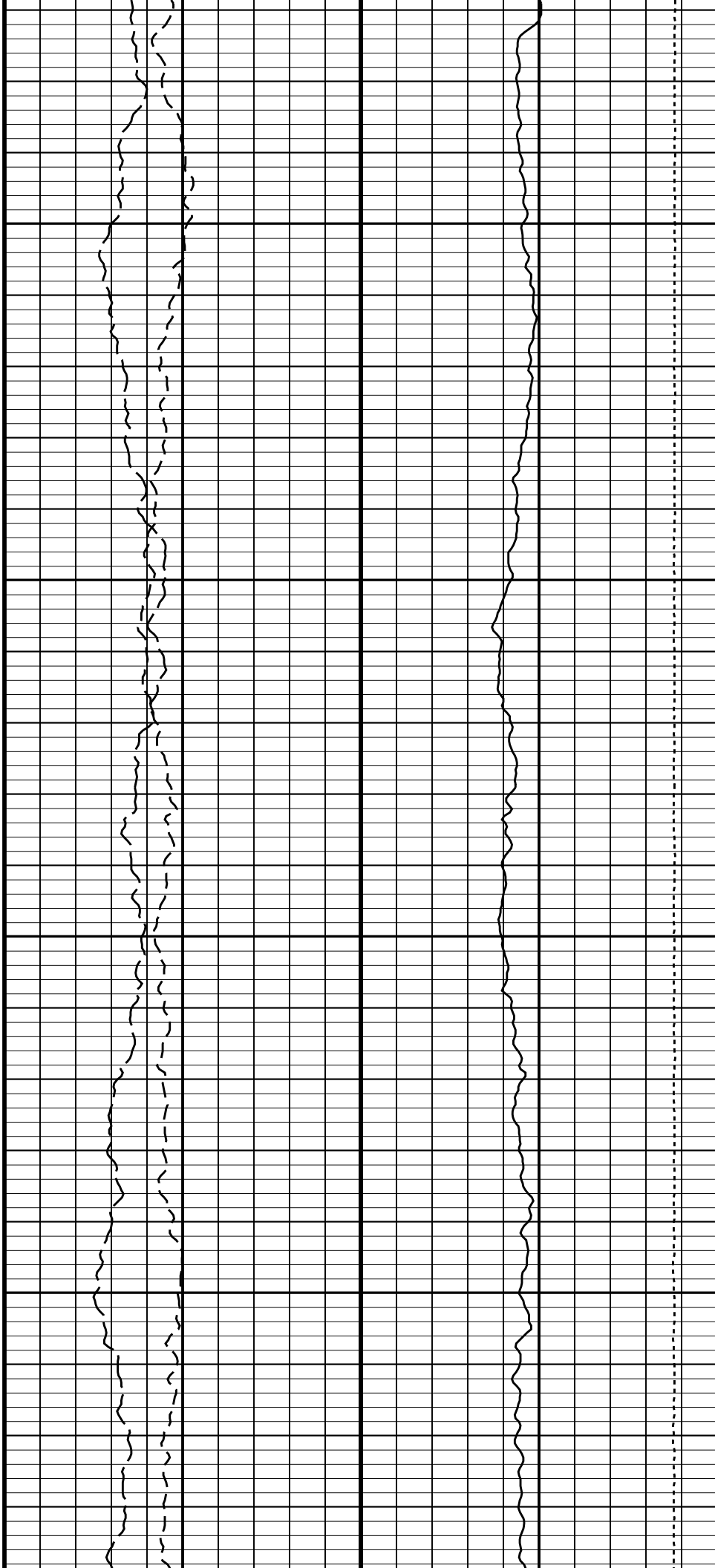
2100

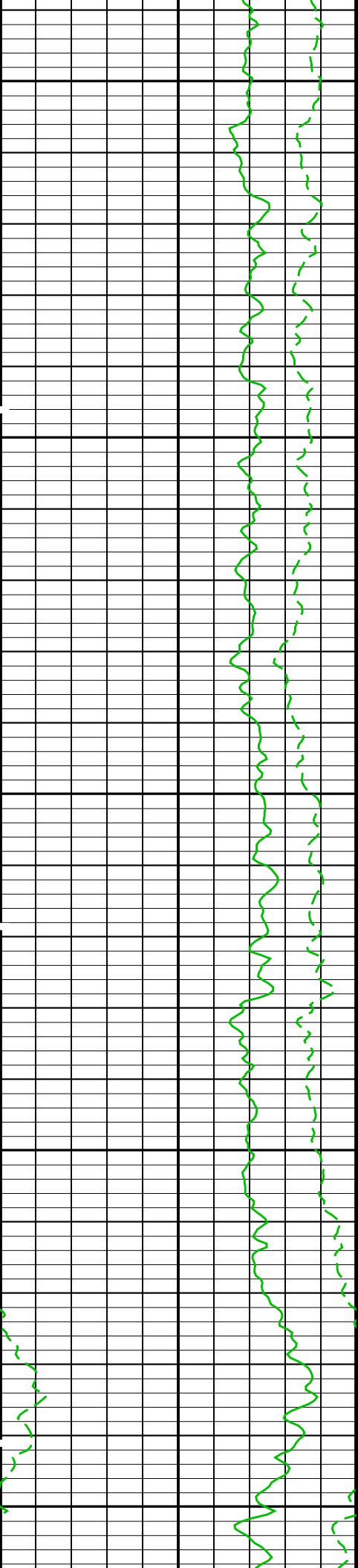




2200

2300

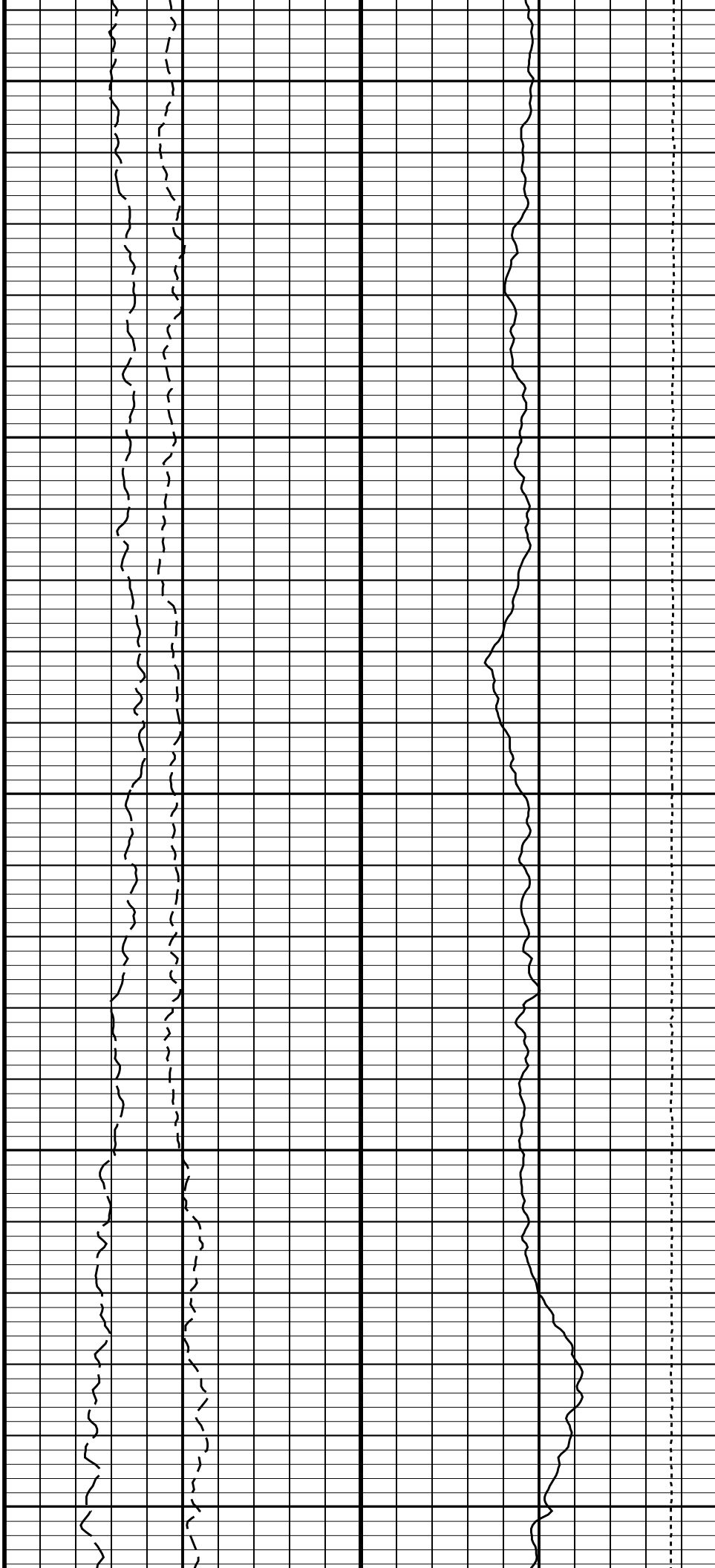


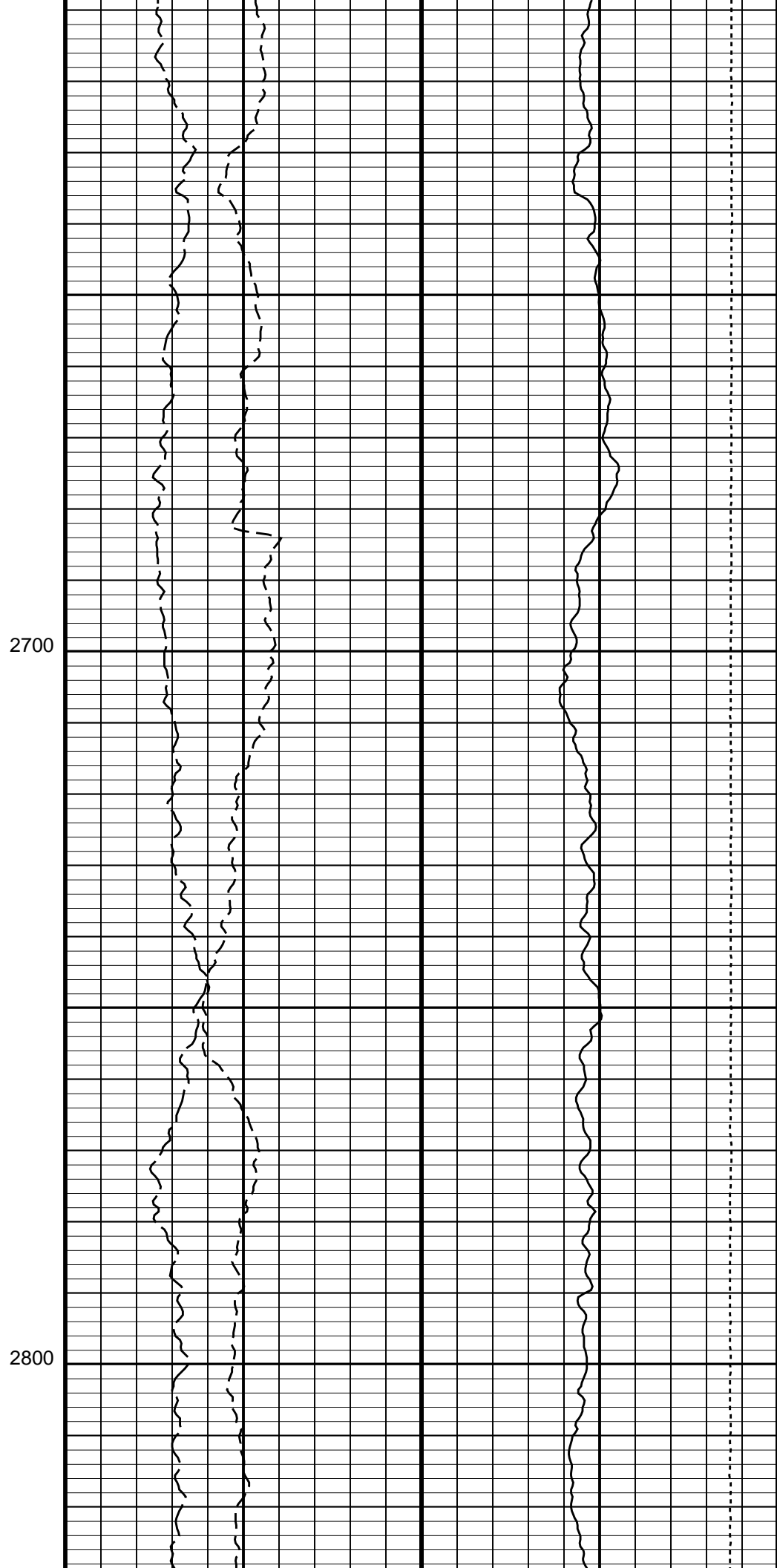
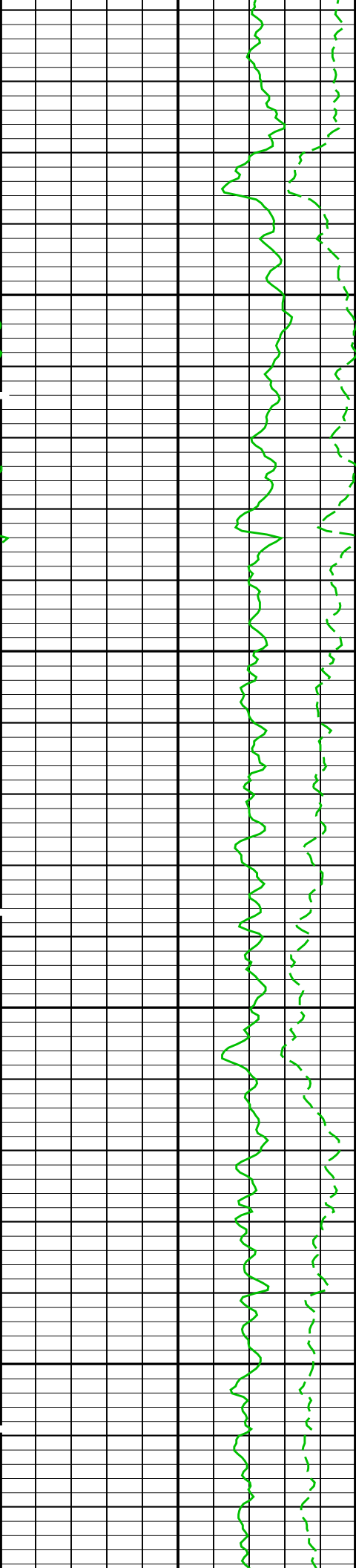


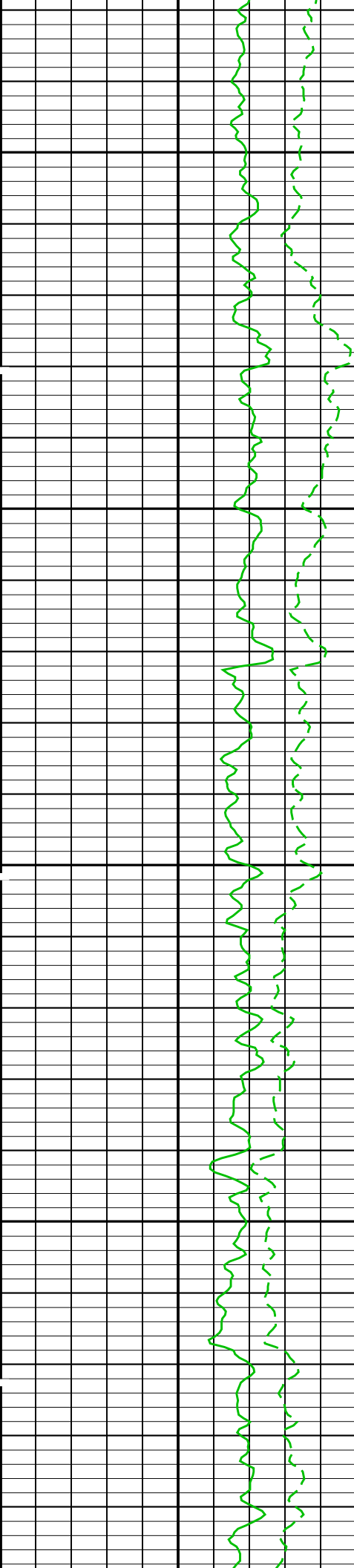
2400

2500

2600

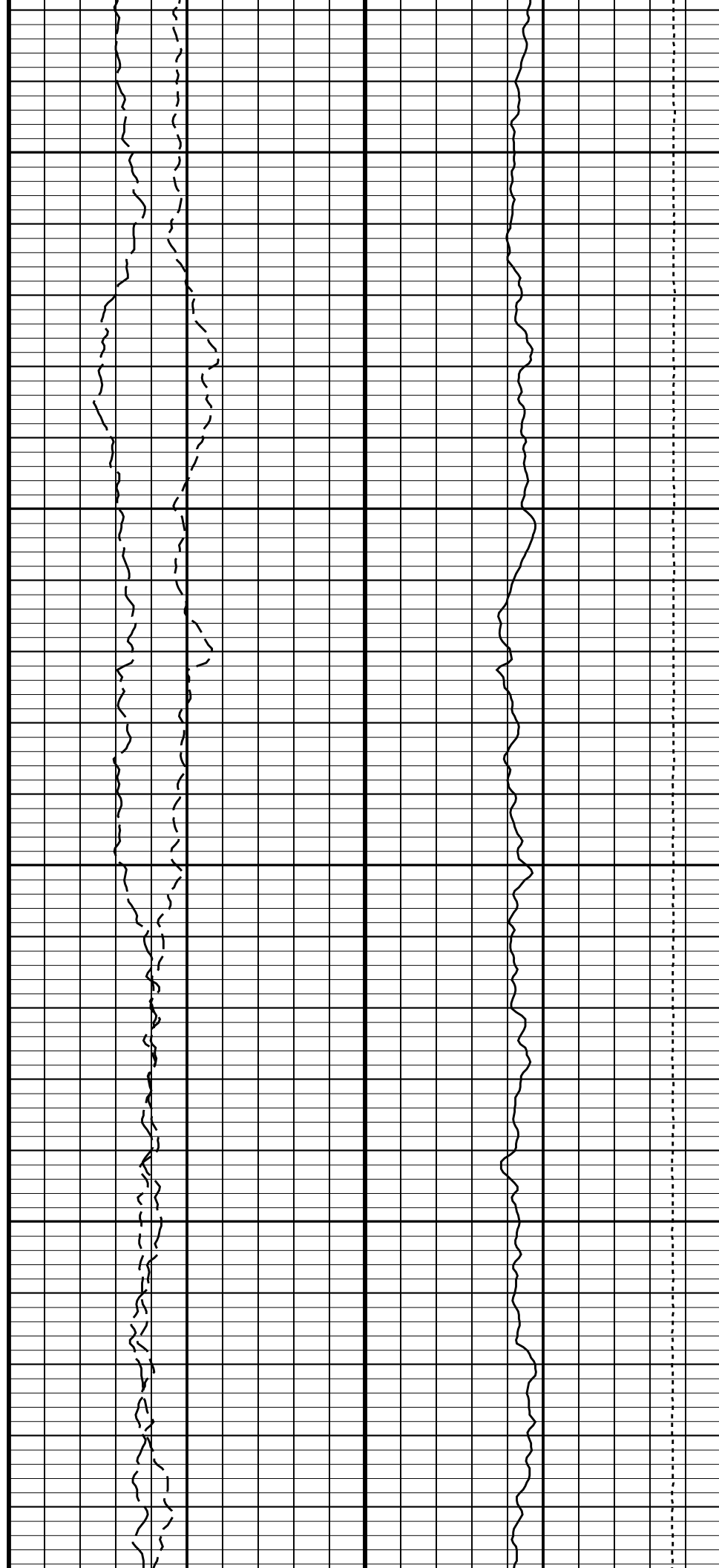


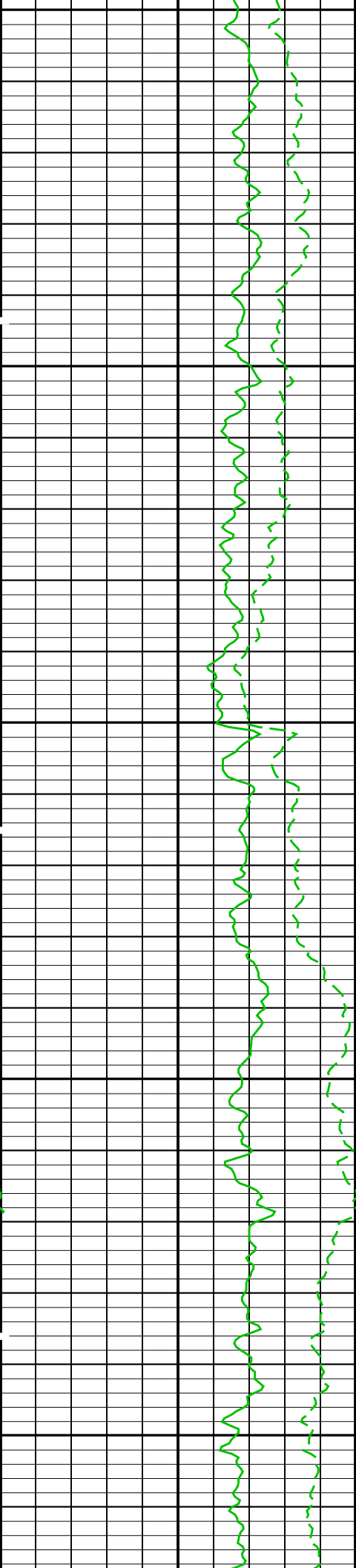




2900

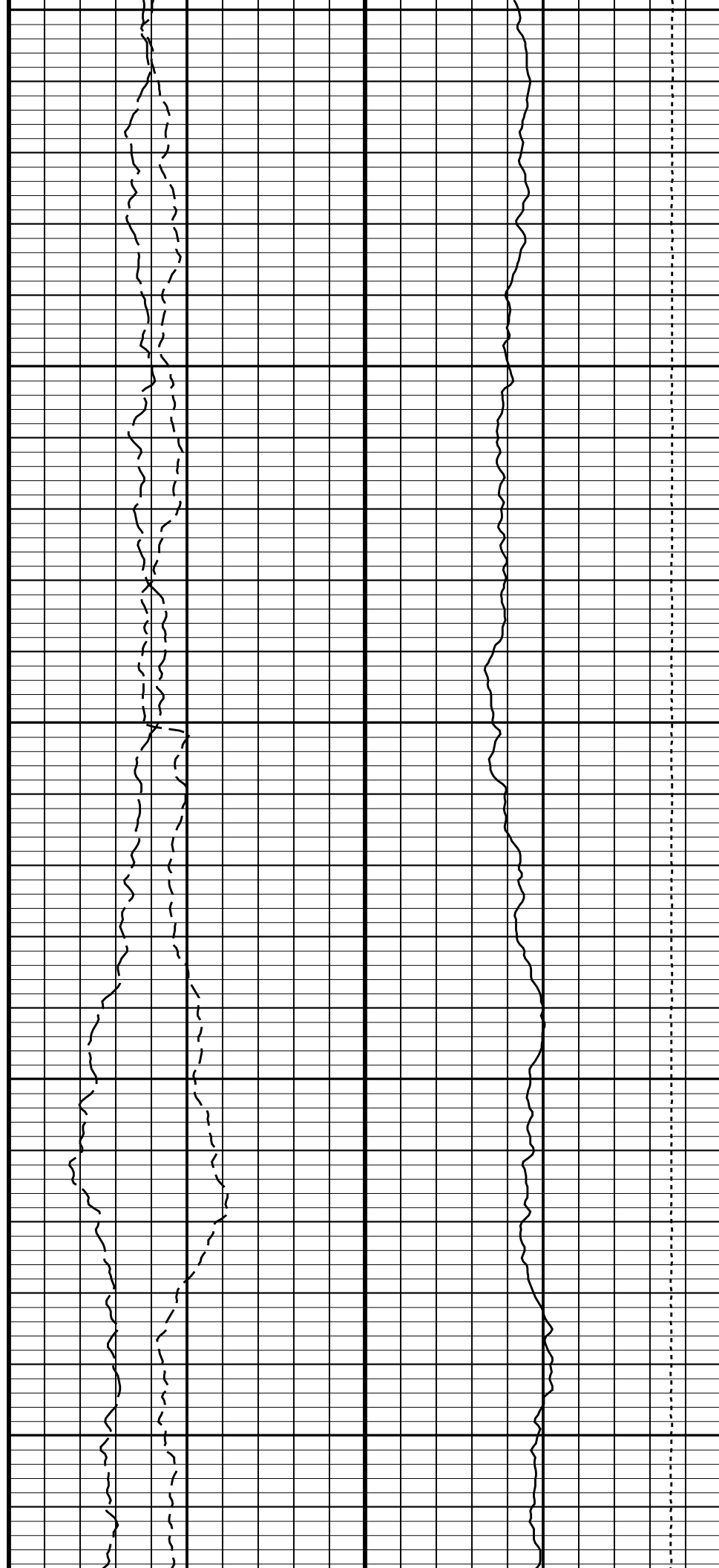
3000

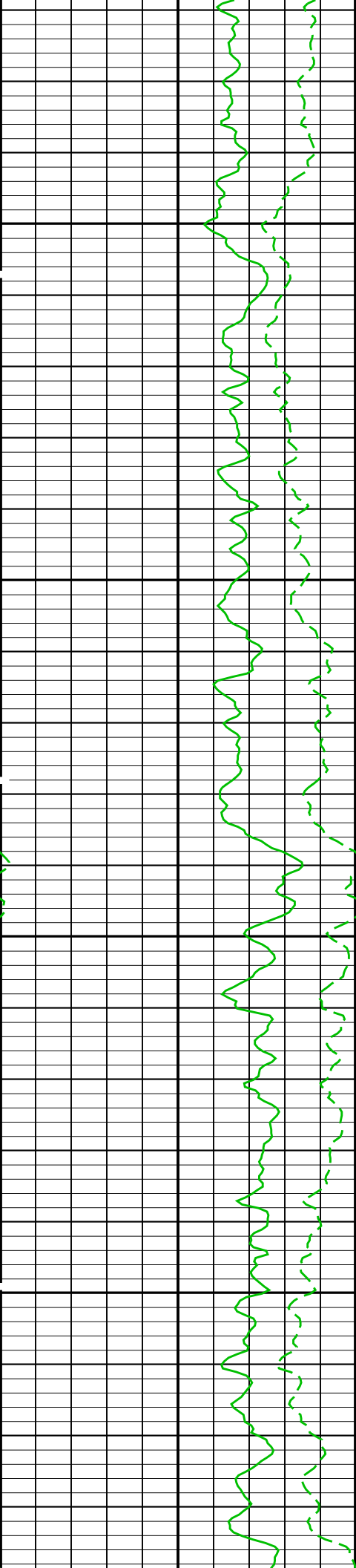




3100

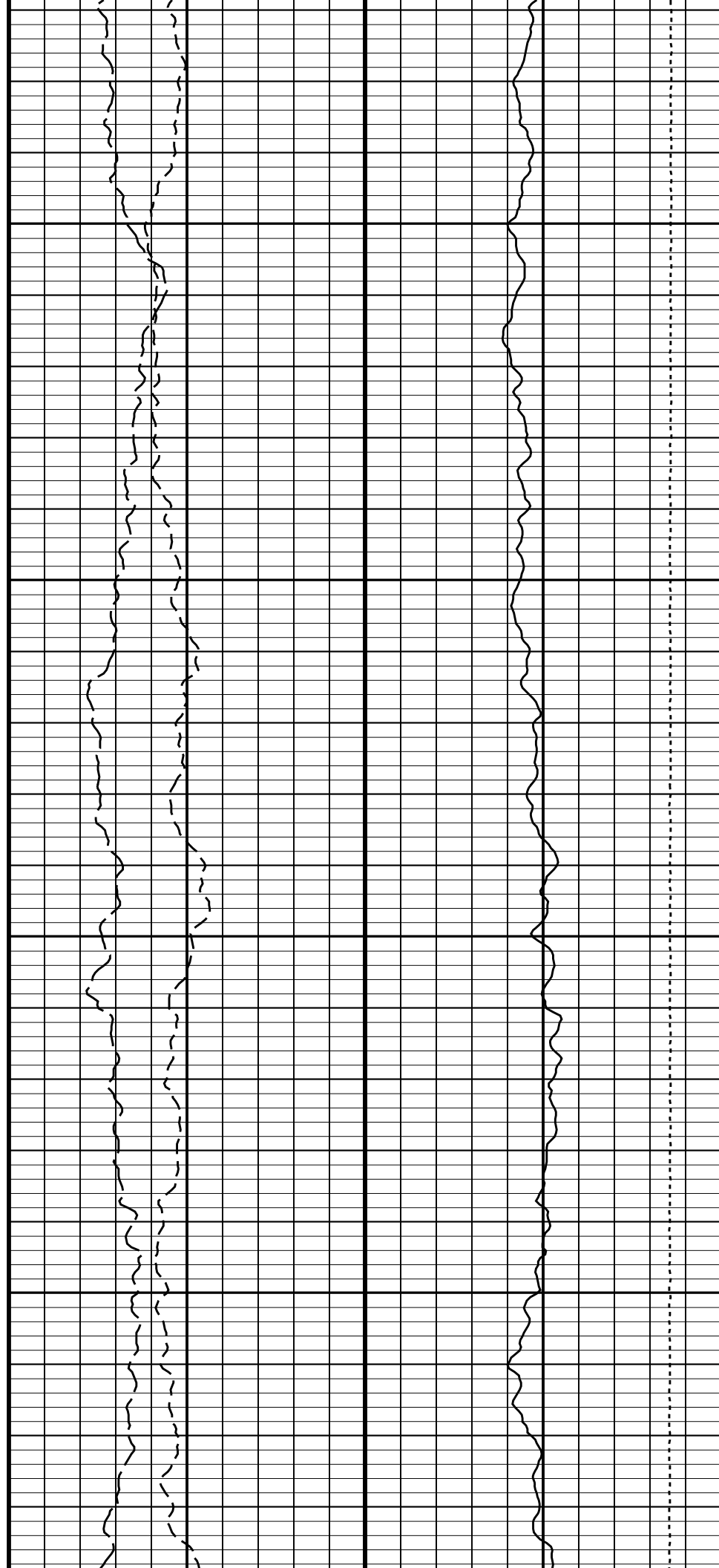
3200

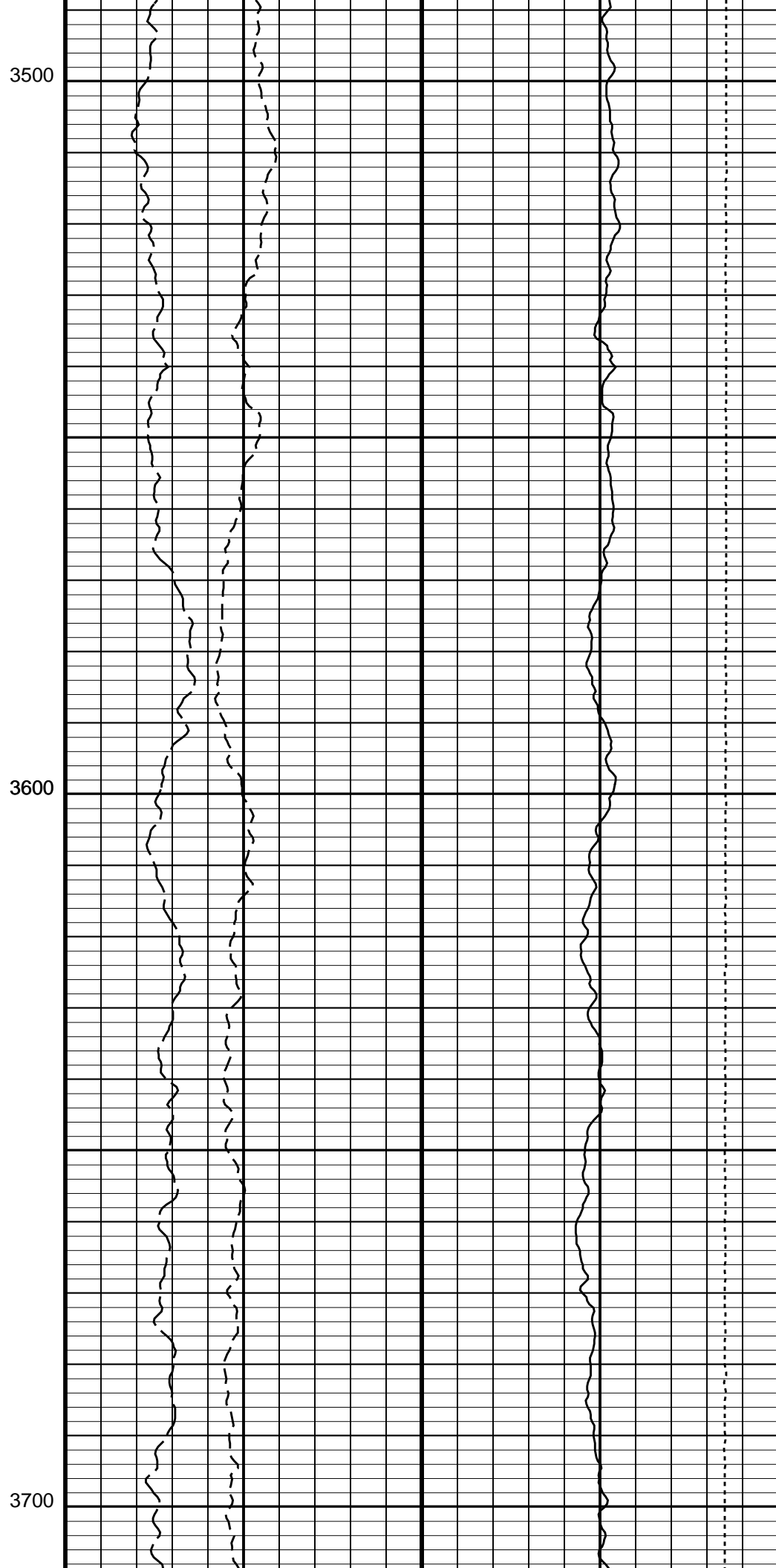
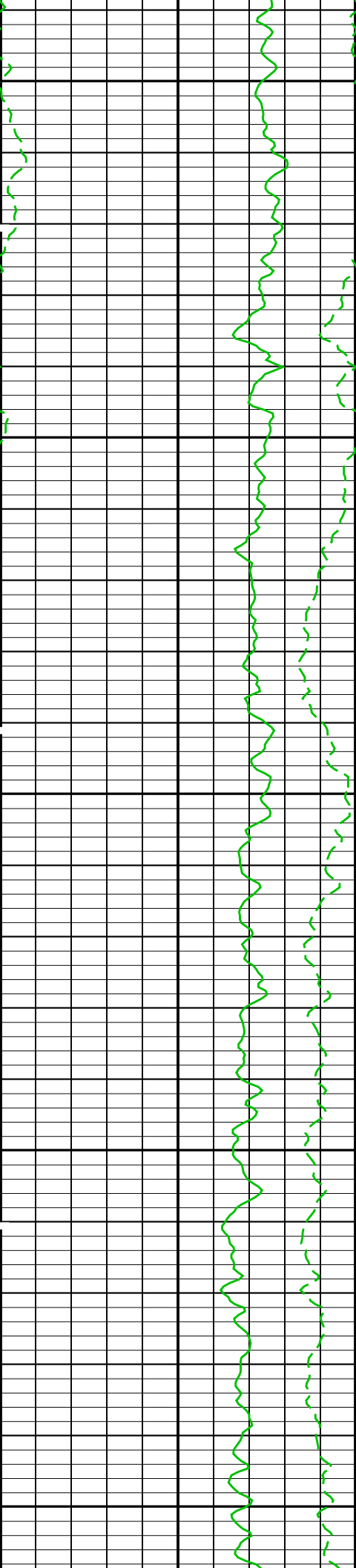


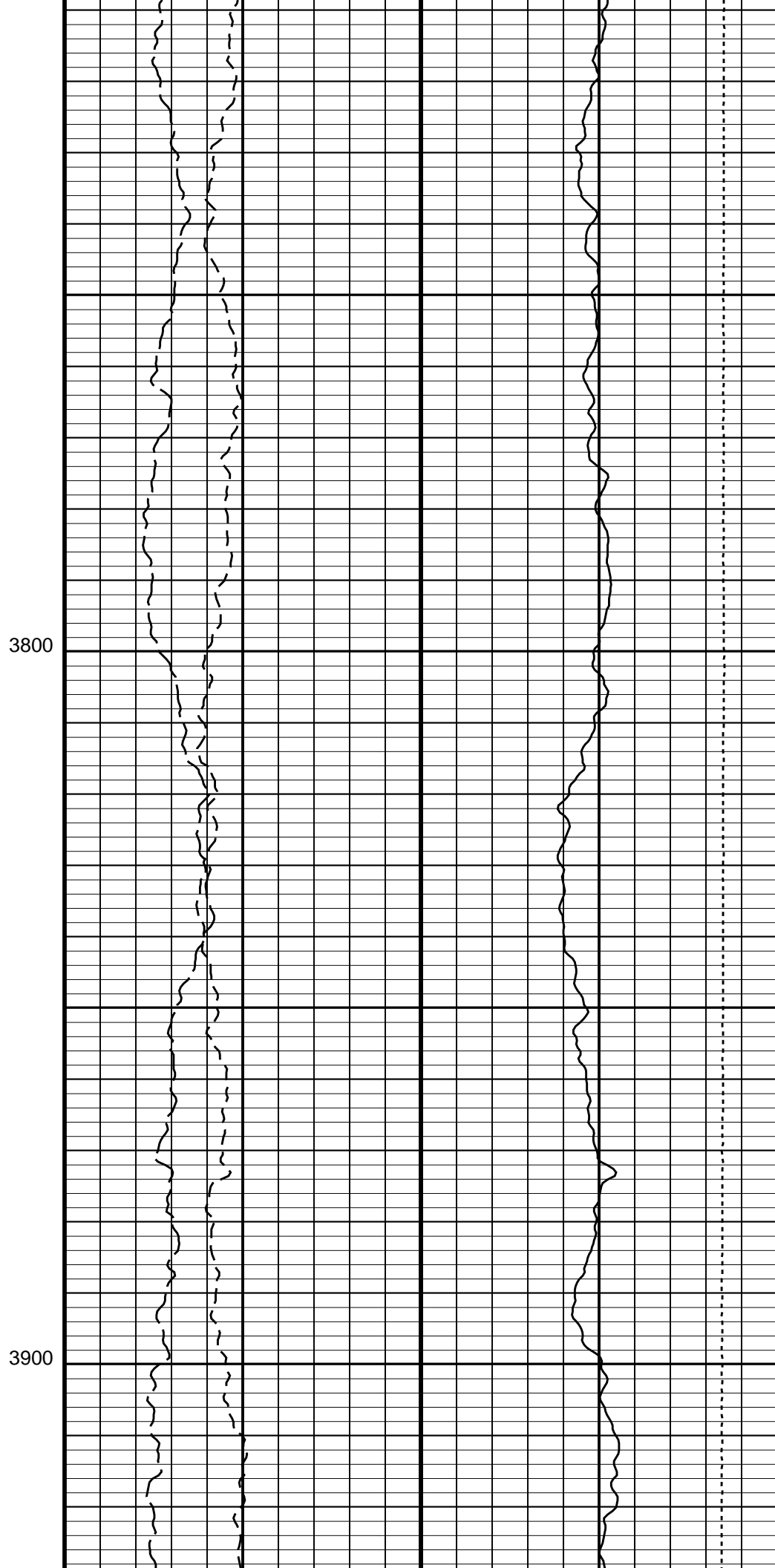
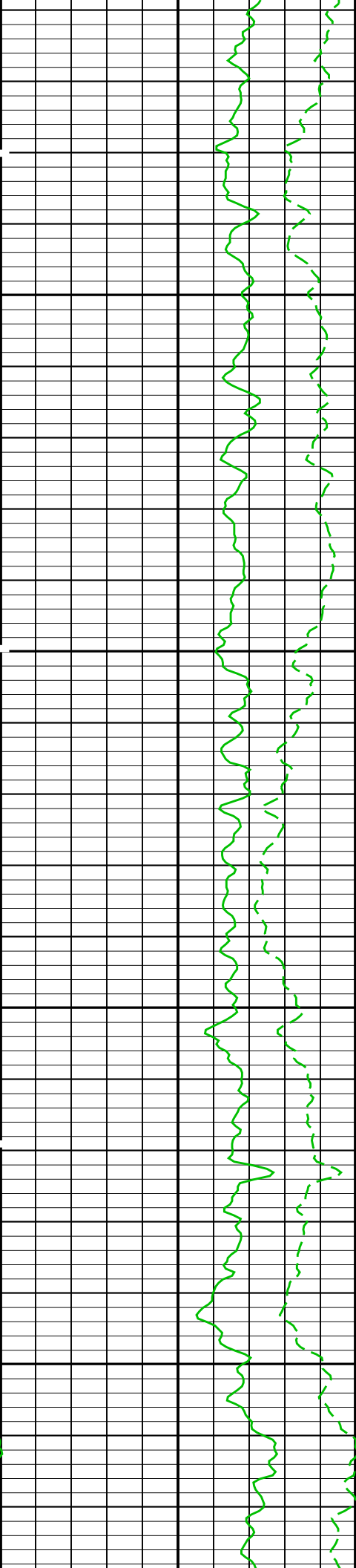


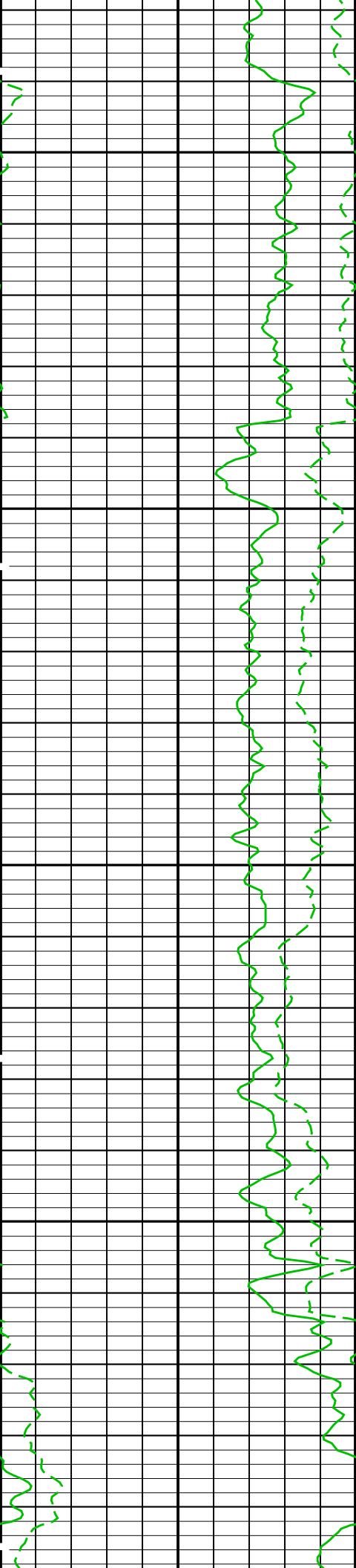
3300

3400



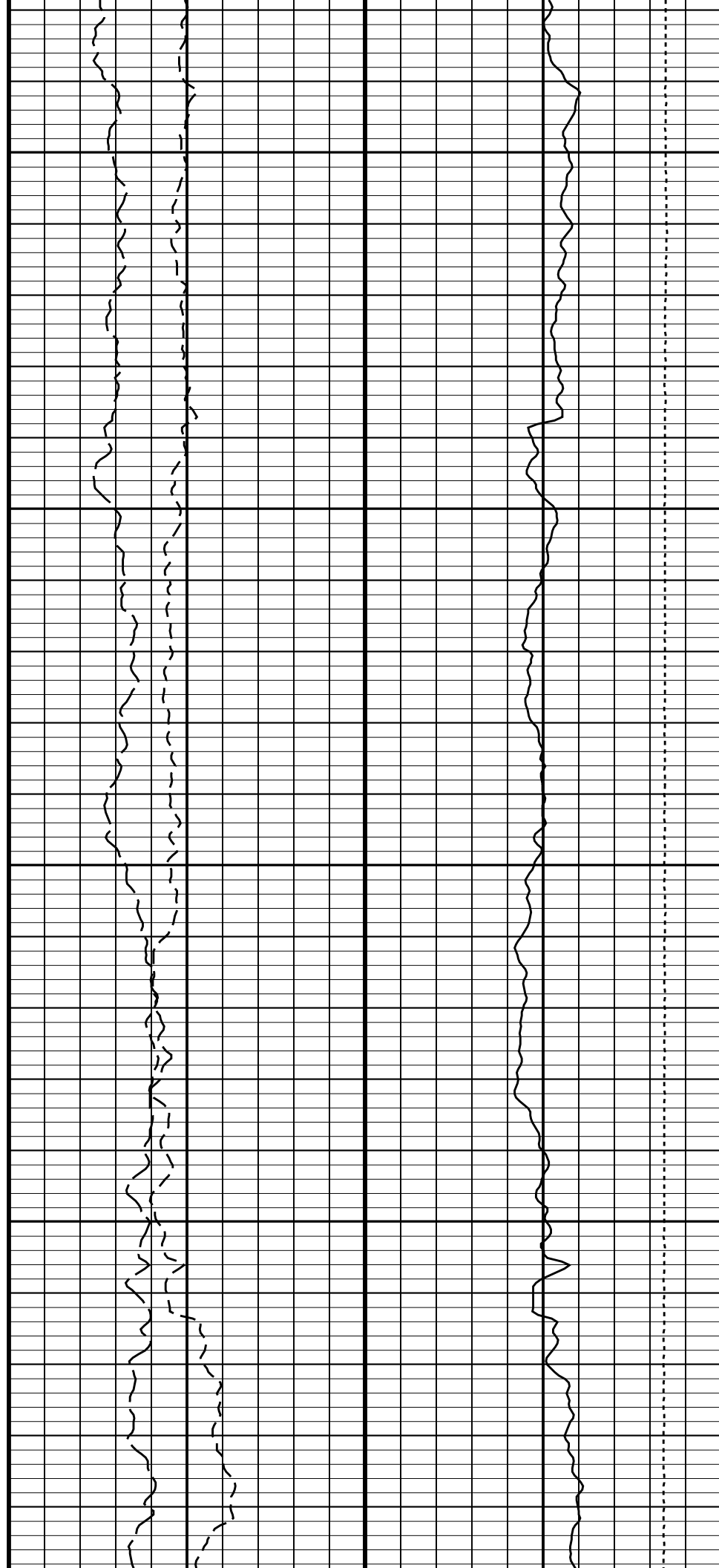


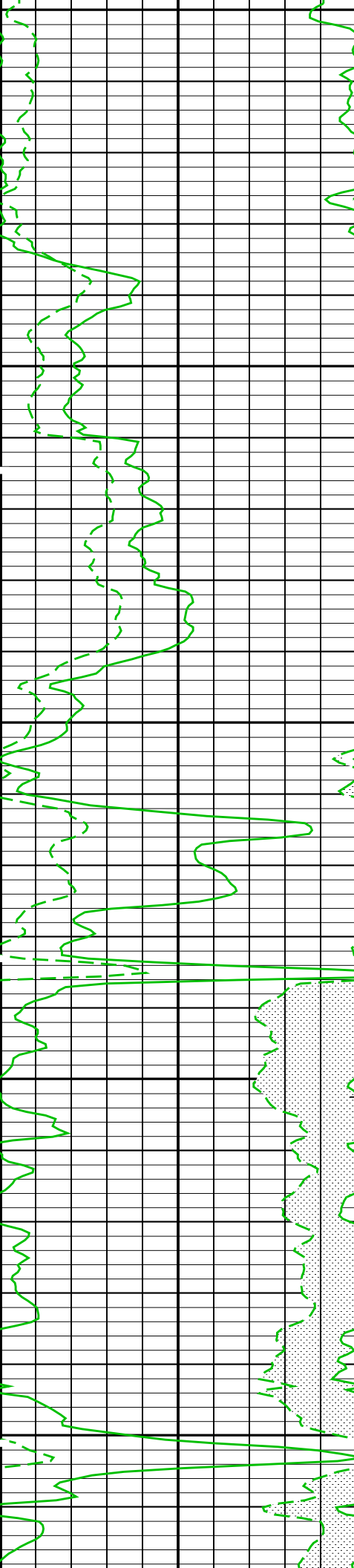




4000

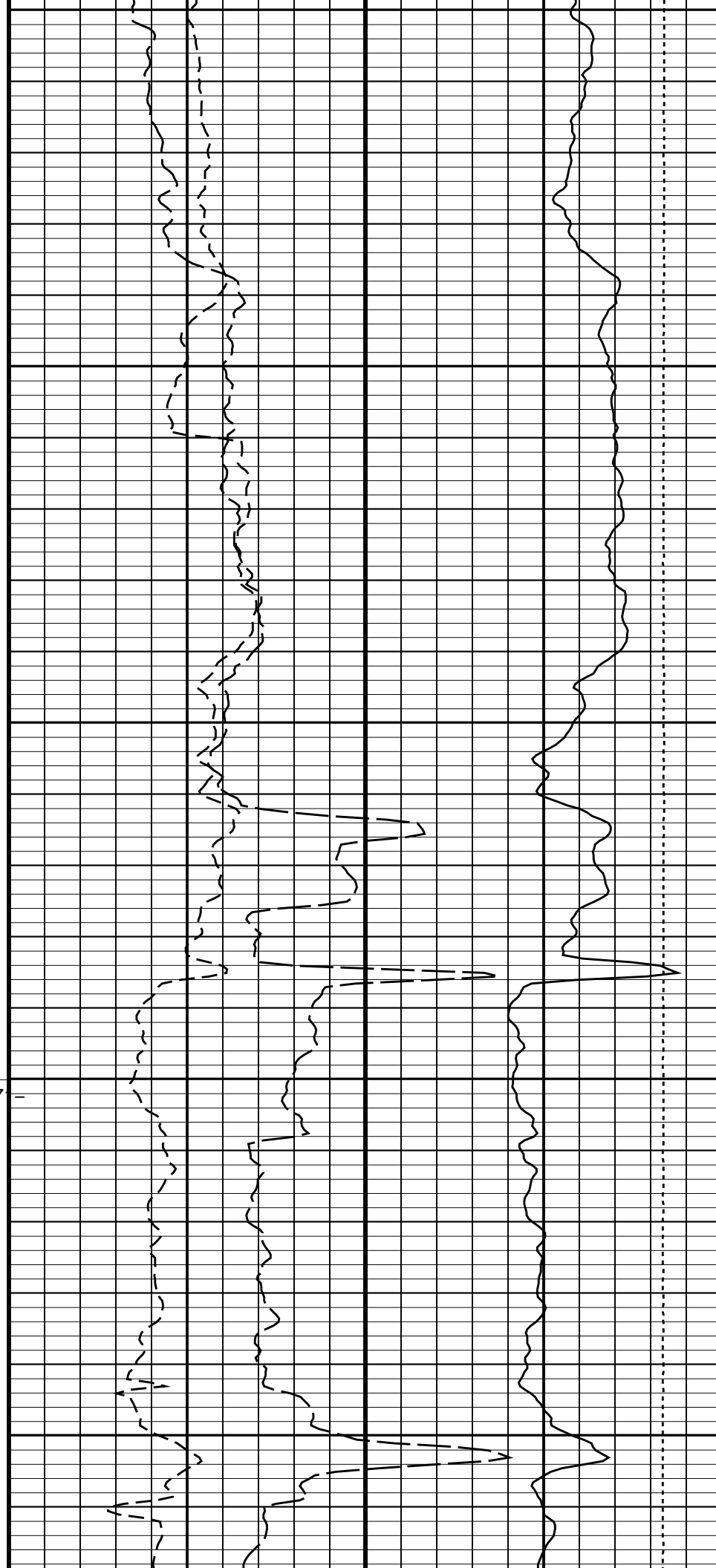
4100

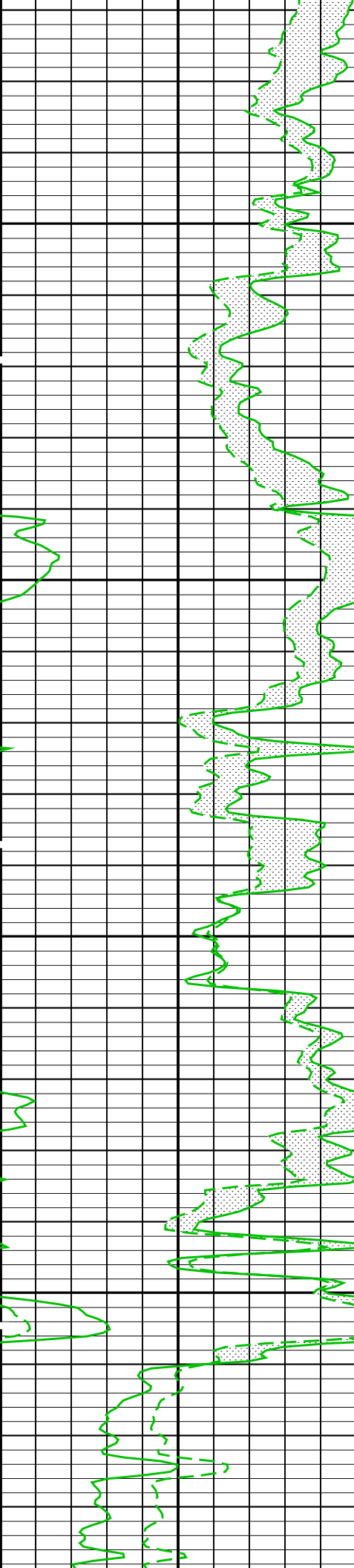




4300.0 FT
-2.68 to 2.7-

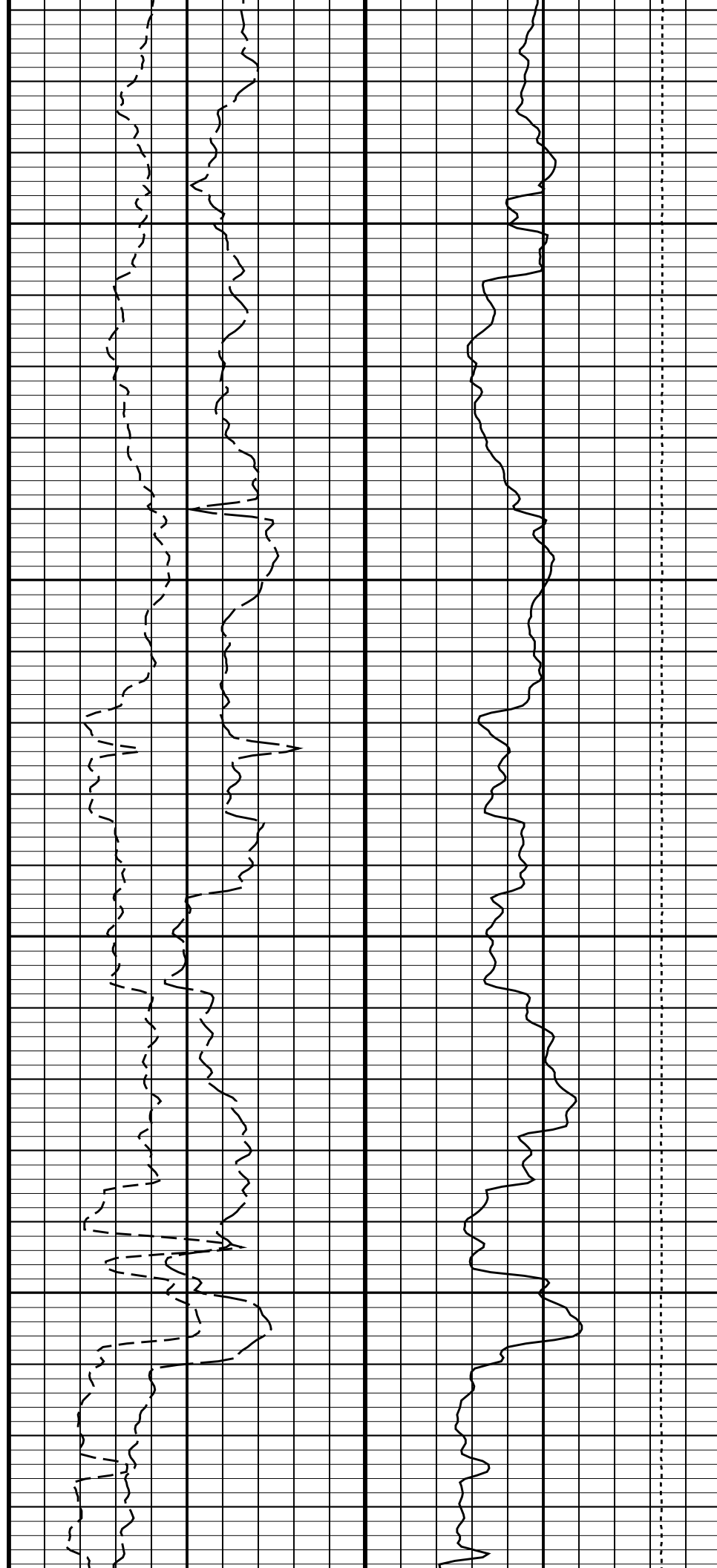
4200

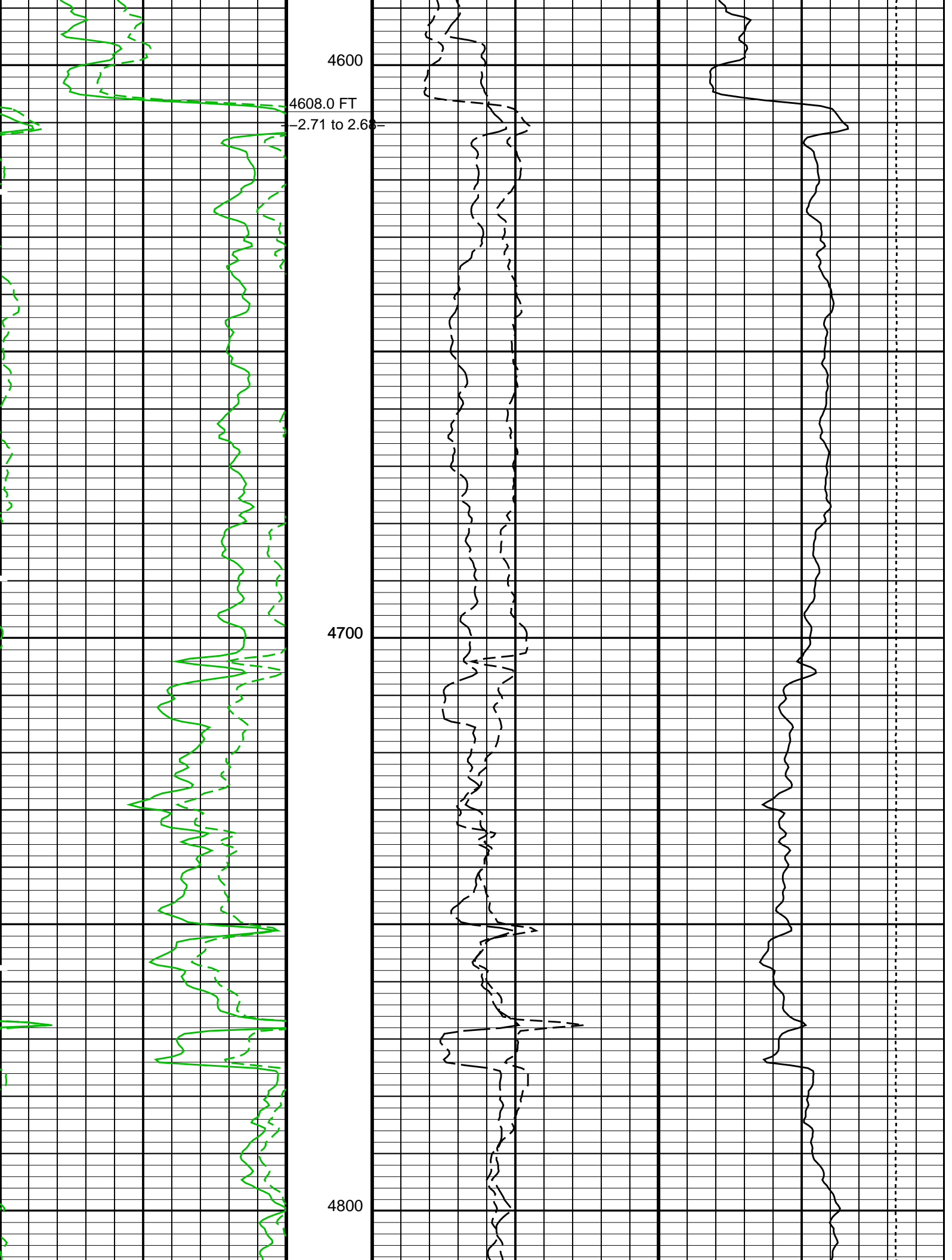


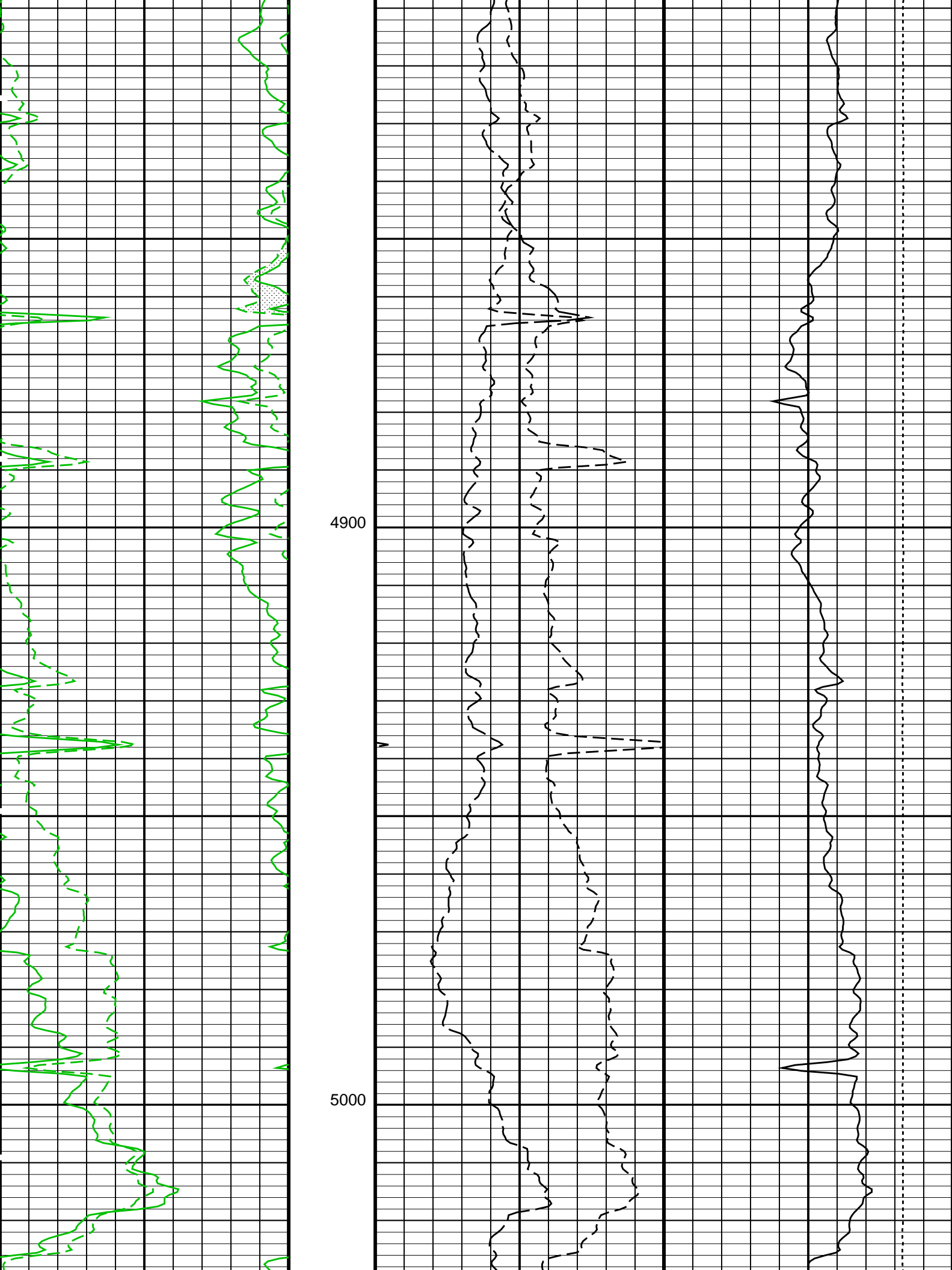


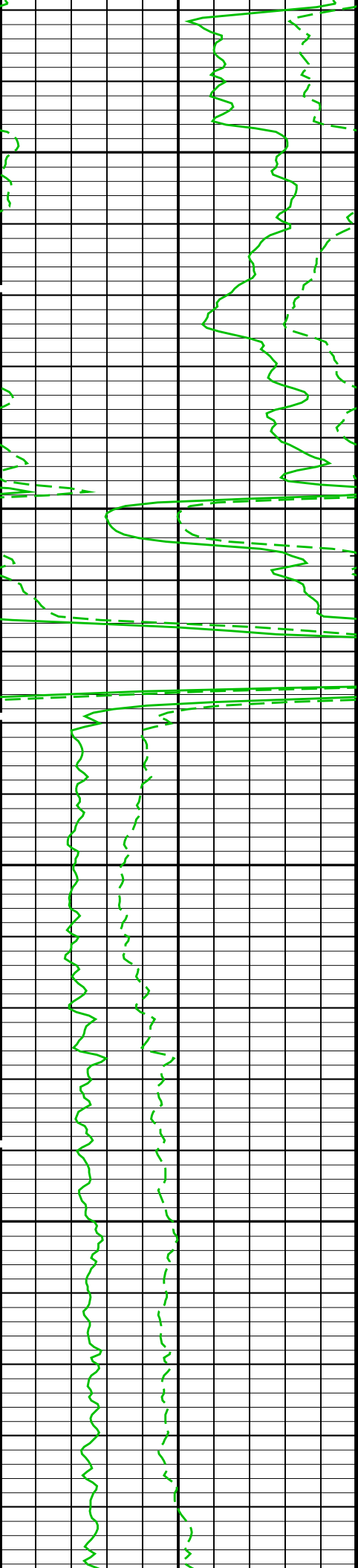
4400

4500

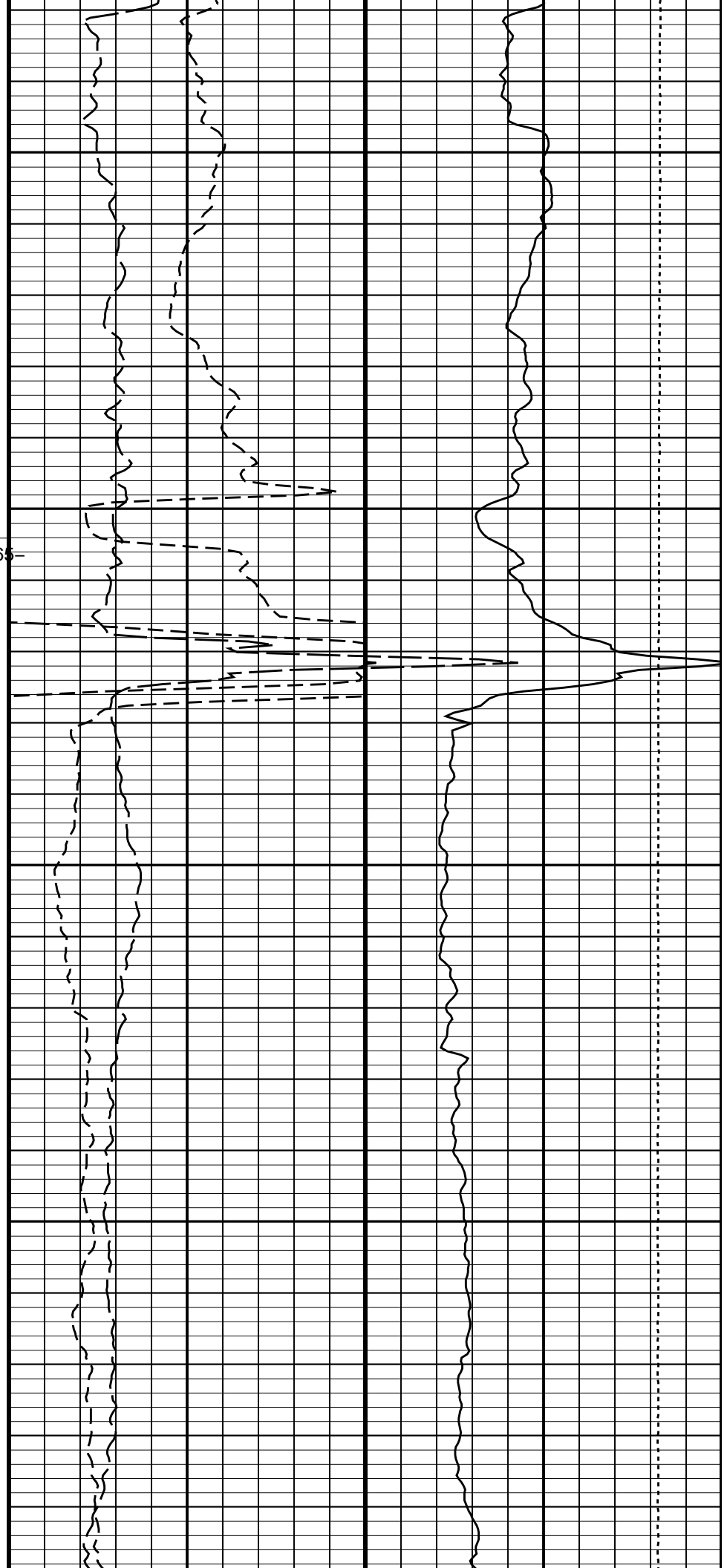




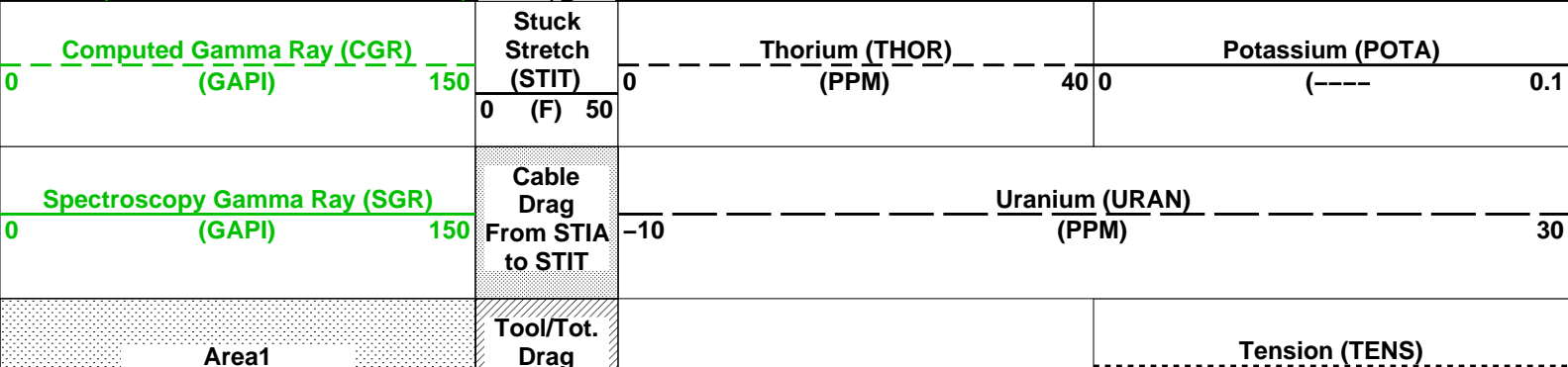
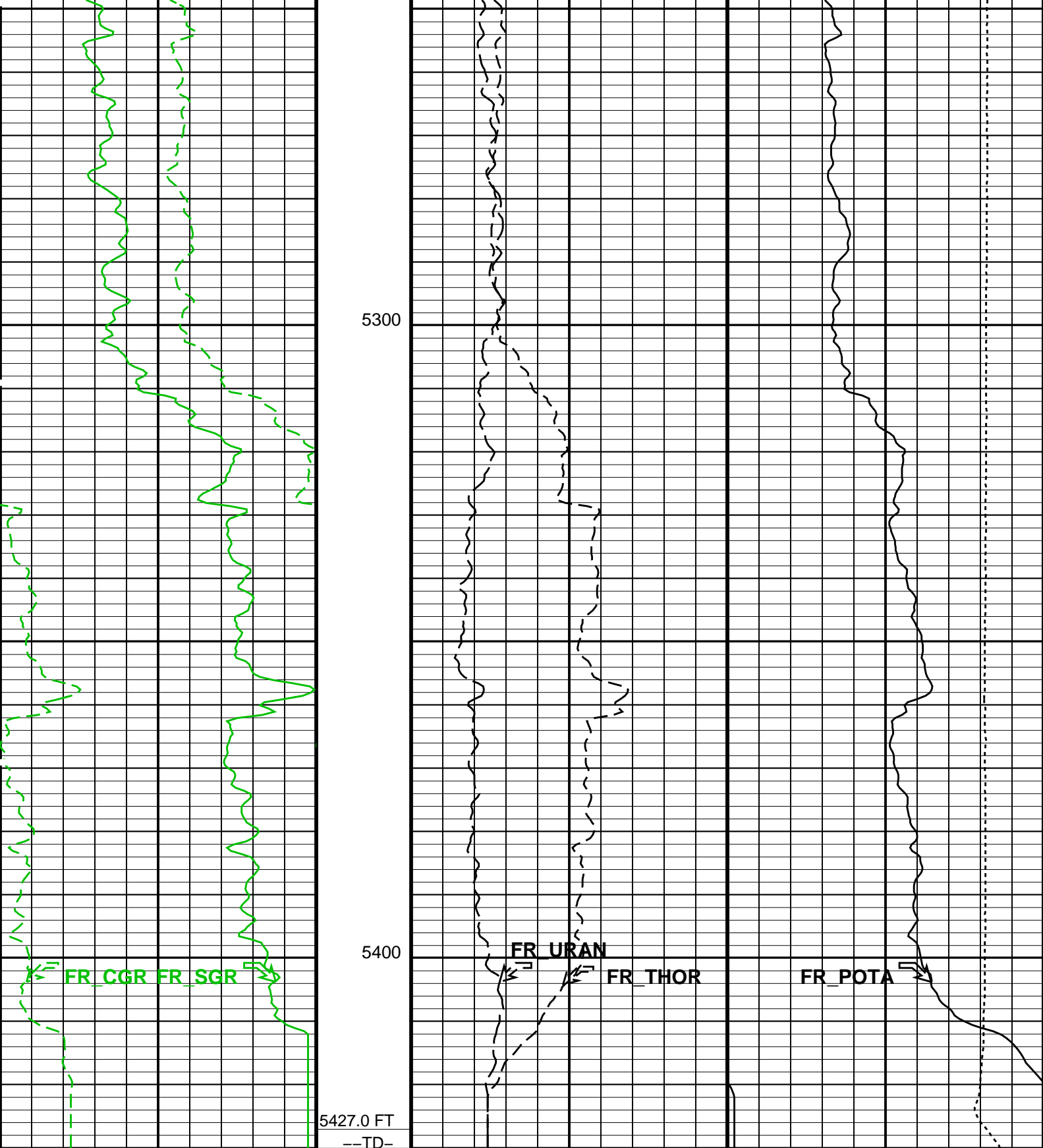




5100
5104.0 FT
-2.68 to 2.65-



5200



Time Mark Every 60 S

Value

NGT-C: Natural Gamma Spectroscopy – C				
CBAR	Constant Barite	1		
CGMI	Spectro Computed Gamma Ray Minimum	0		GAPI
CGSH	Spectro Computed Gamma Ray Shale	100		GAPI
KMIN	Potassium Minimum	0		
KSHA	Potassium Shale	0.02		
NFO	NGT Filtering Option	KALMAN		
PMUD	Potassium Mud	0		%
SGMI	Spectro Gamma Ray Minimum	0		GAPI
SGSH	Spectro Gamma Ray Shale	100		GAPI
TMIN	Thorium Minimum	0		PPM
TSHA	Thorium Shale	12		PPM
UMIN	Uranium Minimum	0		PPM
USHA	Uranium Shale	3		PPM
STI: Stuck Tool Indicator				
LBFR	Trigger for MAXIS First Reading Label	TDL		
STKT	STI Stuck Threshold	2.5		FT
TDD	Total Depth – Driller	5433.00		FT
TDL	Total Depth – Logger	5427.00		FT
System and Miscellaneous				
BS	Bit Size	12.250		IN
DFD	Drilling Fluid Density	9.80		LB/G
DO	Depth Offset for Playback	0.0		FT
DORL	Depth Offset for Repeat Analysis	2.0		FT
PP	Playback Processing	RECOMPUTE		

Graphics File Created: 12-Aug-2007 13:28

MCM

AIT-H	SRPC-3357-Q2_2007	NGT-C	15C0-309
DTA-A	SRPC-3357-Q2_2007	DSLT-FTB	15C0-309
DTC-H	15C0-309		

DEFAULT	AIT NGS SONIC 012LUP	FN:11	PRODUCER	12-Aug-2007 12:03	5430.0 FT	379.0 FT
---------	----------------------	-------	----------	-------------------	-----------	----------

DEFAULT AIT NGS SONIC 022PUP FN:21 PRODUCER 12-Aug-2007 13:28



MAXIS Field Log

Well: Windy Hill 3-17D

Output DLIS Files

OP System Version: 15C0-309

MCM

AIT-H

DTA-A

DTC-H

SRPC-3357-Q2_2007

SRPC-3357-Q2_2007

15C0-309

NGT-C

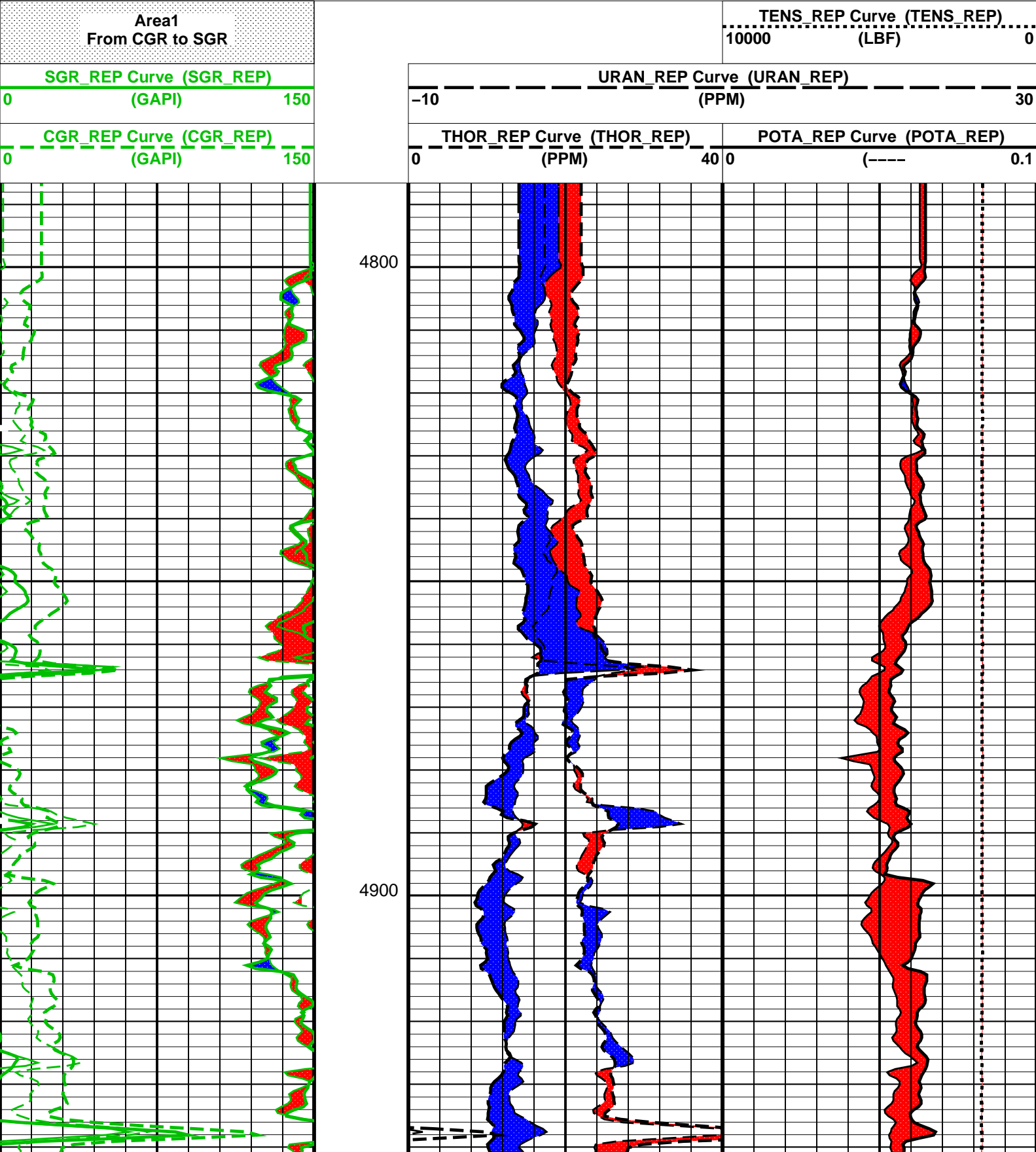
DSLT-FTB

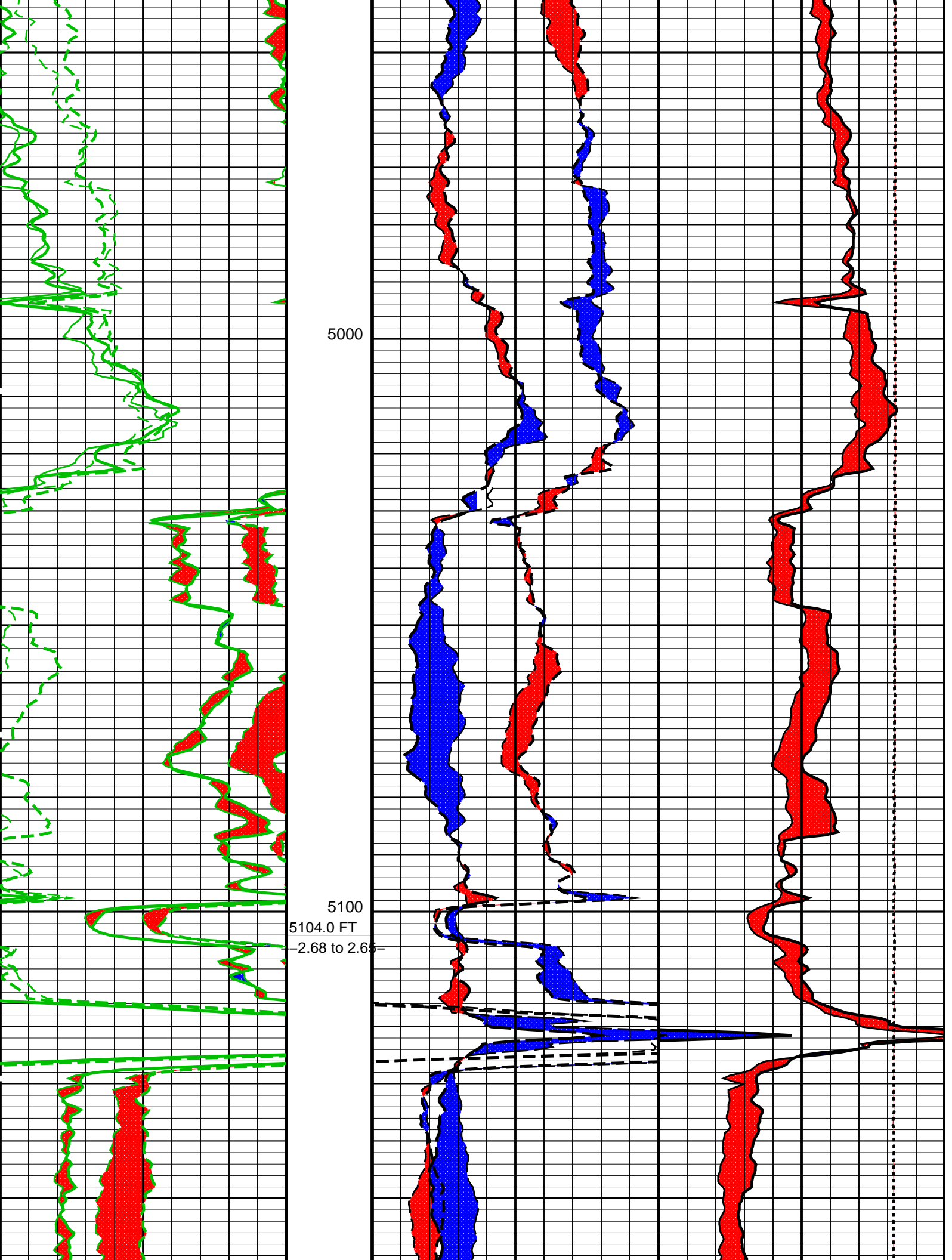
15C0-309

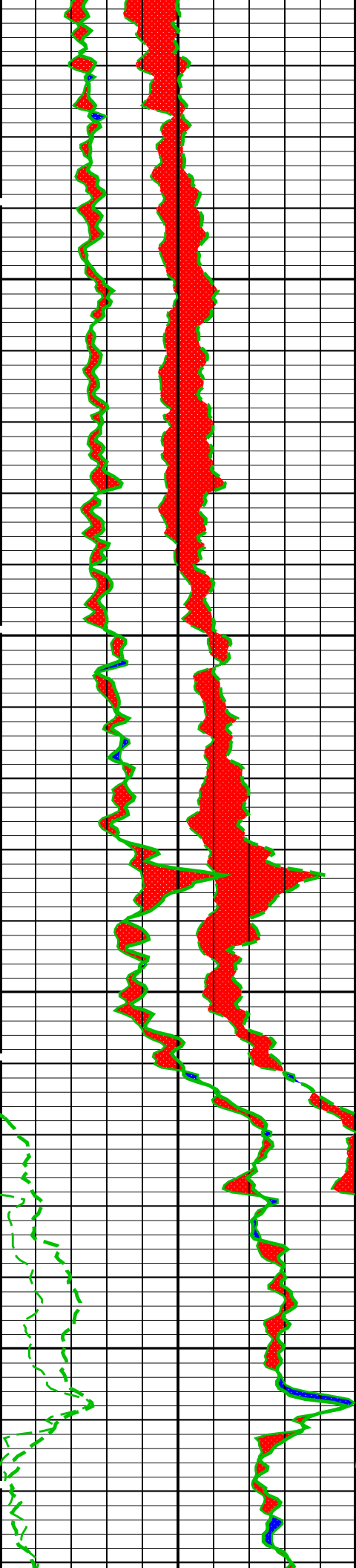
15C0-309

PIP SUMMARY

Time Mark Every 60 S

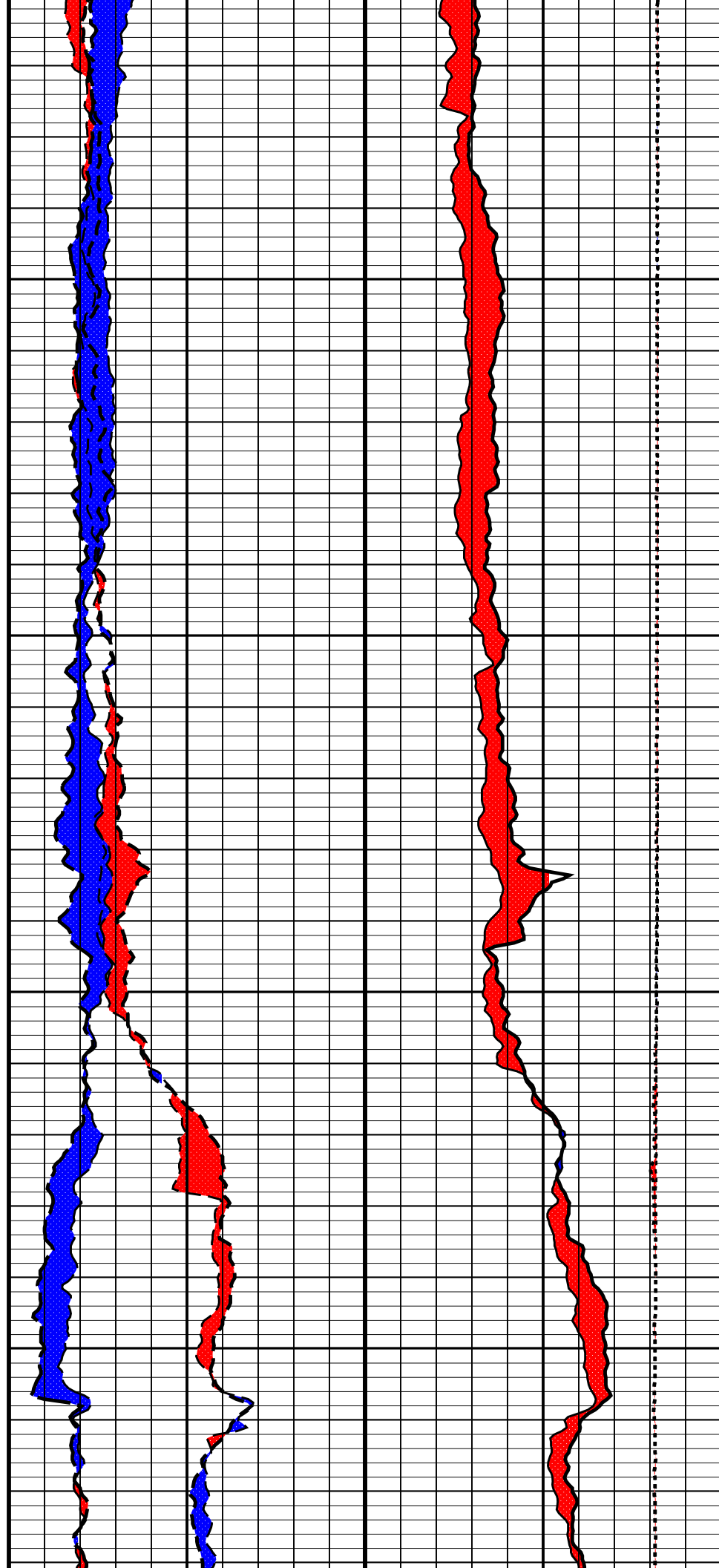


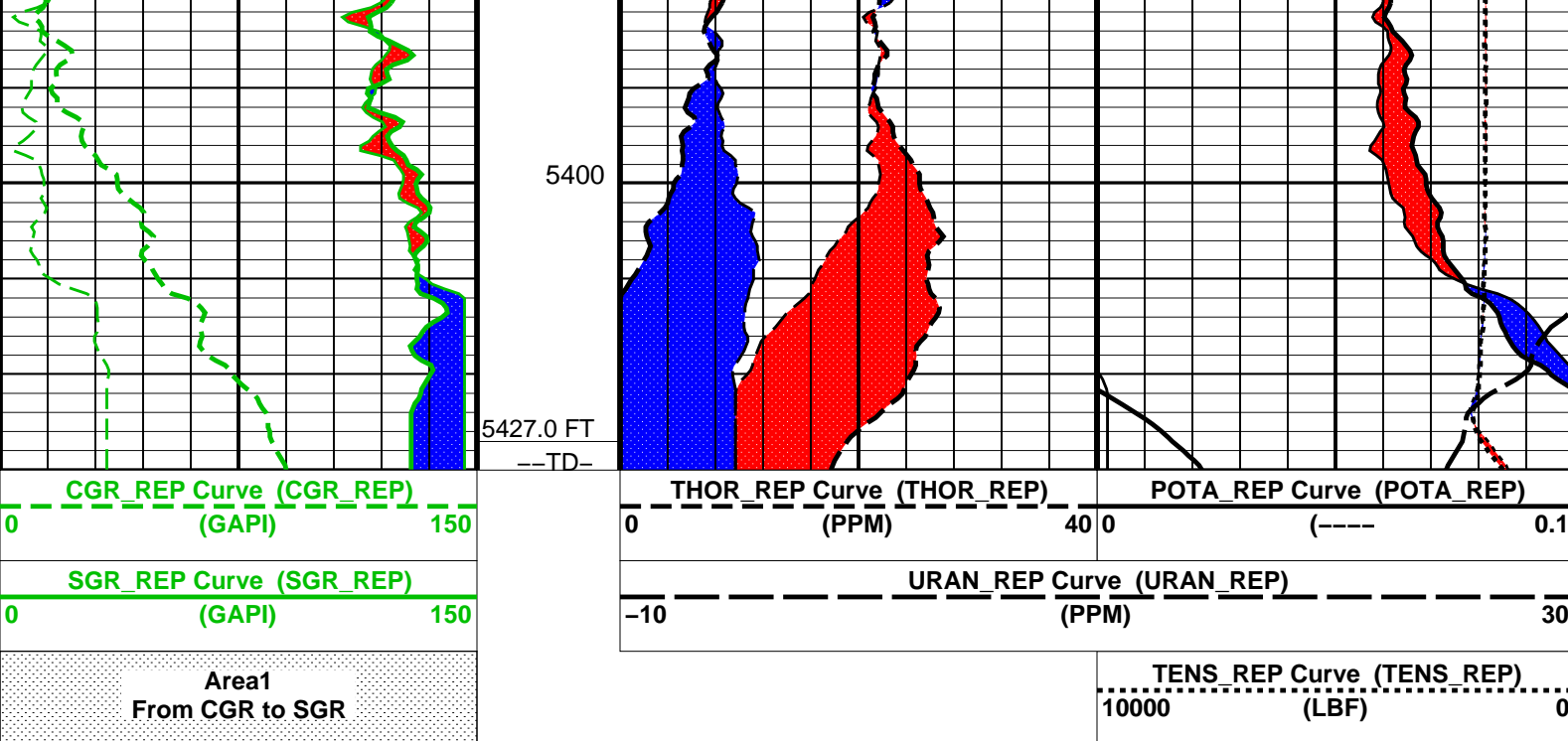




5200

5300





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
NGT-C: Natural Gamma Spectroscopy - C		
CBAR	Constant Barite	1
CGMI	Spectro Computed Gamma Ray Minimum	0 GAPI
CGSH	Spectro Computed Gamma Ray Shale	100 GAPI
KMIN	Potassium Minimum	0
KSHA	Potassium Shale	0.02
NFO	NGT Filtering Option	KALMAN
PMUD	Potassium Mud	0 %
SGMI	Spectro Gamma Ray Minimum	0 GAPI
SGSH	Spectro Gamma Ray Shale	100 GAPI
TMIN	Thorium Minimum	0 PPM
TSHA	Thorium Shale	12 PPM
UMIN	Uranium Minimum	0 PPM
USHA	Uranium Shale	3 PPM
System and Miscellaneous		
BS	Bit Size	12.250 IN
DFD	Drilling Fluid Density	9.80 LB/G
DO	Depth Offset for Playback	0.0 FT
DORL	Depth Offset for Repeat Analysis	2.0 FT
PP	Playback Processing	RECOMPUTE

Format: NGTYields_REP Vertical Scale: 5" per 100' Graphics File Created: 12-Aug-2007 13:28

OP System Version: 15C0-309

MCM

AIT-H	SRPC-3357-Q2_2007	NGT-C	15C0-309
DTA-A	SRPC-3357-Q2_2007	DSL-FTB	15C0-309
DTC-H	15C0-309		

Input DLIS Files

DEFAULT	AIT_NGS_SONIC_010LUP	FN:9	PRODUCER	12-Aug-2007 11:46	5442.0 FT	4784.5 FT
DEFAULT	AIT_NGS_SONIC_012LUP	FN:11	PRODUCER	12-Aug-2007 12:03	5430.0 FT	379.0 FT

Output DLIS Files

DEFAULT	AIT_NGS_SONIC_022PUP	FN:21	PRODUCER	12-Aug-2007 13:28
---------	----------------------	-------	----------	-------------------

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
-------------	---------	--------	--------	-------	--------	-------	-------

Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Master: 20-Jul-2007 10:53 Before: 11-Aug-2007 4:09

Thru Cal Magnitude – 0	0	0.6146	0.6172	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.260	1.266	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6267	0.6297	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7053	0.7083	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.327	1.332	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.923	1.931	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.923	1.931	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.379	1.382	N/A	N/A	N/A	V
Phase – 0	0	59.30	58.78	N/A	N/A	N/A	DEG
Phase – 1	0	58.27	57.74	N/A	N/A	N/A	DEG
Phase – 2	0	54.43	53.89	N/A	N/A	N/A	DEG
Phase – 3	0	53.64	53.10	N/A	N/A	N/A	DEG
Phase – 4	0	47.09	46.52	N/A	N/A	N/A	DEG
Phase – 5	0	45.23	44.64	N/A	N/A	N/A	DEG
Phase – 6	0	45.24	44.65	N/A	N/A	N/A	DEG
Phase – 7	0	42.16	41.37	N/A	N/A	N/A	DEG

Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 20-Jul-2007 10:53 Before: 11-Aug-2007 4:09

Array Induction SPA Plus	990.5	990.5	990.3	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.03630	0.03388	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9174	0.9171	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.00003146	0.00003267	N/A	N/A	N/A	V

Array Induction Tool – H Wellsite Calibration – Test Loop Gain Correction

Master: 20-Jul-2007 10:53

Test Loop Gain Magnitude – 0	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.019	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	0.9965	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	1.008	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	1.005	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.009	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.3788	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.4778	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	-0.1272	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	-0.03952	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	-0.1155	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	-0.1104	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.2446	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	-0.3556	N/A	N/A	N/A	N/A	DEG

Array Induction Tool – H Wellsite Calibration – Sonde Error Correction

Master: 20-Jul-2007 10:53

R Sonde Error Correction – 0	0	-153.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	137.2	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	124.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	54.29	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	25.17	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	7.628	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	8.197	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-2.134	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	639.1	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	211.5	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	29.16	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	-5.433	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	26.43	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	-16.14	N/A	N/A	N/A	N/A	MM/M

X Sonde Error Correction – 6	0	0.5340	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	1.764	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool – H Wellsite Calibration – Mud Gain Correction

Master: 20-Jul-2007 10:53

Coarse – Mag, Real, Imag – 0	0	1.015	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 1	0	1.015	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 2	0	1.015	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	1.016	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	1.017	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	1.017	N/A	N/A	N/A	N/A

Natural Gamma Spectroscopy – C Wellsite Calibration – Background Measurement

Master: 8-Aug-2007 12:46 Before: 8-Aug-2007 13:13

WINDOW 1 Background	100.0	150.0	146.4	N/A	N/A	100.0	CPS
WINDOW 2 Background	50.00	52.18	52.22	N/A	N/A	50.00	CPS
WINDOW 3 Background	10.00	17.13	17.31	N/A	N/A	10.00	CPS
WINDOW 4 Background	6.000	2.700	2.445	N/A	N/A	6.000	CPS
WINDOW 5 Background	10.00	2.600	2.405	N/A	N/A	10.00	CPS
SGR Background	30.00	58.76	57.76	N/A	N/A	N/A	GAPI

Natural Gamma Spectroscopy – C Wellsite Calibration – Normalized Jig Measurement

Master: 8-Aug-2007 12:04 Before: 8-Aug-2007 13:19

WINDOW 1 Jig	376.0	357.6	361.7	N/A	N/A	22.56	CPS
WINDOW 2 Jig	167.0	158.8	159.2	N/A	N/A	10.02	CPS
WINDOW 3 Jig	24.00	22.28	22.00	N/A	N/A	1.440	CPS
WINDOW 4 Jig	14.00	13.26	13.33	N/A	N/A	2.800	CPS
WINDOW 5 Jig	22.50	21.17	21.57	N/A	N/A	4.500	CPS
SGR Jig	165.0	163.7	165.0	N/A	N/A	7.000	GAPI

Natural Gamma Spectroscopy – C Master Calibration – Master Quality Control Values

Master: 8-Aug-2007 11:59

Photomultiplier Res. CARC3	8.000	7.686	--	--	--	--
APU WINDOW Jig	1350	831.4	--	--	--	CPS
APL WINDOW Jig	1350	831.3	--	--	--	CPS

Digitizing Sonic Logging Tool Master Calibration – DSLT CBL/CBLB Amplitude Normalization in SFT-255

Master: Calibration not done

CBL Raw Amplitude	33.00	N/A	--	--	--	--	MV
CBLB Raw Amplitude	46.00	N/A	--	--	--	--	MV

The NGT PCSL Value is set to 134.651 KEV

Array Induction Tool – H / Equipment Identification

Primary Equipment:

Rm/SP Bottom Nose

Array Induction Sonde

AHRM – A























AHIS – BA

372

Auxiliary Equipment:

















Array Induction Tool – H Wellsite Calibration

Electronics Calibration Check – Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6146		0.6050	59.30		71.00
	Before	0.6172			58.78		
1	Master	1.260		1.270	58.27		70.00
	Before	1.266			57.74		
2	Master	0.6267		0.6230	54.43		66.00
	Before	0.6297			53.89		
3	Master	0.7053		0.7040	53.64		65.00
	Before	0.7083			53.10		
4	Master	1.327		1.337	47.09		59.00
	Before	1.332			46.52		
	Master	1.923			45.23		



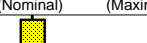

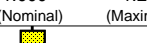

5	Before	1.931		1.955	44.64		57.00
6	Master	1.923		1.955	45.24		57.00
	Before	1.931			44.65		
7	Master	1.379		1.415	42.16		53.00
	Before	1.382			41.37		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 20-Jul-2007 10:53				Before: 11-Aug-2007 4:09			

Array Induction Tool – H Wellsite Calibration							
Electronics Calibration Check – Auxilliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			990.5	Master			0.03630
Before			990.3	Before			0.03388
	941.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
Phase	Array Induction Temperature Plus V		Value	Phase	Array Induction Temperature Zero V		Value
Master			0.9174	Master			3.146E-00
Before			0.9171	Before			3.267E-00
	0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)		-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)
Master: 20-Jul-2007 10:53				Before: 11-Aug-2007 4:09			

Array Induction Tool – H Wellsite Calibration							
Test Loop Gain Correction							
Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG	
0	1.017				0.3788		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.019				0.4778		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.016				-0.1272		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.017				-0.03952		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9965				-0.1155		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.008				-0.1104		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.005				0.2446		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.009				-0.3556		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
Master: 20-Jul-2007 10:53							

Array Induction Tool – H Wellsite Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	−153.6				639.1			
		−231.0 (Minimum)	−56.00 (Nominal)	119.0 (Maximum)		−2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	137.2				211.5			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		−625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	124.6				29.16			

		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	54.29					-5.433		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	25.17					26.43		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	7.628					-16.14		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	8.197					0.5340		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-2.134					1.764		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Master: 20-Jul-2007 10:53								

















Array Induction Tool – H Wellsite Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	1.015				1.016			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.015				1.017			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.015				1.017			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Master: 20—Jul-2007 10:53								

Master: 20-Jul-2007 10:53

















Array Induction Tool – H Master Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6146		0.6050	59.30		71.00
1	Master	1.260		1.270	58.27		70.00
2	Master	0.6267		0.6230	54.43		66.00
3	Master	0.7053		0.7040	53.64		65.00
4	Master	1.327		1.337	47.09		59.00
5	Master	1.923		1.955	45.23		57.00
6	Master	1.923		1.955	45.24		57.00
7	Master	1.379		1.415	42.16		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 20-Jul-2007 10:53							

Array Induction Tool – H Master Calibration									
Electronics Calibration Check – Auxilliary									
Phase	Array Induction SPA Plus MV			Value	Phase	Array Induction SPA Zero MV			Value
Master	<div><div></div></div>			990.5	Master	<div><div></div></div>			0.03630
	941.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)			-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)	
Phase	Array Induction Temperature Plus V			Value	Phase	Array Induction Temperature Zero V			Value
Master	<div><div></div></div>			0.9174	Master	<div><div></div></div>			3.146E-00
	0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)			-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)	
Master: 20-Jul-2007 10:53									







Array Induction Tool – H Master Calibration				
Test Loop Gain Correction				

Idx	Value	Test Loop Gain Magnitude V			Value	Phase DEG		
0	1.017				0.3788			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.019				0.4778			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.016				-0.1272			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.017				-0.03952			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9965				-0.1155			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.008				-0.1104			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.005				0.2446			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.009				-0.3556			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 20-Jul-2007 10:53

Array Induction Tool – H Master Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-153.6				639.1		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)
1	137.2				211.5		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)
2	124.6				29.16		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)
3	54.29				-5.433		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)
4	25.17				26.43		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)
5	7.628				-16.14		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)
6	8.197				0.5340		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)
7	-2.134				1.764		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)

Master: 20-Jul-2007 10:53

Array Induction Tool – H Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	1.015				1.016			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.015				1.017			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.015				1.017			

	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Master: 20-Jul-2007 10:53						

Natural Gamma Spectroscopy – C / Equipment Identification

Primary Equipment:

NGT Cartridge
NGT Sonde

NGC – C
NGD – A

1745

Auxiliary Equipment:

NGT Cartridge Housing
NGT Sonde Housing
Gamma Source Radioactive

NGCH – A
NGH – B
GSR – U

Natural Gamma Spectroscopy – C Wellsite Calibration

Background Measurement

Phase	WINDOW 1 Background CPS	Value	Phase	WINDOW 2 Background CPS	Value	Phase	WINDOW 3 Background CPS	Value
Master		150.0	Master		52.18	Master		17.13
Before		146.4	Before		52.22	Before		17.31
0 (Minimum) 100.0 (Nominal) 400.0 (Maximum)			0 (Minimum) 50.00 (Nominal) 200.0 (Maximum)			0 (Minimum) 10.00 (Nominal) 40.00 (Maximum)		
Phase	WINDOW 4 Background CPS	Value	Phase	WINDOW 5 Background CPS	Value	Phase	SGR Background GAPI	Value
Master		2.700	Master		2.600	Master		58.76
Before		2.445	Before		2.405	Before		57.76
0 (Minimum) 6.000 (Nominal) 24.00 (Maximum)			0 (Minimum) 10.00 (Nominal) 40.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)		

Master: 8-Aug-2007 12:46

Before: 8-Aug-2007 13:13

Natural Gamma Spectroscopy – C Wellsite Calibration

Normalized Jig Measurement

Phase	WINDOW 1 Jig CPS	Value	Phase	WINDOW 2 Jig CPS	Value	Phase	WINDOW 3 Jig CPS	Value
Master		357.6	Master		158.8	Master		22.28
Before		361.7	Before		159.2	Before		22.00
354.0 (Minimum) 376.0 (Nominal) 398.0 (Maximum)			155.0 (Minimum) 167.0 (Nominal) 179.0 (Maximum)			21.50 (Minimum) 24.00 (Nominal) 26.50 (Maximum)		
Phase	WINDOW 4 Jig CPS	Value	Phase	WINDOW 5 Jig CPS	Value	Phase	SGR Jig GAPI	Value
Master		13.26	Master		21.17	Master		163.7
Before		13.33	Before		21.57	Before		165.0
12.50 (Minimum) 14.00 (Nominal) 15.50 (Maximum)			20.00 (Minimum) 22.50 (Nominal) 25.00 (Maximum)			153.0 (Minimum) 165.0 (Nominal) 177.0 (Maximum)		

Master: 8-Aug-2007 12:04

Before: 8-Aug-2007 13:19

Natural Gamma Spectroscopy – C Wellsite Calibration

Quality Control Values

Phase	DHVF Jig V	Value	Phase	Quality Windows Ratio Jig	Value
Master		1369	Master		2.251
Before		1368	Before		2.271
1088 (Minimum) 1450 (Nominal) 1813 (Maximum)			2.150 (Minimum) 2.240 (Nominal) 2.330 (Maximum)		

Master: 8-Aug-2007 12:04

Before: 8-Aug-2007 13:19

Natural Gamma Spectroscopy – C Wellsite Calibration

Quality Control Values Check

Phase	Thorium peak Form Factor Jig	Value
Before		-0.01207
-0.2000 (Minimum) 0 (Nominal) 0.2000 (Maximum)		

Before: 8-Aug-2007 13:19

Natural Gamma Spectroscopy – C Master Calibration

Master Quality Control Values

Phase	Photomultiplier Res. CAPC3	Value	Phase	APL WINDOW Jig CPS	Value	Phase	APL WINDOW Jig CPS	Value
-------	----------------------------	-------	-------	--------------------	-------	-------	--------------------	-------

Phase	Photomultiplier Res. CARCS		Value	Phase	APL WINDOW Jig CPS		Value	Phase	APL WINDOW Jig CPS		Value
Master	<div><div></div></div>		7.686	Master	<div><div></div></div>		831.4	Master	<div><div></div></div>		831.3
	4.500 (Minimum)	8.000 (Nominal)	11.50 (Maximum)		700.0 (Minimum)	1350 (Nominal)	1600 (Maximum)		700.0 (Minimum)	1350 (Nominal)	1600 (Maximum)
Phase	Thorium peak Form Factor Jig		Value								
Master	<div><div></div></div>		-0.01887								
	-0.1000 (Minimum)	0 (Nominal)	0.1000 (Maximum)								
Master: 8-Aug-2007 11:59											

Digitizing Sonic Logging Tool / Equipment Identification

Primary Equipment:

BHC Sonde
Digitizing Sonic Logging Cartridge

SLS – W
DSLCL – B

Auxiliary Equipment:

Electronics Cartridge Housing

ECH – KH

Digitizing Sonic Logging Tool Master Calibration									
DSLTL CBL/CBLB Amplitude Normalization in SFT-255									
Phase	CBL Raw Amplitude MV			Value	Phase	CBLB Raw Amplitude MV			Value
Master	NOT DONE			N/A	Master	NOT DONE			N/A
	27.00 (Minimum)	33.00 (Nominal)	43.00 (Maximum)	27.00 (Minimum)		46.00 (Nominal)	68.00 (Maximum)		
Master: Calibration not done									

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH – A
DTCH – A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH – KC

Company: **Windy Hill Gas Storage, LLC**

Schlumberger

Well: **Windy Hill 3-17D**

Field: **Wildcat**

County: **Morgan**

State: **Colorado**

Natural Gamma-Ray Spectrometry Tool