

**ARRAY INDUCTION / RSFE  
PHOTO DENSITY / NEUTRON  
GAMMA RAY LOG**

COMPANY: ENDEAVOR NATURAL GAS, LP.  
 WELL: LAKE ARTHUR RECLAMATION CO. #1  
 FIELD: PERREAU ISLAND  
 PROVINCE/COUNTY: CAMERON  
 COUNTRY/STATE: USA / LOUISIANA  
 LOCATION: LAT. 29°45'48.16"N  
 LON: 92°45'10.42"W  
COMPACT

SEC 23 TWP 12S RGE 04W Other Services  
 API Number 17-023-23027  
 Permit Number 239919  
 Permanent Datum G.L., Elevation -1.5 feet  
 Log Measured From K.B. @ 30 FT. above Permanent Datum  
 Drilling Measured From K.B.

Elevations:  
 KB 28.50  
 DF 27.50  
 GL -1.50

Date	23-AUG-2009	
Run Number	ONE	
Depth Driller	12888.00	feet
Depth Logger	12814.00	feet
First Reading	12813.00	feet
Last Reading	1800.00	feet
Casing Driller	8991.00	feet
Casing Logger	8991.00	feet
Bit Size	6.75	inches
Hole Fluid Type	WATER BASED	
Density / Viscosity	10.40 lb/USg	42.00 SEC/QT
PH / Fluid Loss	9.90	3.40 ml/30Min
Sample Source	FLOW LINE	
Rm @ Measured Temp	0.80 @ 85.0	ohm-m
Rmf @ Measured Temp	0.60 @ 85.0	ohm-m
Rmc @ Measured Temp	1.0 @ 85.0	ohm-m
Source Rmf / Rmc	CALC	CALC
Rm @ BHT	0.34 @ 208.0	ohm-m
Time Since Circulation	9 HOUR	
Max Recorded Temp	208.00	deg F
Equipment Name	COMPACT	
Equipment / Base	13023	ALICE
Recorded By	K. CALLIS	
Witnessed By	B. RUSS, P. MCCARTHY	M. WINSTON
DRILLING RIG	PRECISION #77	

BOREHOLE RECORD			Last Edited: 23-AUG-2009 18:49
Bit Size inches	Depth From feet	Depth To feet	
6.750	8891.00	12814.00	

CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
INTERMED	7.625	0.00	8891.00	29.70

**REMARKS**

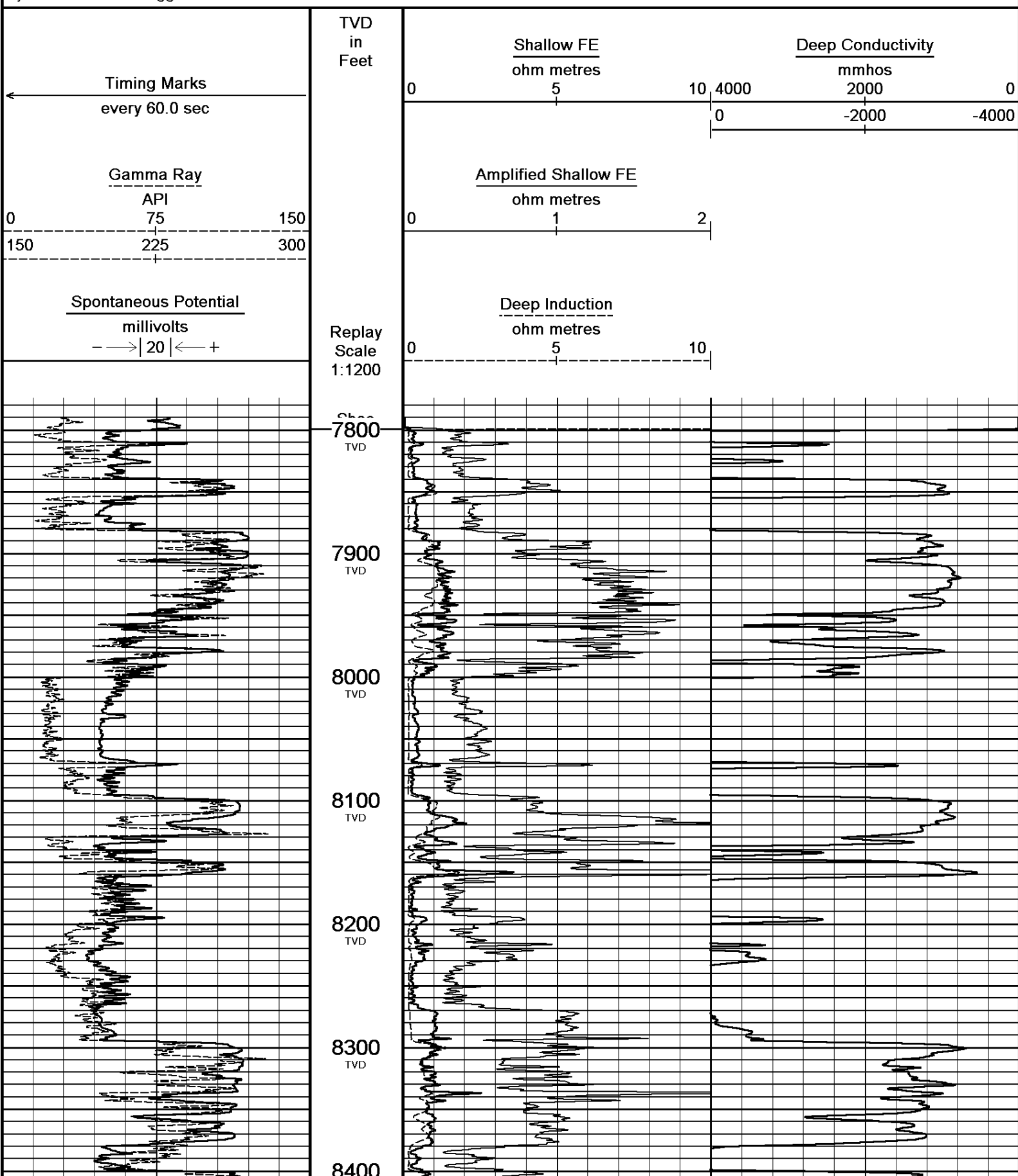
MAI,MFE,MPD,MDN,MCG LOGGED IN COMBINATION S.O #3518398  
 ANNULAR HOLE VOLUMES CALCULATED FRO 5.5 INCH CASING.  
 RWA CALCULATED USING A= .61 \_M= 2.15  
 POROSITY ASSUMES A DENSITY MATRIX OF 2.65 g/cc  
 \*\*UNABLE TO GET LOG BELOW 12814' WHERE IT SAT DOWN.\*\*  
 \*\*GAMMA RAY LOGGED BEHIND PIPE TO 1800' AS PER CUSTOMERS REQUEST\*\*

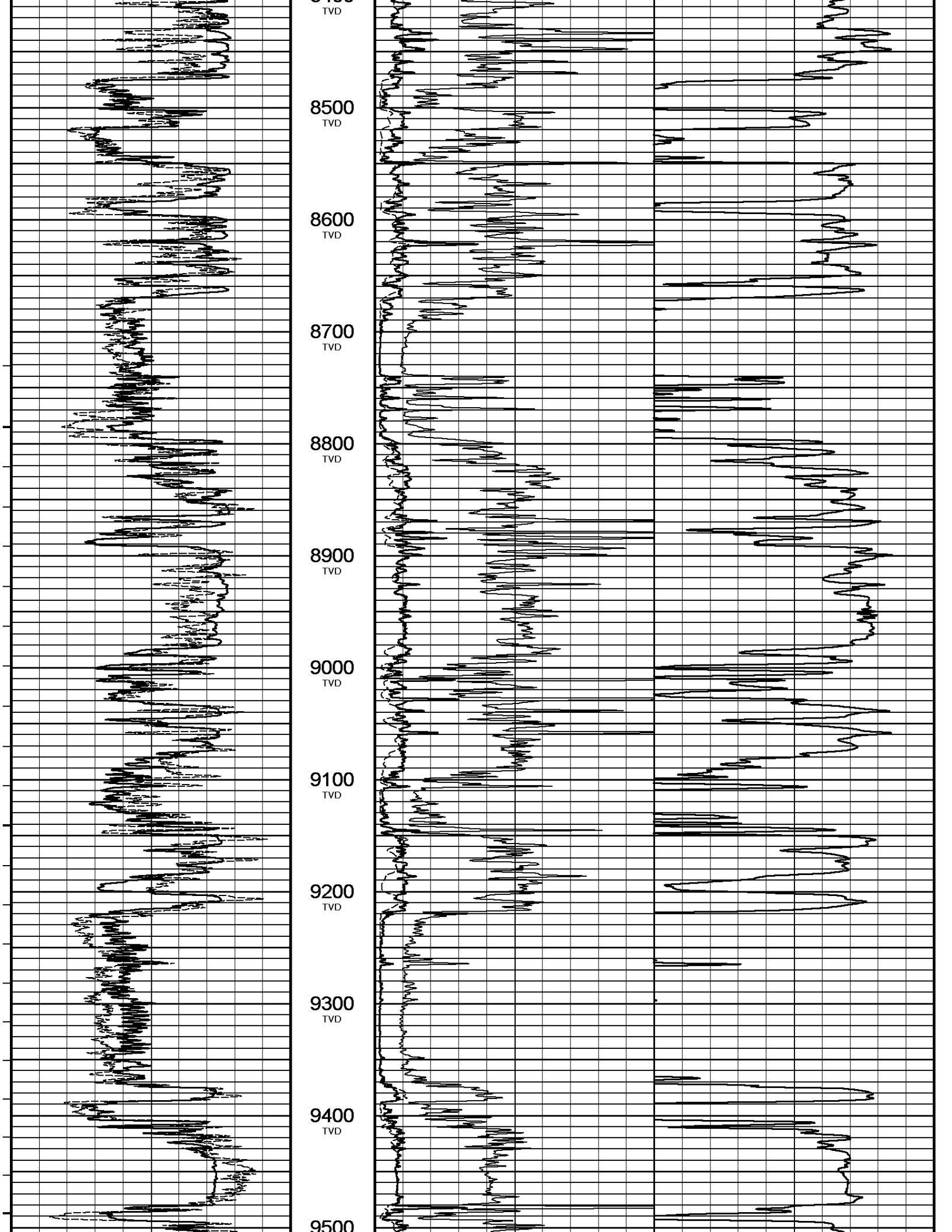
CREW: F. CHAVEZ, J. DEVINEY  
 THANK YOU FOR CHOOSING WEATHERFORD WIRELINE SERVICES, ALICE, TX. (361) 661-1726

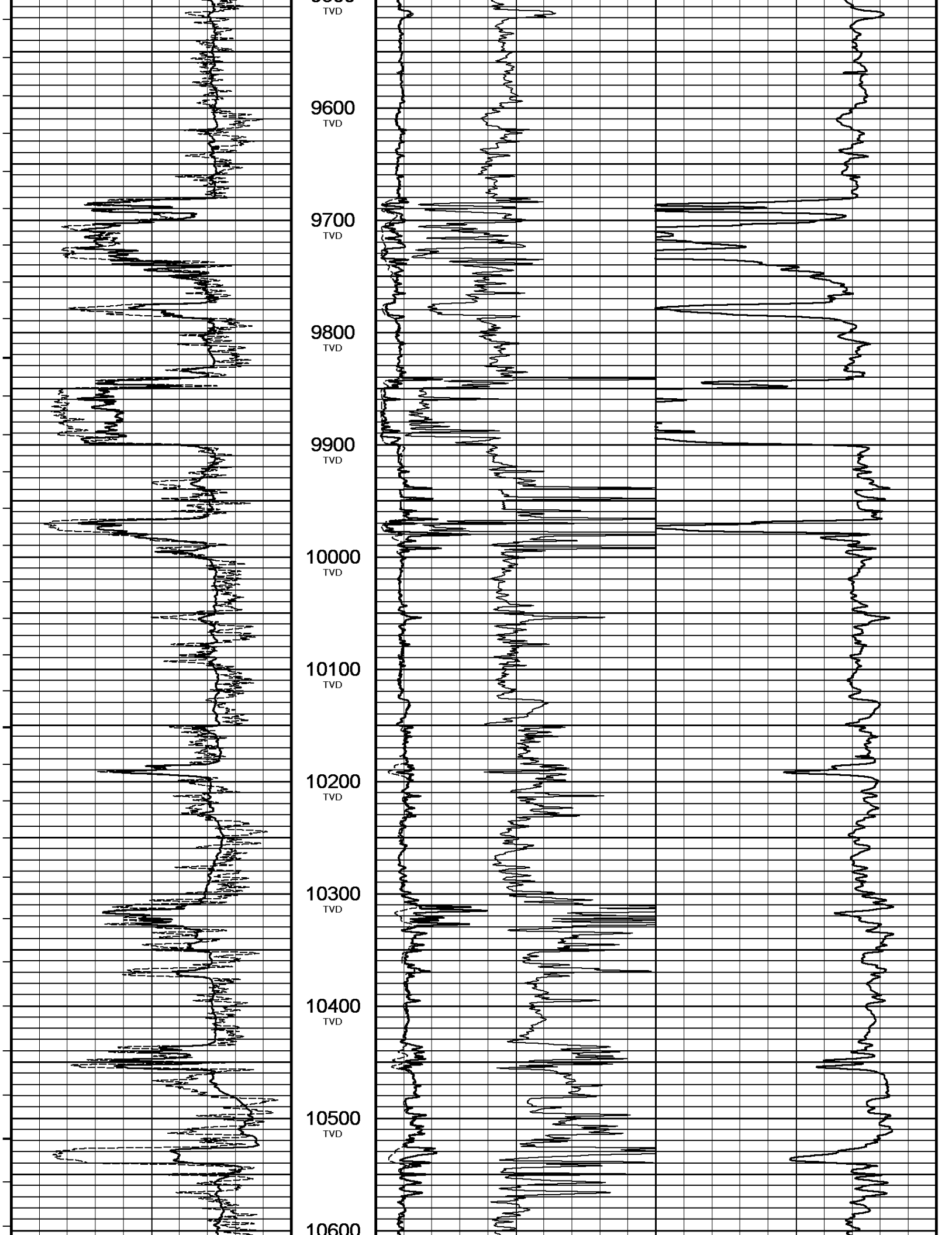
All interpretations are opinions based on inferences from electrical and other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

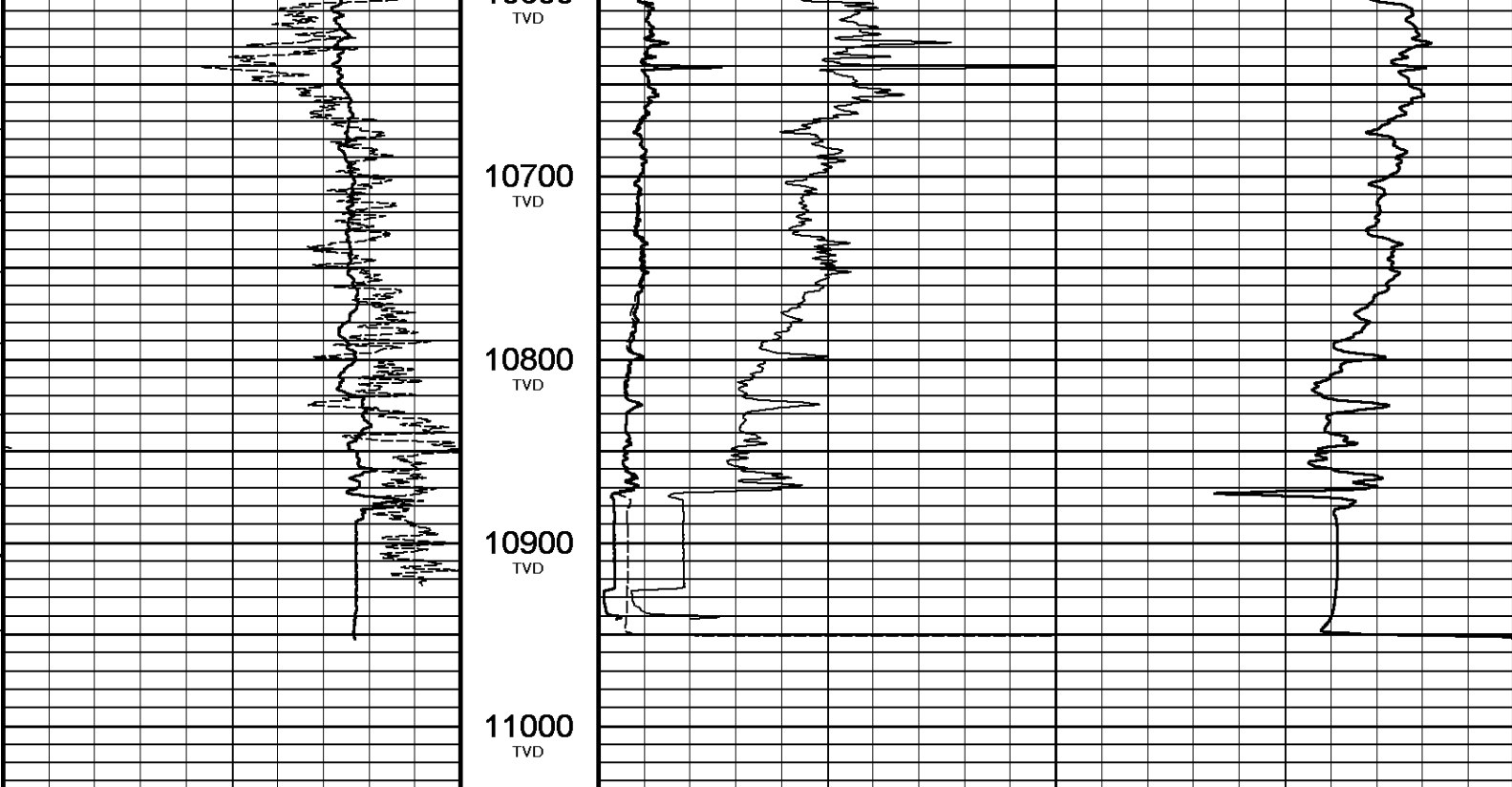
**1 Inch Log TVD**

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\COPY(3) of Triple Combo\_001.dta Recorded on 23-AUG-2009 16:04  
 System Versions: Logged with 8.05.0177 Processed with 8.05.0177 Plotted with 8.05.0177









**Timing Marks**  
every 60.0 sec

**Gamma Ray**  
API  
0 75 150  
150 225 300

**Spontaneous Potential**  
millivolts  
- -> | 20 | <- +

**TVD in Feet**

**Shallow FE**  
ohm metres  
0 5 10

**Deep Conductivity**  
mmhos  
0 2000 4000  
-2000 -4000

**Amplified Shallow FE**  
ohm metres  
0 1 2

**Deep Induction**  
ohm metres  
0 5 10

**Replay Scale**  
1:1200

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\COPY(3) of Triple Combo\_001.dta  
 Recorded on 23-AUG-2009 16:04  
 System Versions: Logged with 8.05.0177 Processed with 8.05.0177 Plotted with 8.05.0177

↑ 1 Inch Log TVD ↑

↓ 2 Inch Log TVD ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\COPY(3) of Triple Combo\_001.dta  
 Recorded on 23-AUG-2009 16:04  
 System Versions: Logged with 8.05.0177 Processed with 8.05.0177 Plotted with 8.05.0177

**TVD in Feet**

**Shallow FE**  
ohm metres  
0 5 10

**Deep Conductivity**  
mmhos  
0 2000 4000  
-2000 -4000

**Amplified Shallow FE**  
ohm metres

**Gamma Ray**  
API

**Timing Marks**  
every 60.0 sec

0 75 150  
150 225 300

Spontaneous Potential  
millivolts  
-->|20|<--+

0 1 2

Deep Induction  
ohm metres  
0 5 10

Replay  
Scale  
1:600

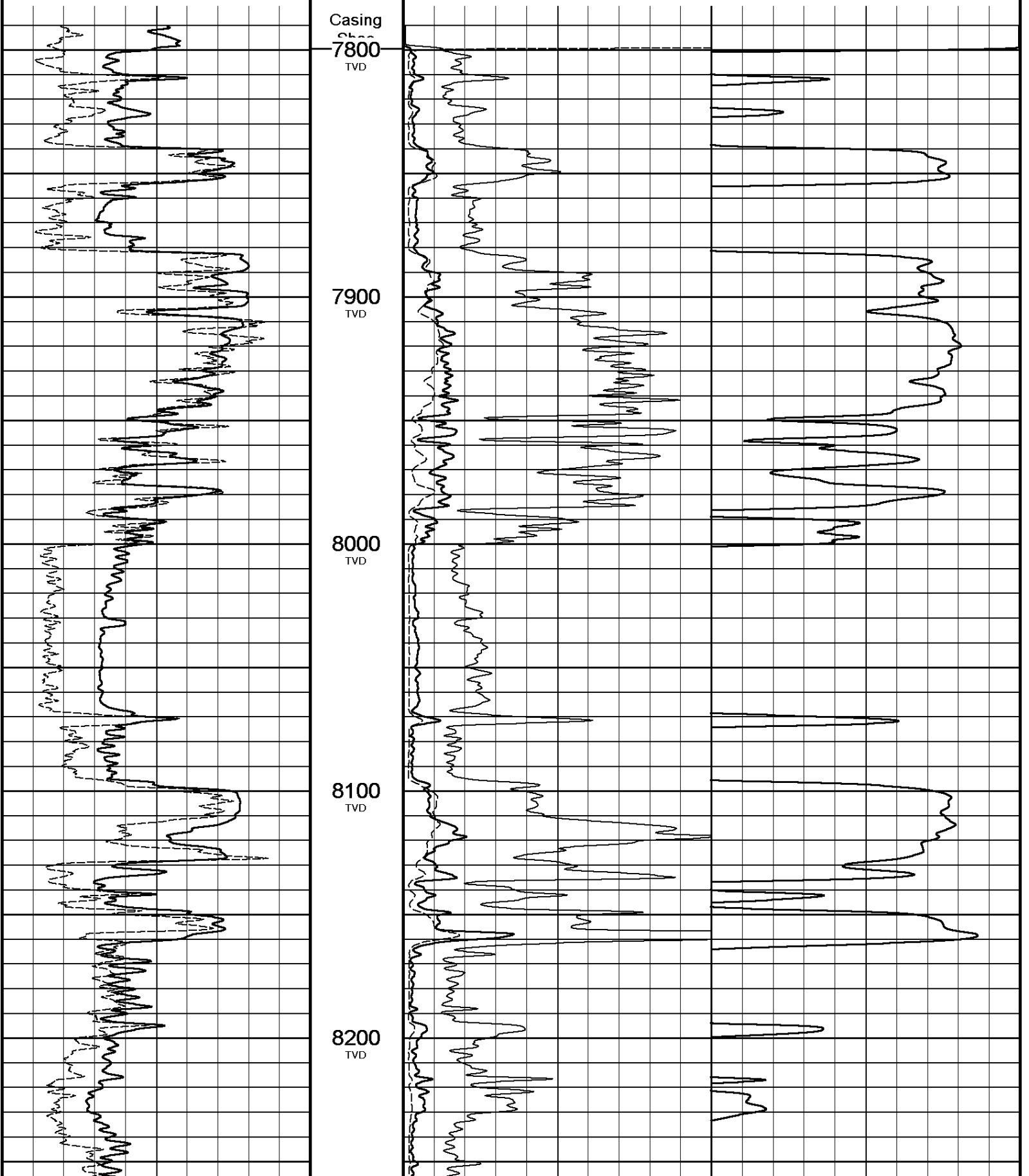
Casing  
7800  
TVD

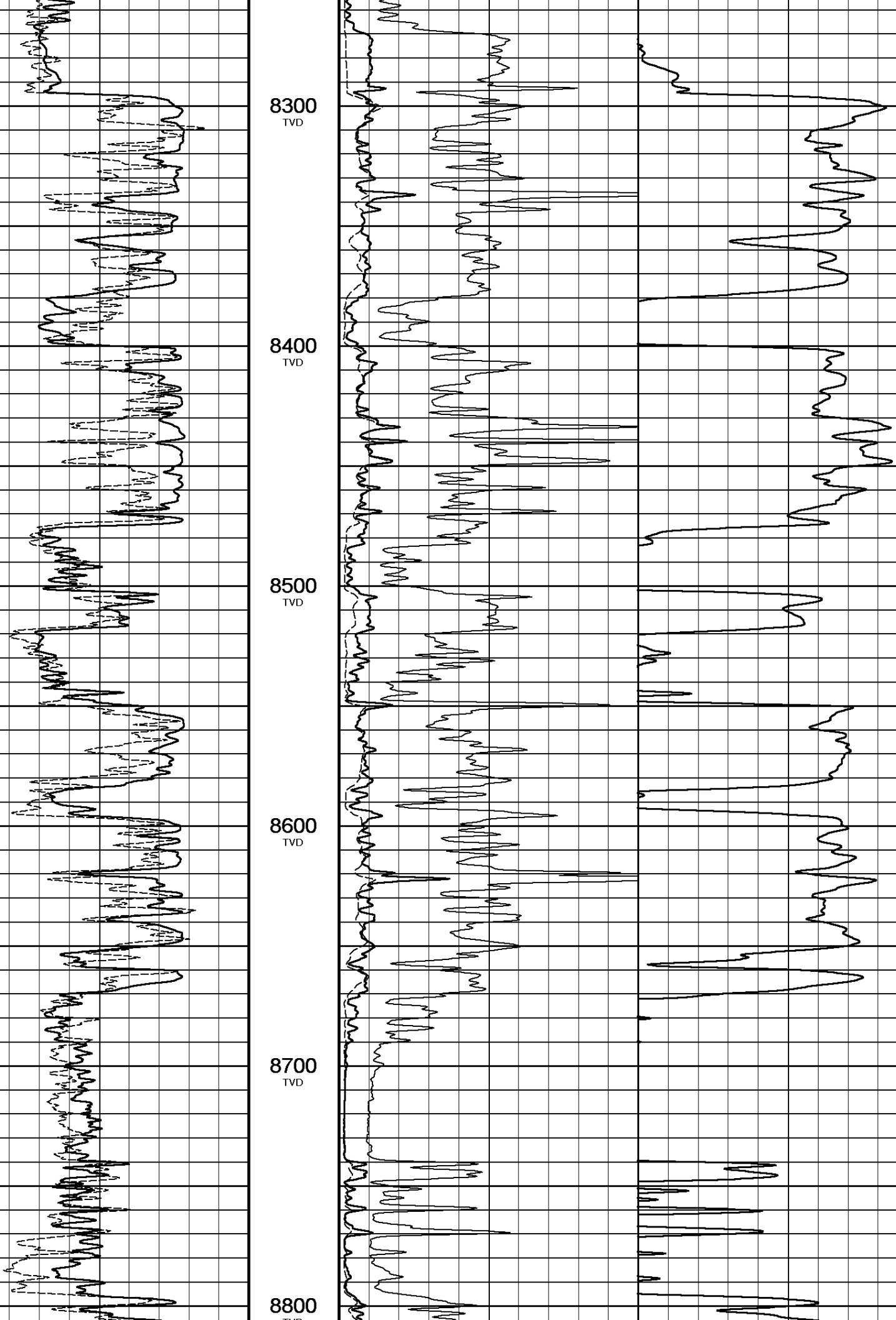
7900  
TVD

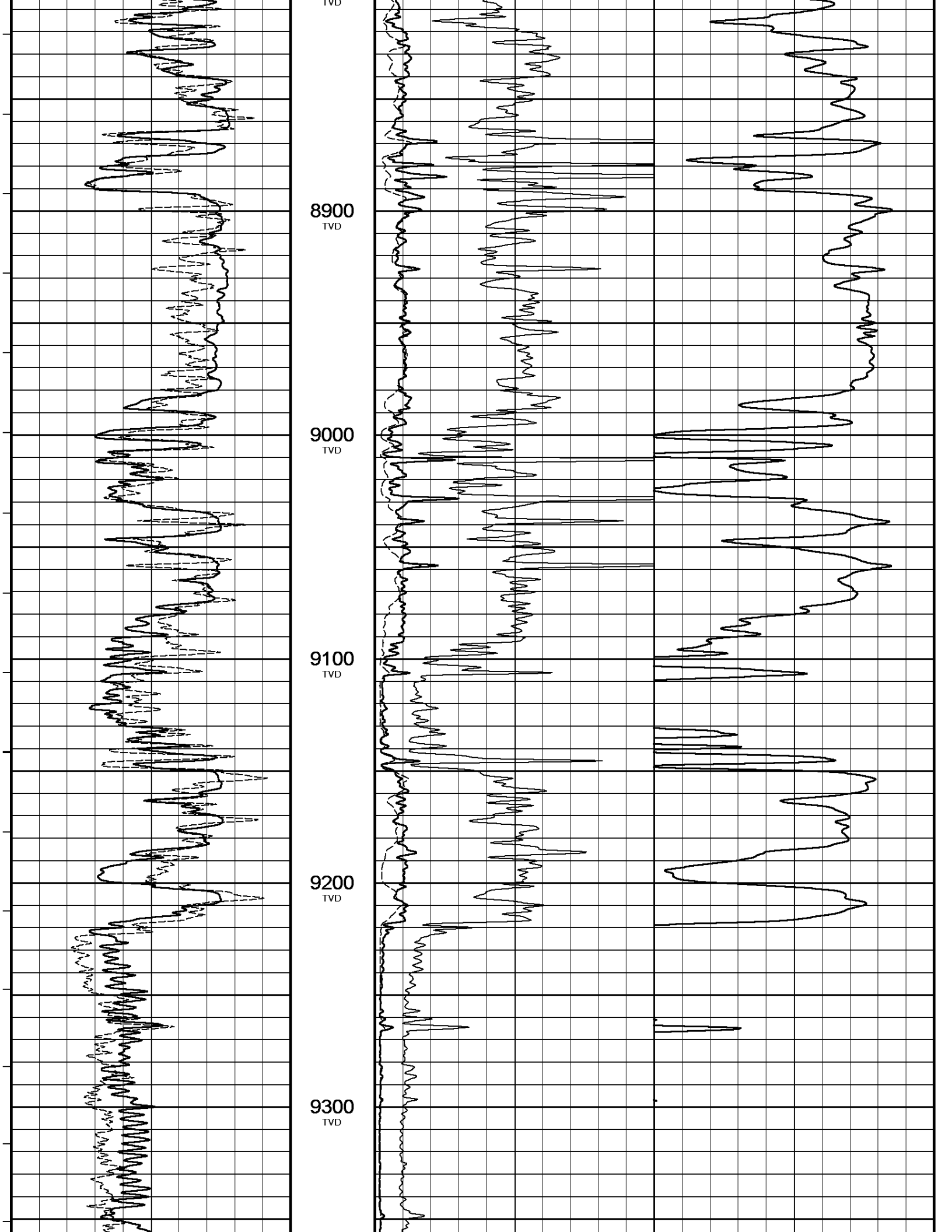
8000  
TVD

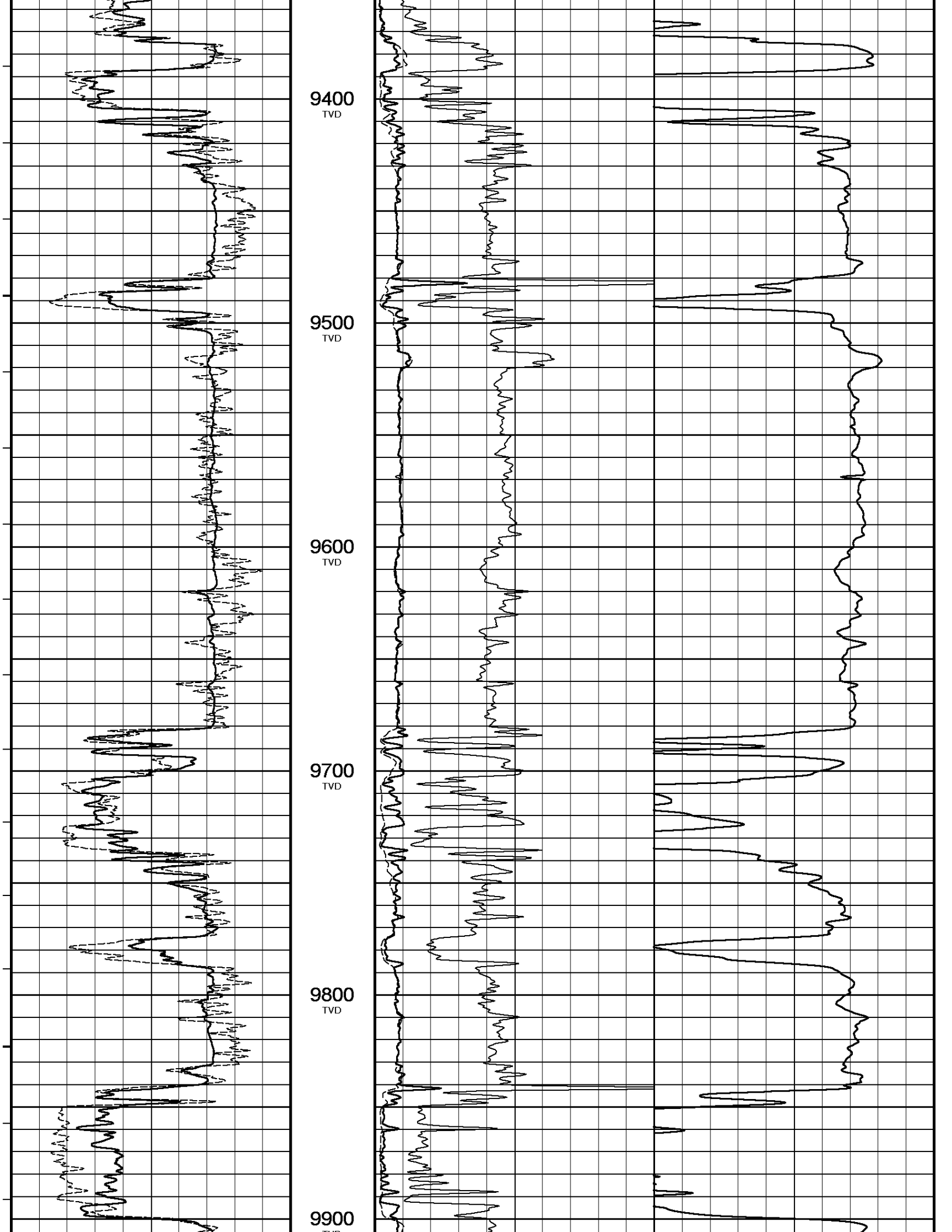
8100  
TVD

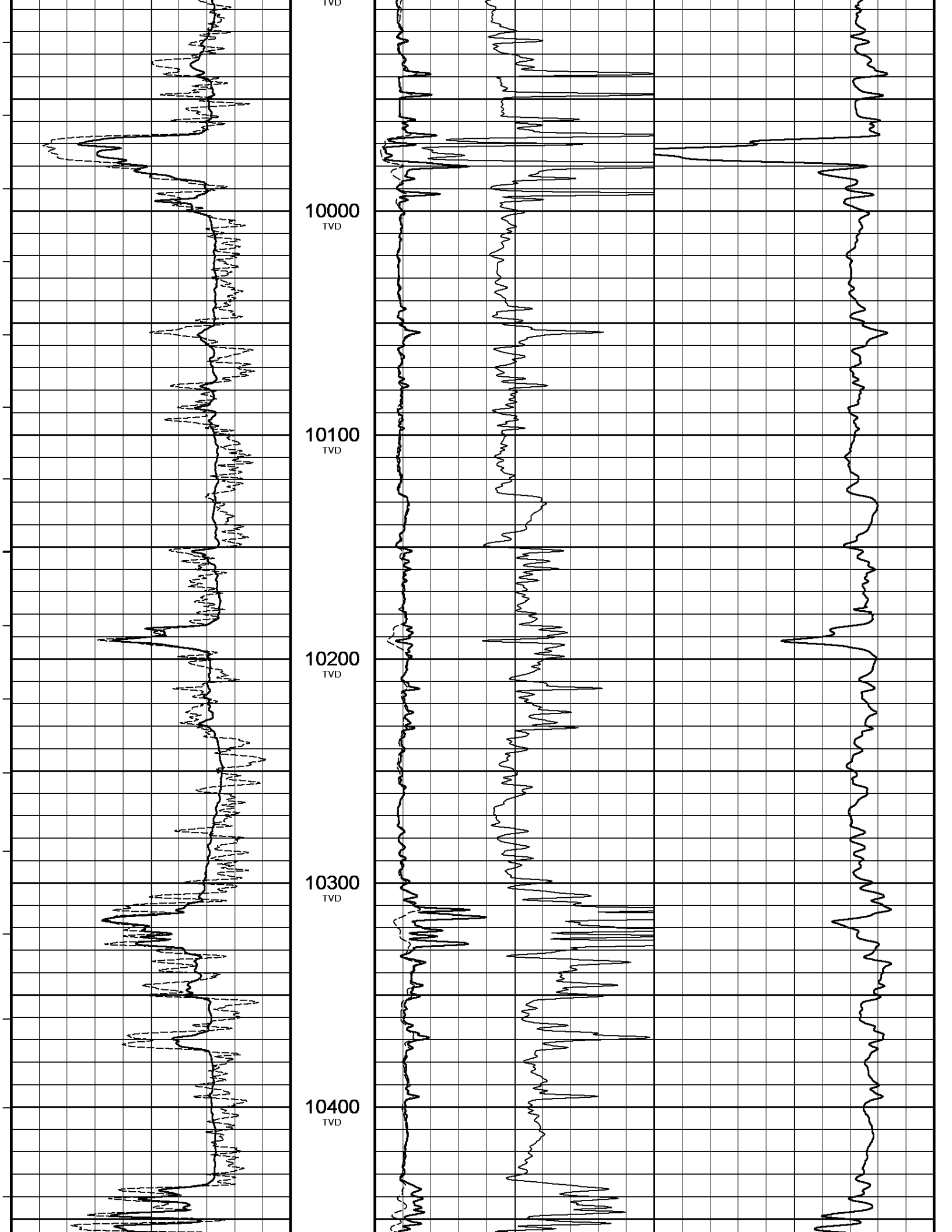
8200  
TVD

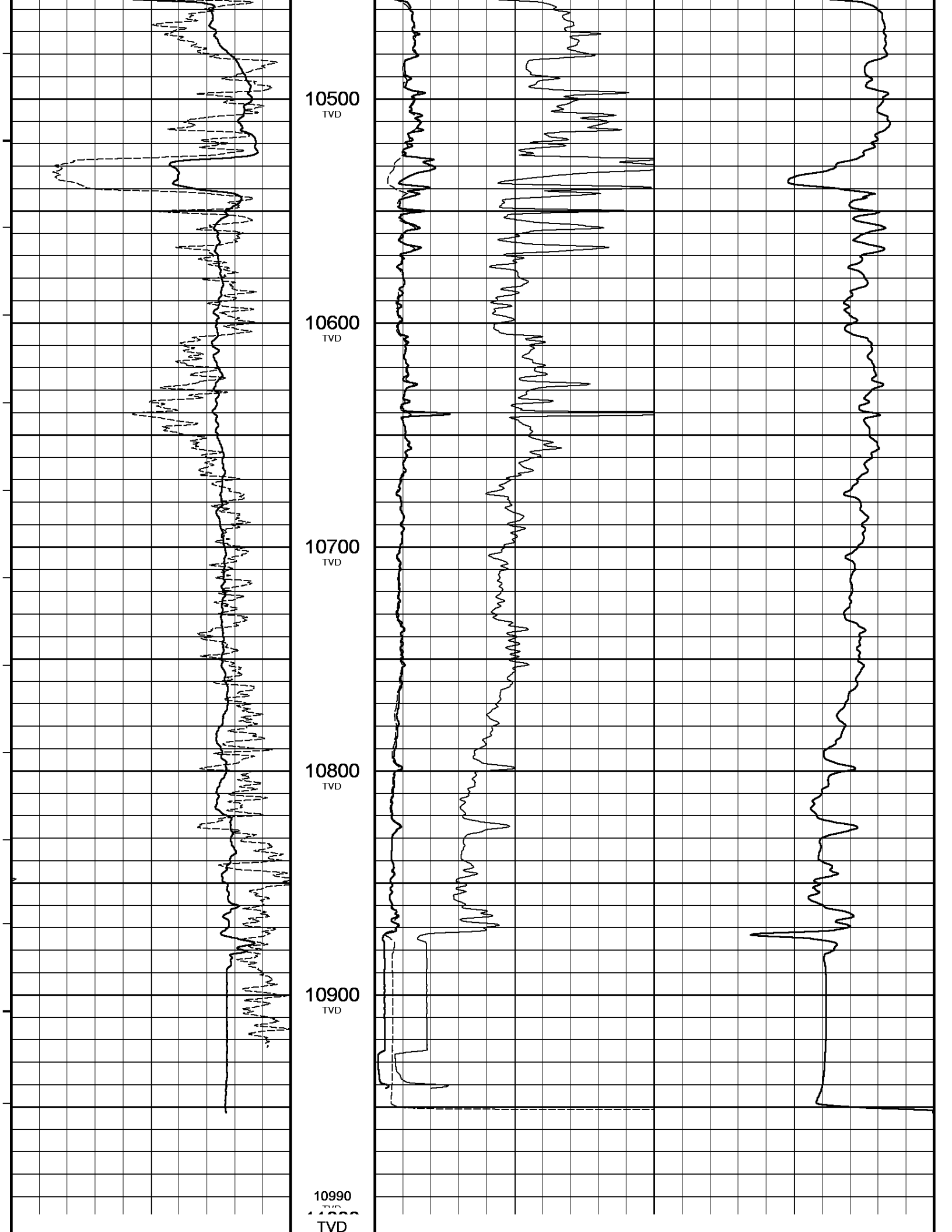


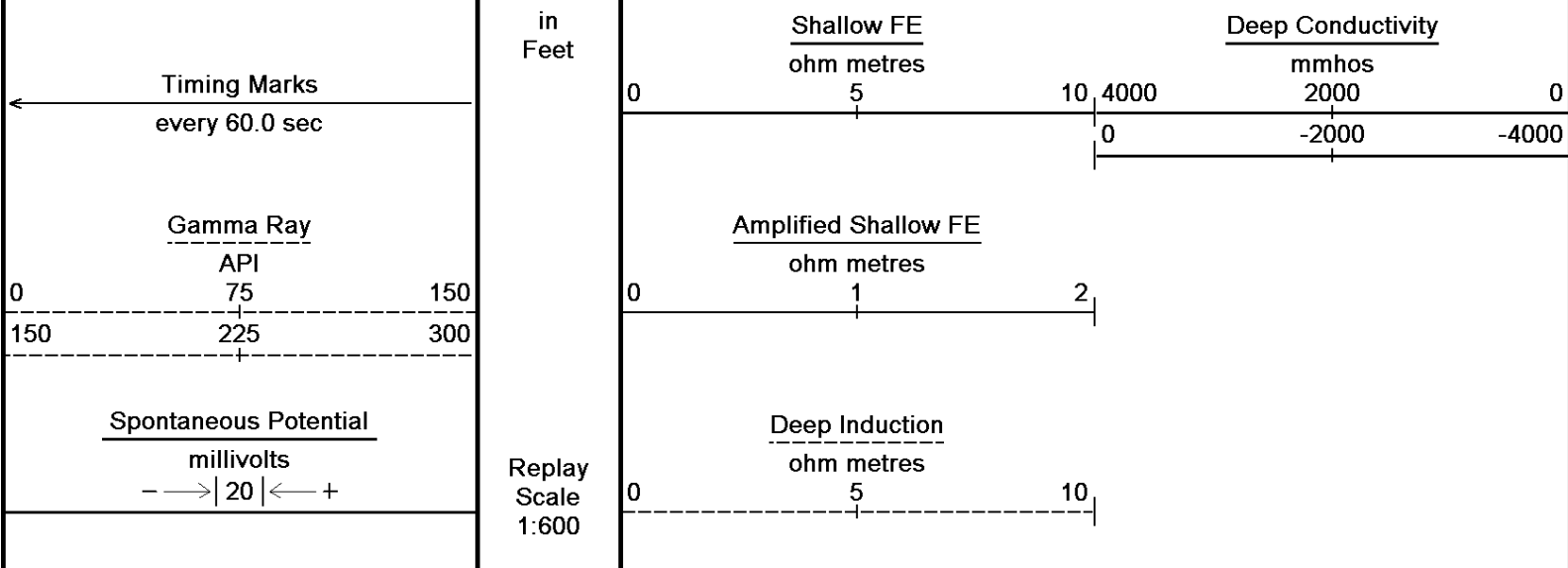










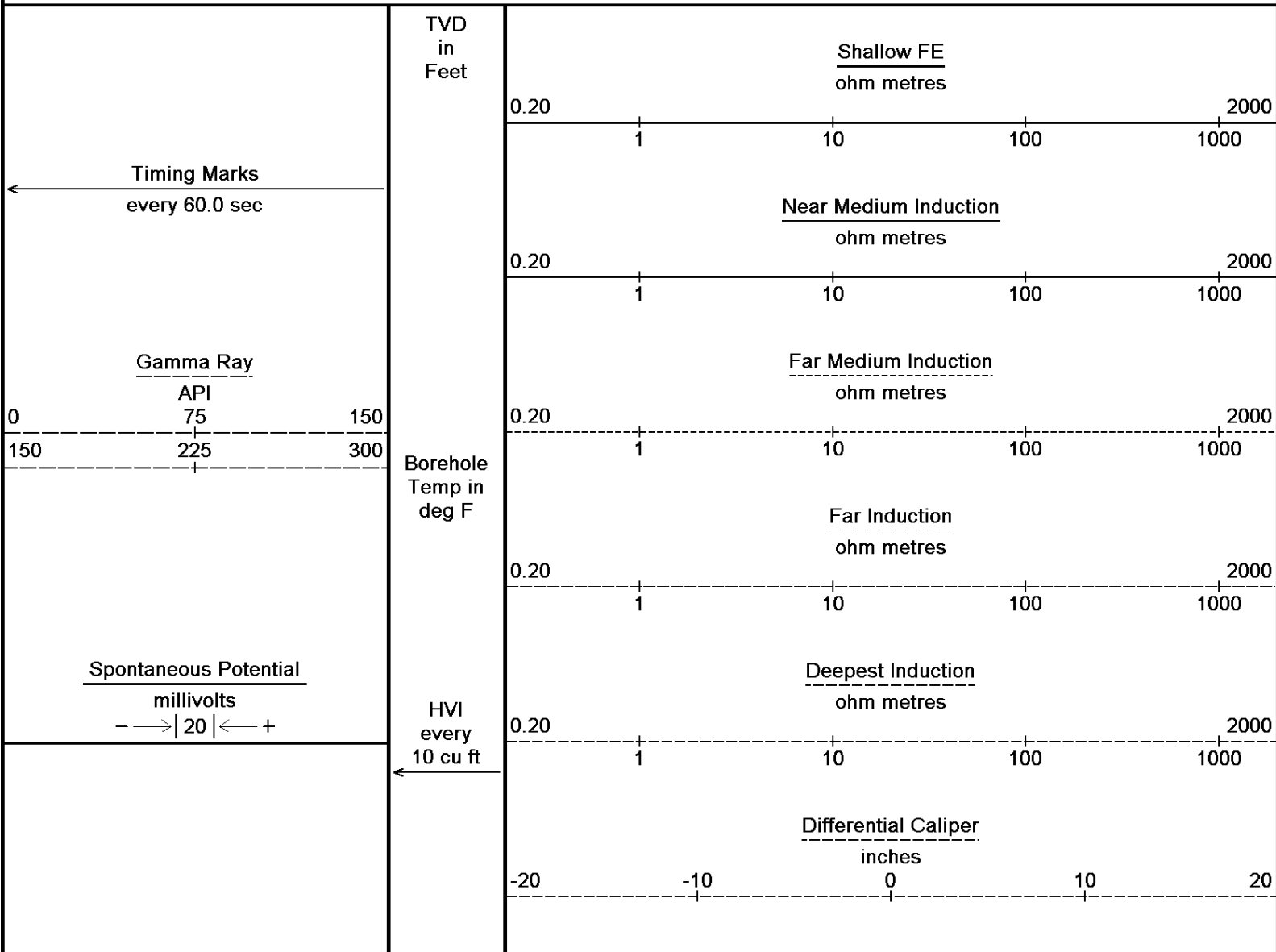


Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\COPY(3) of Triple Combo\_001.dta  
 Recorded on 23-AUG-2009 16:04  
 System Versions: Logged with 8.05.0177 Processed with 8.05.0177 Plotted with 8.05.0177

↑ 2 Inch Log TVD ↑

↓ 5 Inch Main TVD ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\COPY of Main Log.dta  
 Recorded on 23-AUG-2009 16:04  
 System Versions: Plotted with 8.05.0177



Density Correction

grams/cc

-0.90      -0.40      0.10

Annular  
Integral  
every  
10 cu ft

Bit Size

inches

-13.25      -3.25      6.75      16.75      26.75

DST Uphole Tension

pounds

20000      10000      0  
0      -10000      -20000

Apparent Water Res.

ohm metres

0      0.25      0.50

Sandstone Neutron Por.

percent

60      30      0

Sandstone Density Por.

percent

60      30      0

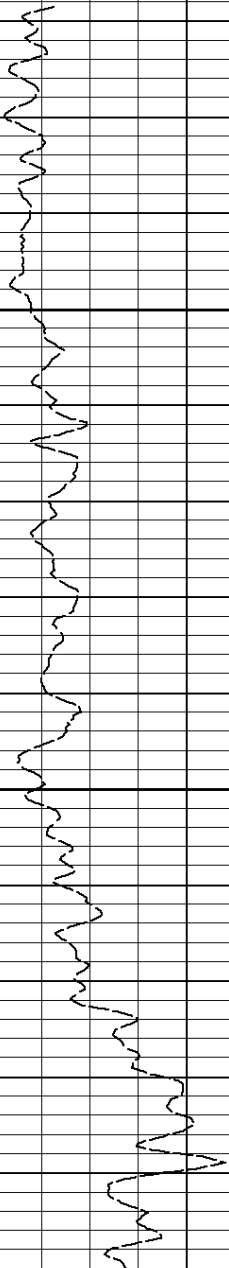
Replay  
Scale  
1:240

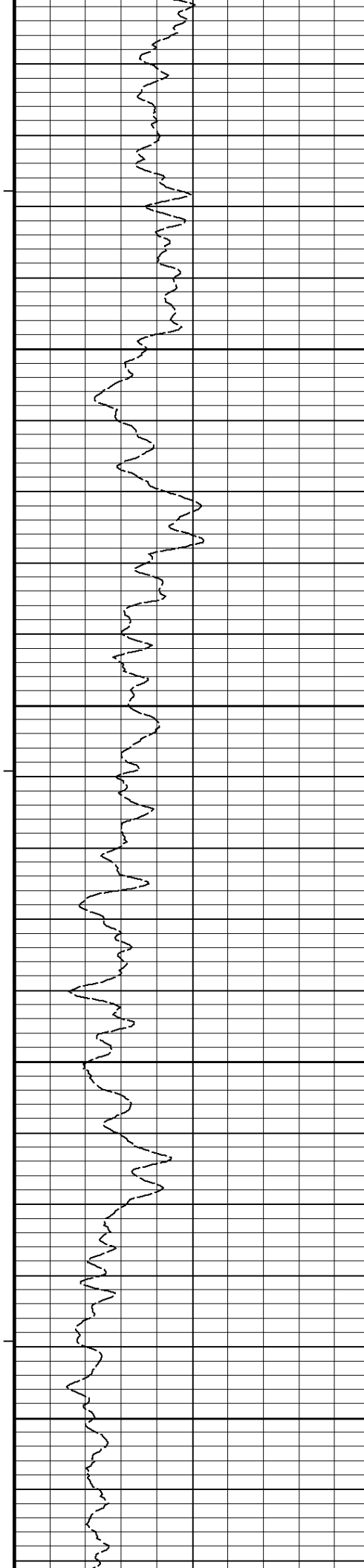
1712  
TVD

1750  
TVD

1800  
TVD

1850





TVD

1900  
TVD

1950  
TVD

2000  
TVD

2050  
TVD



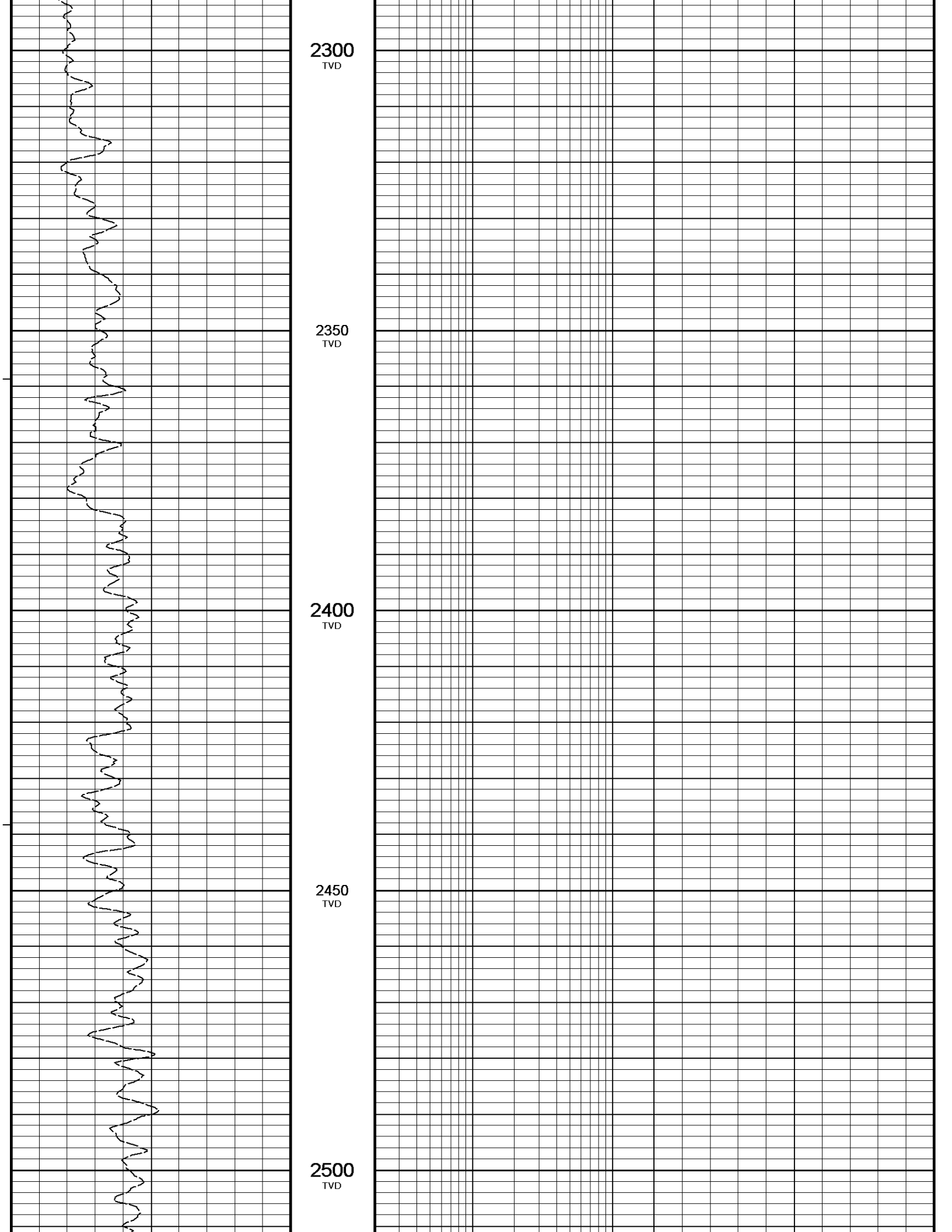
2300  
TVD

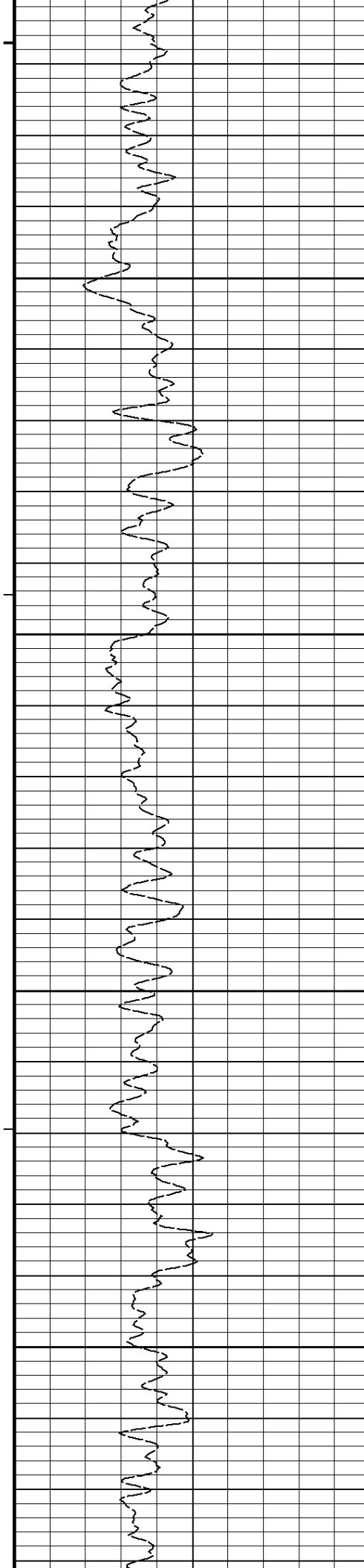
2350  
TVD

2400  
TVD

2450  
TVD

2500  
TVD





2550  
TVD

2600  
TVD

2650  
TVD

2700  
TVD



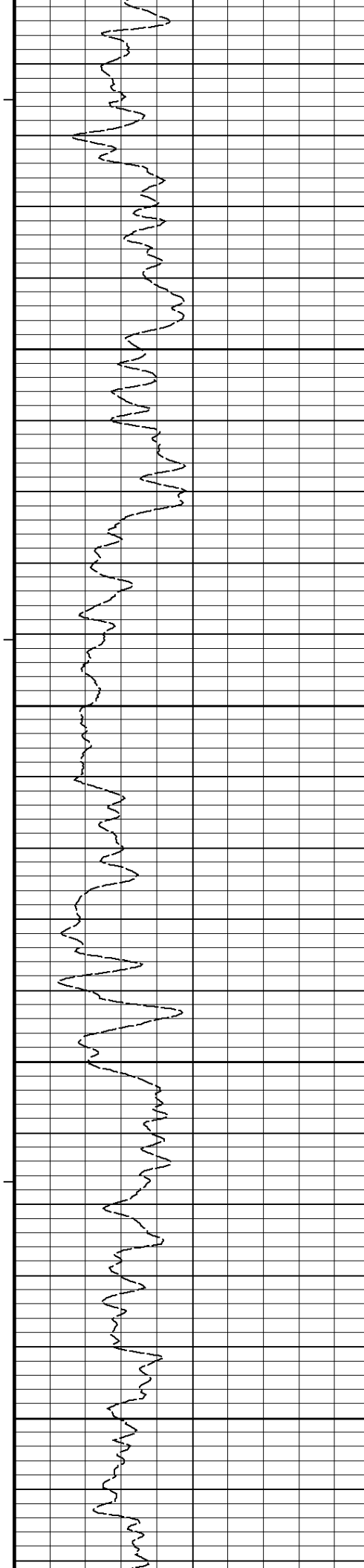
TVD

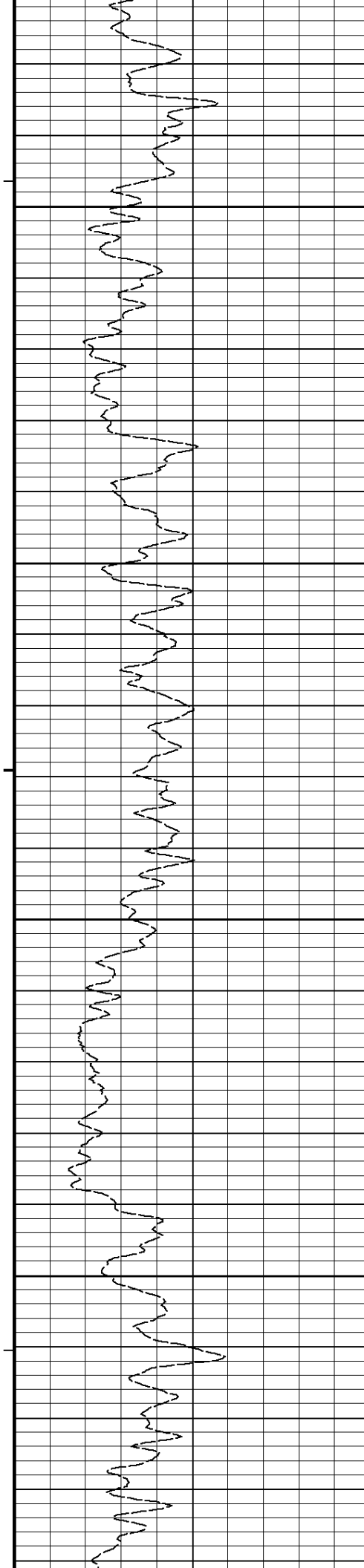
3000  
TVD

3050  
TVD

3100  
TVD

3150  
TVD





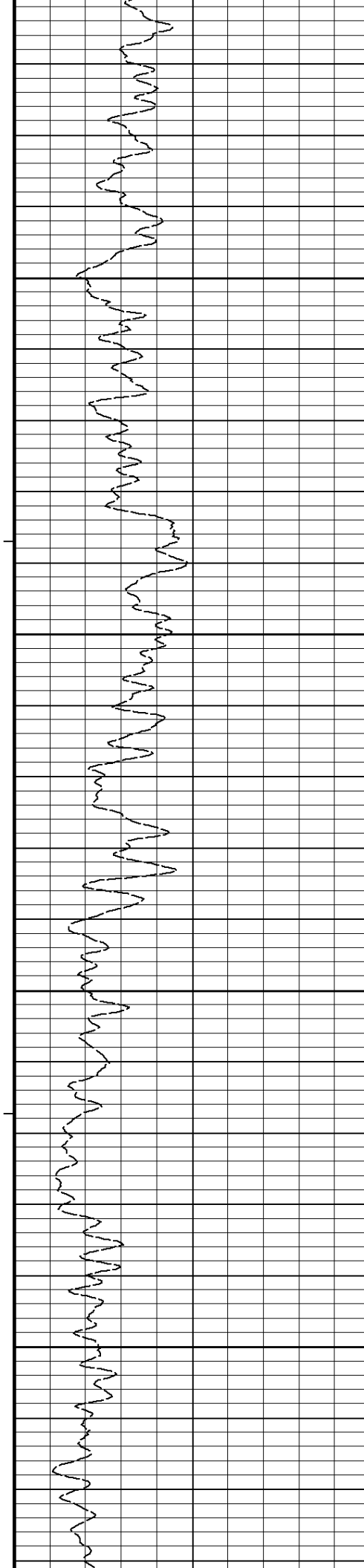
3200  
TVD

3250  
TVD

3300  
TVD

3350  
TVD





3650  
TVD

3700  
TVD

3750  
TVD

3800  
TVD



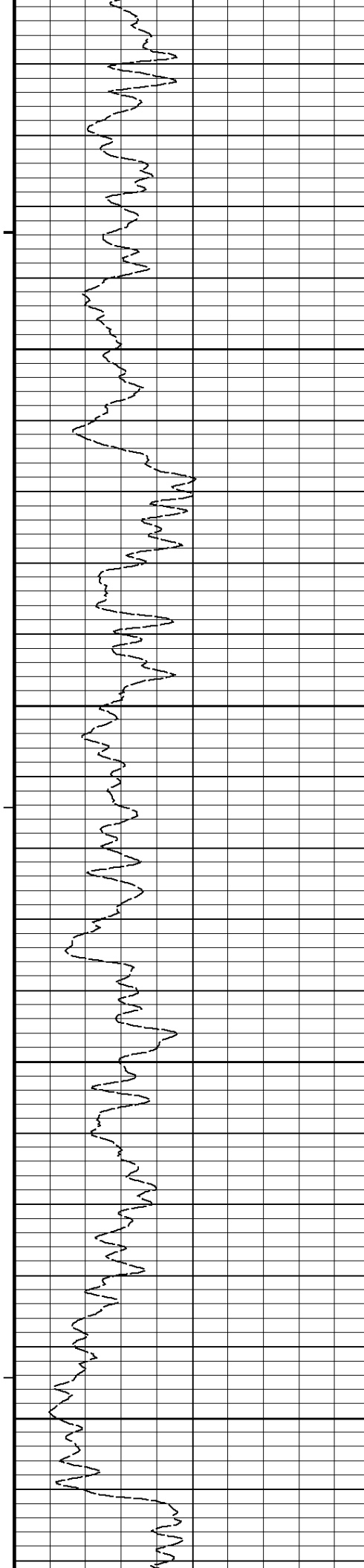
TVD

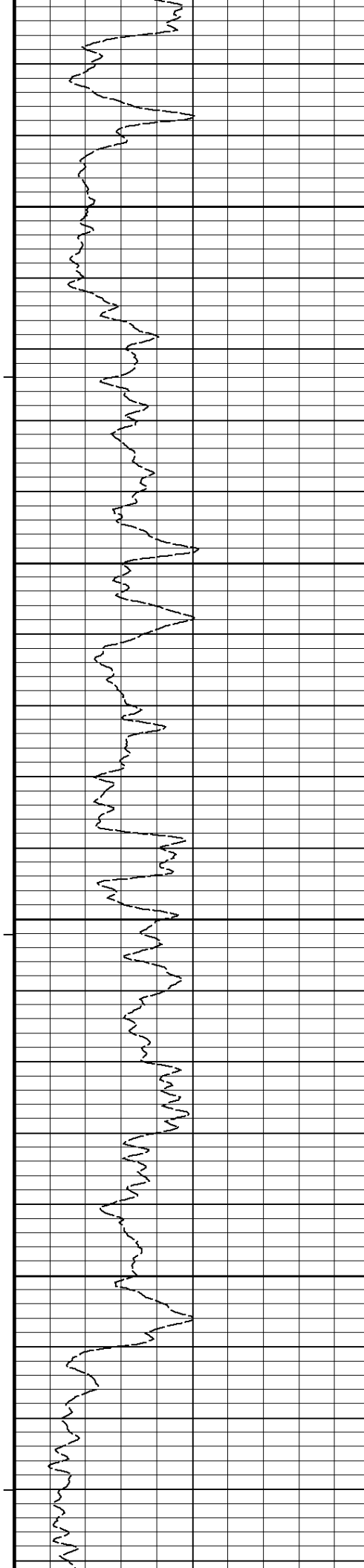
4100  
TVD

4150  
TVD

4200  
TVD

4250  
TVD



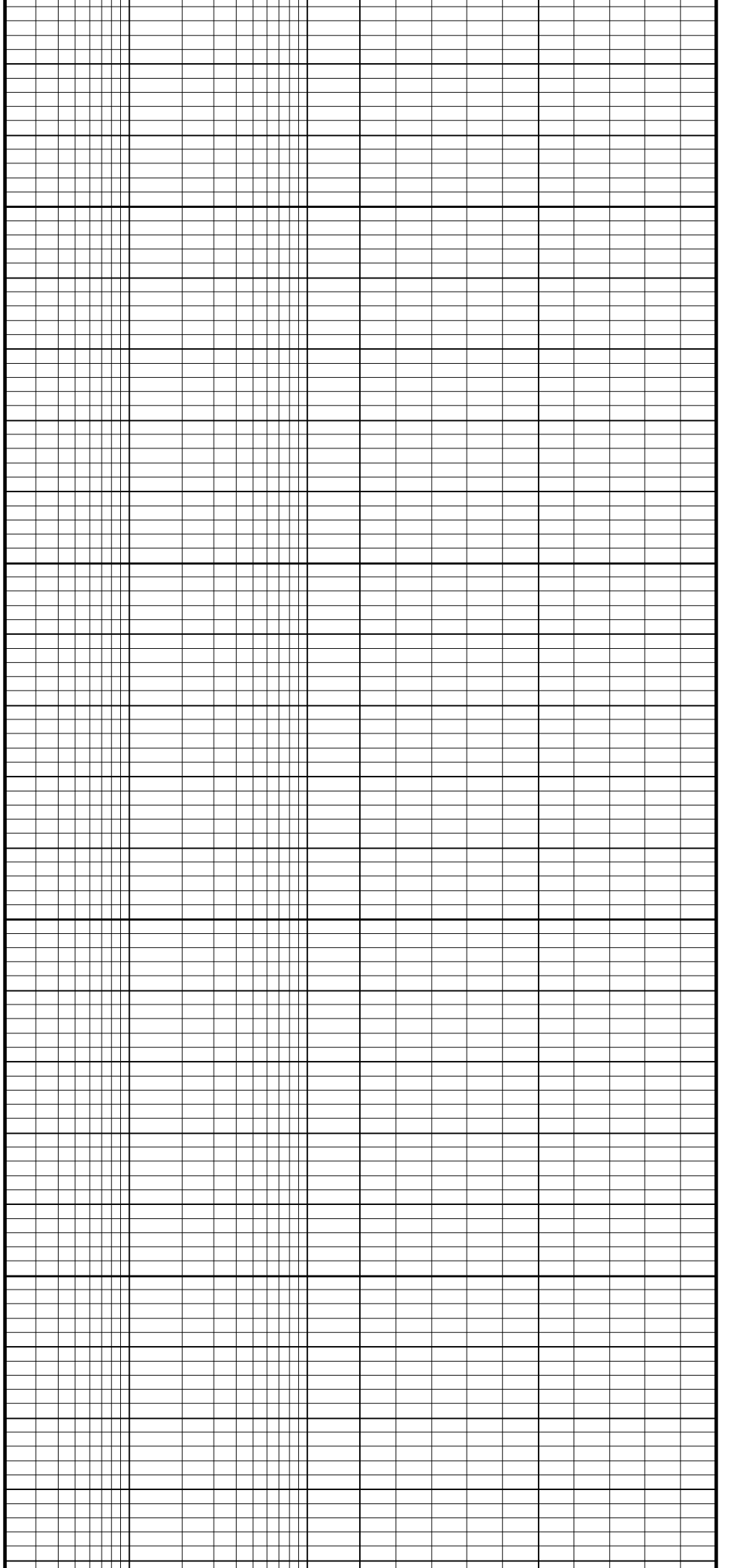


4300  
TVD

4350  
TVD

4400  
TVD

4450  
TVD



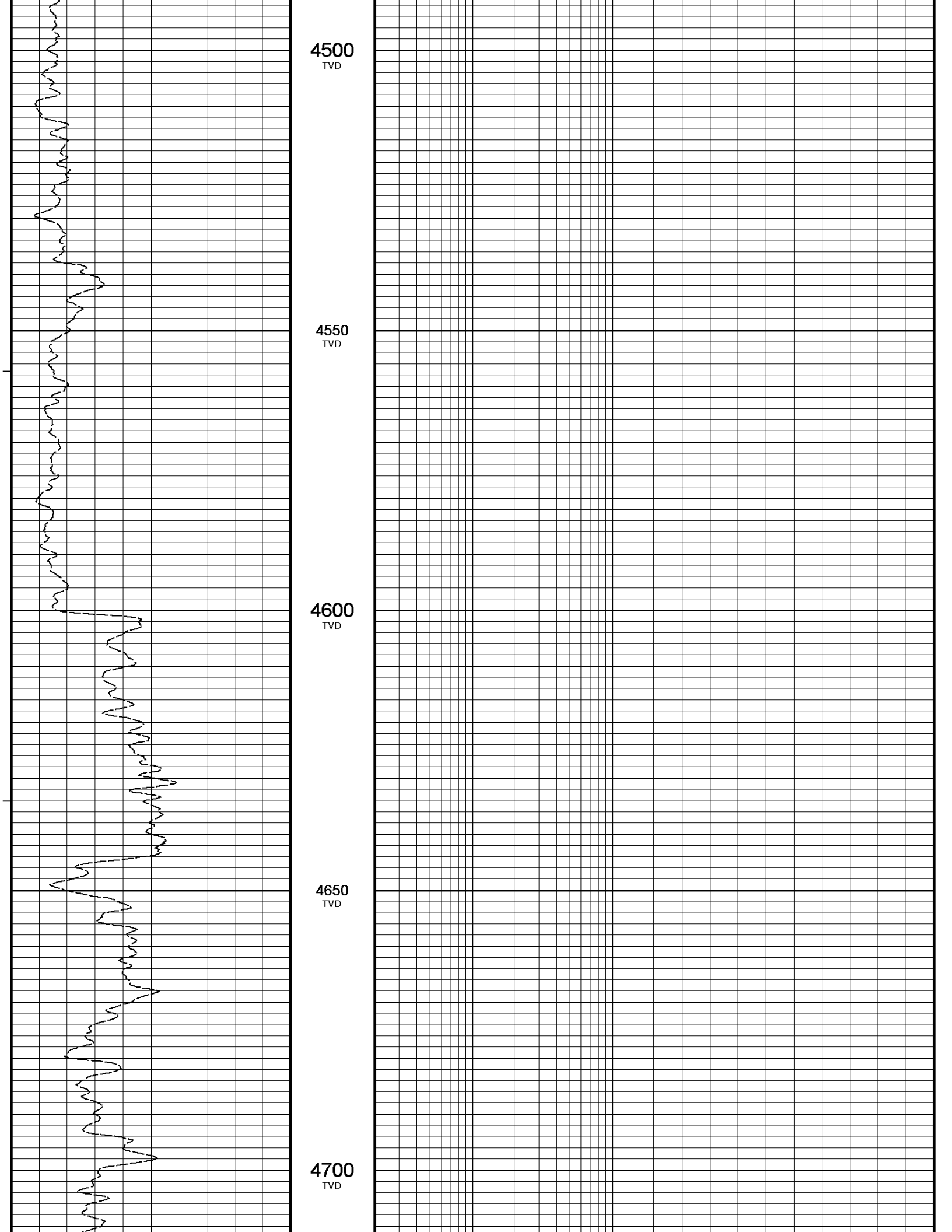
4500  
TVD

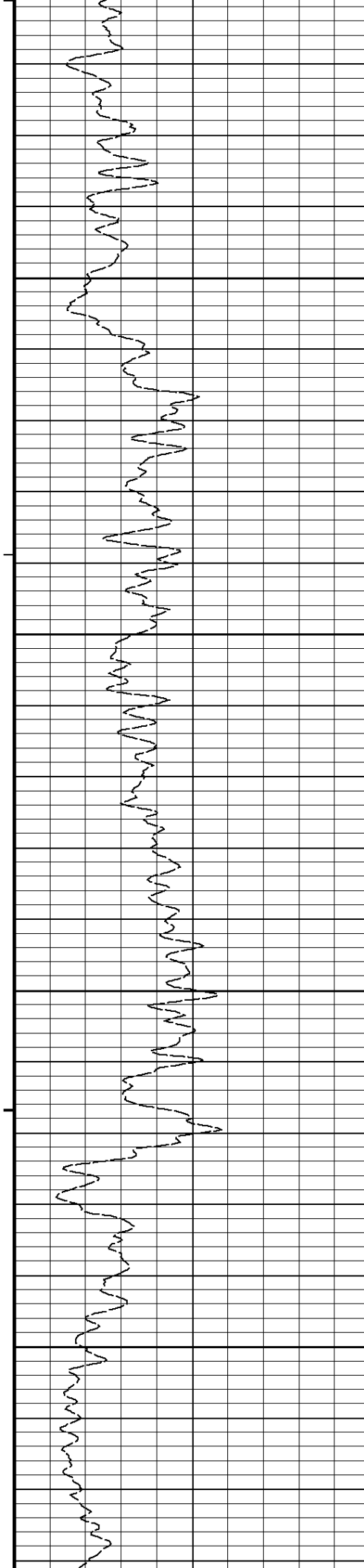
4550  
TVD

4600  
TVD

4650  
TVD

4700  
TVD





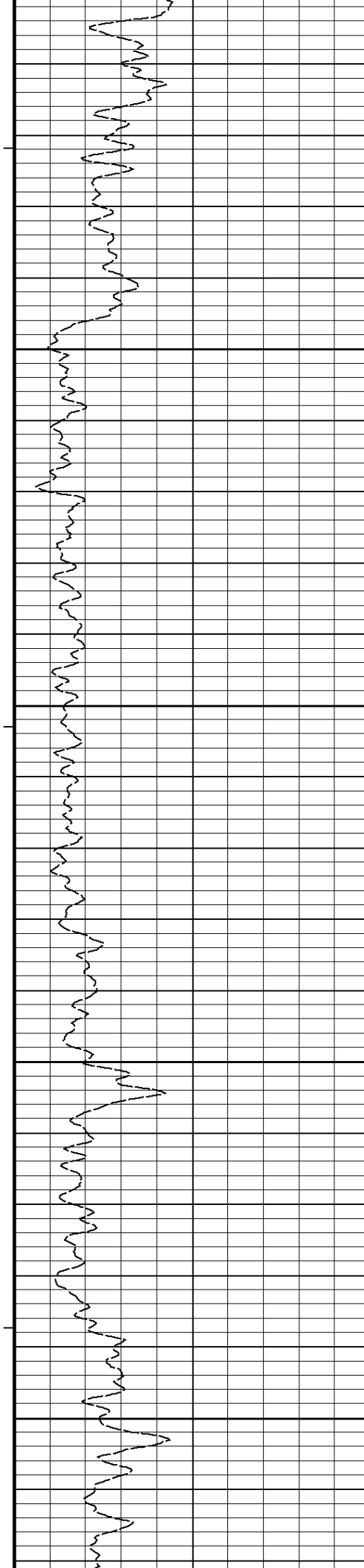
4750  
TVD

4800  
TVD

4850  
TVD

4900  
TVD





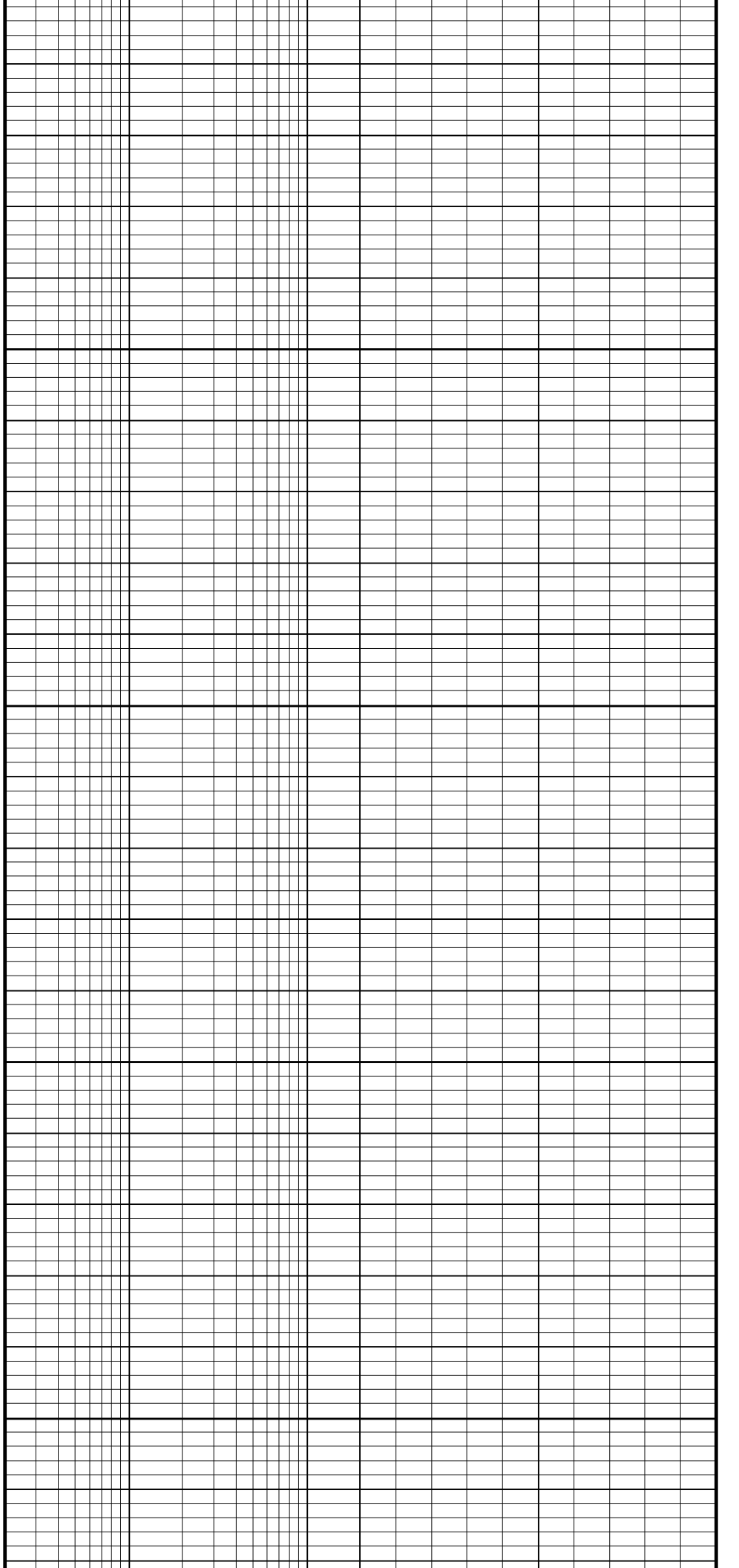
TVD

5200  
TVD

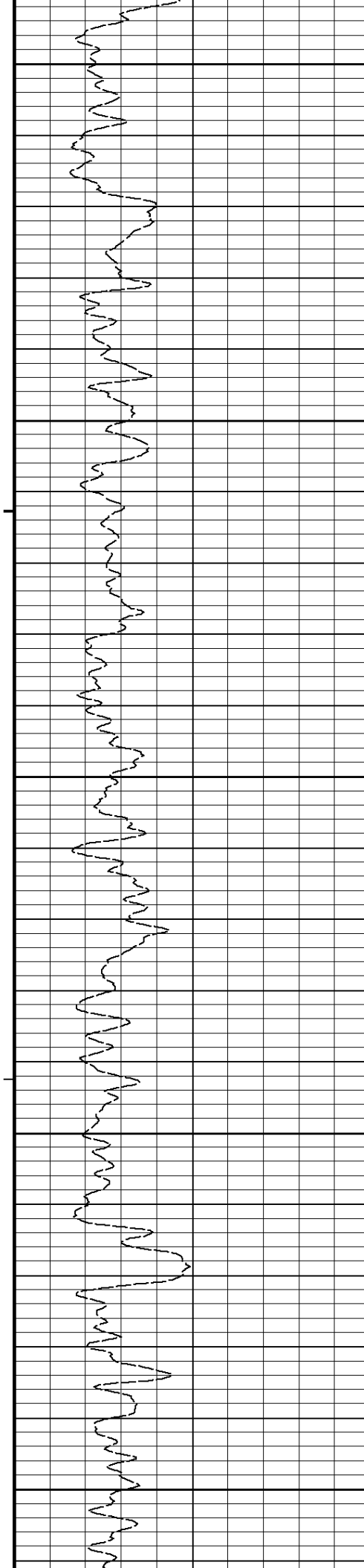
5250  
TVD

5300  
TVD

5350  
TVD







5600  
TVD

5650  
TVD

5700  
TVD

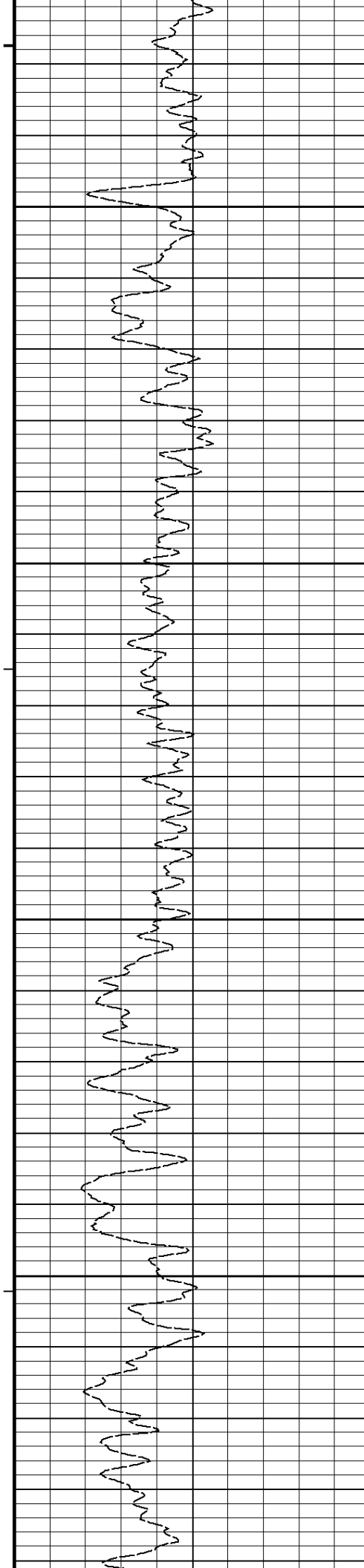
5750  
TVD

5800  
TVD







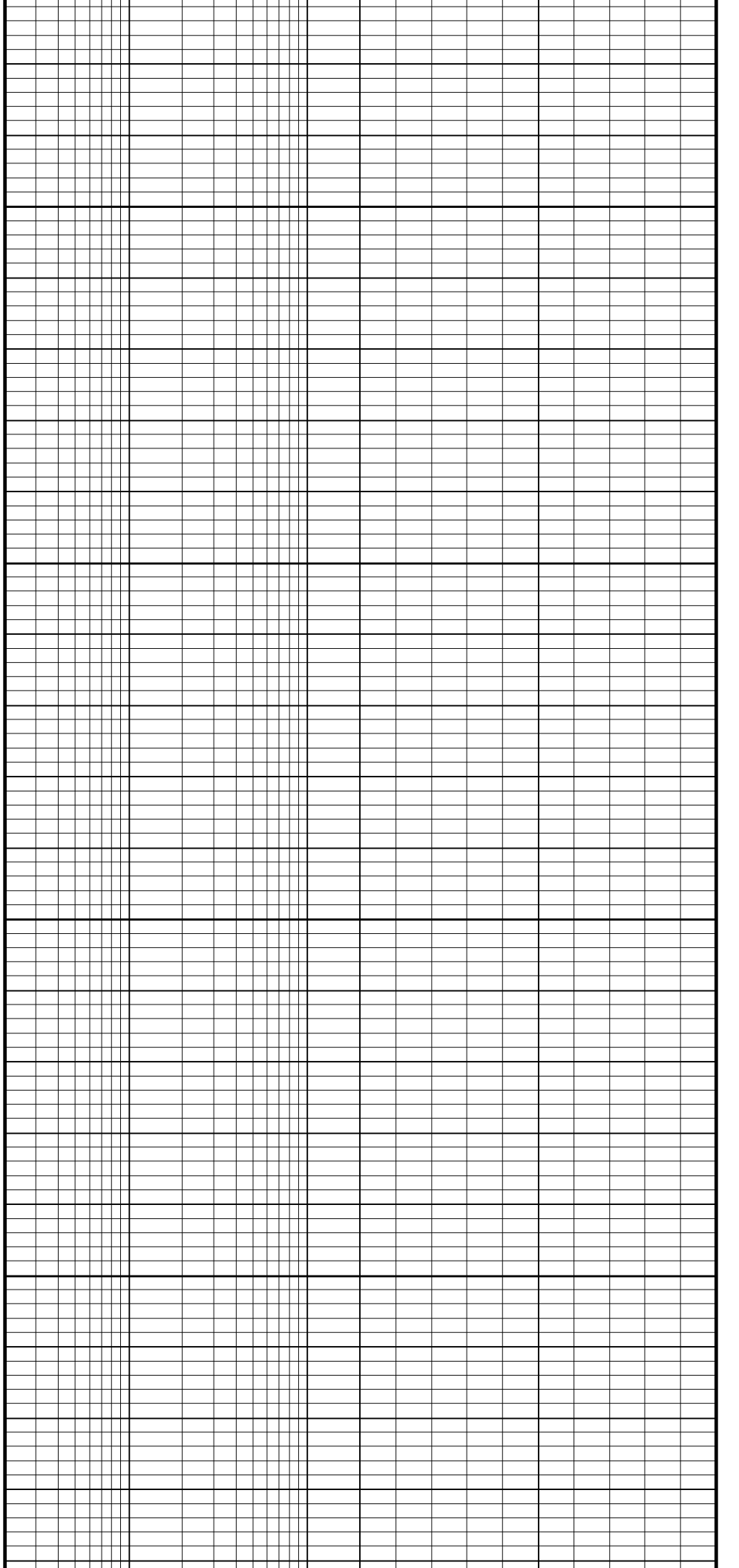


6500  
TVD

6550  
TVD

6600  
TVD

6650  
TVD

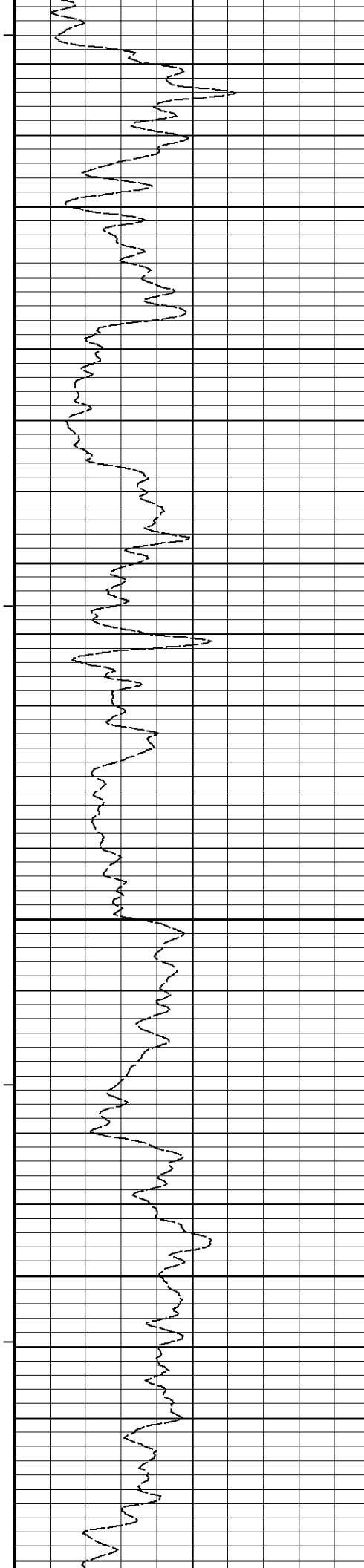










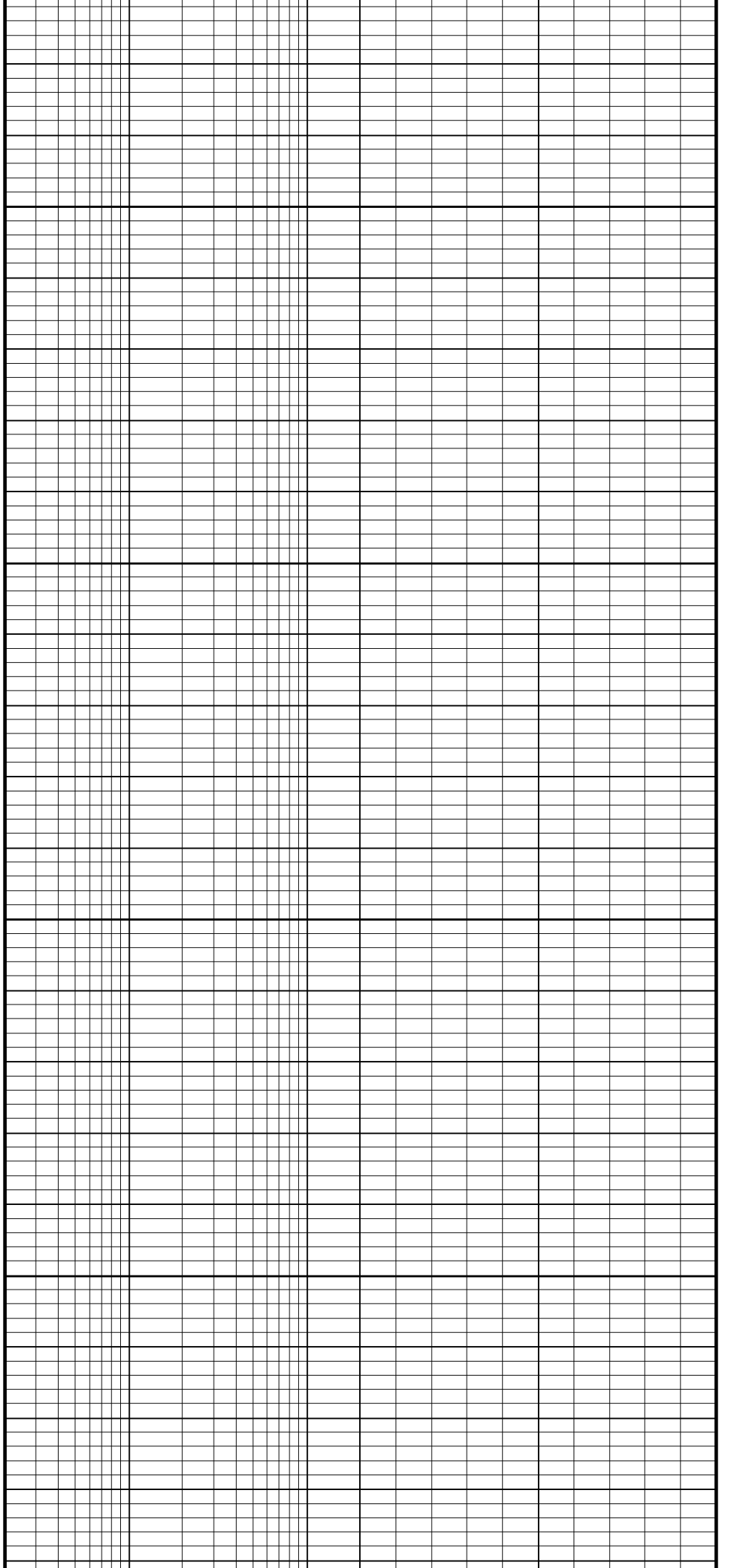


7600  
TVD

7650  
TVD

7700  
TVD

7750  
TVD



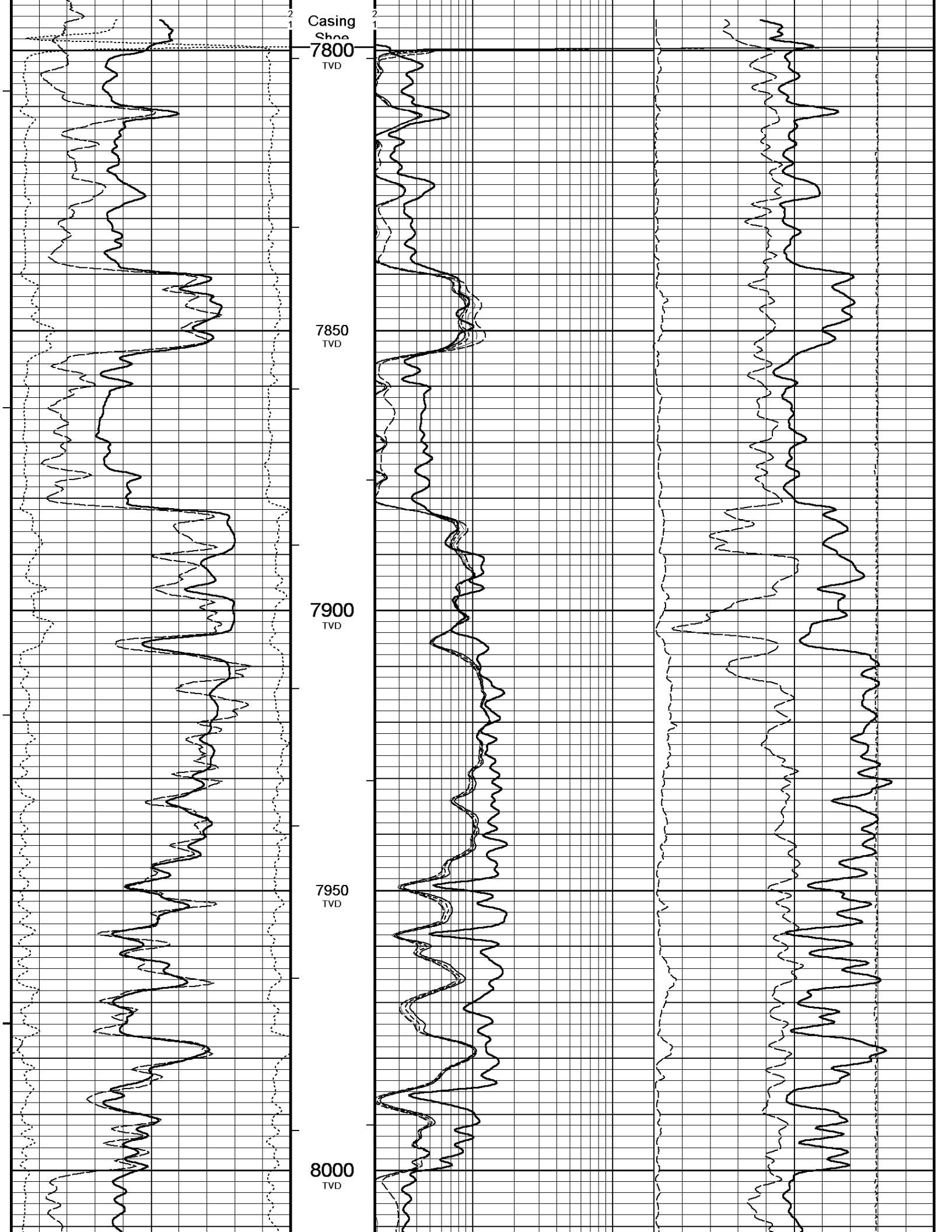
Casing  
Shoe  
7800  
TVD

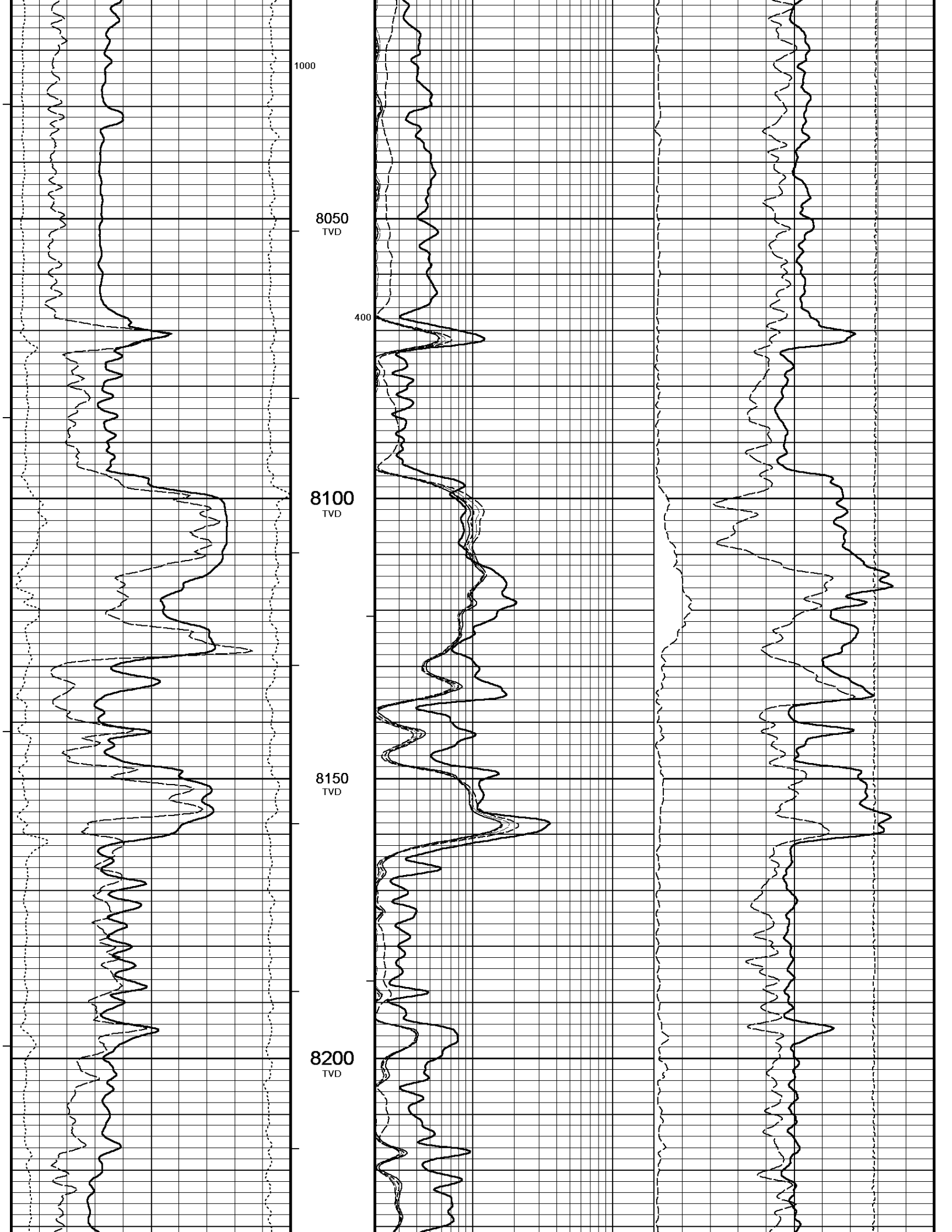
7850  
TVD

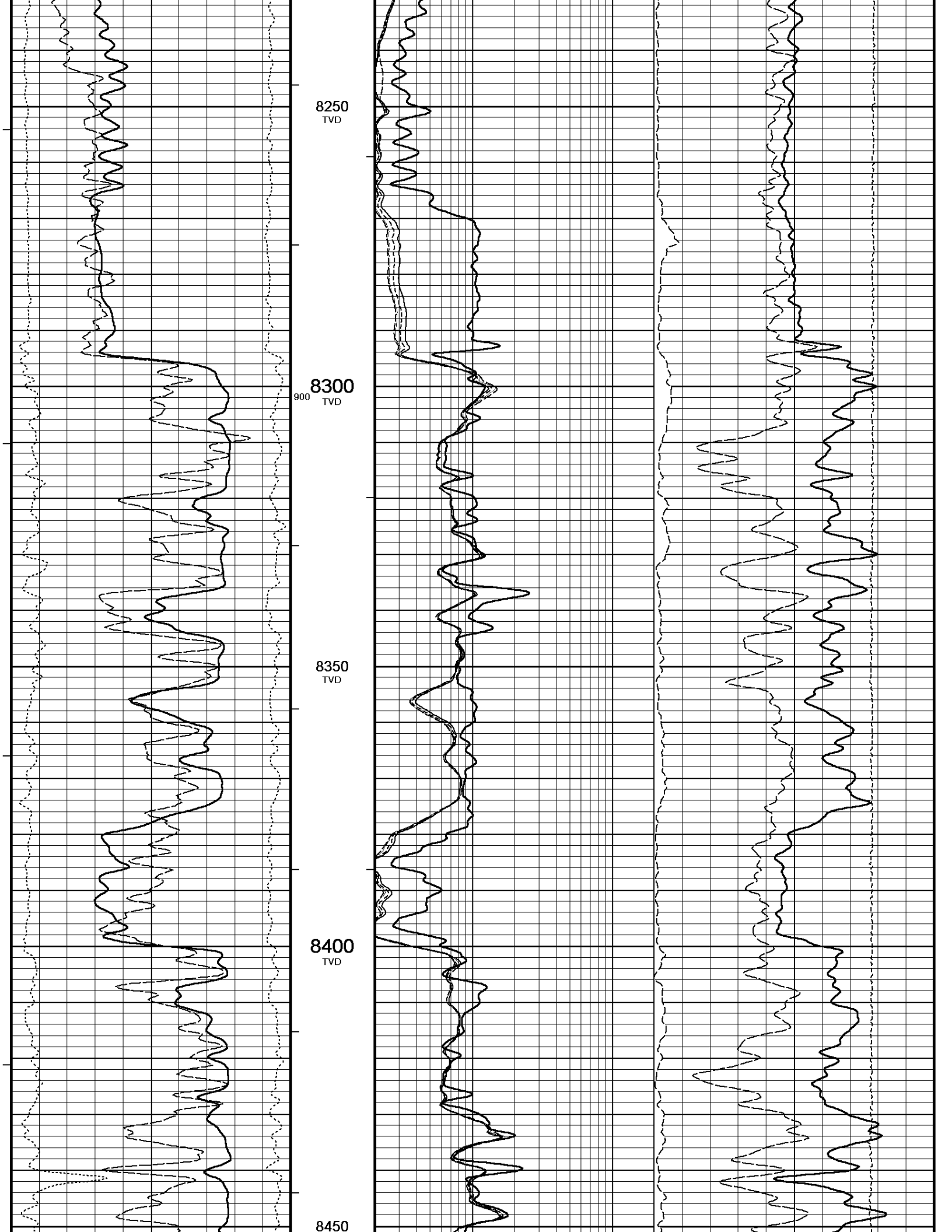
7900  
TVD

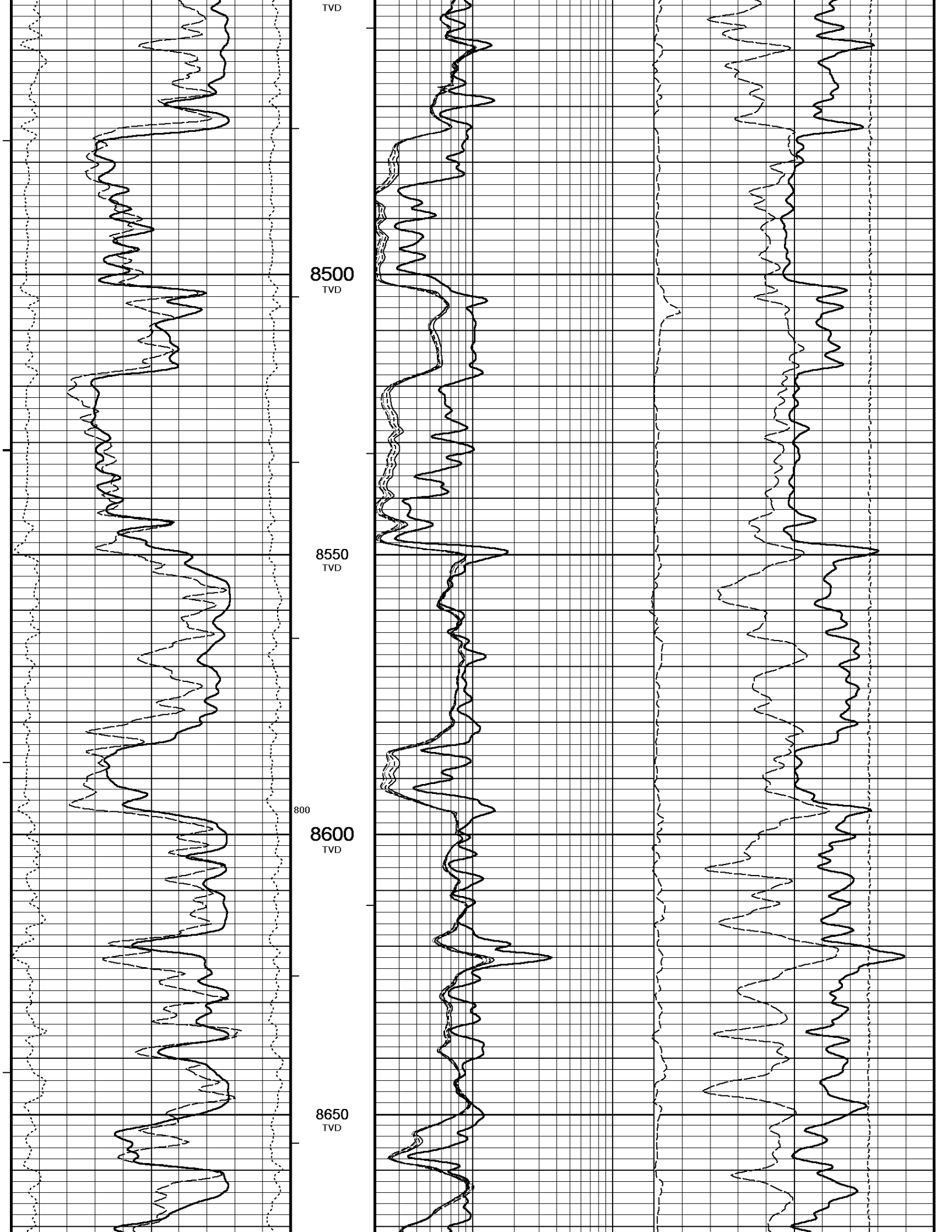
7950  
TVD

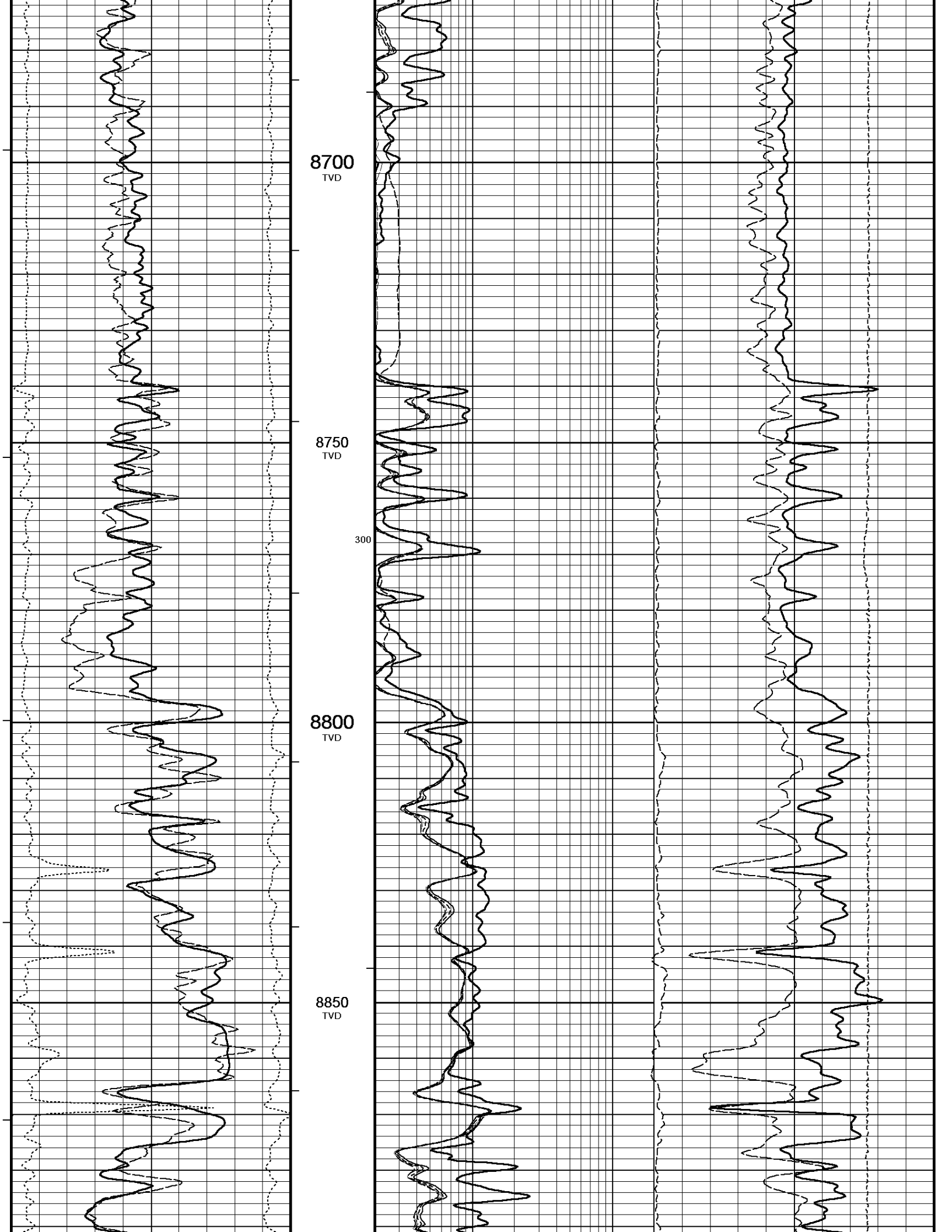
8000  
TVD

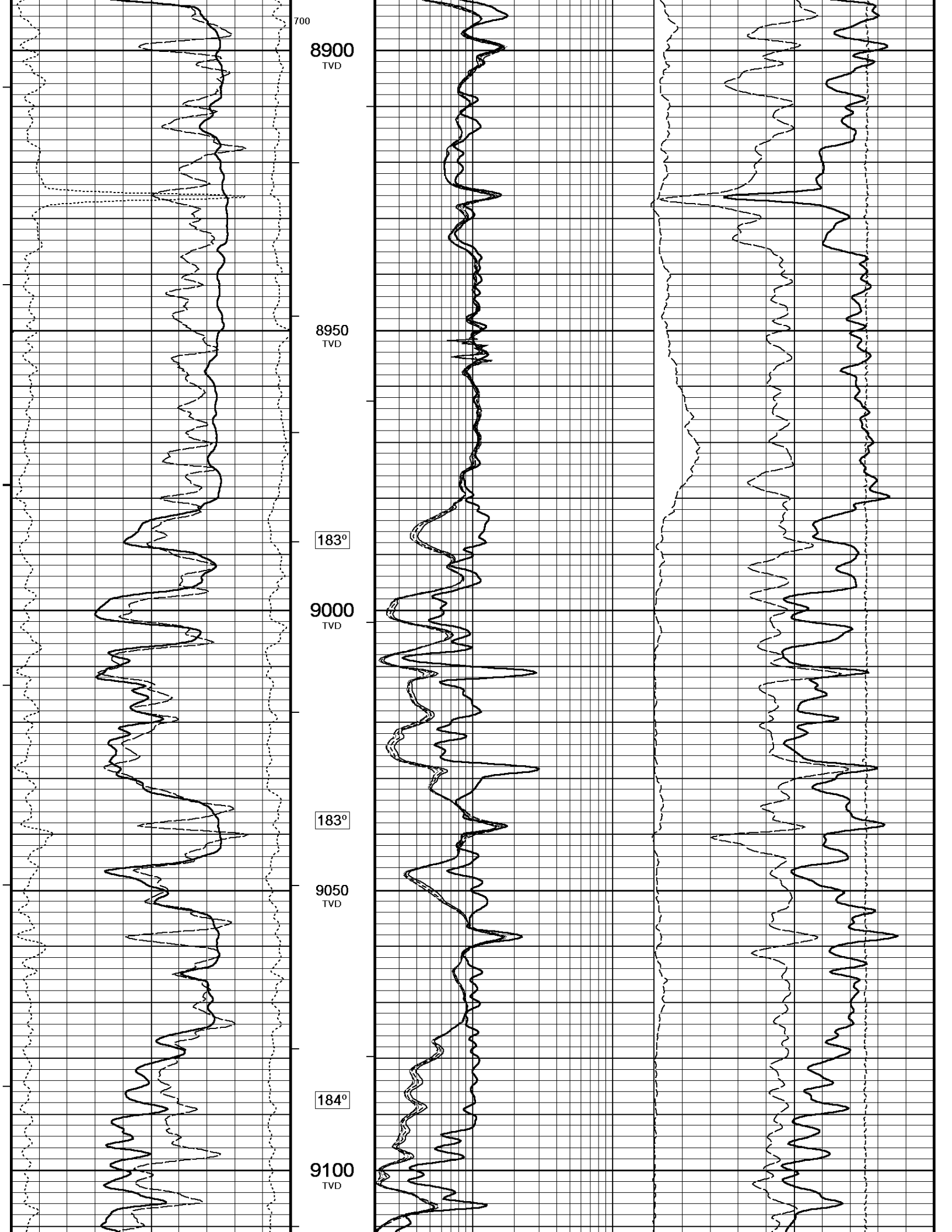


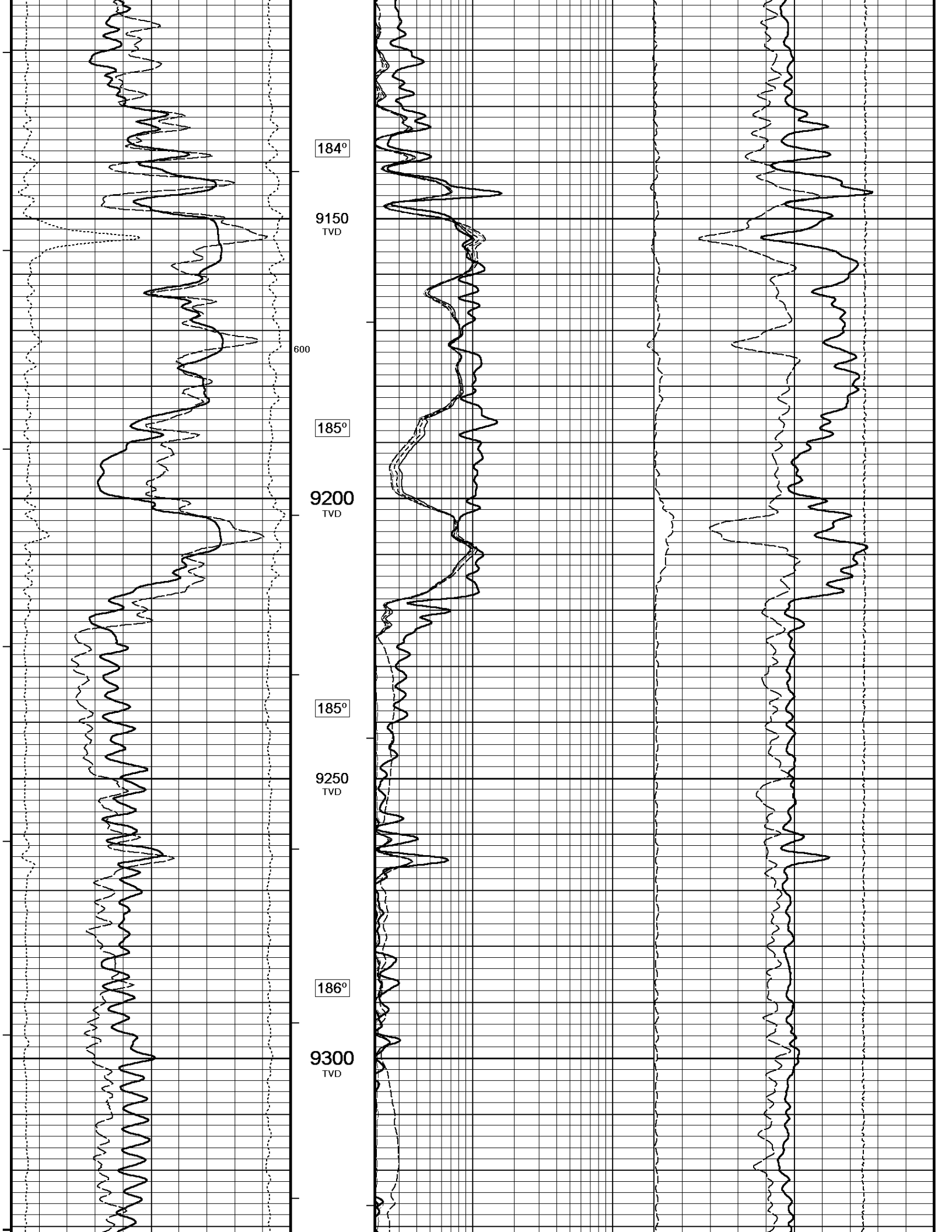


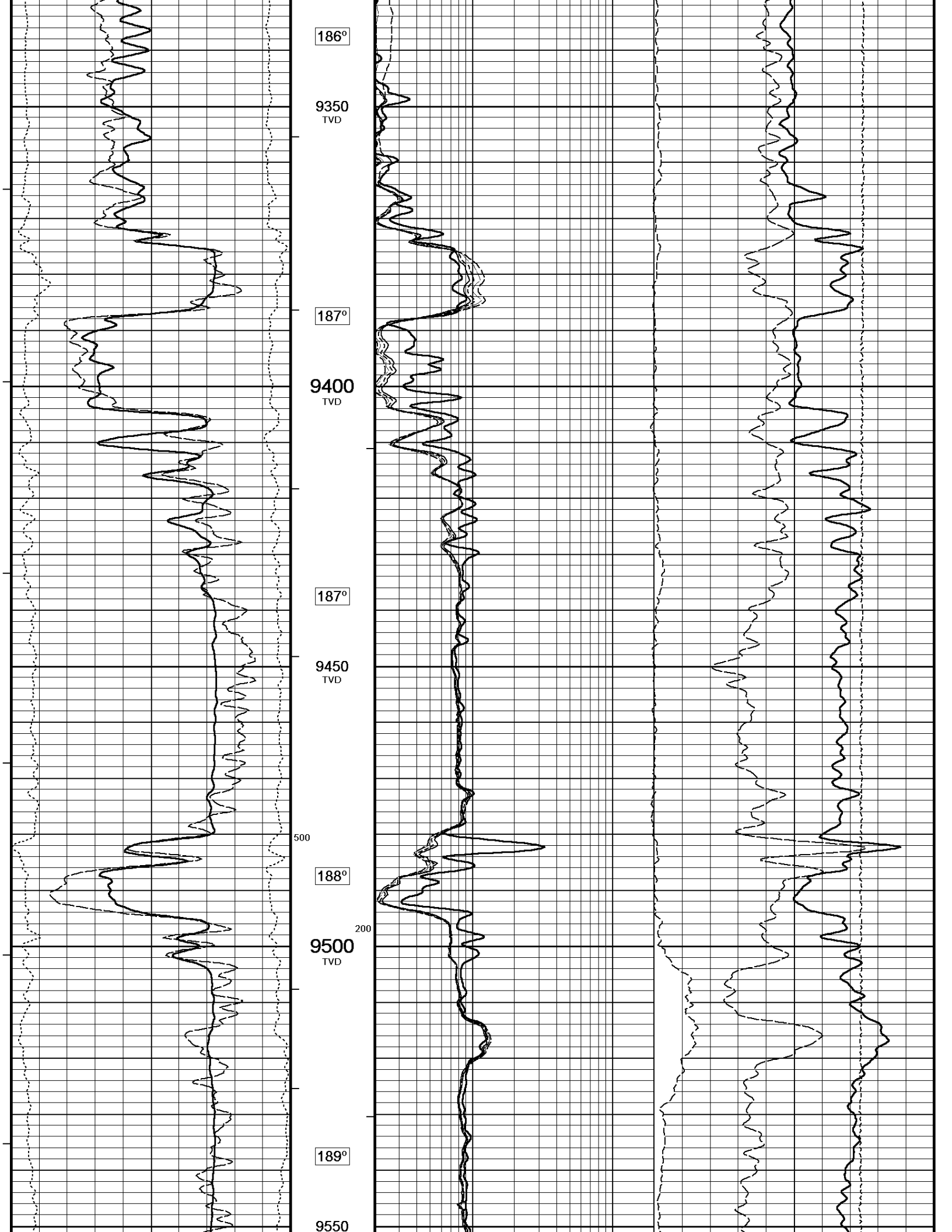


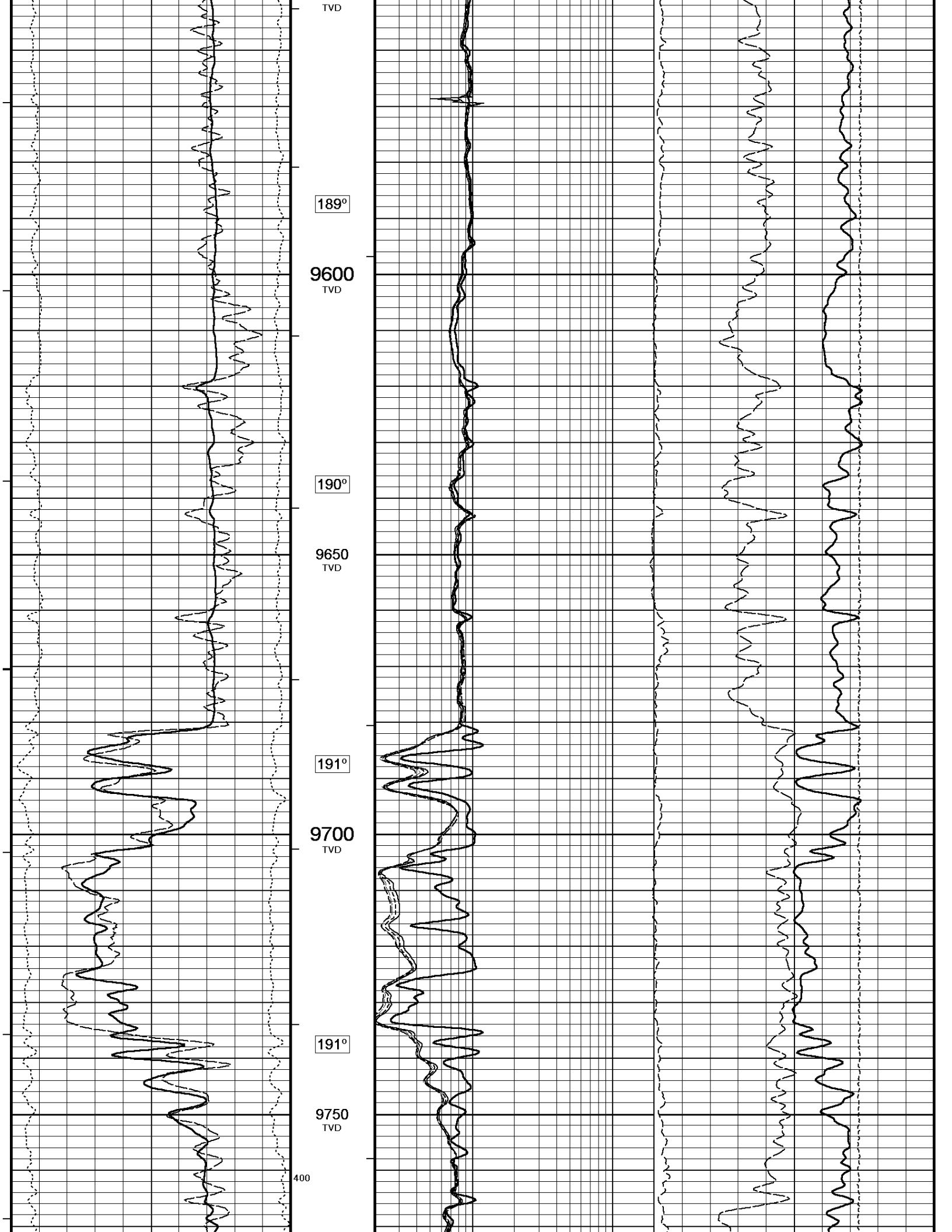


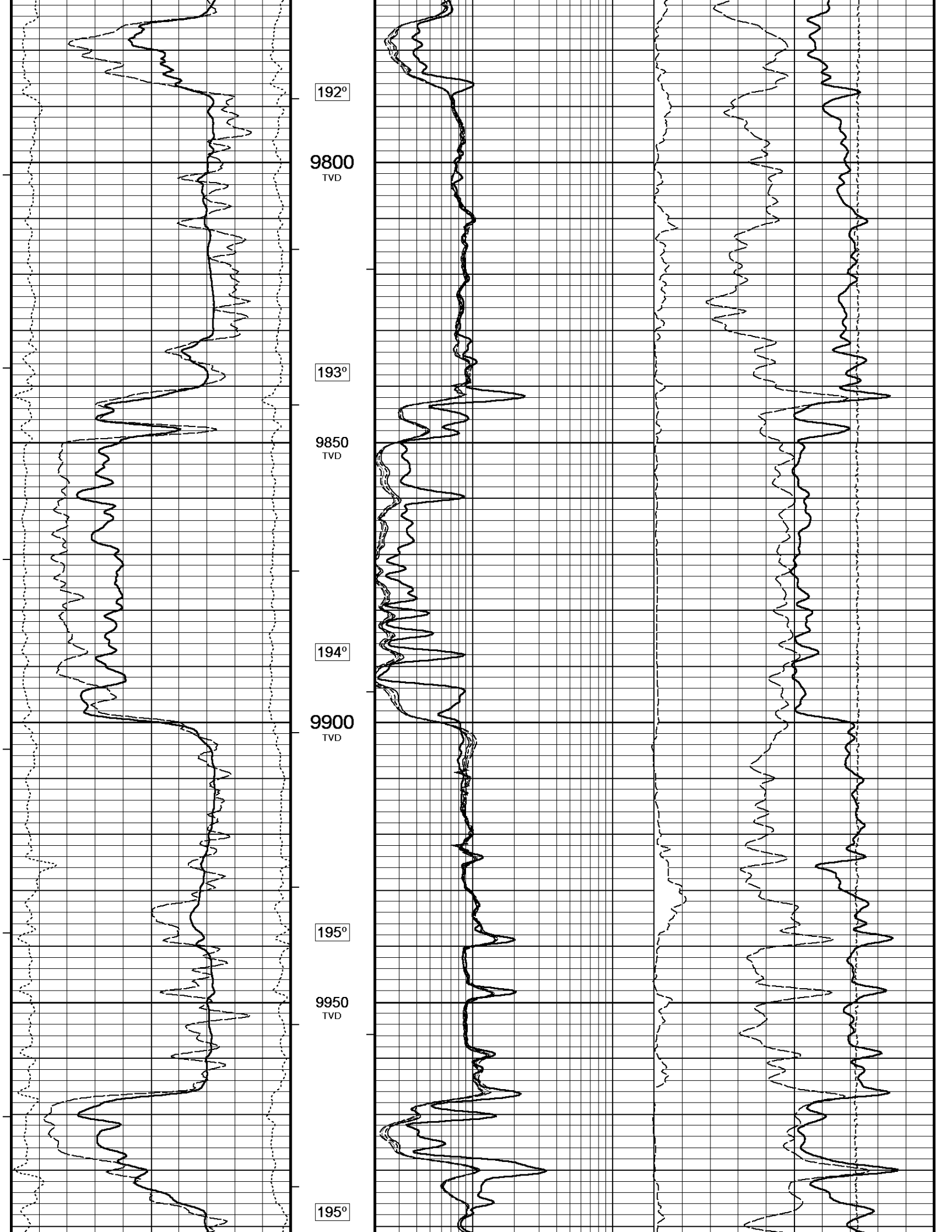


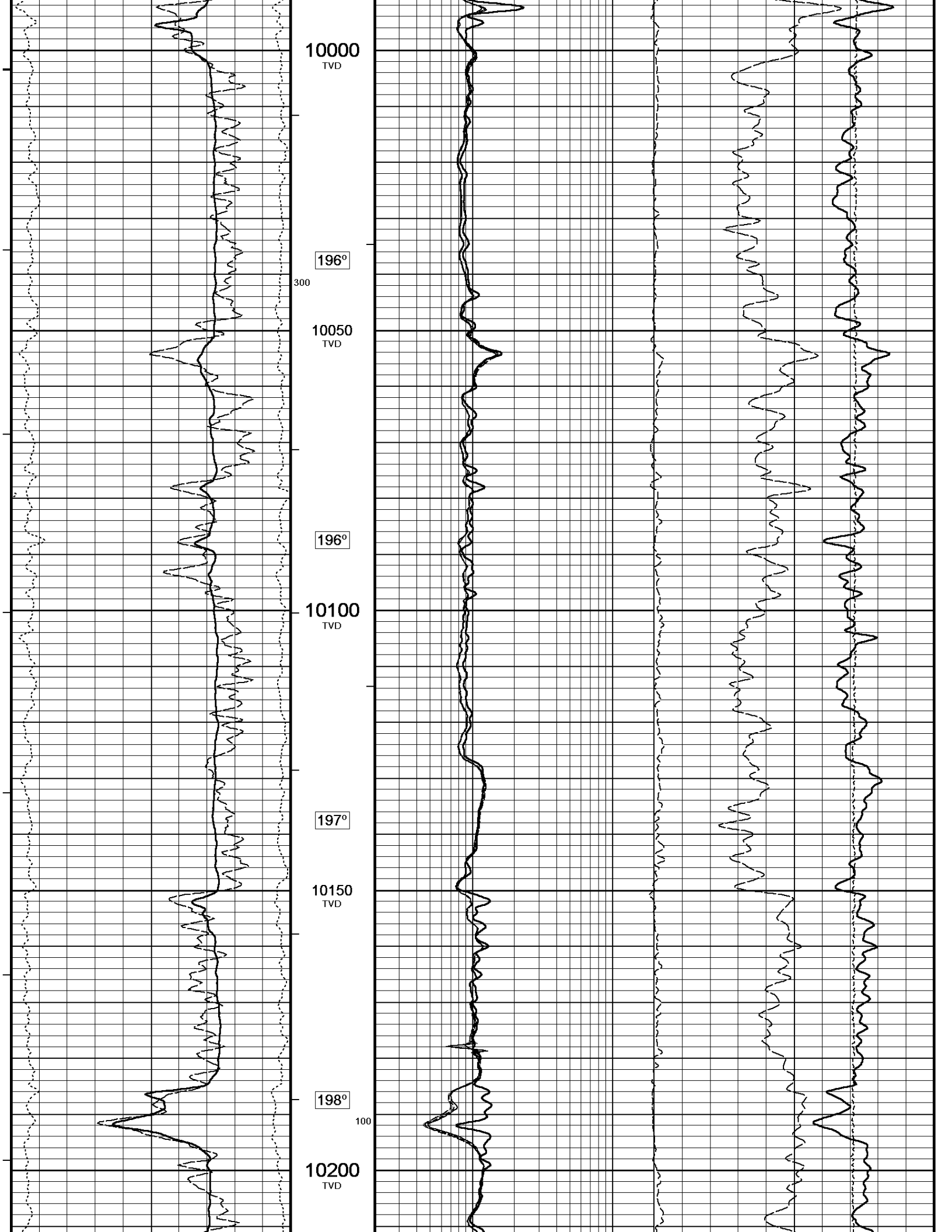


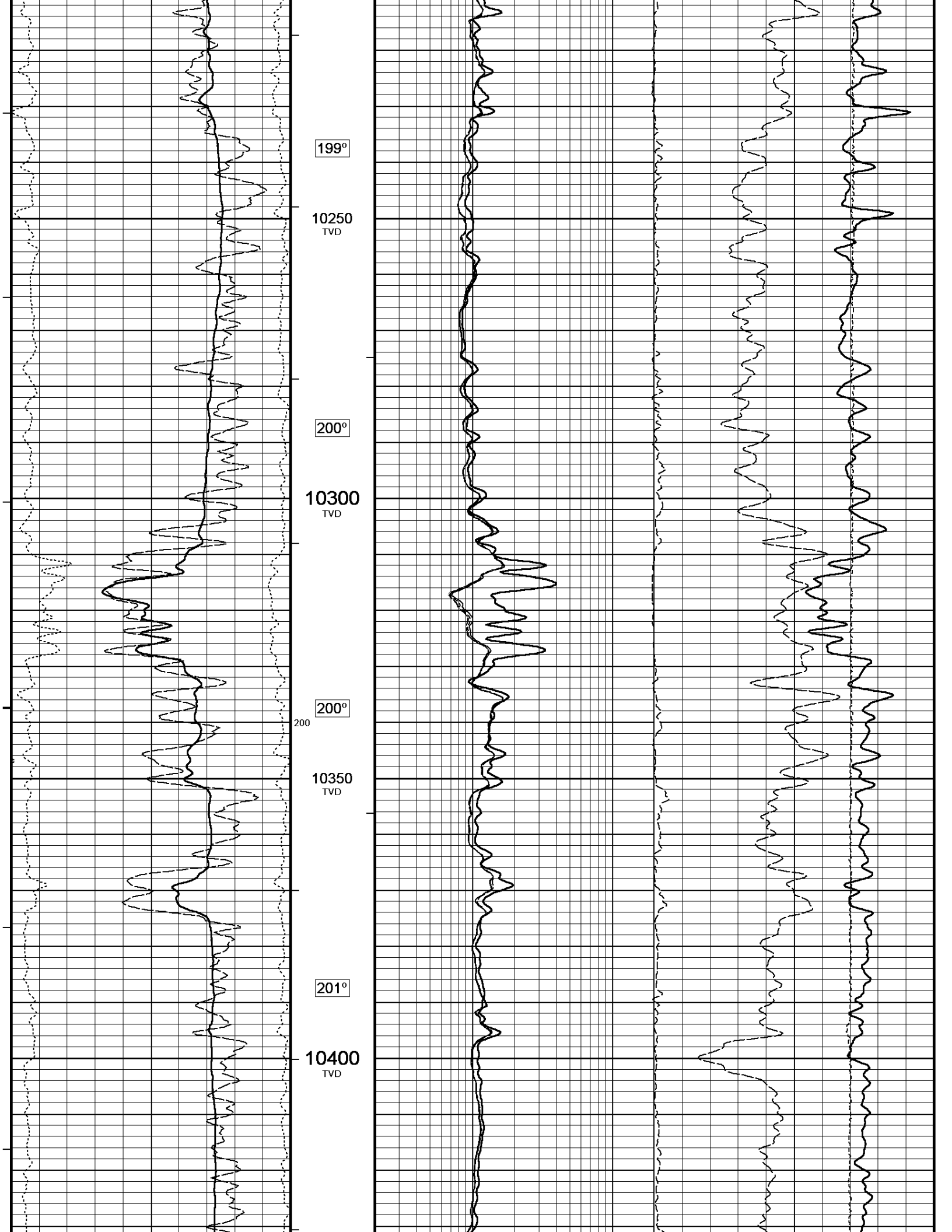


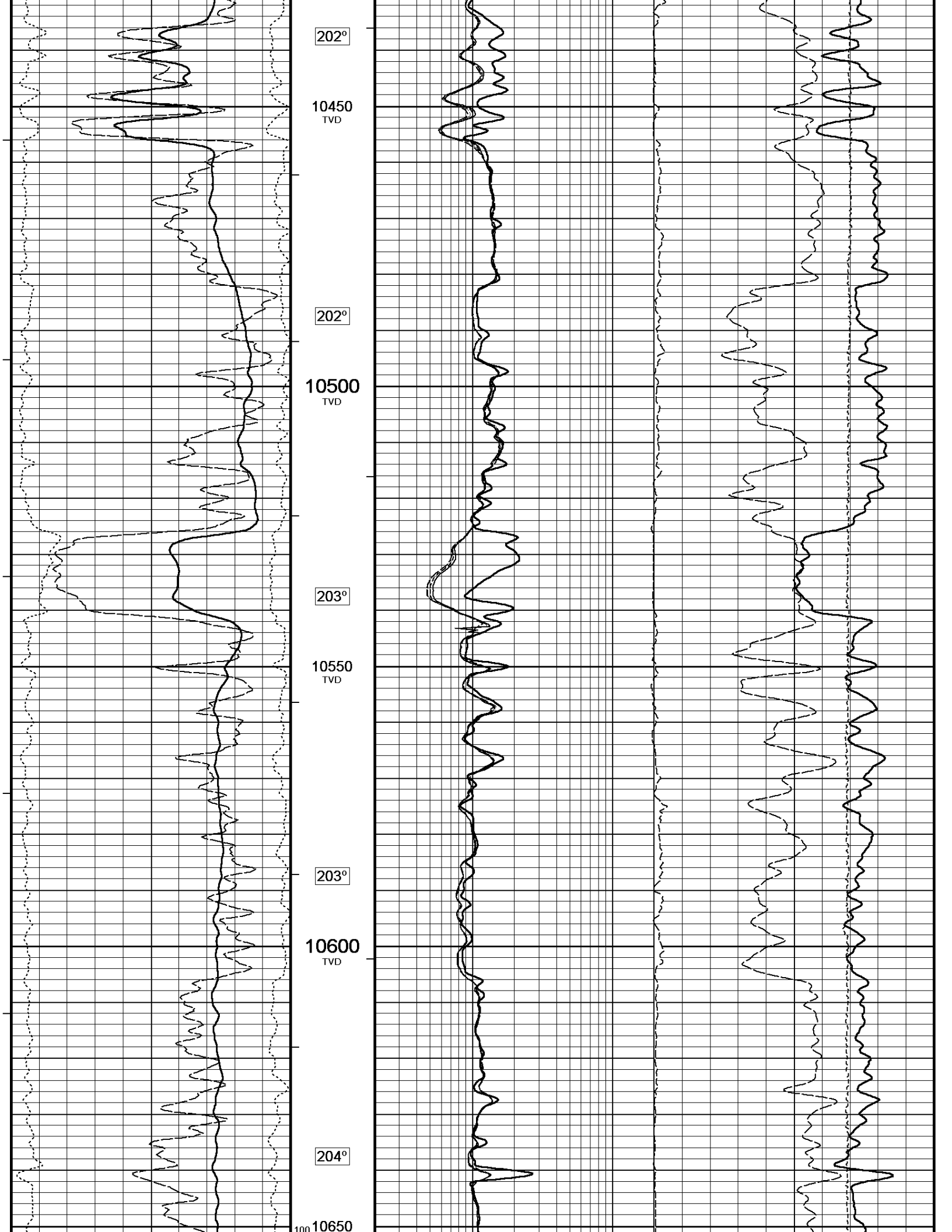


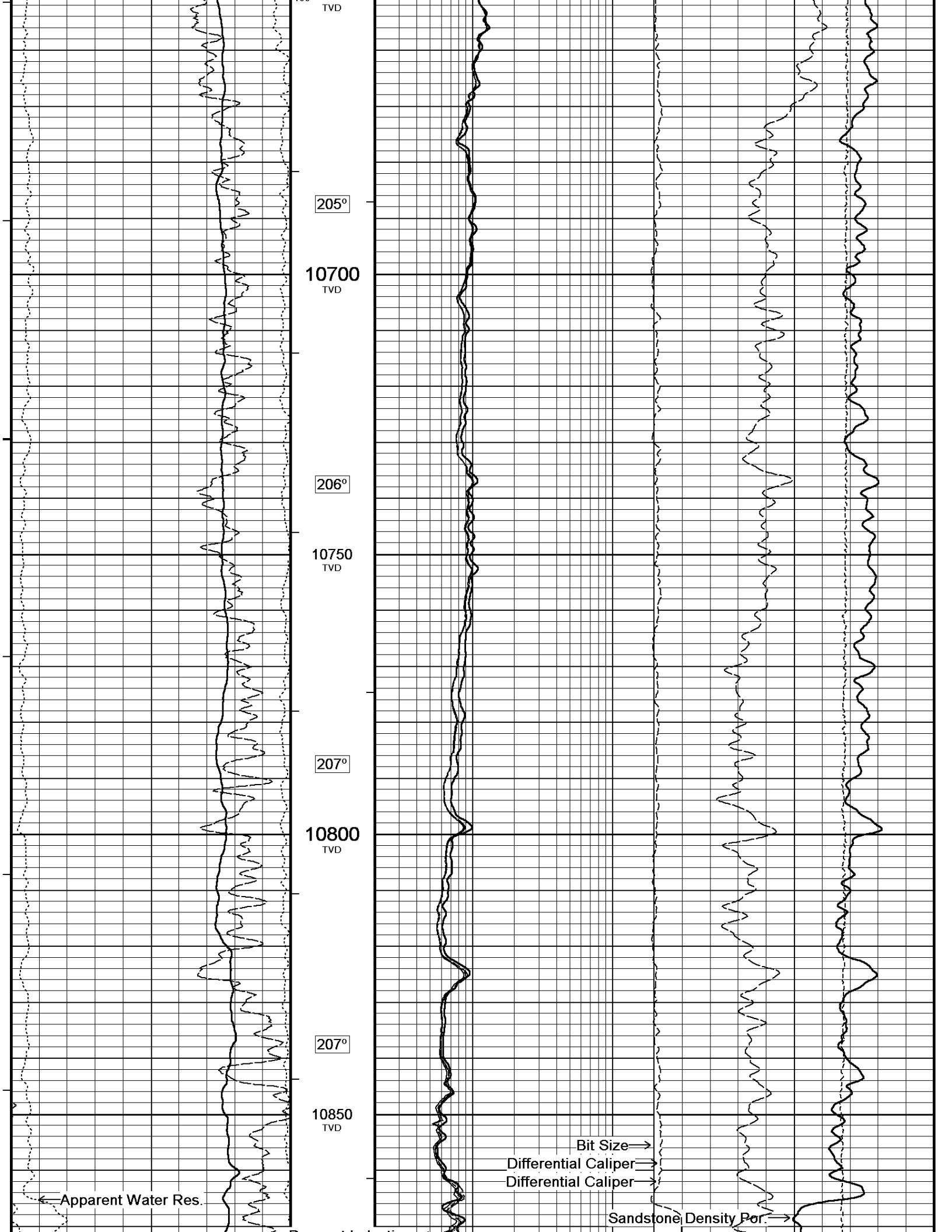


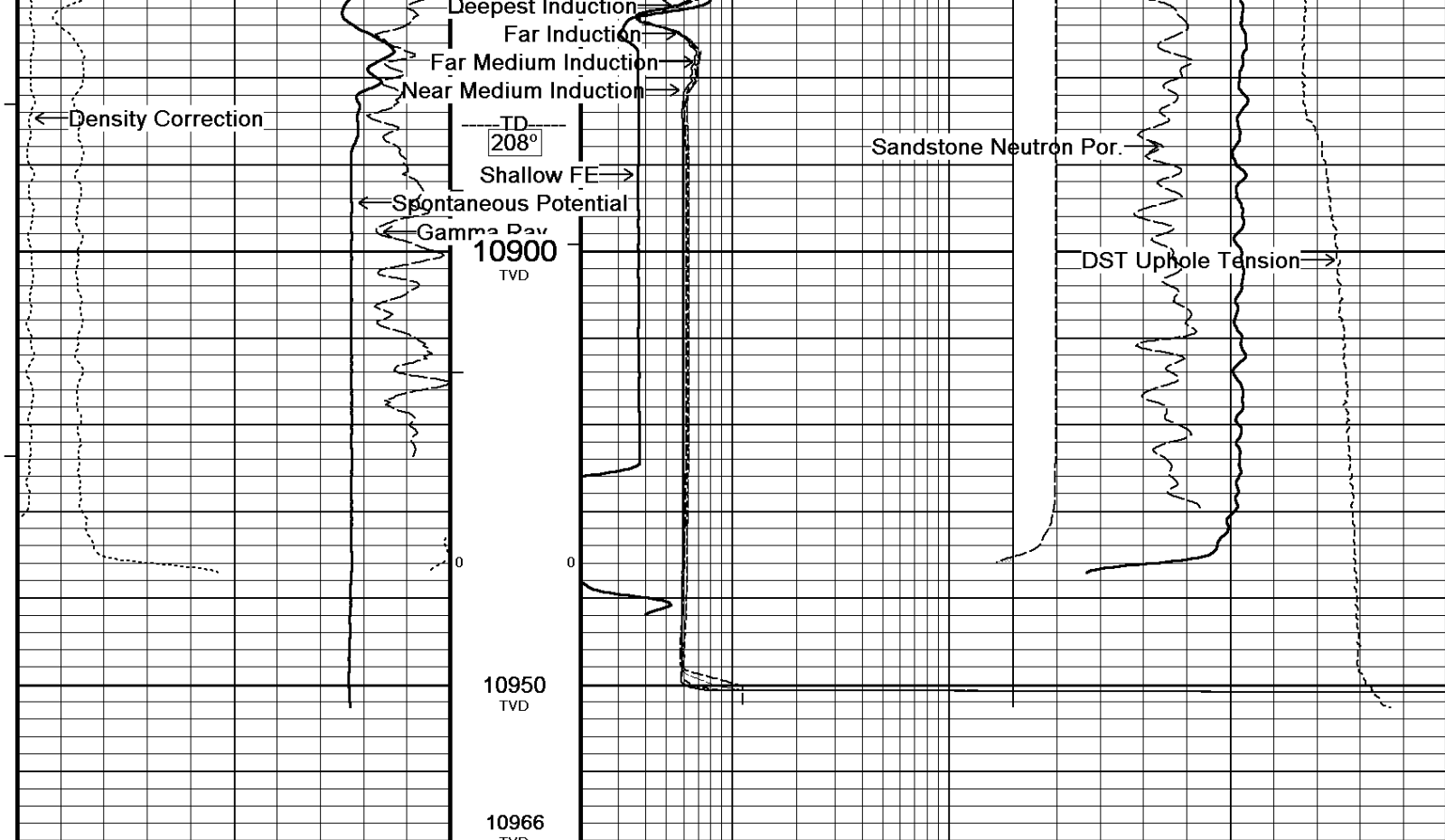












TVD in Feet

Timing Marks every 60.0 sec

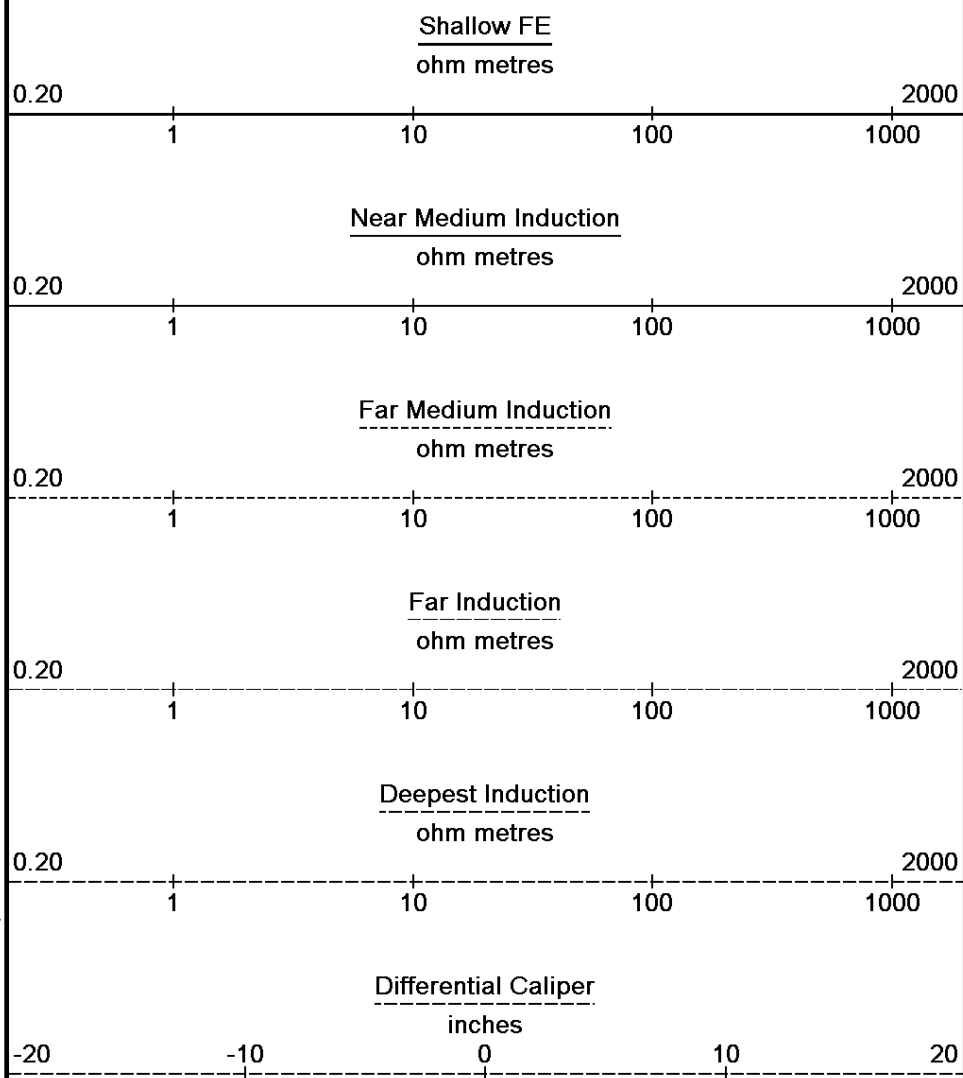
Gamma Ray API

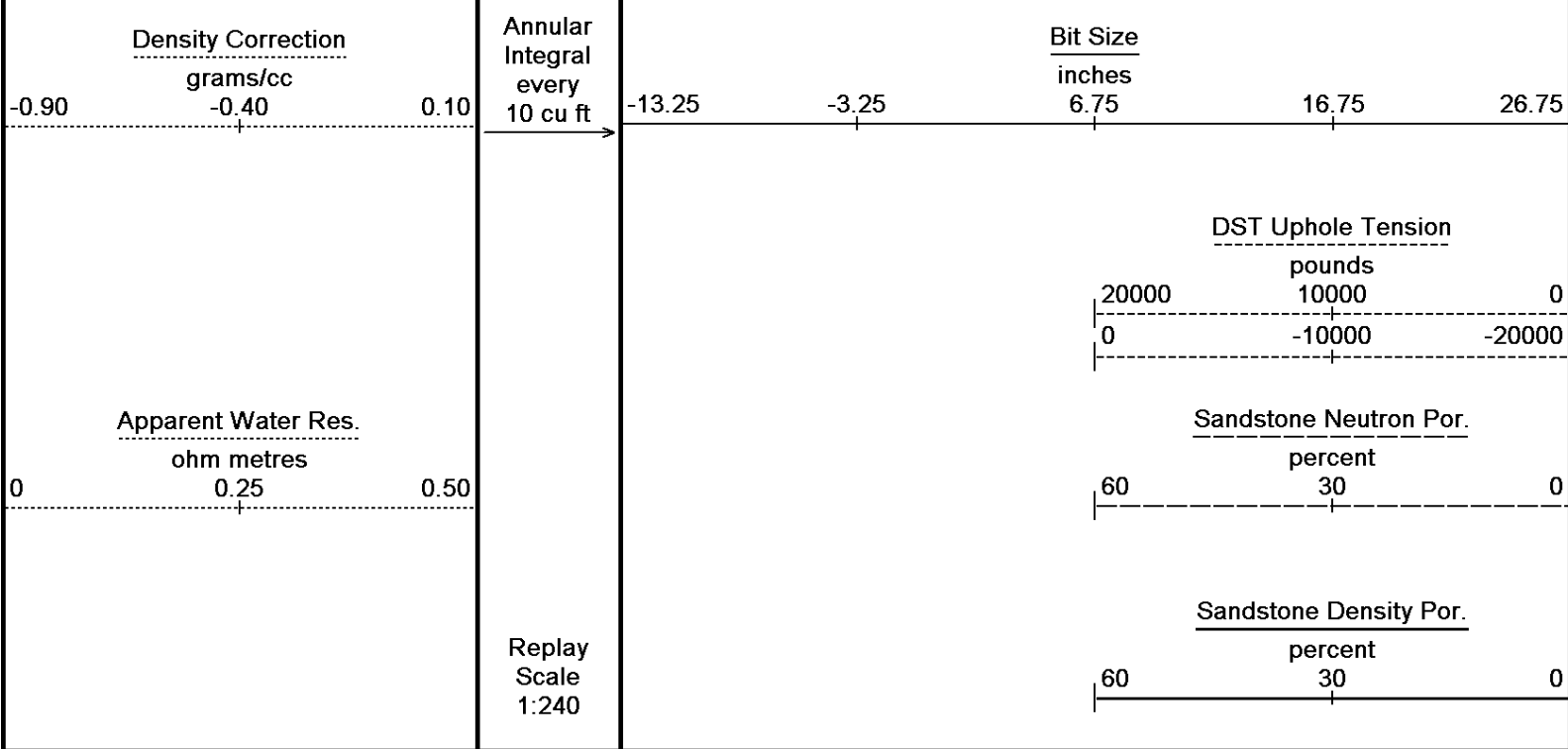
0	75	150
150	225	300

Borehole Temp in deg F

Spontaneous Potential millivolts  
 - -> | 20 | <- +

HVI every 10 cu ft



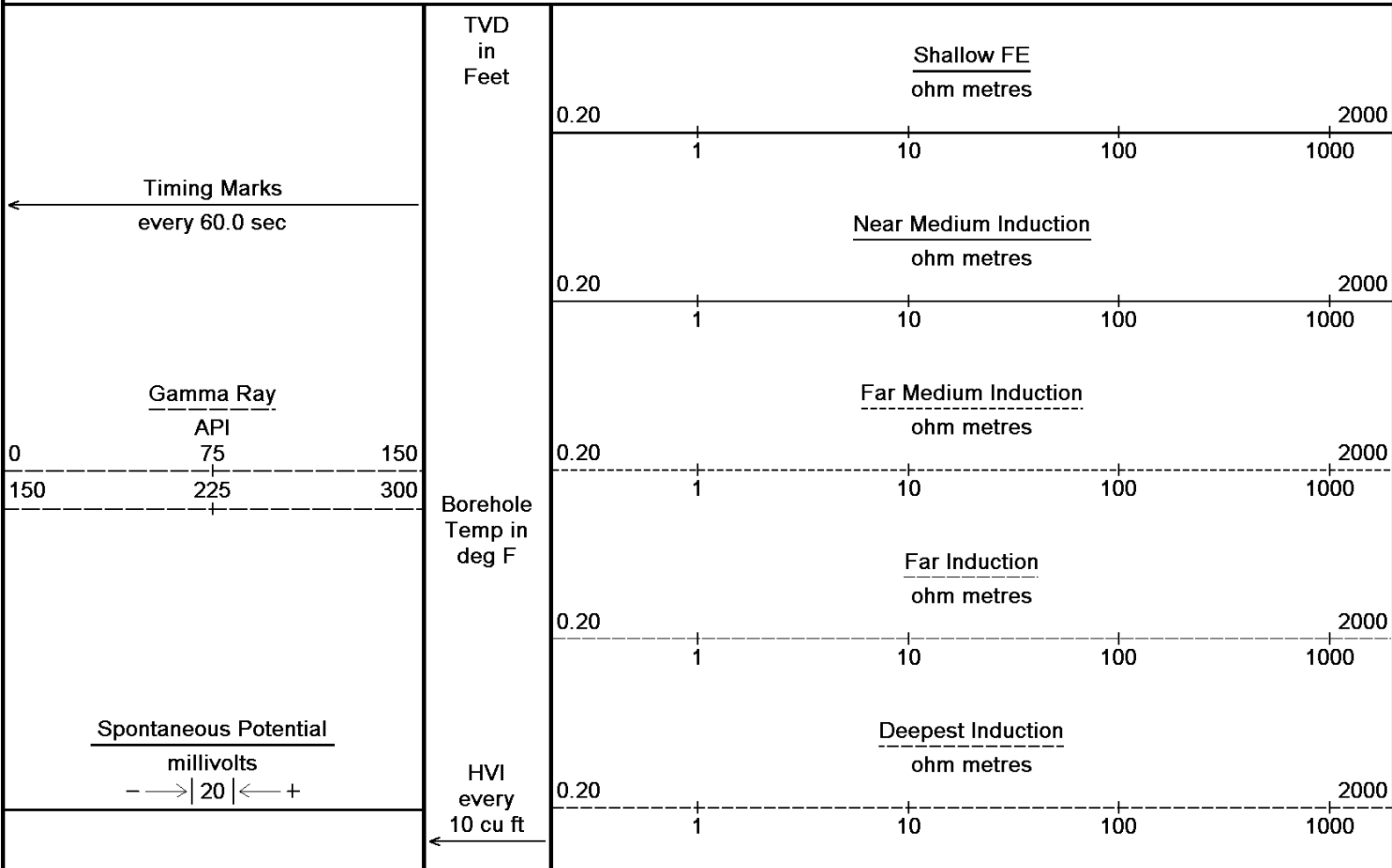


Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\Copy of Main Log.dta Recorded on 23-AUG-2009 16:04  
 System Versions: Plotted with 8.05.0177

↑ **5 Inch Main TVD** ↑

↓ **5 Inch Repeat TVD** ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\Copy of Triple Combo\_002.dta Recorded on 23-AUG-2009 17:34  
 System Versions: Logged with 8.05.0177    Processed with 8.05.0177    Plotted with 8.05.0177



Density Correction  
grams/cc  
-0.90      -0.40      0.10

Apparent Water Res.  
ohm metres  
0      0.25      0.50

Annular  
Integral  
every  
10 cu ft

Replay  
Scale  
1:240

8984  
TVD

9000  
TVD

9050  
TVD

9100  
TVD

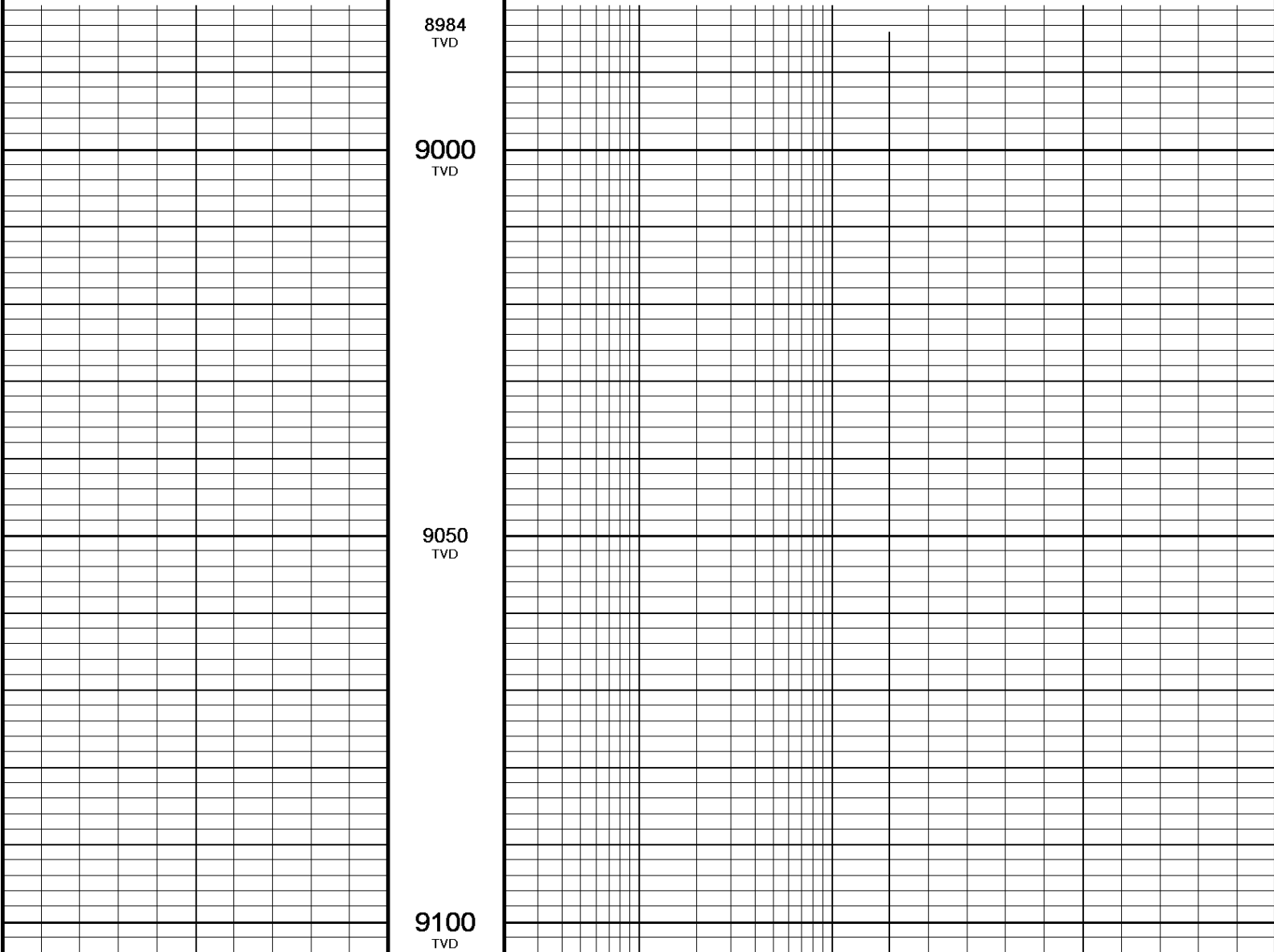
Differential Caliper  
inches  
-20      -10      0      10      20

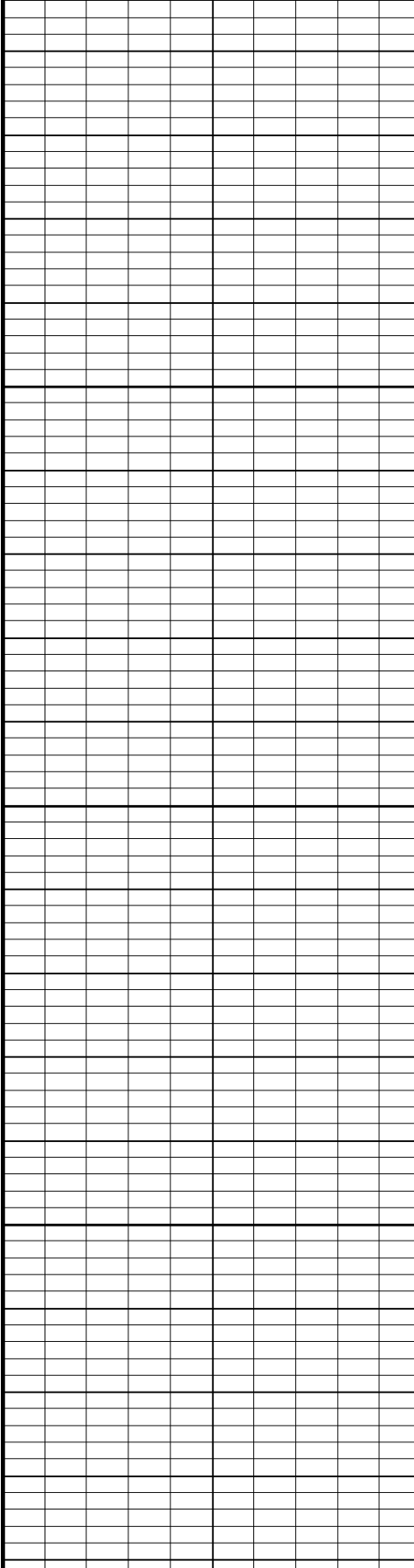
Bit Size  
inches  
-13.25      -3.25      6.75      16.75      26.75

DST Uphole Tension  
pounds  
20000      10000      0  
0      -10000      -20000

Sandstone Neutron Por.  
percent  
60      30      0

Sandstone Density Por.  
percent  
60      30      0



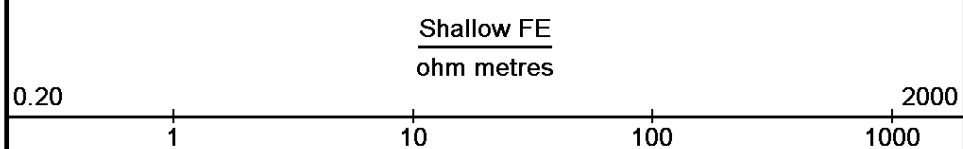
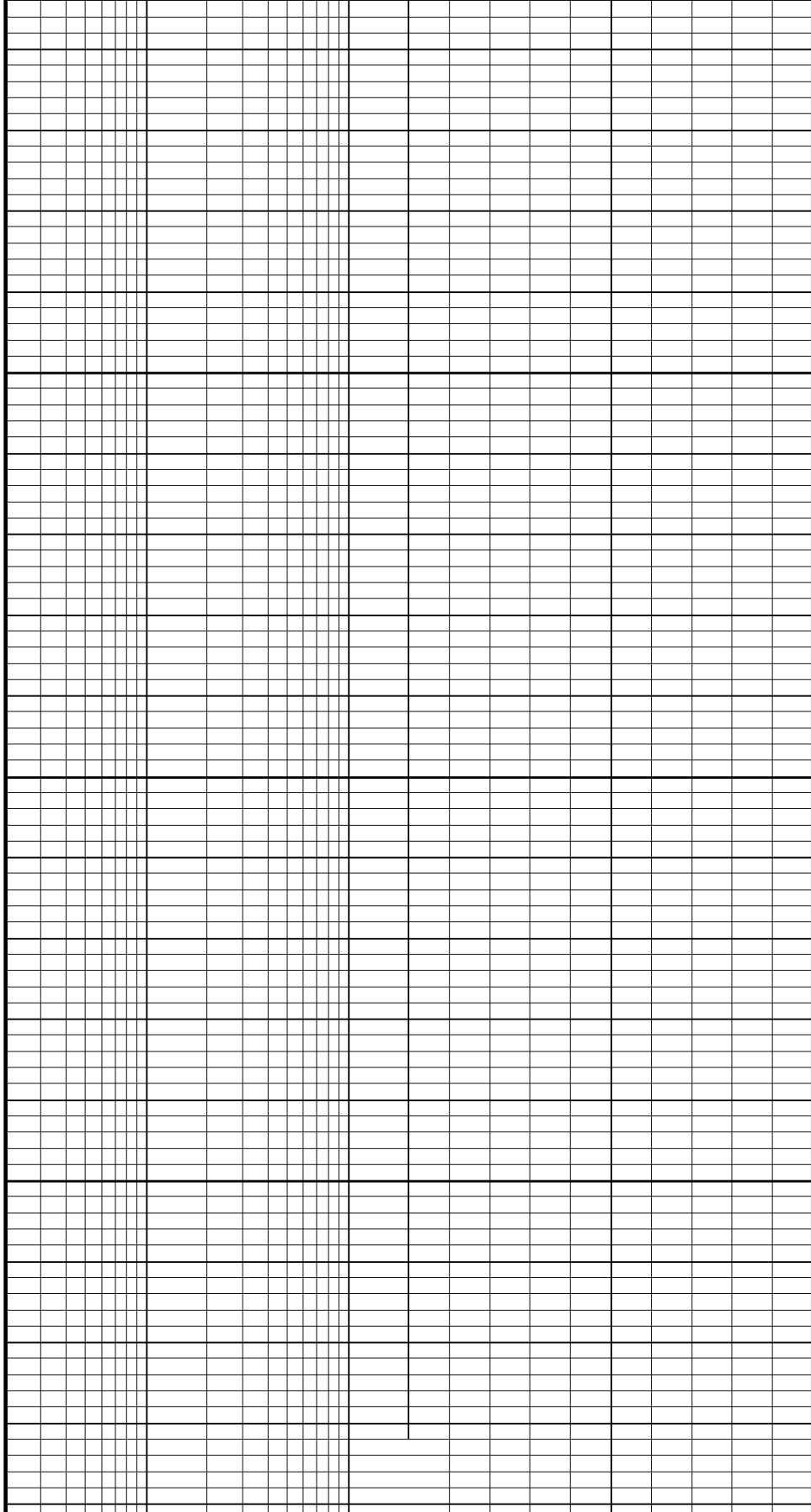


9150  
TVD

9200  
TVD

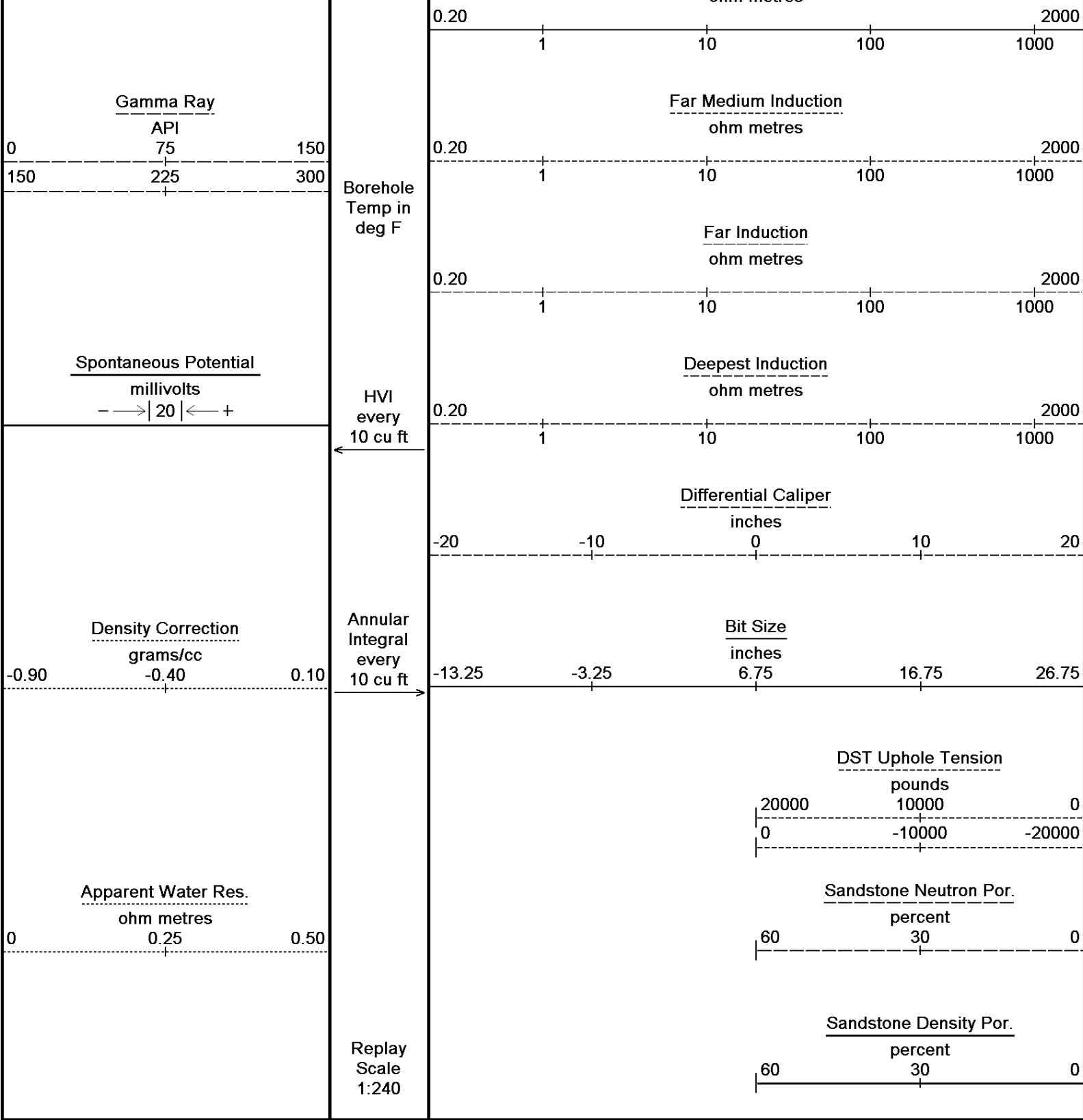
9250  
TVD

9292  
TVD  
in  
Feet



← Timing Marks  
every 60.0 sec

Near Medium Induction  
ohm metres



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 23-AUG-2009 20:06  
 Filename: E:\Logs\Data\Endeavor Natural Gas\Copy of Triple Combo\_002.dta Recorded on 23-AUG-2009 17:34  
 System Versions: Logged with 8.05.0177 Processed with 8.05.0177 Plotted with 8.05.0177

↑ 5 Inch Repeat TVD ↑

**BEFORE SURVEY CALIBRATION**

E:\Logs\Data\Endeavor Natural Gas\Copy of Triple Combo.dta

General Constants All 000

Last Edited on 23-AUG-2009,15:54

General Parameters

Mud Resistivity 0.800 ohm-metres  
 Mud Resistivity Temperature 85.000 degrees F

Water Level	0.000	feet
Density/Neutron Processing	Water Level Switch	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	None	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 000

Field Calibration on 01-OCT-2008 08:41

Reading No	Measured	Calibrated (lbs)
1	14529.71	0.00
2	15052.61	434.00

Gamma Calibration MCG 123

Field Calibration on 23-AUG-2009,13:41

	Measured	Calibrated (API)
Background	71	48
Calibrator (Gross)	838	572
Calibrator (Net)	767	524

Gamma Constants MCG 123

Last Edited on 23-AUG-2009,13:40

Gamma Calibrator Number	GRCC 146	
Mud Density	1.25	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG 123

Field Calibration on 3-AUG-2009,13:37

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

High Resolution Temperature Calibration MCG 123

Field Calibration on 3-AUG-2009,13:37

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MCG 123

Pre-filter Length	11
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Neutron Calibration MDN 105

Base Calibration on 3-AUG-2009 12:35  
Field Check on 12-AUG-2009,08:13

Base Calibration				
		Measured	Calibrated (cps)	
	Near	Far	Near	Far
Ratio	3081	98	3714	110
	31.287		33.764	
Field Calibrator at Base				
			Calibrated (cps)	
Ratio			3030	3360
			0.902	
Field Check				
			Calibrated (cps)	
Ratio			3021	3334
			0.906	

Neutron Constants MDN 105

Last Edited on 23-AUG-2009,13:41

Neutron Source Id	751
Neutron Jig Number	WSV 165
Epithermal Neutron	No
Caliper Source for Processing	Bit Size

Stand-off	0.00	inches
Mud Density	1.25	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	7.00	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

Photo Density Calibration MPD 106

Base Calibration on 3-AUG-2009 11:50  
Field Check on 23-AUG-2009,13:42

Density Calibration				
Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	62048	33069	60331	31878
Reference 2	25184	2878	25171	2536
Field Check at Base				
	1366.4	1467.3		
Field Check				
	1367.4	1469.8		

PE Calibration				
Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	247	1218		
Reference 1	28056	61815	0.459	0.398
Reference 2	7225	25021	0.293	0.272
Field Check at Base				
	247.1	1217.5		
Field Check				
	244.9	1218.4		

Density Constants MPD 106

Last Edited on 23-AUG-2009,15:21

Density Source Id	265	
Nylon Calibrator Number	DNC-E-604	
Aluminium Calibrator Number	DAC-D-604	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.25	gm/cc
Mud Density Z/A Correction	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Advanced	
Matrix Density (gm/cc)		
	Depth (ft)	
2.65		
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

Caliper Calibration MPD 106

Base Calibration on 3-AUG-2009 11:27  
Field Calibration on 23-AUG-2009,13:42

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	21263	4.02

1	21263	4.02
2	30960	6.01
3	40863	7.99
4	51228	10.03
5	61764	11.99
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.94	7.99

FE Calibration MFE 088

Base Calibration on 3-AUG-2009 13:32  
Field Check on 23-AUG-2009,13:42

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.4	126.8
Base Check		279.8
Field Check		279.8

FE Constants MFE 088

Last Edited on 23-AUG-2009,13:42

Running Mode	No Sleeve
MFE K Factor	0.1268
Caliper Source for FE correction	Density Caliper
Caliper Value for FE correction	N/A inches
Rm Source for FE correction	Temperature Corr
Temp. for Rm Corr.	MCG External Temperature
Stand-off	0.5 inches

Induction Calibration MAI 077

Base Calibration on 21-AUG-2009,10:35  
Field Check on 23-AUG-2009,13:43

Base Calibration

Test Loop Calibration	Measured	Calibrated (mmho/m)
Channel	Low High	Low High
1	14.0 459.1	9.3 966.2
2	5.4 370.9	7.6 821.4
3	2.8 253.1	5.2 566.0
4	2.1 131.8	2.6 279.2

Array Temperature 65.0 Deg F

Channel	Base Check (mmho/m)	Field Check (mmho/m)
	Low High	Low High
1	20.8 3937.5	20.8 3937.7
2	32.6 3628.5	32.6 3628.7
3	30.5 3113.8	30.5 3114.0
4	19.4 2101.0	19.4 2101.1
Deep	18.3 2003.5	18.3 2003.5
Medium	44.5 4127.5	44.6 4127.6
Shallow	49.4 5403.0	49.3 5403.2

Array Temperature 85.9 86.1 Deg F

Induction Constants MAI 077

Last Edited on 23-AUG-2009,13:42

Induction Model	ENHANCED
Caliper for Borehole Corr.	Density Caliper
Hole Size for Borehole Correction	N/A inches
Tool Centred	No
Stand-off Type	Pineapple
Stand-off	0.49 inches
Number of Fins on Stand-off	5.0000
Stand-off Fin Angle	72.00 degrees
Stand-off Fin Width	1.3878 inches
Borehole Corr. Rm Source	Temperature Corr
Temp. for Rm Corr.	MCG External Temperature
Squasher Start	0.0020 mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
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DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m

High Resolution Temperature Calibration MAI 077

Field Calibration on 21-AUG-2009,10:34

	Measured	Calibrated(Deg F)
Lower	0.00	0.00
Upper	0.00	0.00

High Resolution Temperature Constants MAI 077

Last Edited on 21-AUG-2009,10:34

Pre-filter Length 11

### DOWNHOLE EQUIPMENT

E:\Logs\Data\Endeavor Natural Gas\COPY of Triple Combo.dta

MCC-A 11C Tension Cablehead  
MCC 1 Length: 2.40 ft Weight: 19.8 lb

11C-11B MTA-A Compact Tool Adaptor  
MTA 1 Length: 1.53 ft Weight: 13.2 lb

SHA-H Compact Swivel Head Adaptor  
SHA 112 Length: 2.30 ft Weight: 22.0 lb

Compact Gamma  
MCG 123 Length: 8.70 ft Weight: 63.9 lb



34.89 ft GRGC - Gamma Ray

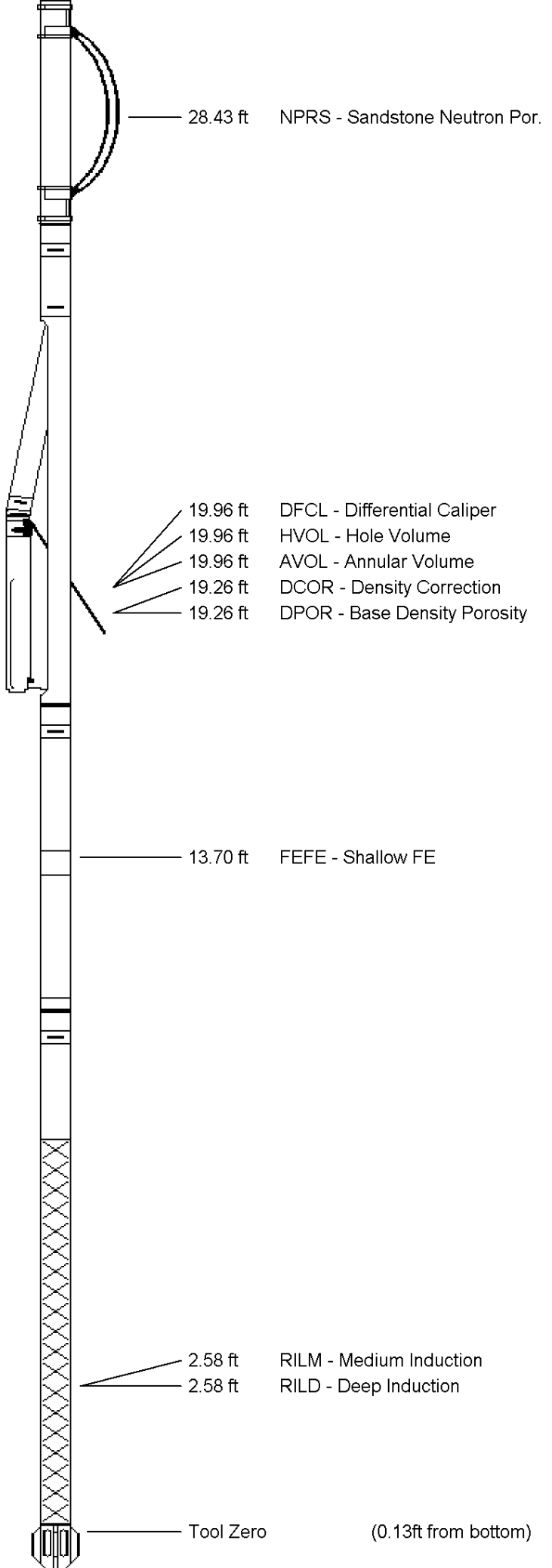
31.98 ft CGXT - MCG External Temperature

Compact Neutron  
MDN 105 Length: 5.04 ft Weight: 50.7 lb

Compact Density/Caliper  
MPD 106 Length: 9.59 ft Weight: 90.4 lb

Compact Focussed Electric  
MFE 88 Length: 6.03 ft Weight: 48.5 lb

Compact Induction  
MAI 77 Length: 10.81 ft Weight: 48.5 lb



28.43 ft NPRS - Sandstone Neutron Por.

19.96 ft DFCL - Differential Caliper  
19.96 ft HVOL - Hole Volume  
19.96 ft AVOL - Annular Volume  
19.26 ft DCOR - Density Correction  
19.26 ft DPOR - Base Density Porosity

13.70 ft FEFE - Shallow FE

2.58 ft RILM - Medium Induction  
2.58 ft RILD - Deep Induction

Tool Zero (0.13ft from bottom)

Total

Length: 46.39 ft

Weight: 357.1 lb

All measurements relative to tool zero.

COMPANY ENDEAVOR NATURAL GAS, LP.  
 WELL LAKE ARTHUR RECLAMATION CO. #1  
 FIELD PERREAU ISLAND  
 PROVINCE/COUNTY CAMERON  
 COUNTRY/STATE USA / LOUISIANA

Elevation Kelly Bushing	28.50	feet	First Reading	12813.00	feet
Elevation Drill Floor	27.50	feet	Depth Driller	12888.00	feet
Elevation Ground Level	-1.50	feet	Depth Logger	12814.00	feet



**Weatherford**<sup>®</sup>

ARRAY INDUCTION / RSFE  
 PHOTO DENSITY / NEUTRON  
 GAMMA RAY LOG