

Tucker
ENERGY SERVICES

PHASED INDUCTION
SHALLOW FOCUS SP LOG

Company MTM PETROLEUM INC.
Well HUFFORD #1-23
Field
County KINGMAN
State KANSAS
Country USA
API No. 15-095-22287

File No : TUL-59782
Company : MTM PETROLEUM INC.
Well : HUFFORD #1-23
Field :
County : KINGMAN
State : KANSAS
Country : USA
API No : 15-095-22287

Location :
2310' FSL & 330' FEL
NE NE SE

LSD : Sect : 23 Twp : 30S Rge : 7W

Permanent Datum: GL Elevations: KB 1488.00 Ft CNT PIT
Drilling Measured From: KB DF 1487.00 Ft LDT
Log Measured From: KB GL 1478.00 Ft MLT
Above Permanent Datum: 10.00 Ft

Date	2014-08-19		
Run Number	1		
Depth--Driller	4282.0	Ft	
Depth--Logger	4282.0	Ft	
First Reading	4282.0	Ft	
Last Reading	225.0	Ft	
Casing--Driller	225.0	Ft	
Casing--Logger	225.0	Ft	
Bit Size	7.875	In	
Casing Size	8.625	In	
Hole Fluid Type	WBM		
Density	9.2		
Fluid Loss	8.8		
PH/Viscosity	10.5	50.0	
Sample Source	MEASURED		
RMF@Measured Temp.	1.500	@ 80 F	
RMF@Measured Temp	1.280	@ 80 F	
RMF@Measured Temp.	1.730	@ 80 F	
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.990	@ 125 F	
Time Circulation Stopped	2014-08-19 05:00		
Max Recorded Temp.	127	F	
Equipment/Base	T-126	TULSA	
Recorded By	S.K. DAVIS		
Witnessed By	A. YOUNG / N. MILLER		

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	4282.00	8.625	24.00	225.00	0.00

Run Number	1	
Date	2014-08-19	
Date/Time On Bottom	2014-08-19 09:00	
Depth to Fluid	0.0 Ft	
Salinity	4000.000	
RMF@BHT	0.840 @ 125 F	
RMC@BHT	1.140 @ 125 F	

Run Number 1

Comments

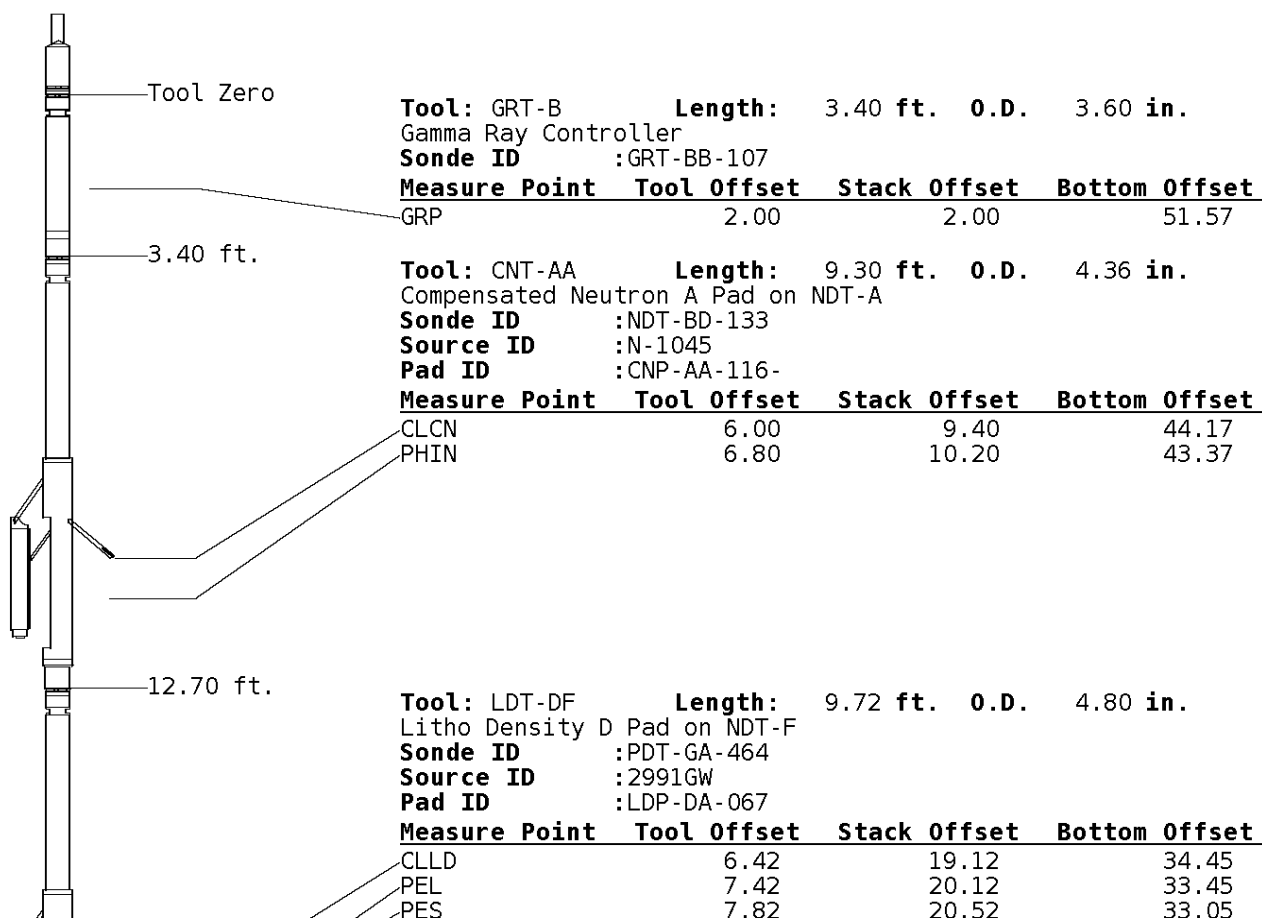
ALL PRESENTATION PER CUSTOMER REQUEST
 GRT,CNT,LDT,PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 DETAIL SECTION FROM TD TO 3000'
 ANHYDRITE SECTION FROM 1150' TO 750'

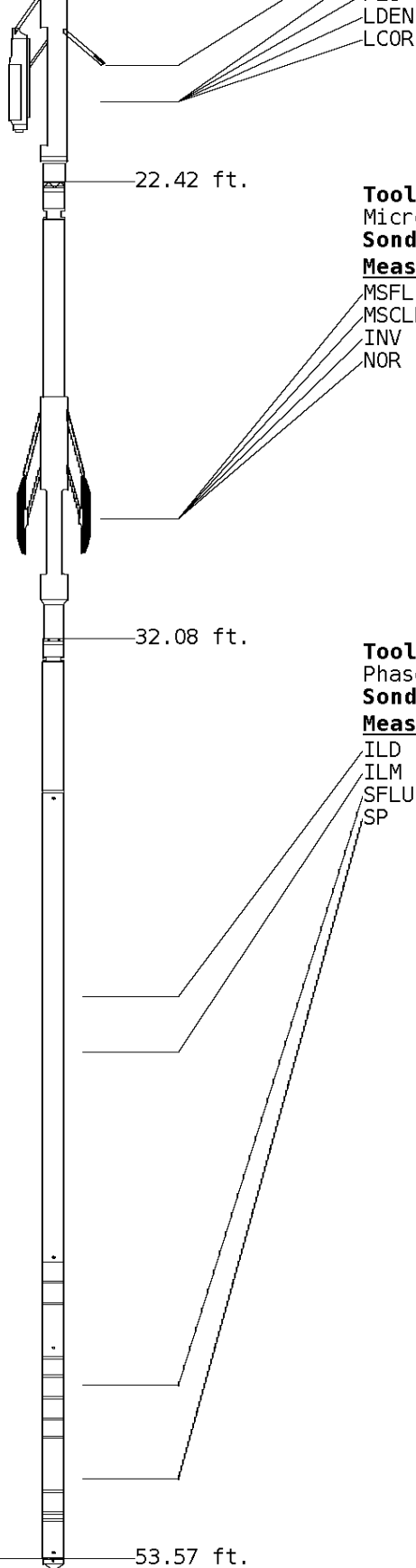
GRT; GRP,
 CNT; PHIN, CLCNIN
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
 MLT; NOR.RF, INV.RF, MSCLPIN.
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS;
 M. DRUEPPEL
 C. GONZALES

Tool String Schematic

Total Tool Length - 53.57 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.





Tool: MST-DA Length: 9.66 ft. O.D. 6.00 in.
 Micro Spherically Focused (IC)
 Sonde ID :MST-DA-057

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55

Tool: PIT-CA Length: 21.49 ft. O.D. 3.62 in.
 Phased Dual Induction w/ RM & D
 Sonde ID :PIT-AB-005

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88

Well File: mtm-huff-1-23-mstk-aug-19

Scale: 1:600 Format: DIL-600

Segment: V1.D1.S7 Accordion Shift main 10 td

Acquired: 2014-08/19 09:07 3.3.0-12594

Reference: 0

Processed: 2014-08/19 10:22 3.3.0-12594

TENSION
LBS

10000

0

DEEP INDUCTION
OHMM

0.0

500.0

0.0

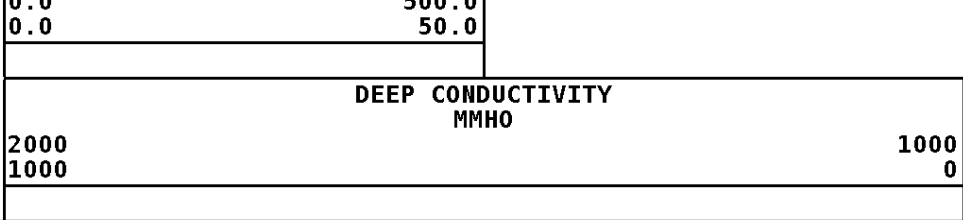
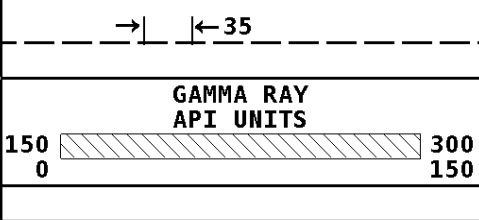
50.0

SPONTANEOUS POTENTIAL
mV

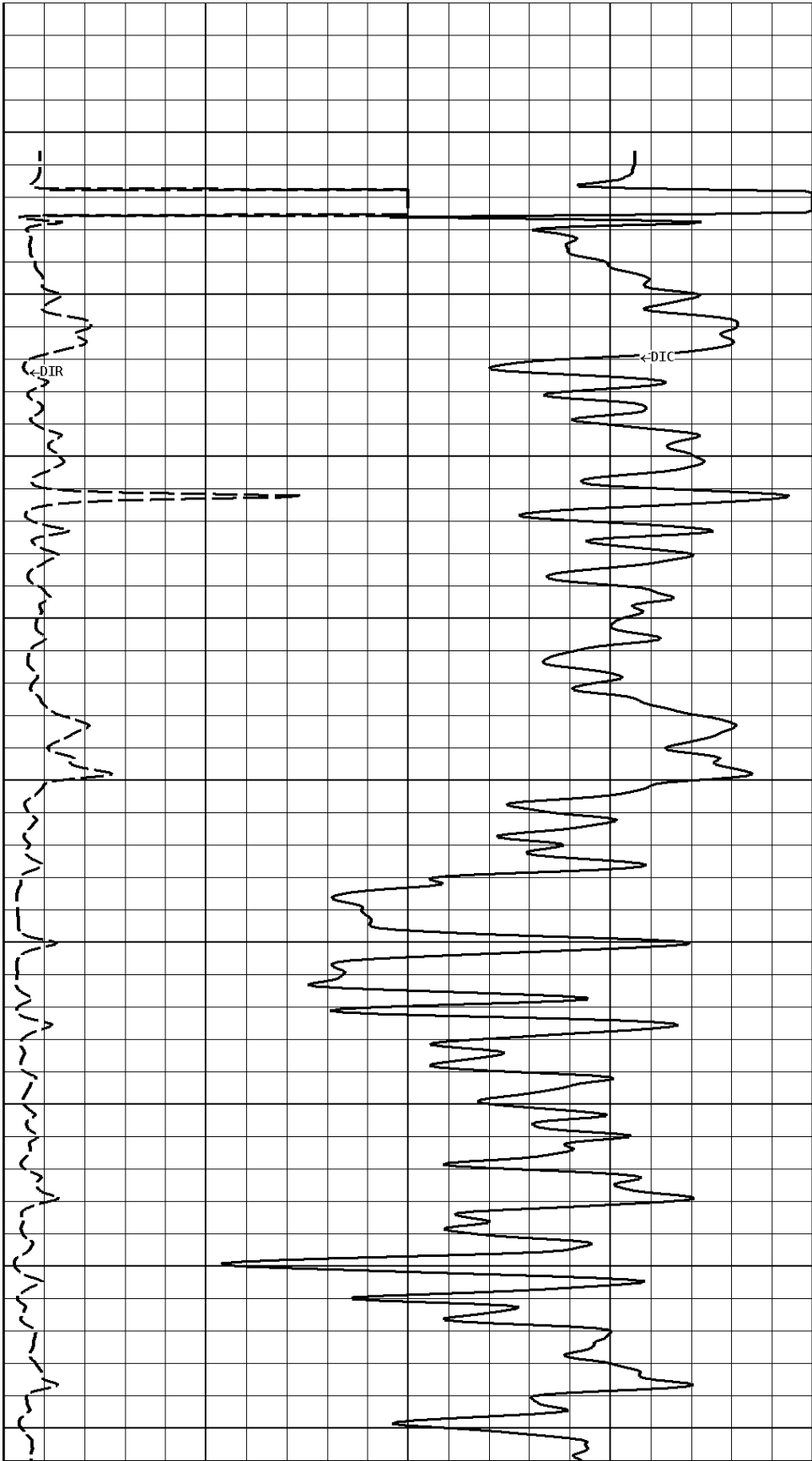
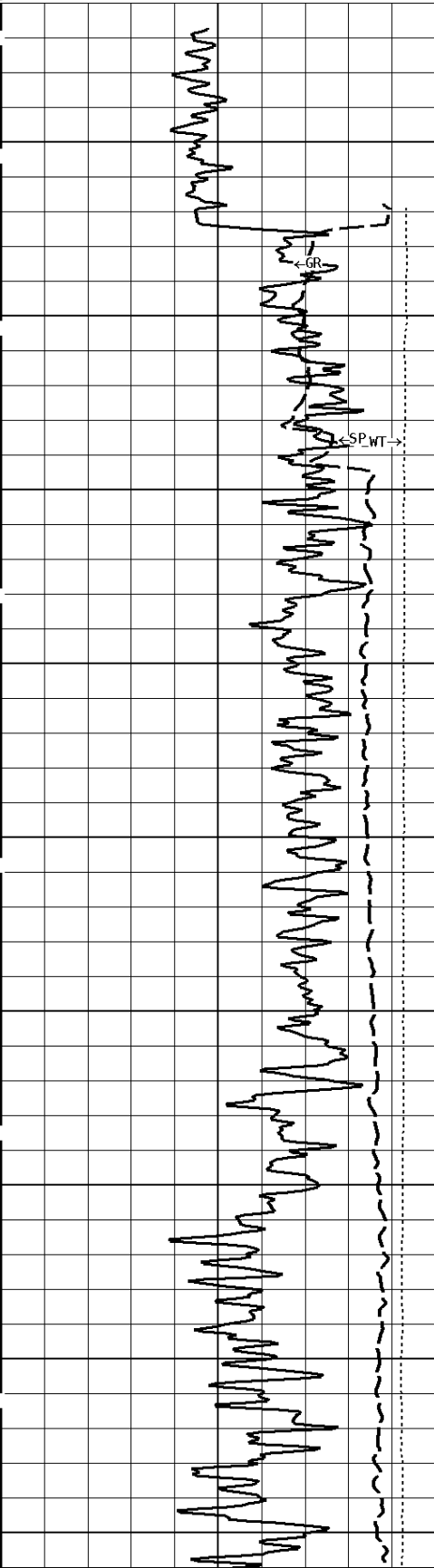
SHALLOW FOCUSED RESISTIVITY
OHMM

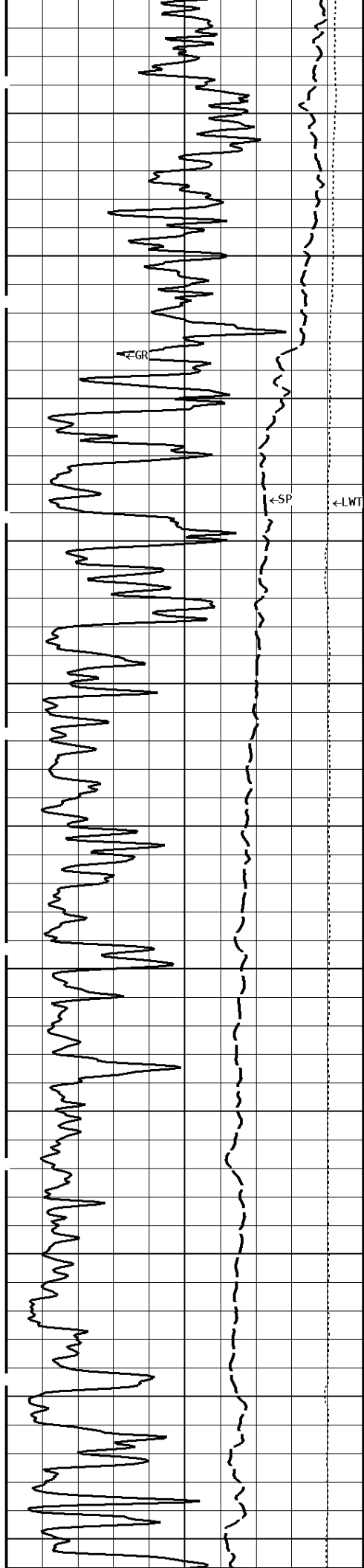
0.0

500.0



1:600 MAIN SECTION





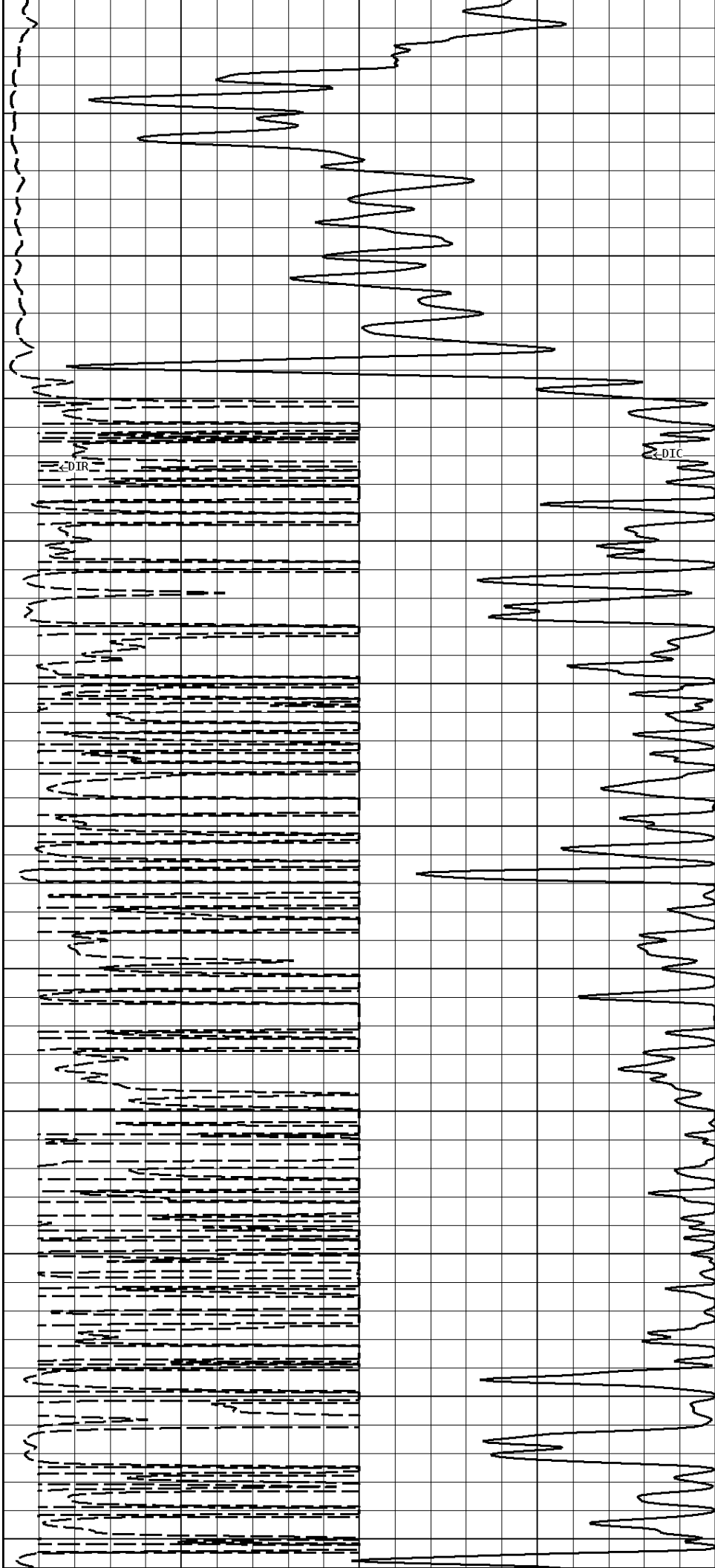
700

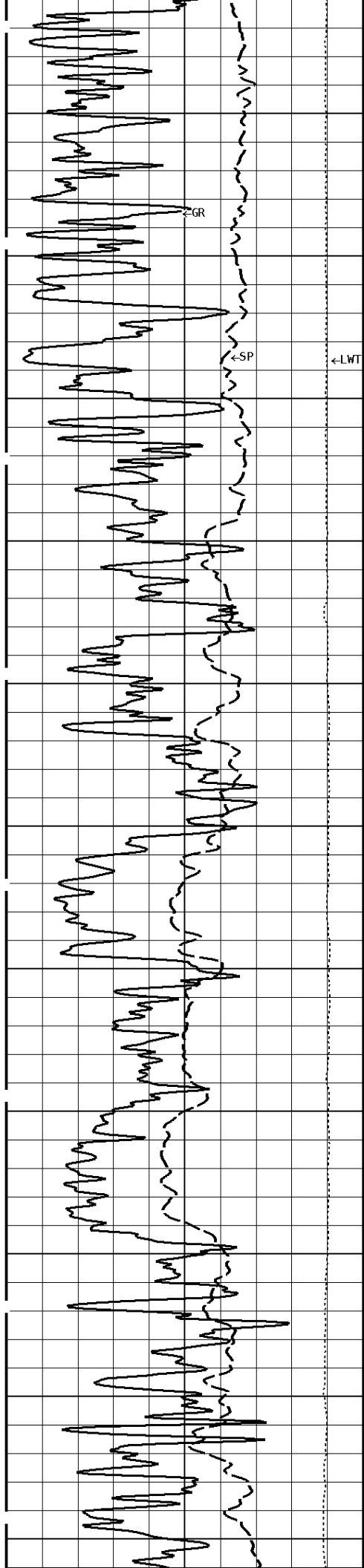
800

900

1000

1100





1200

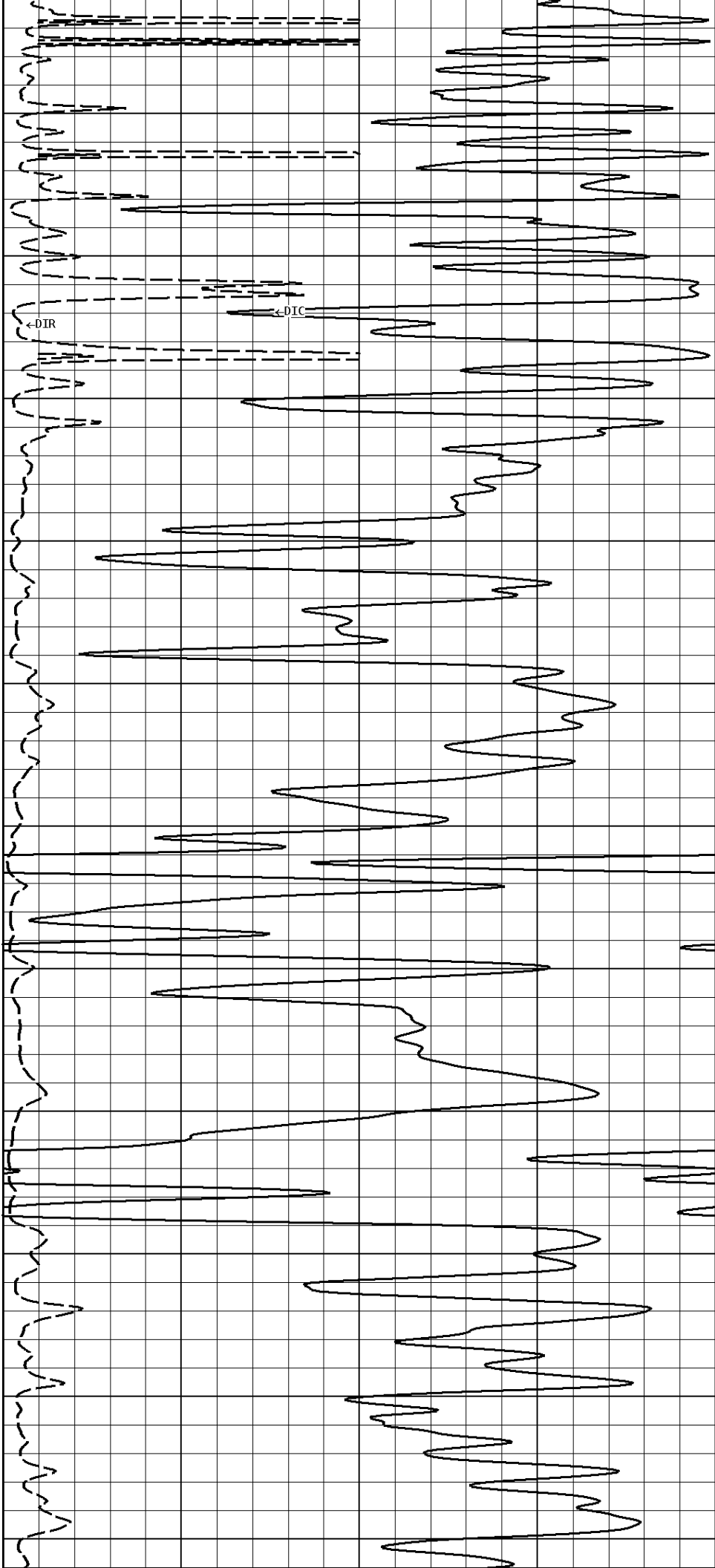
1300

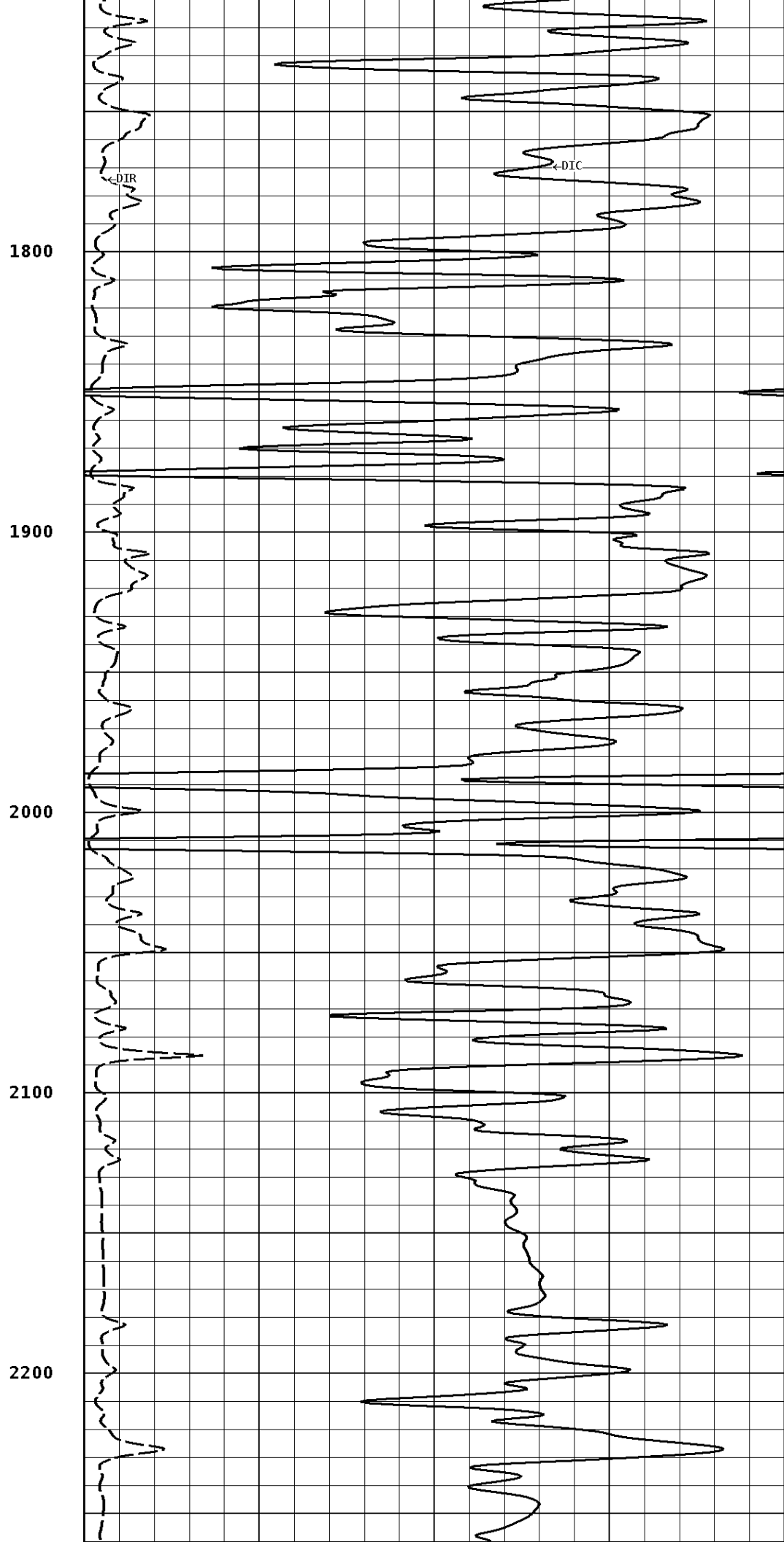
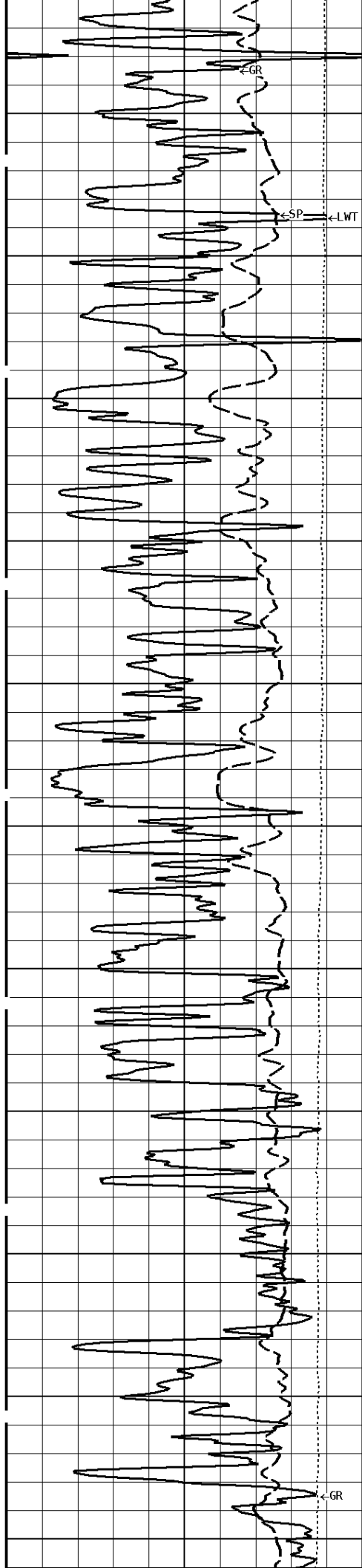
1400

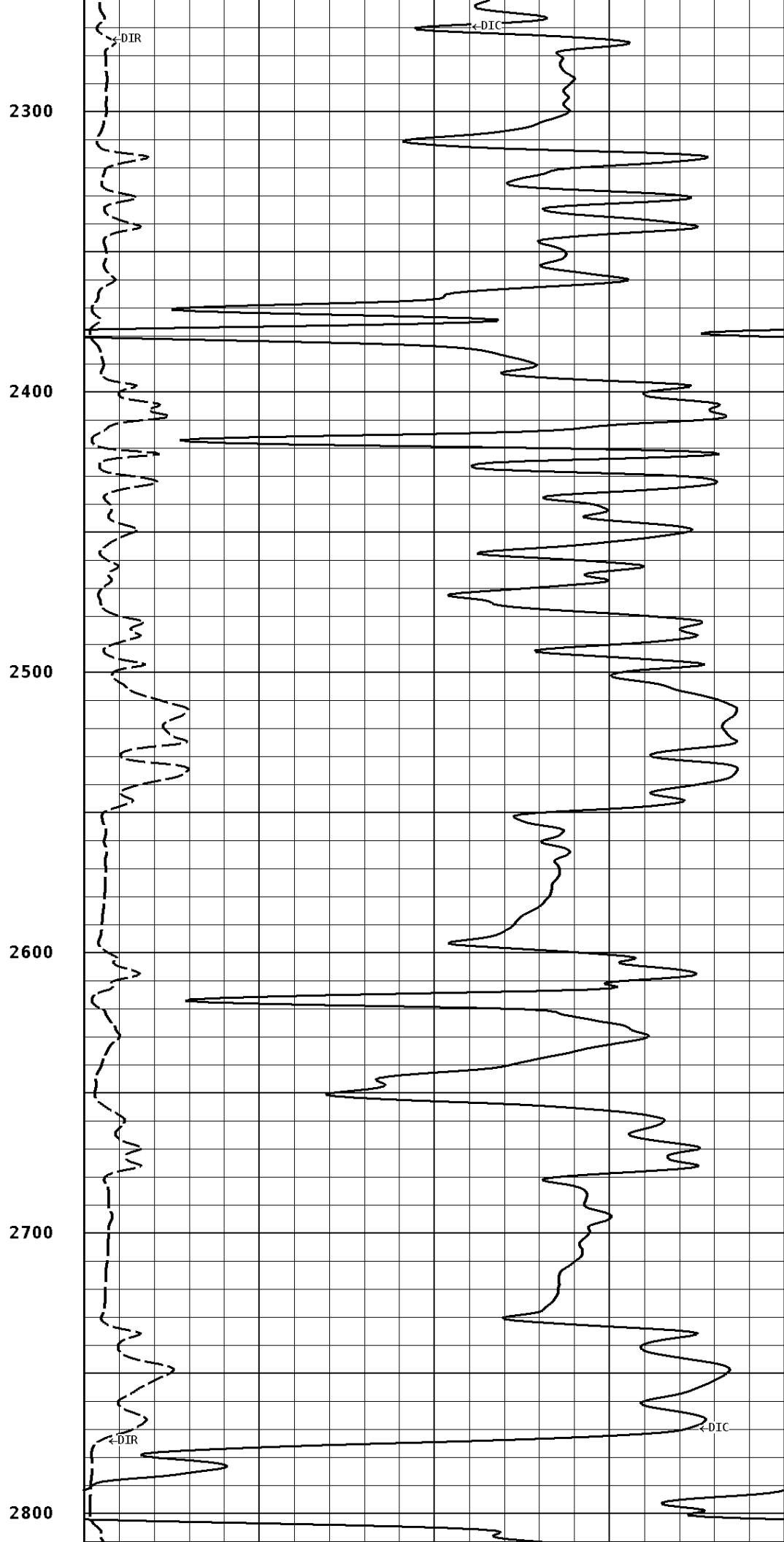
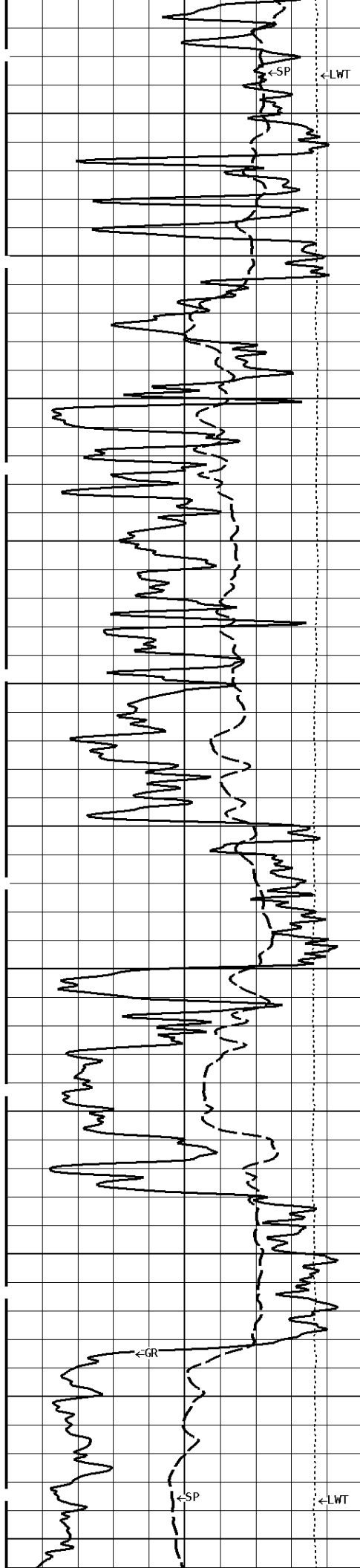
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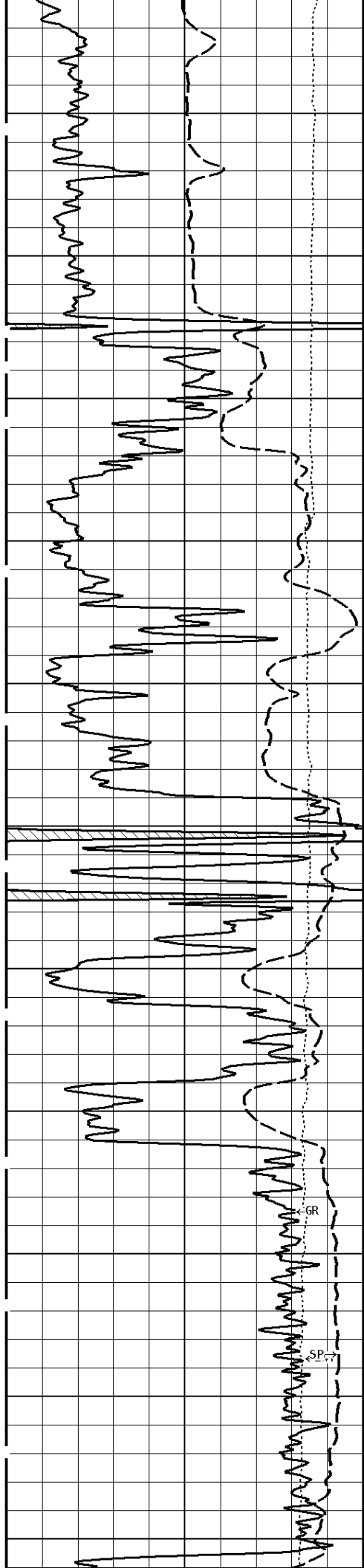
1600

1700









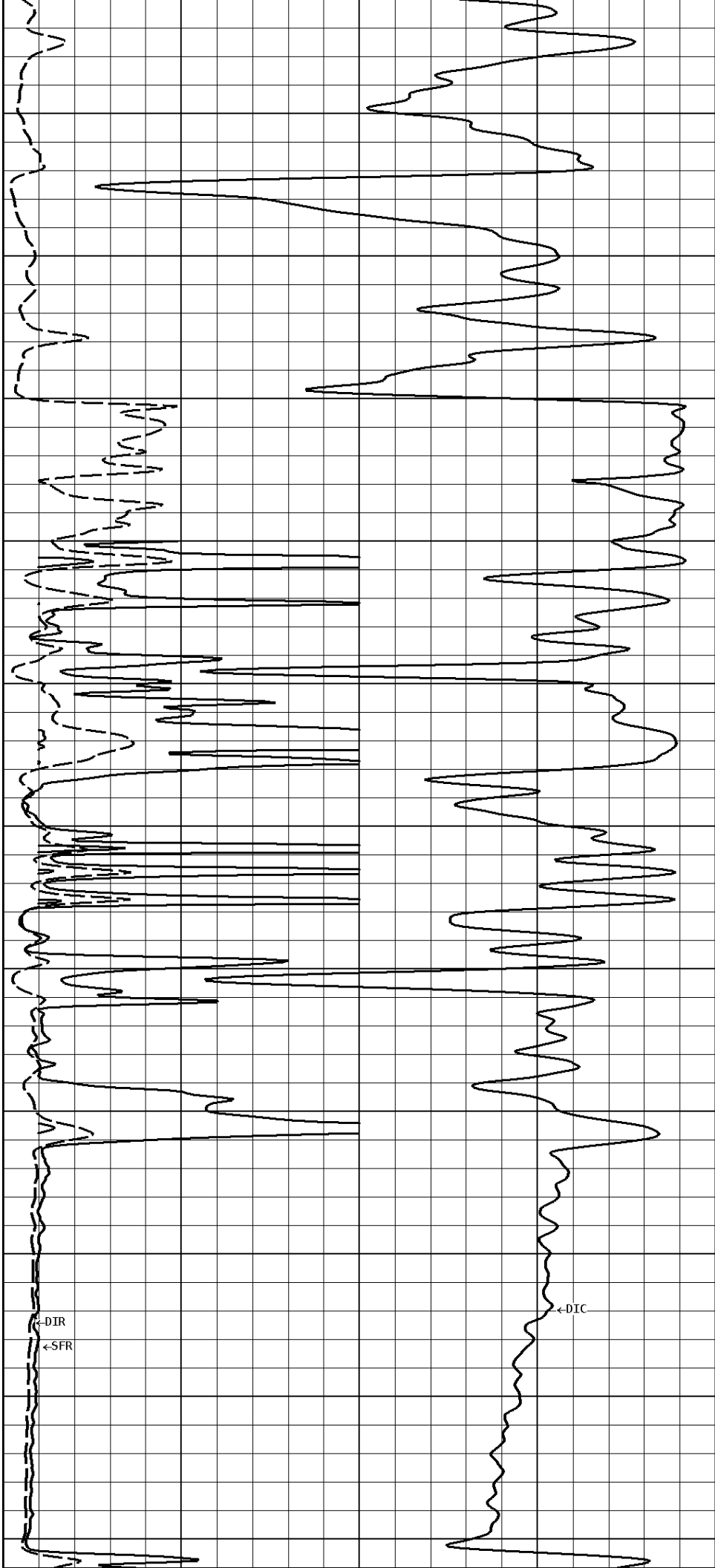
2900

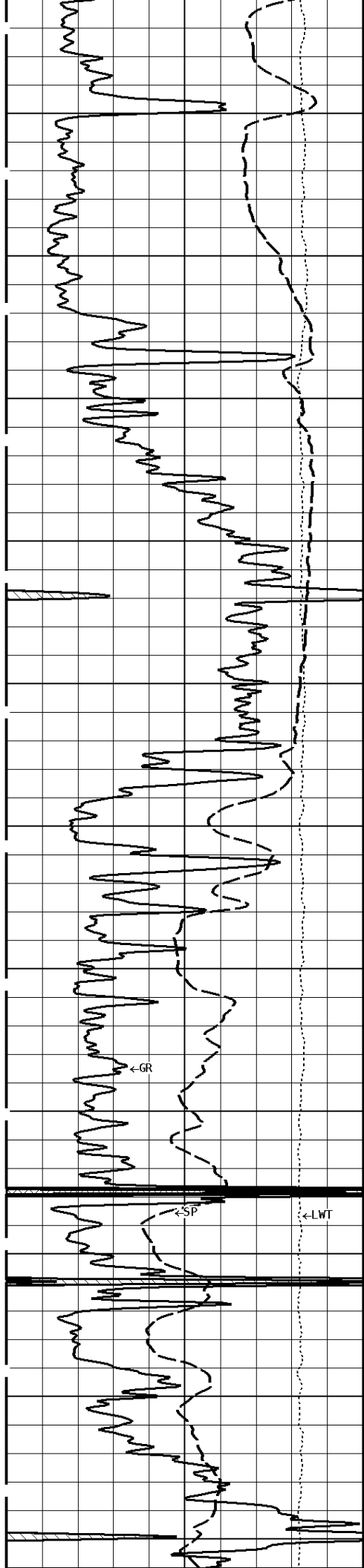
3000

3100

3200

3300





3400

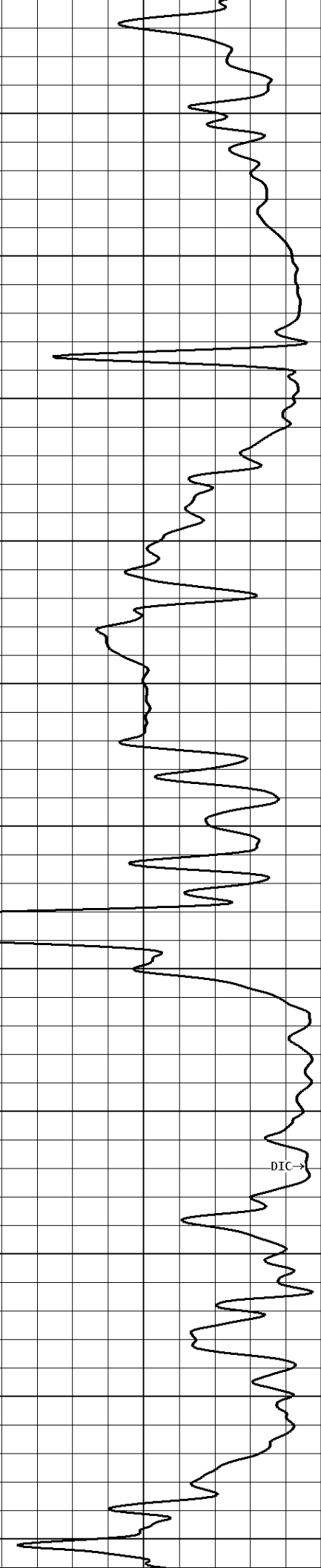
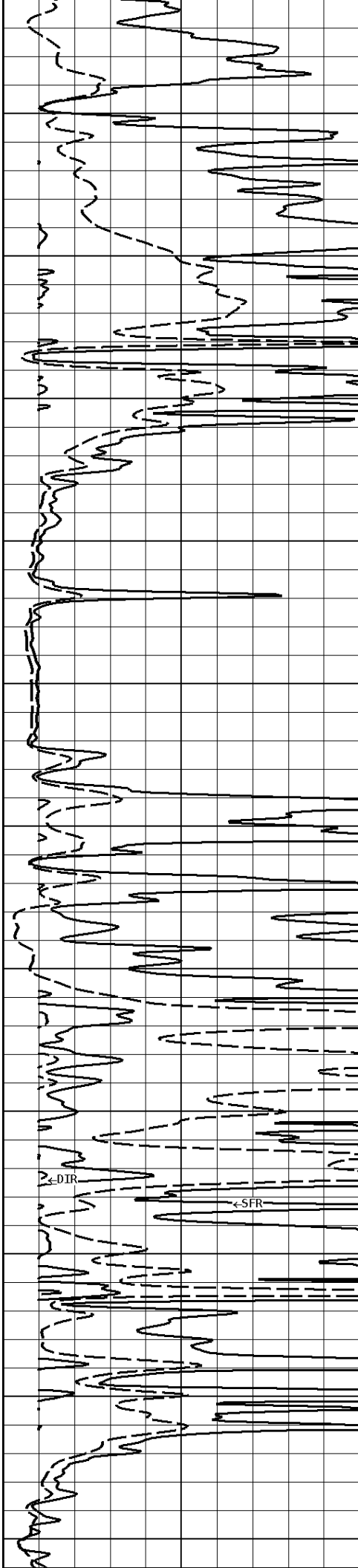
3500

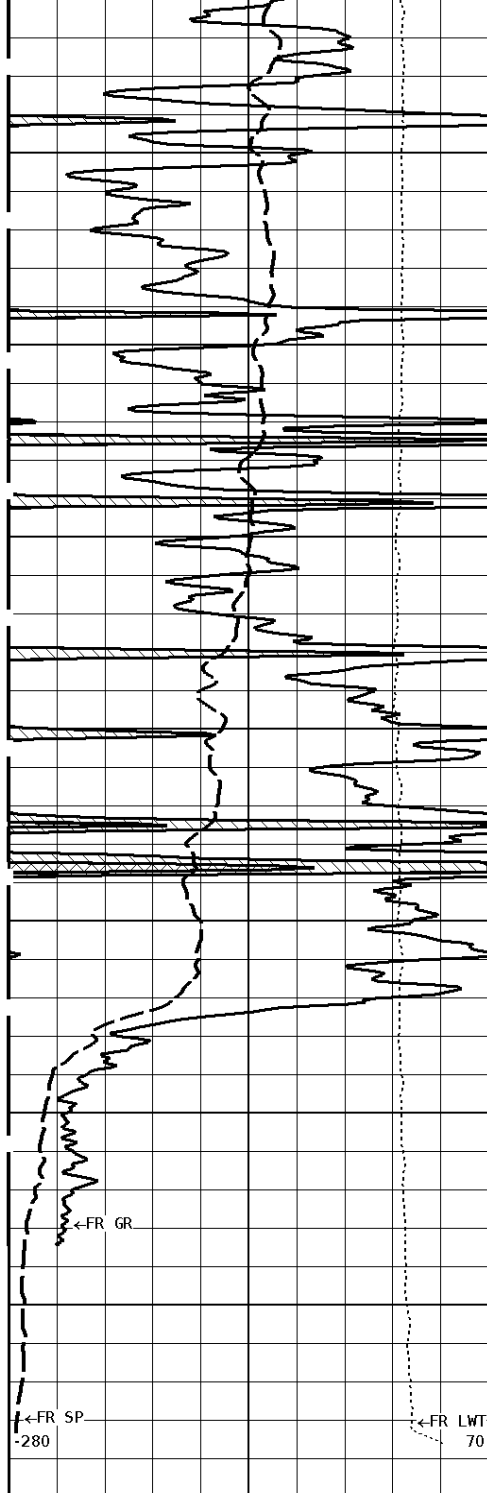
3600

3700

3800

3900



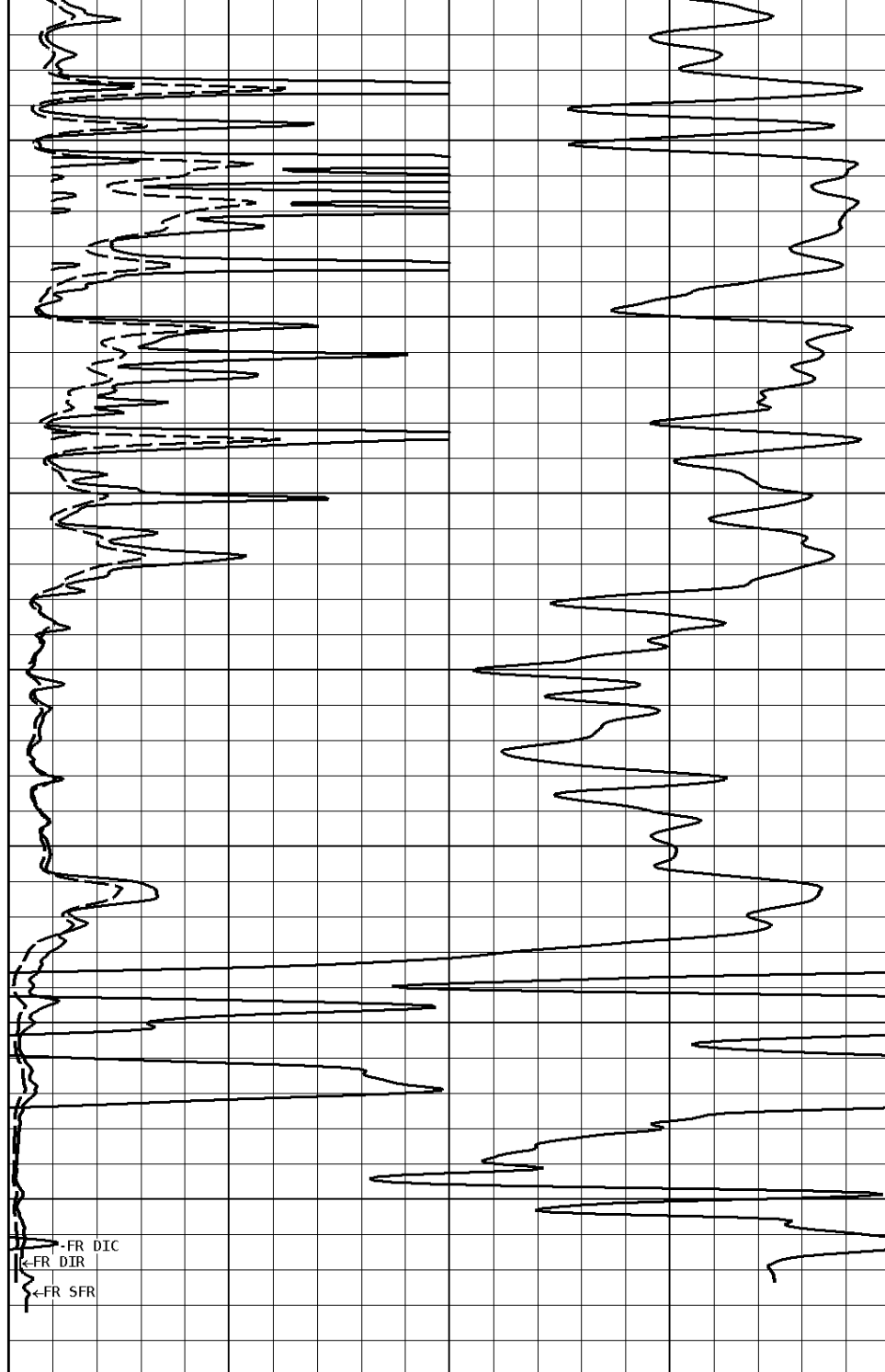


4000

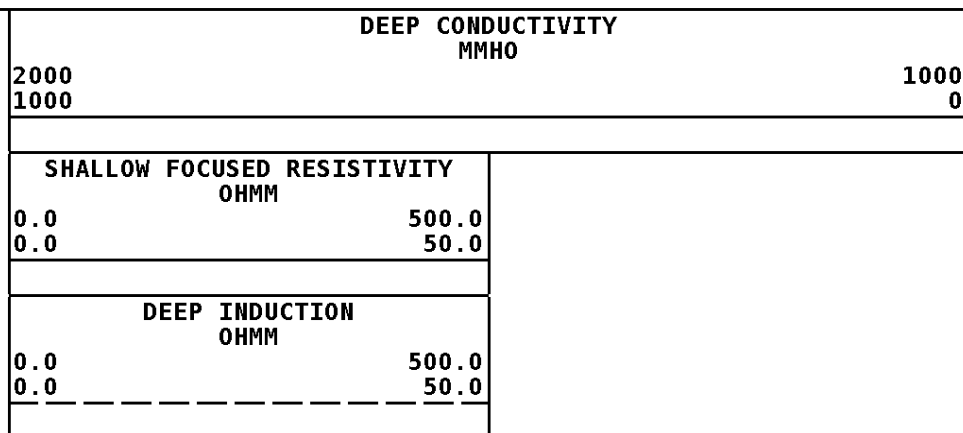
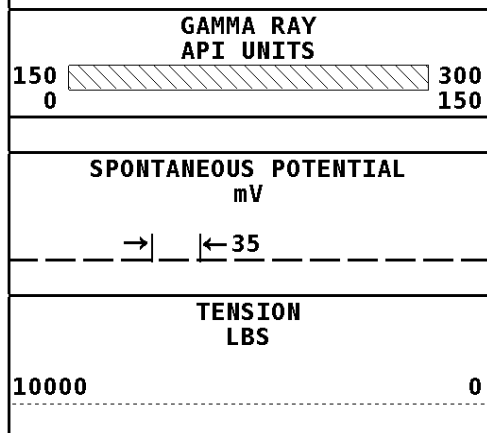
4100

4200

4282



1:600 MAIN SECTION



Well File:mtm-huff-1-23-mstk-aug-19

Segment: V1.D1.S7 Accordion Shift main 10 td

Reference: 0

Scale: 1:240

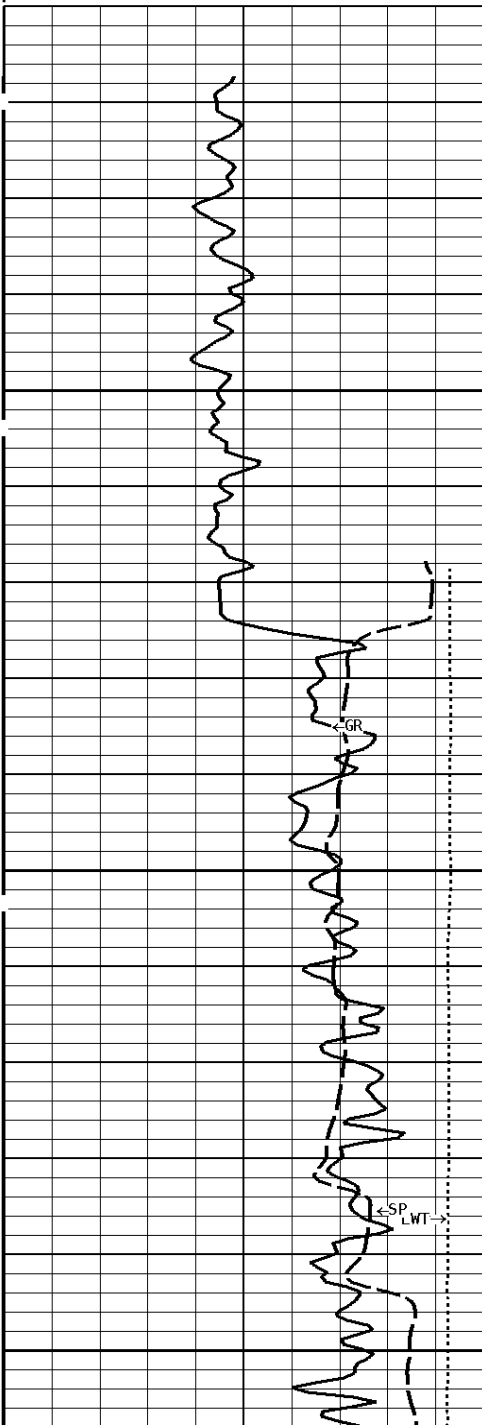
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Processed: 2014-08/19 10:22 3.3.0-12594

Format: DIL-240

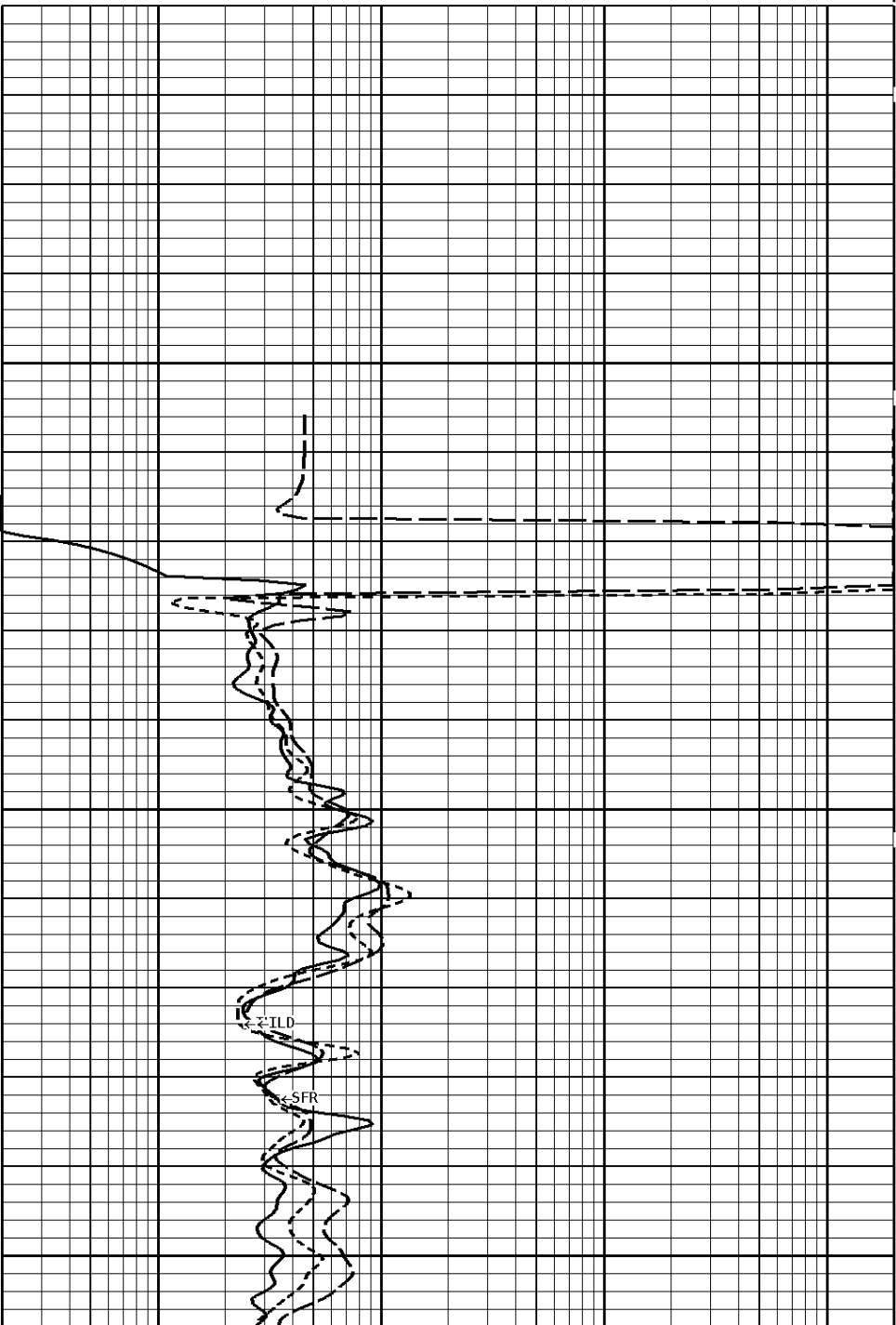
SPONTANEOUS POTENTIAL mV → ←35		DEEP INDUCTION OHMM 0.22000.0
TENSION LBS 100000		MEDIUM INDUCTION OHMM 0.22000.0
GAMMA RAY API UNITS 1500300		SHALLOW FOCUSED RESISTIVITY OHMM 0.22000.0

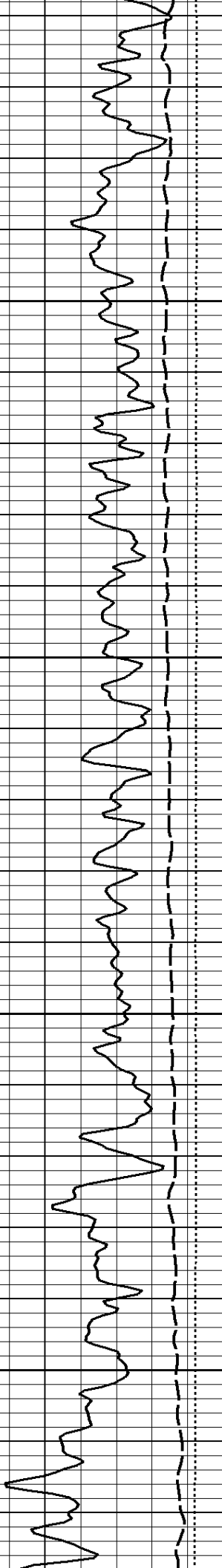
1:240 MAIN SECTION



200

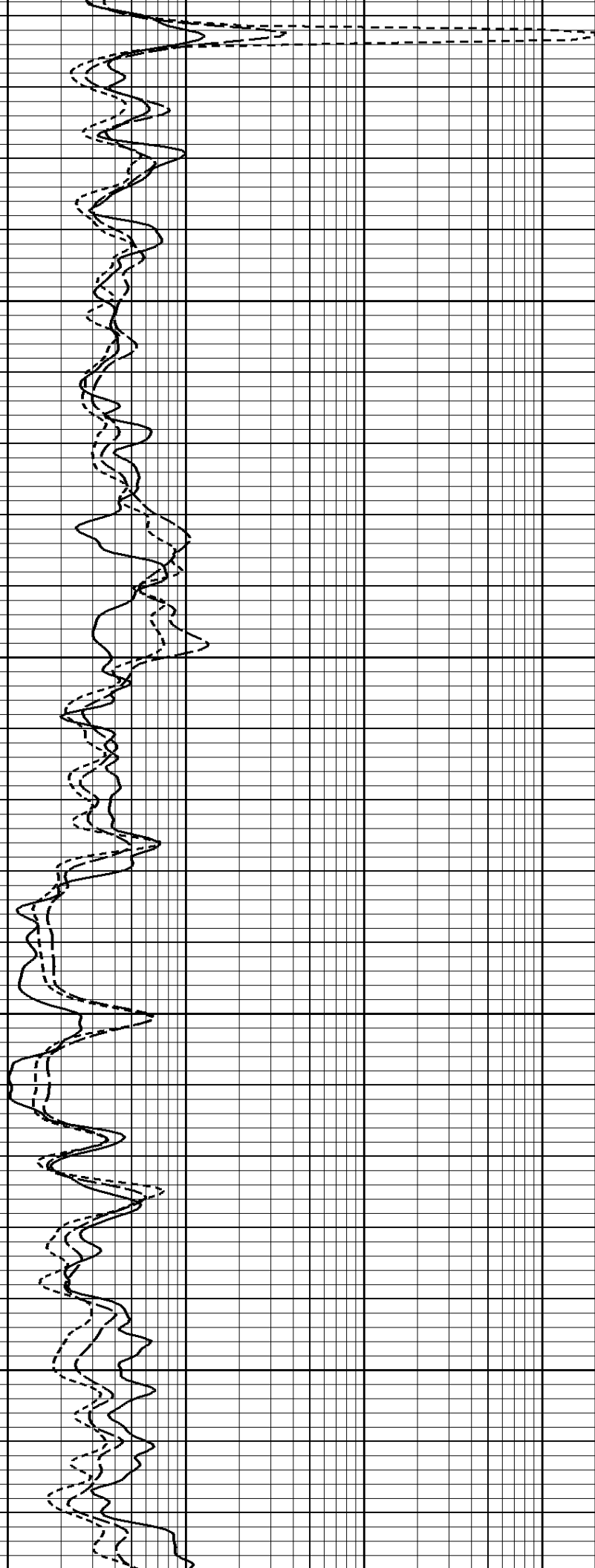
300





400

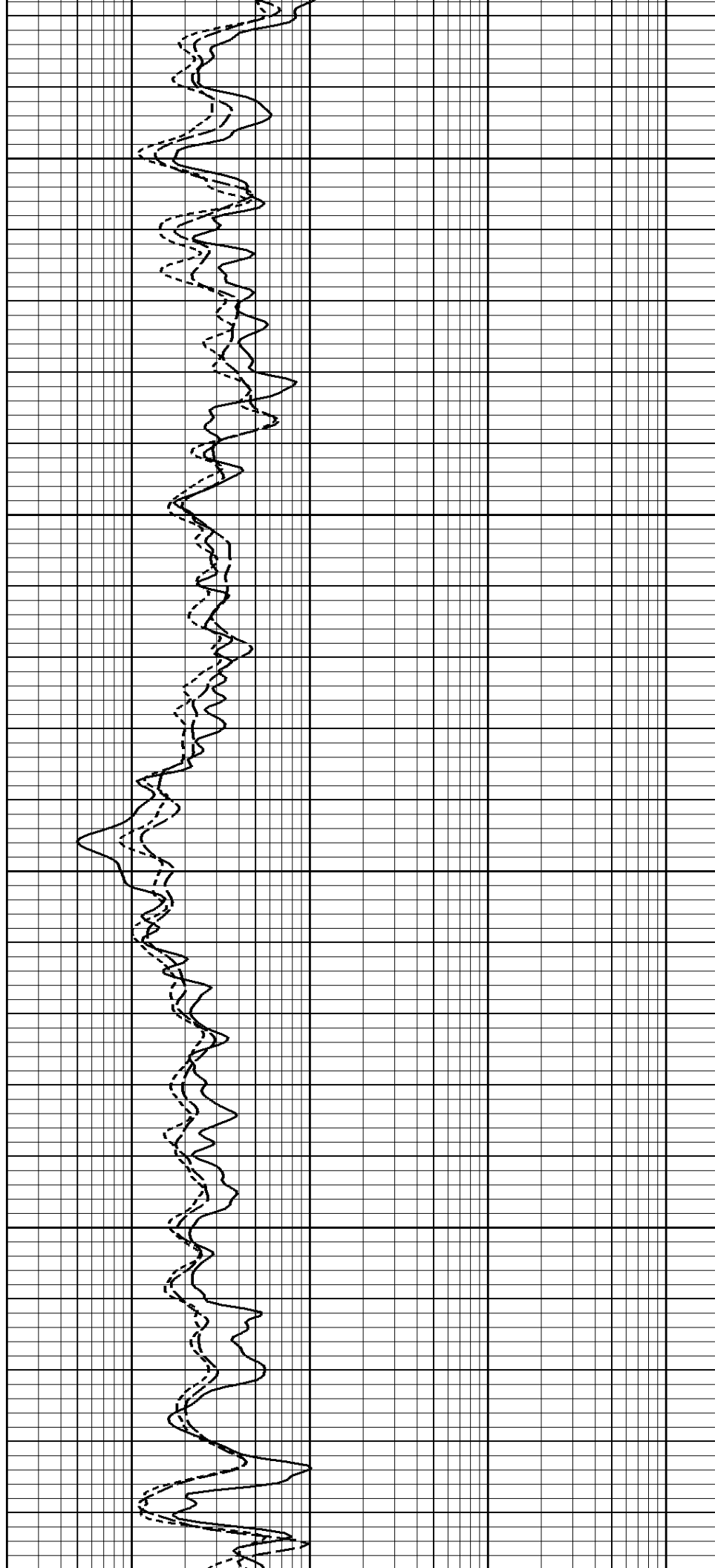
500

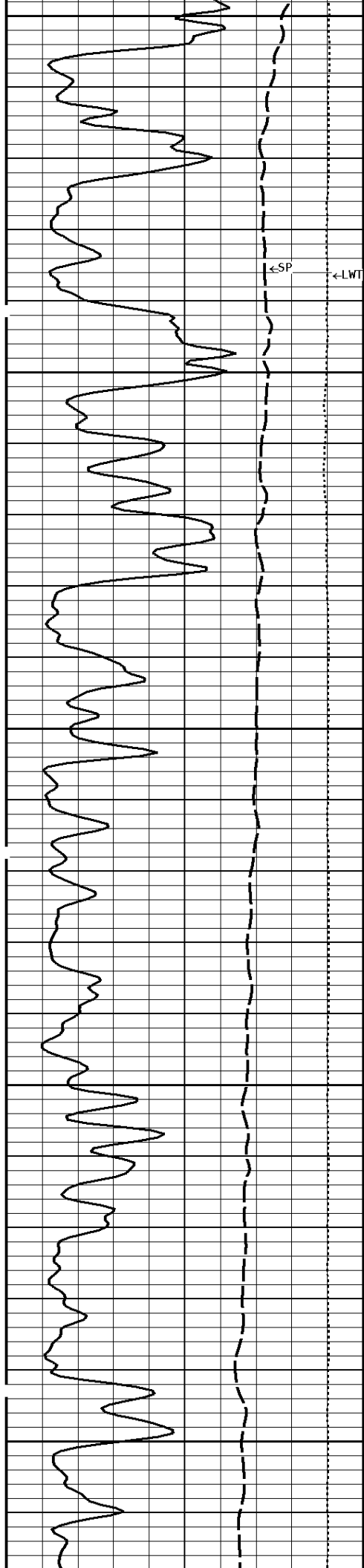




600

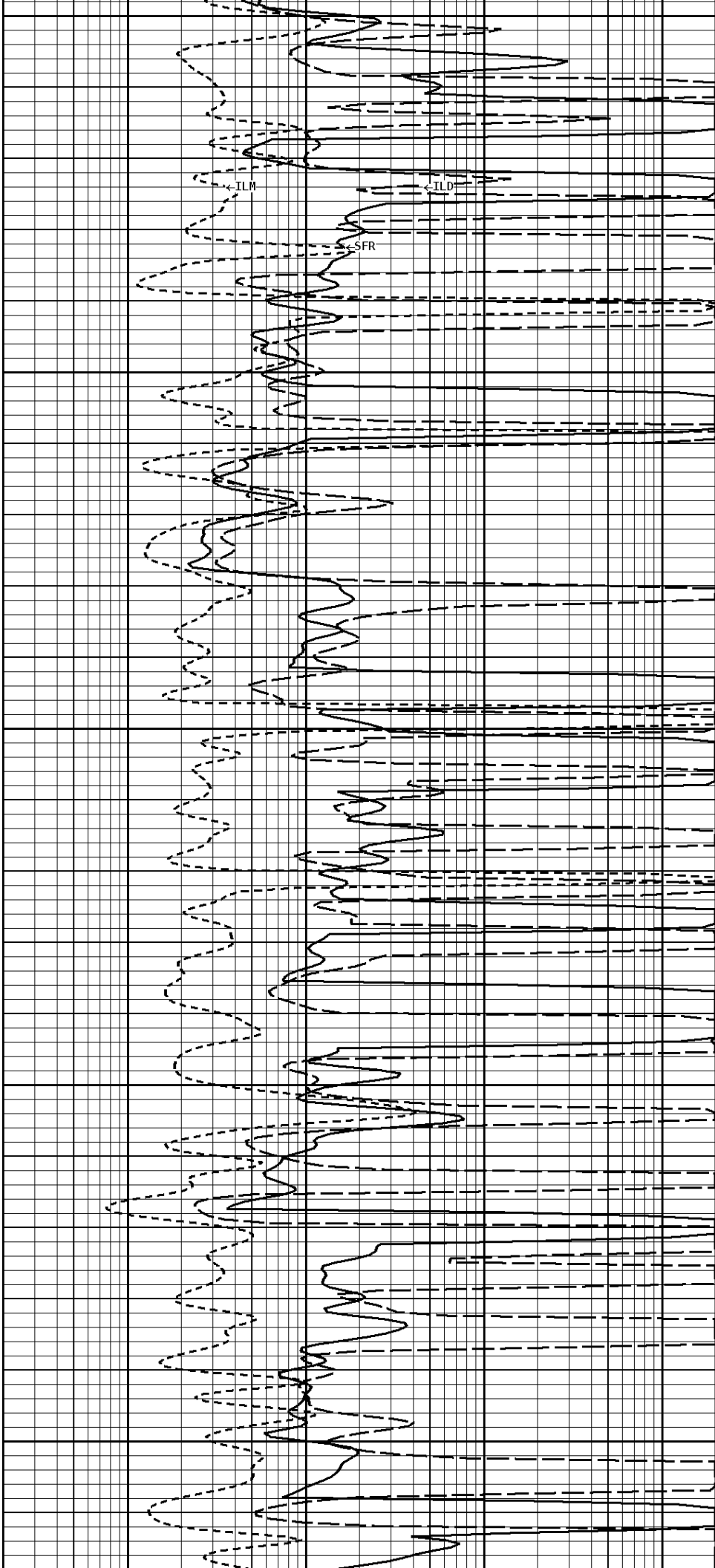
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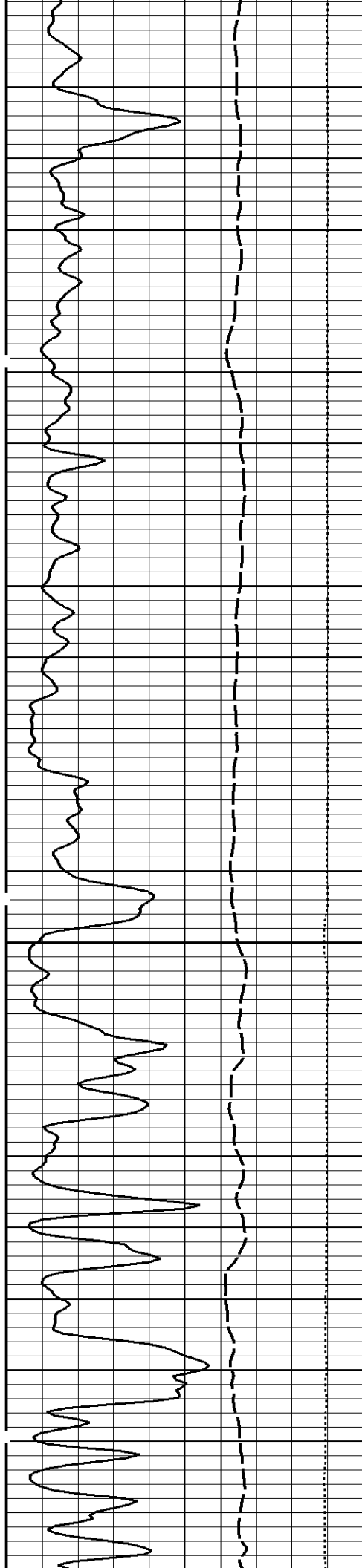




800

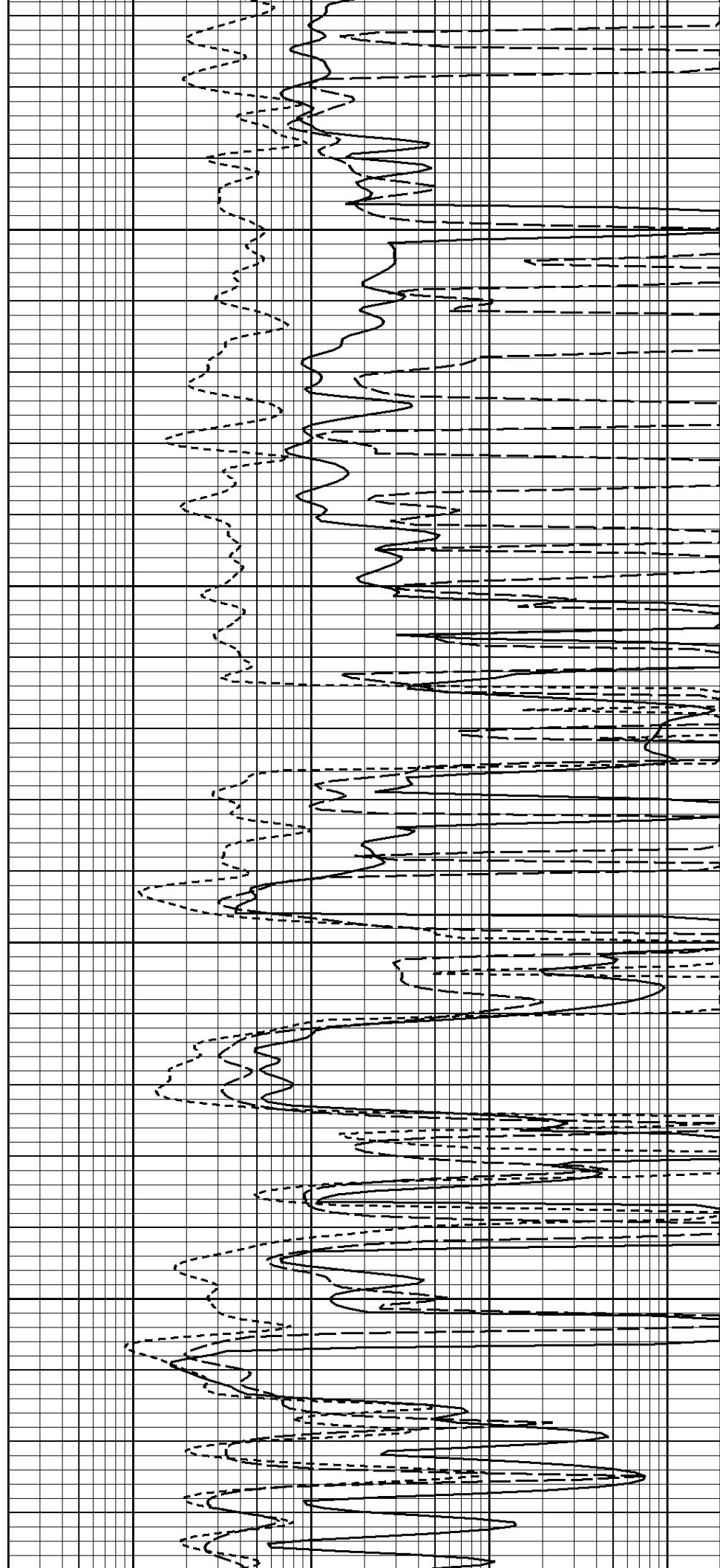
900

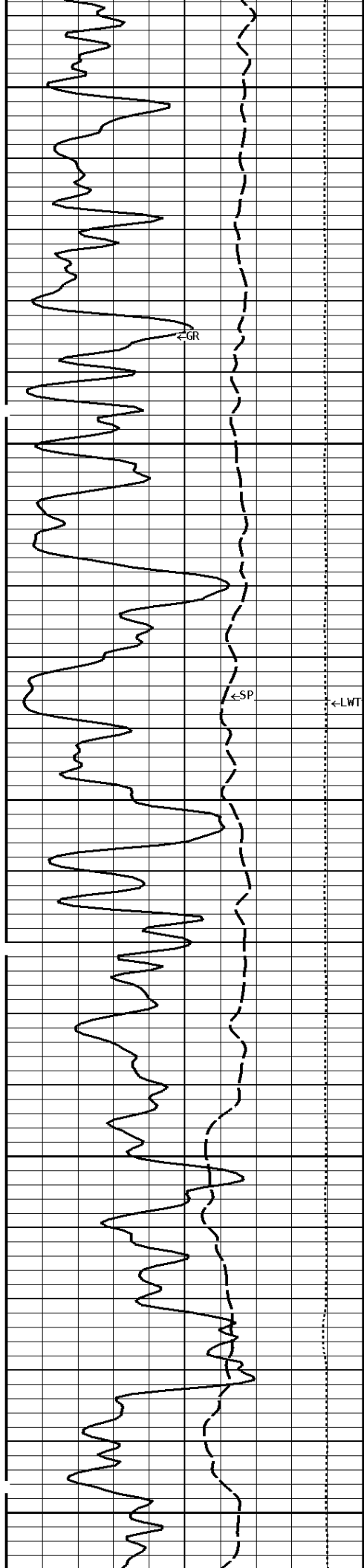




1000

1100

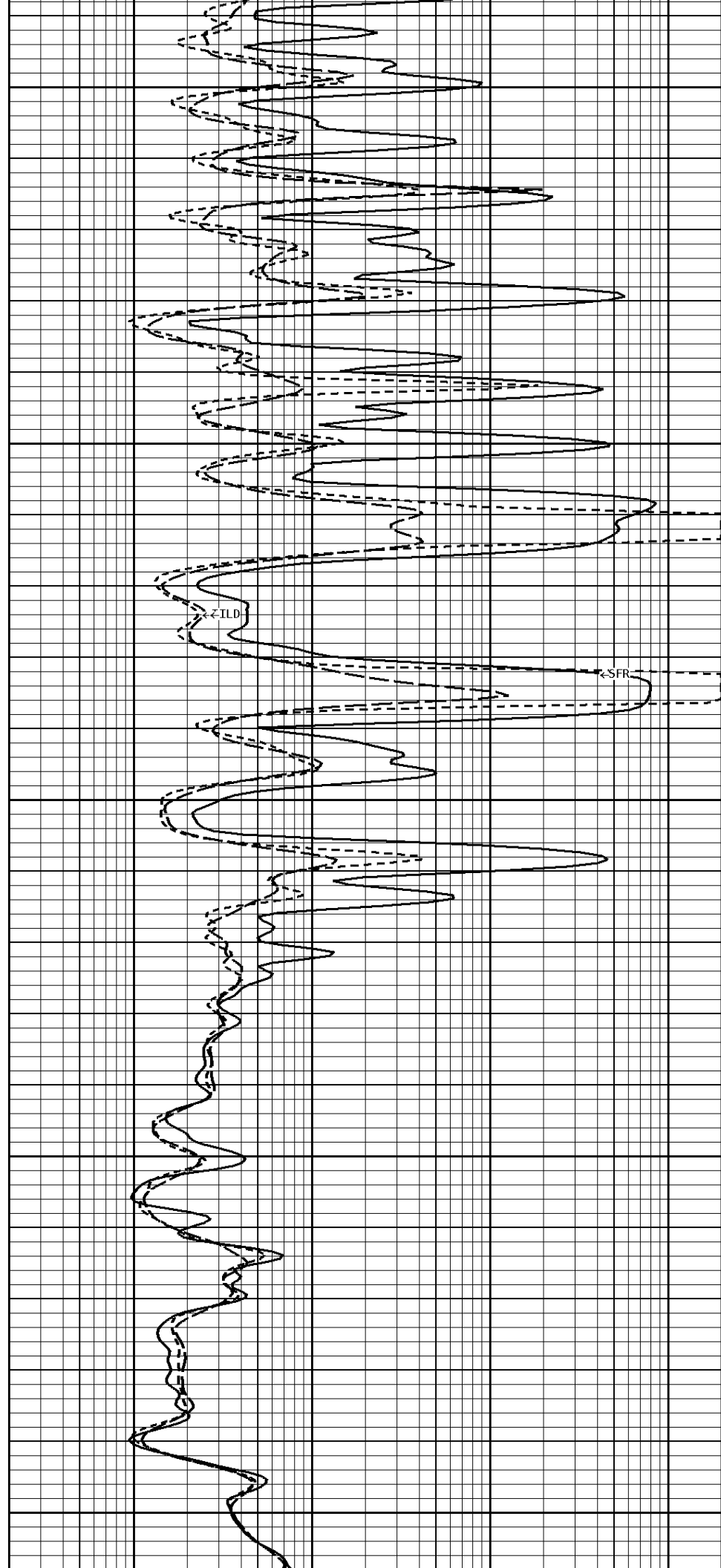


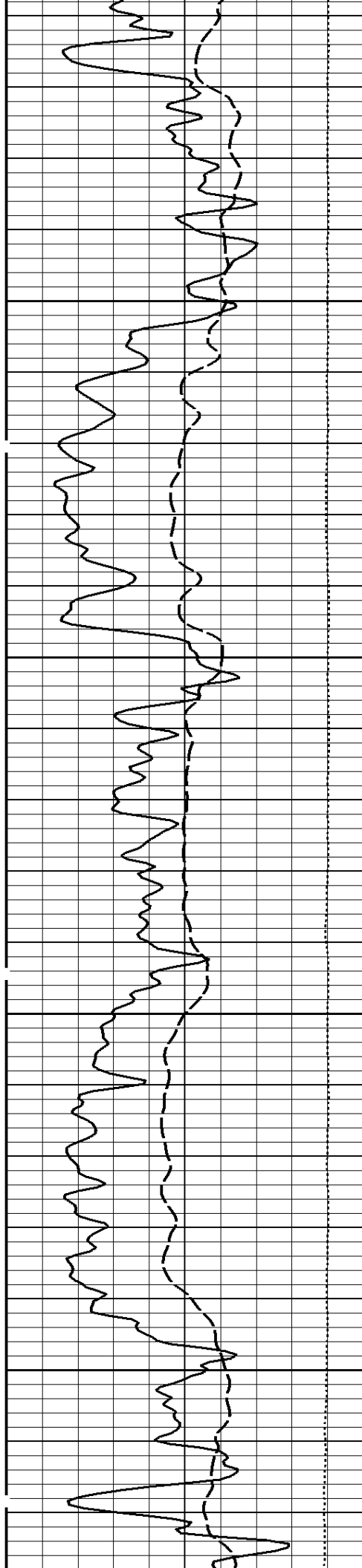


1200

1300

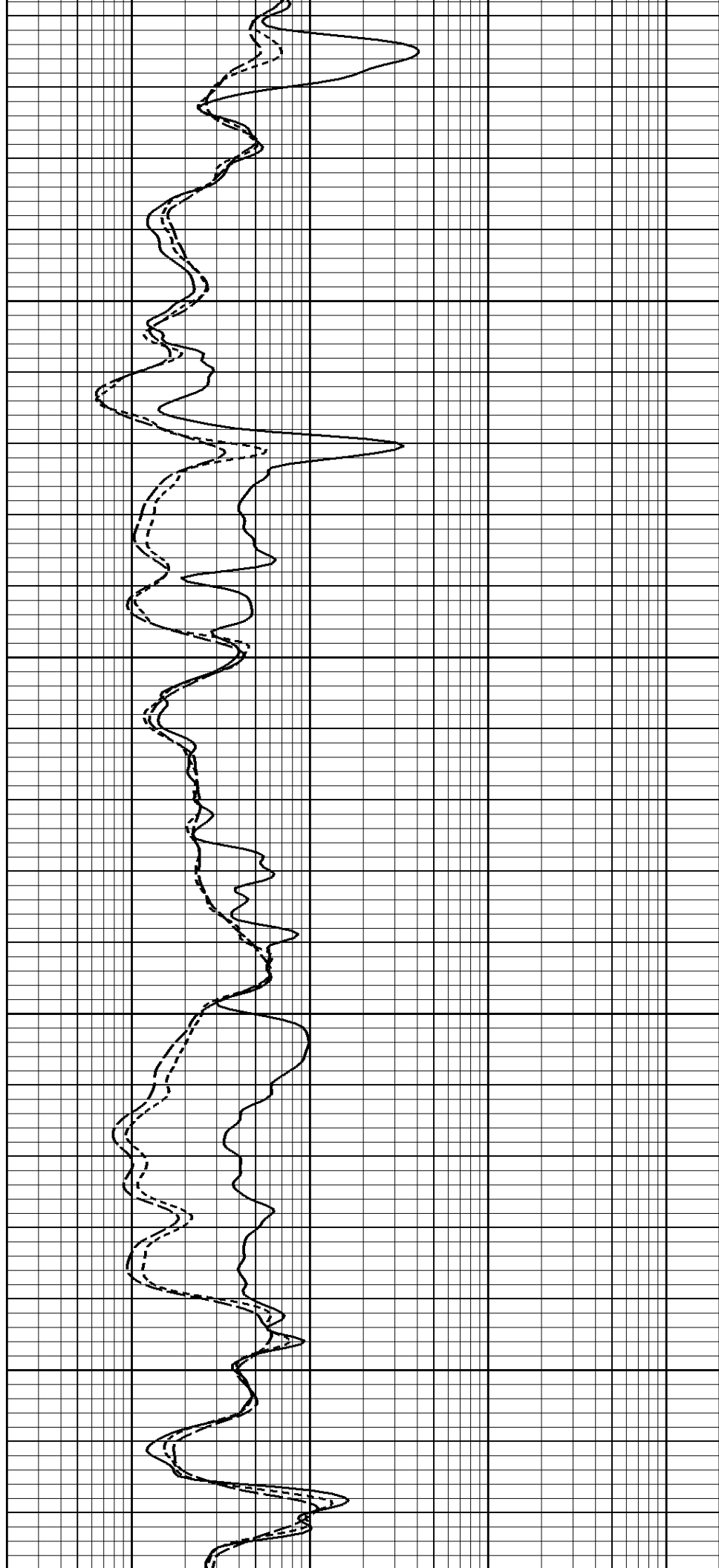
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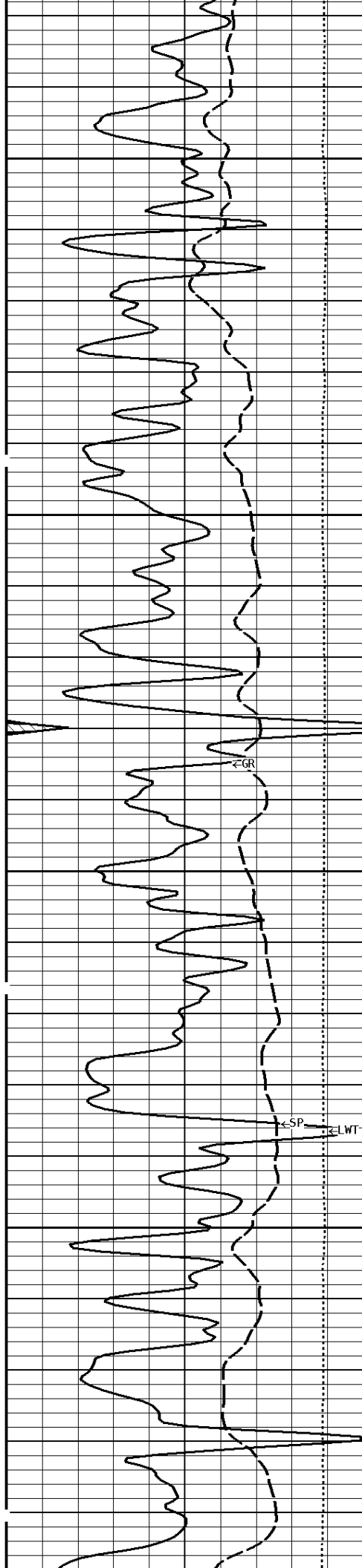




1500

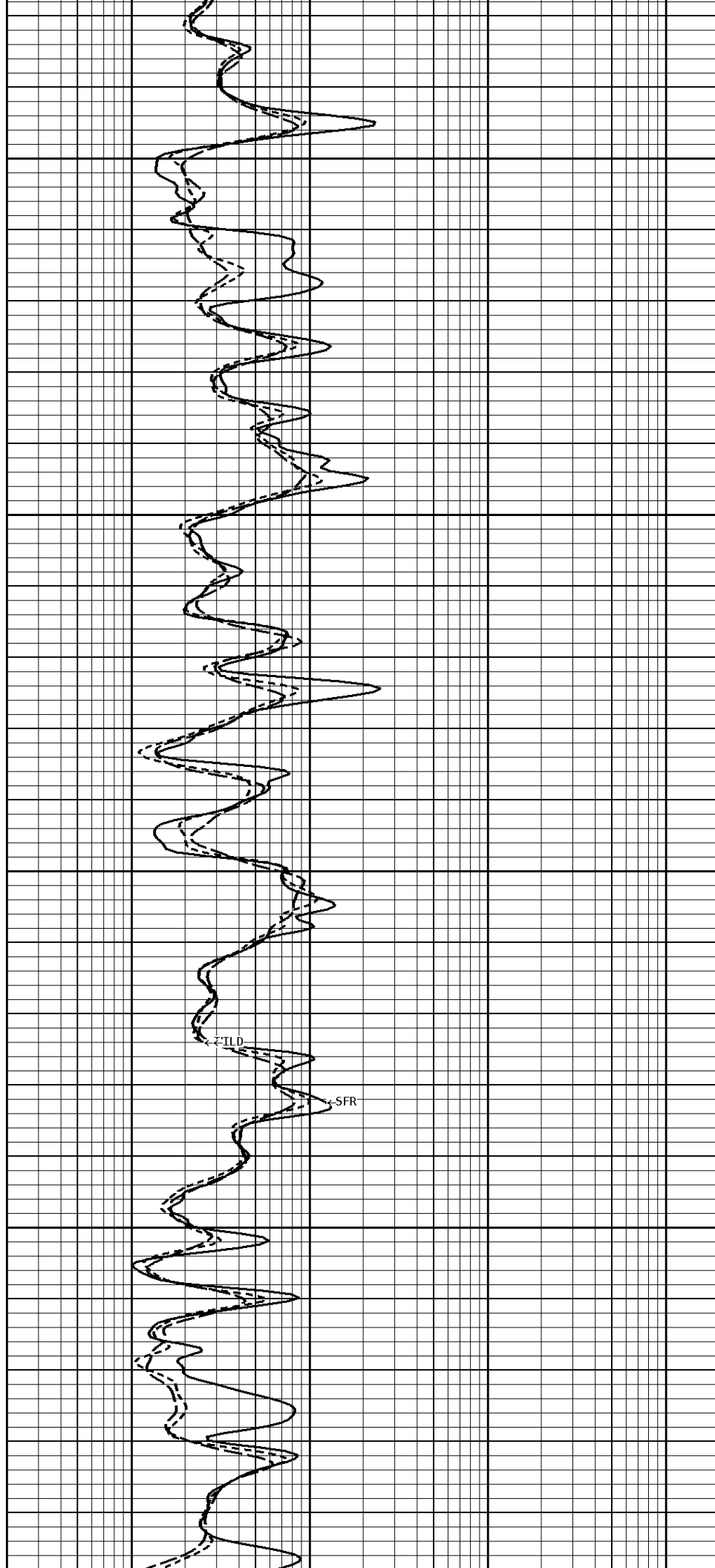
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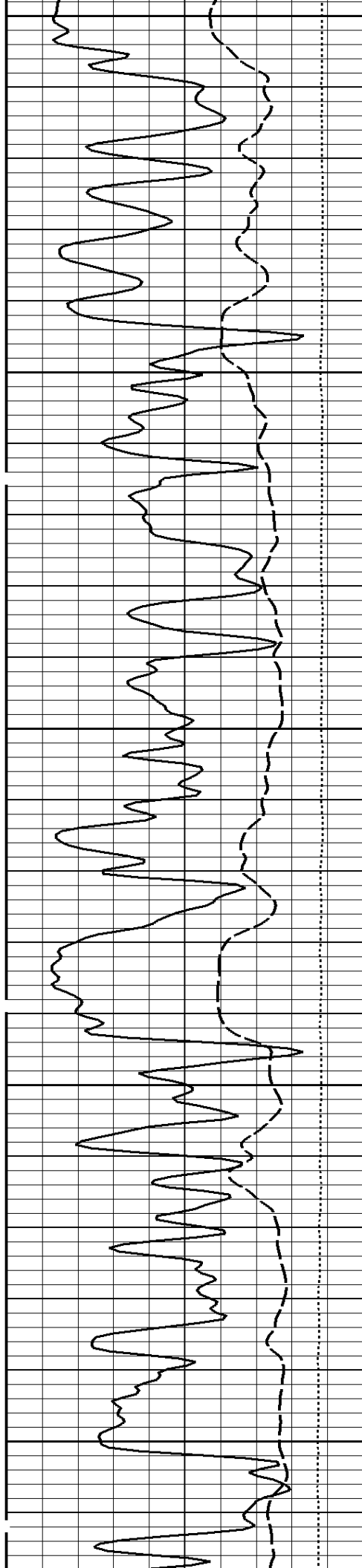




1700

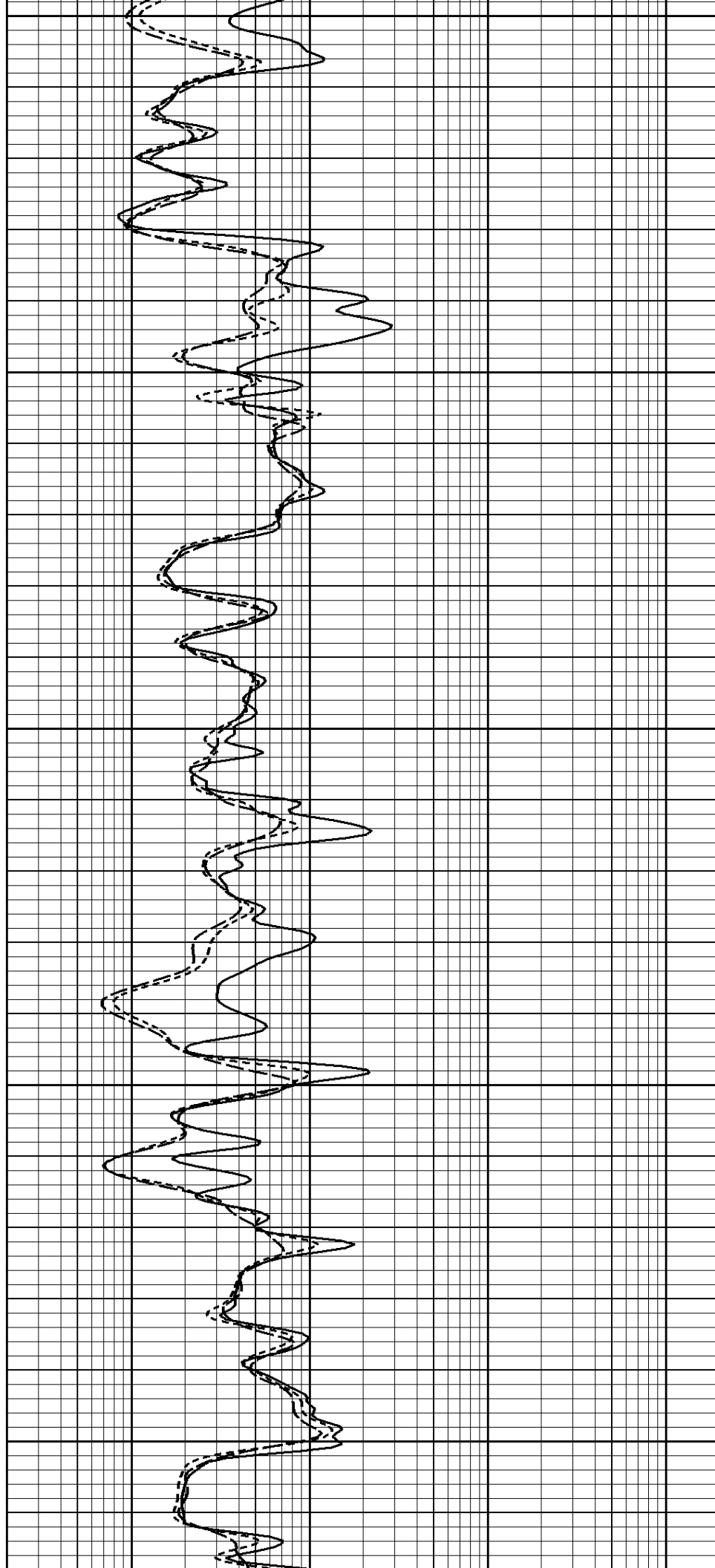
1800

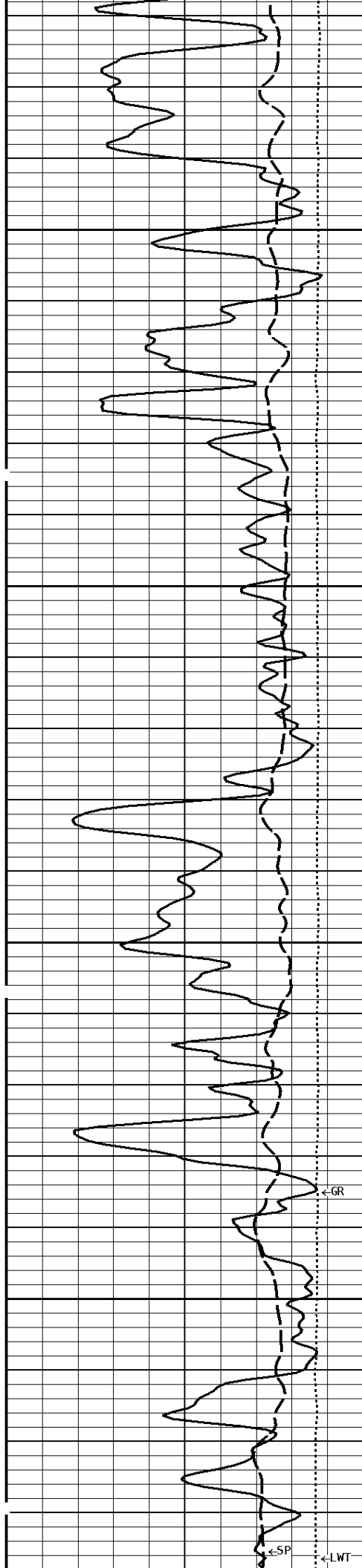




1900

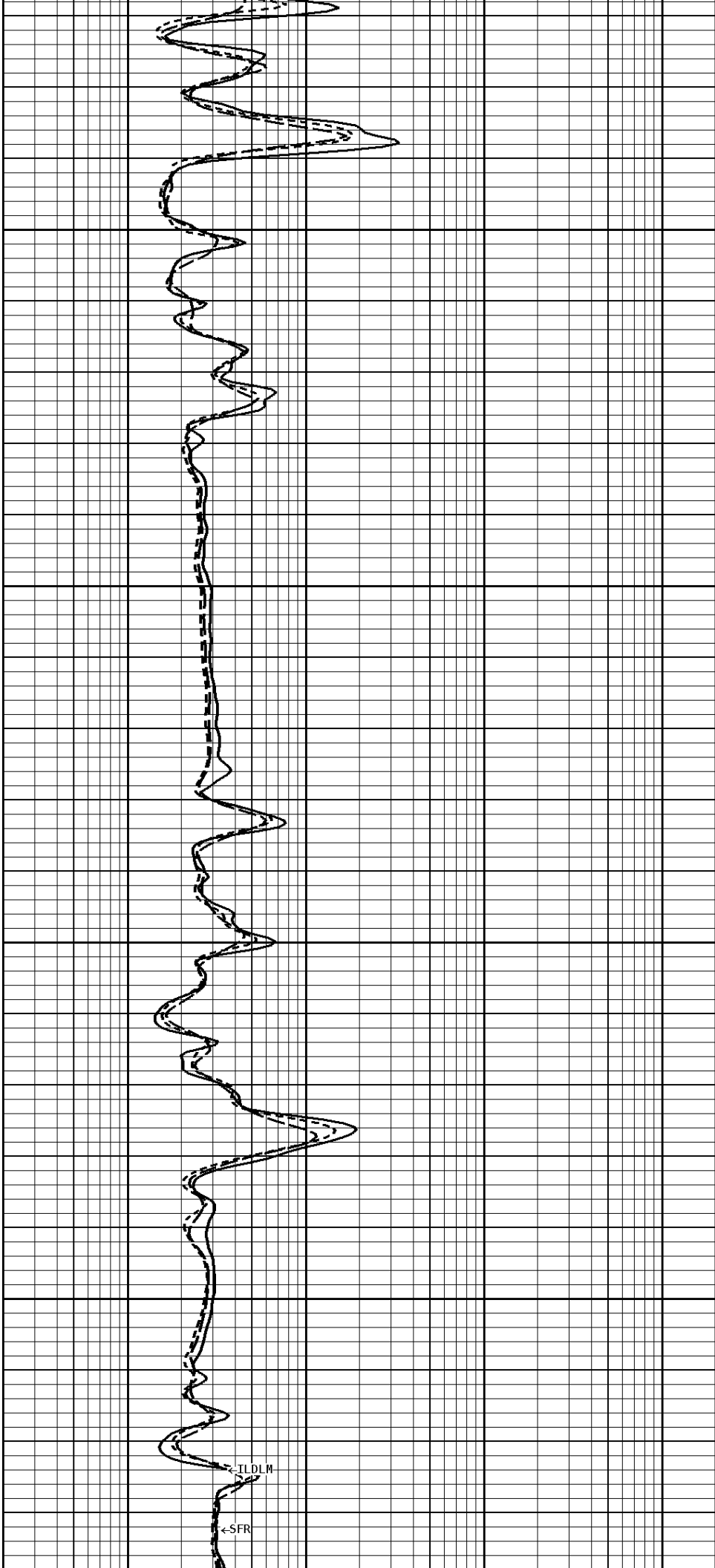
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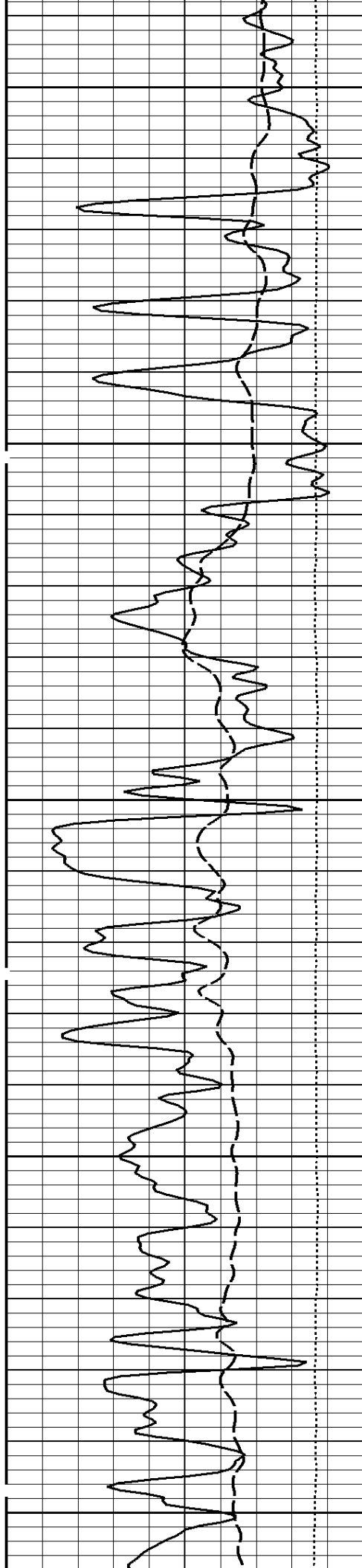




2100

2200

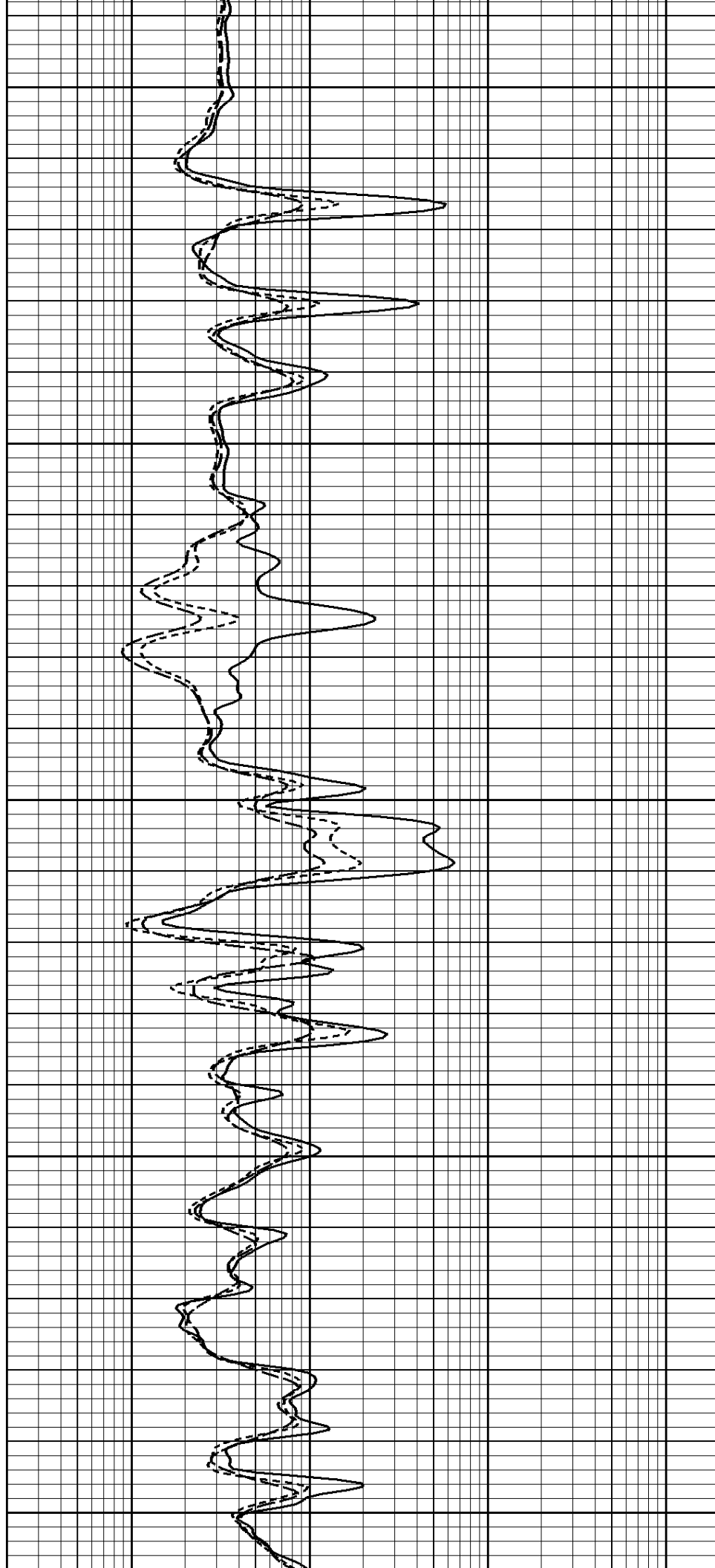


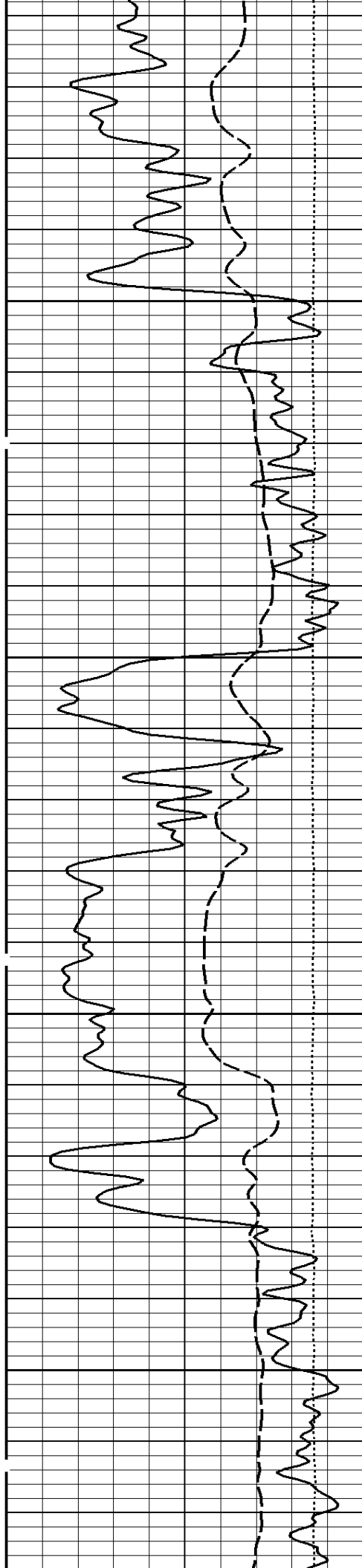


2300

2400

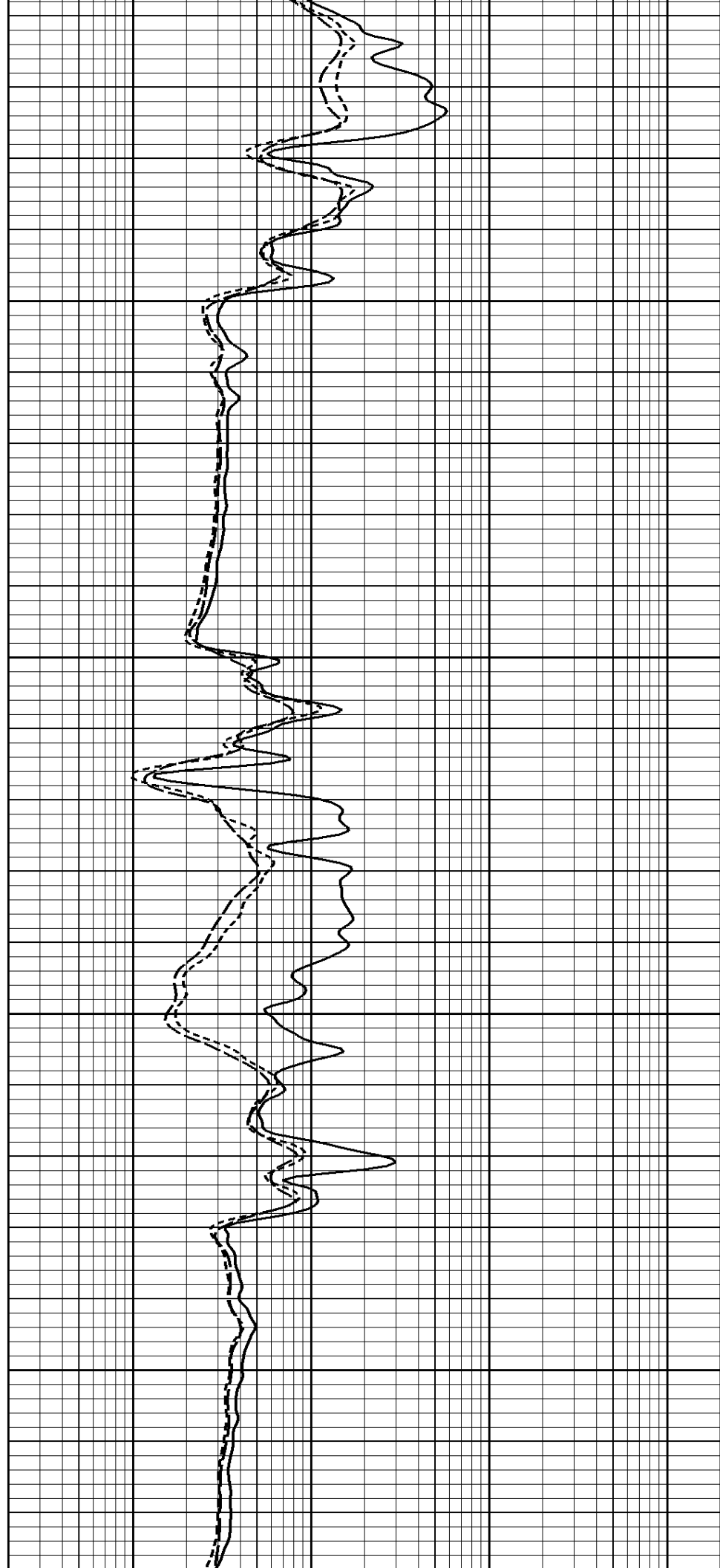
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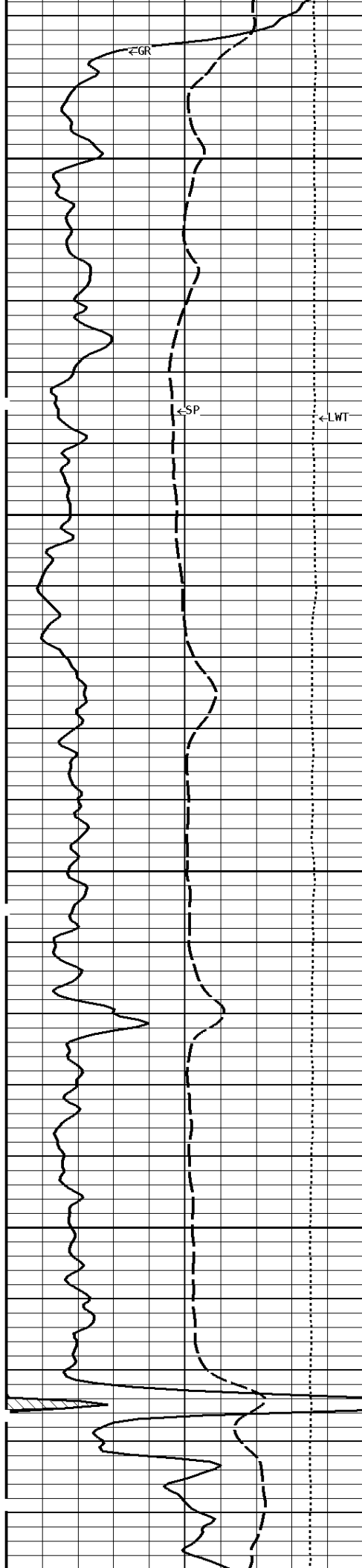




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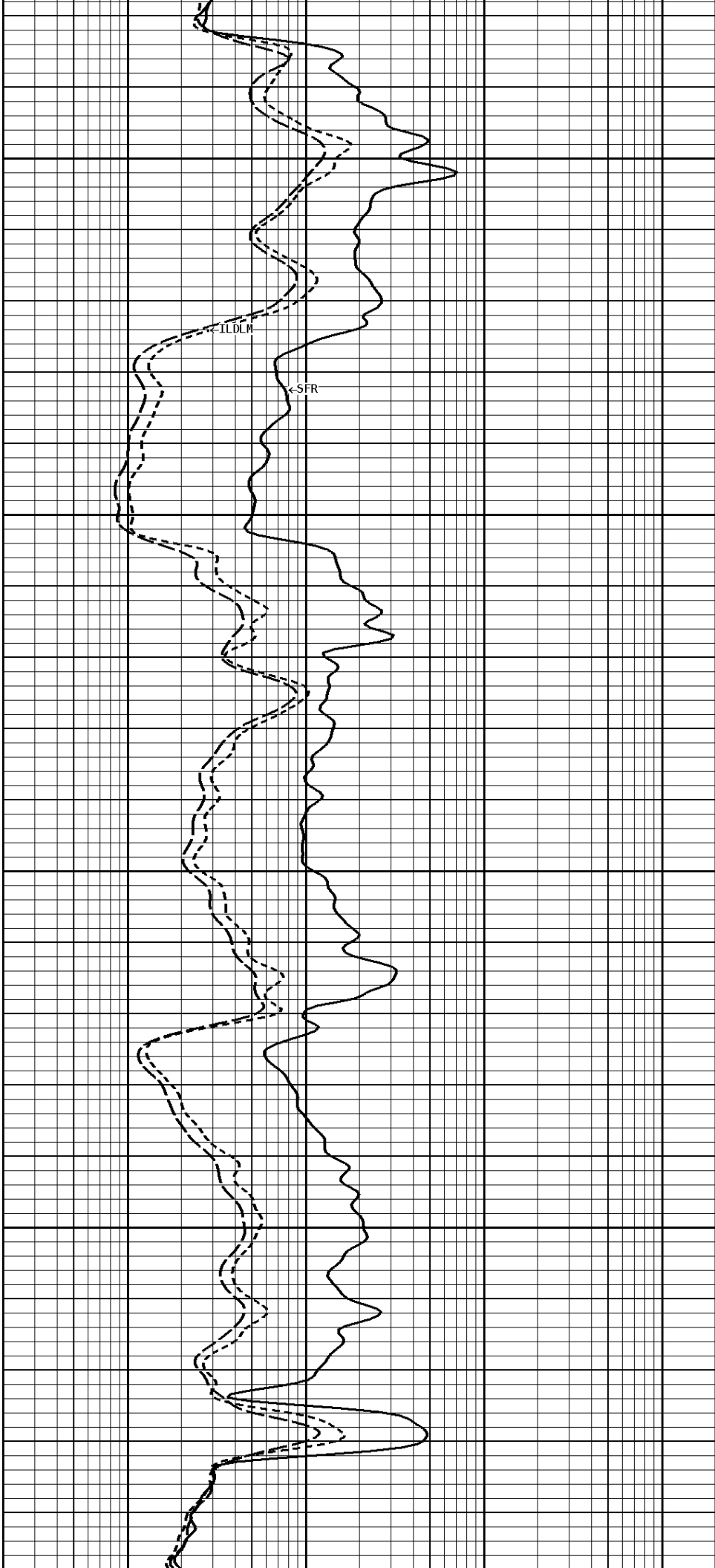
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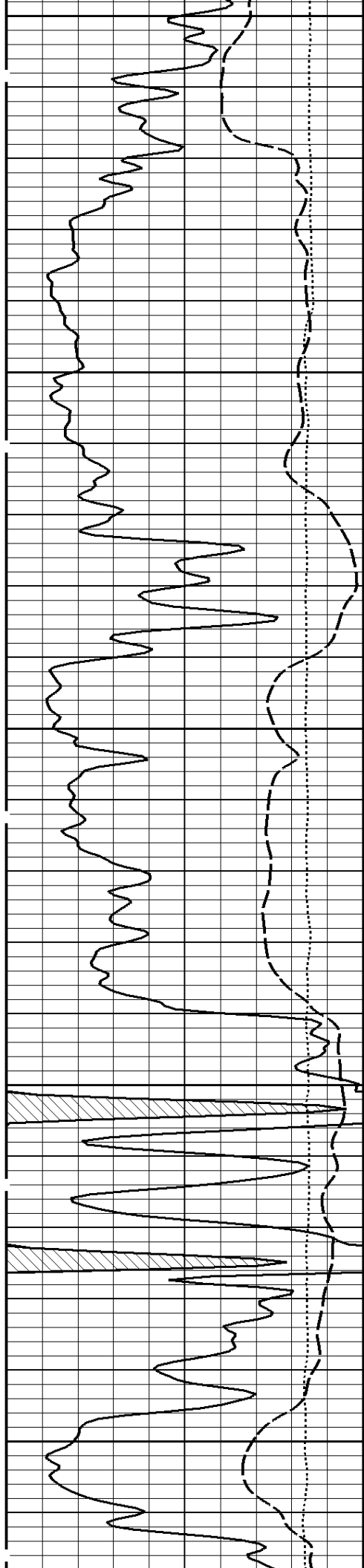




2800

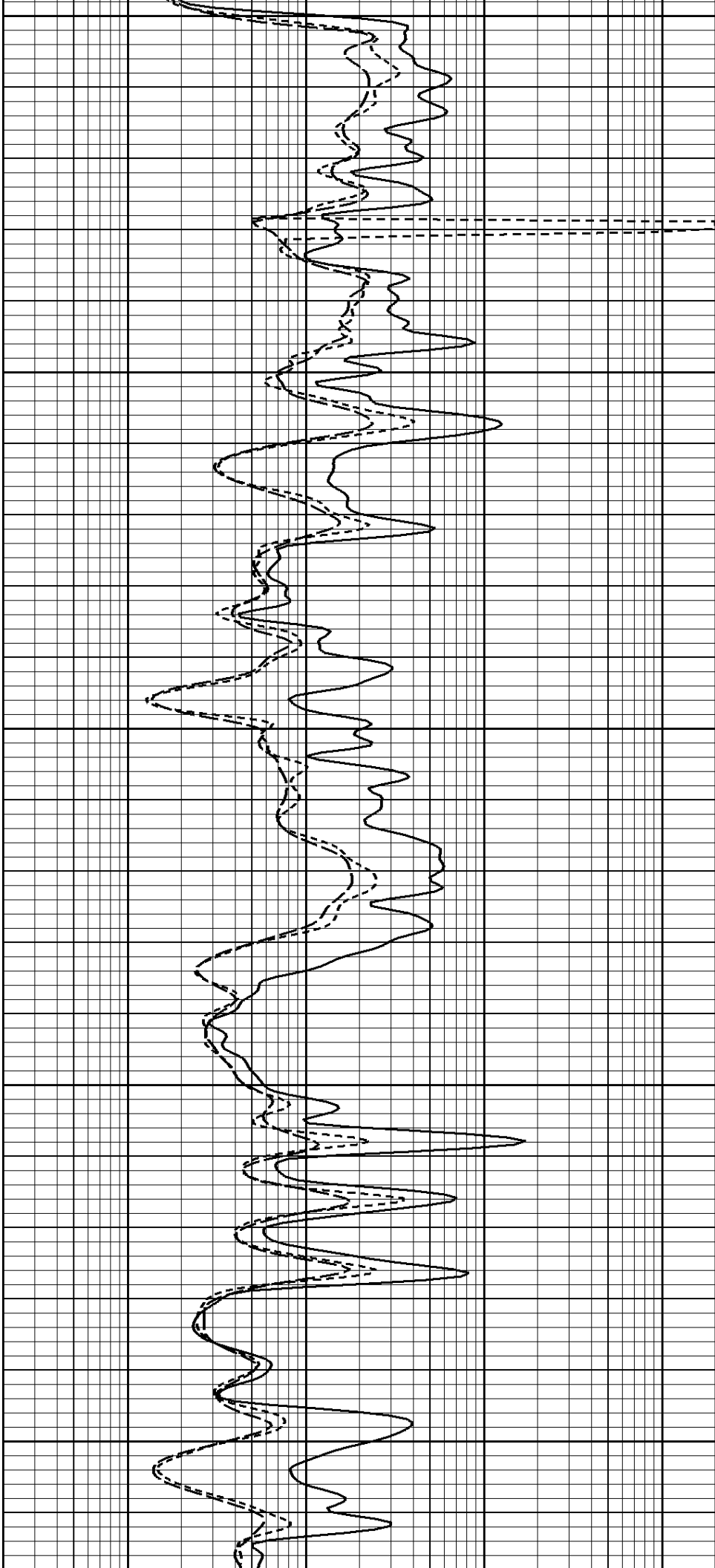
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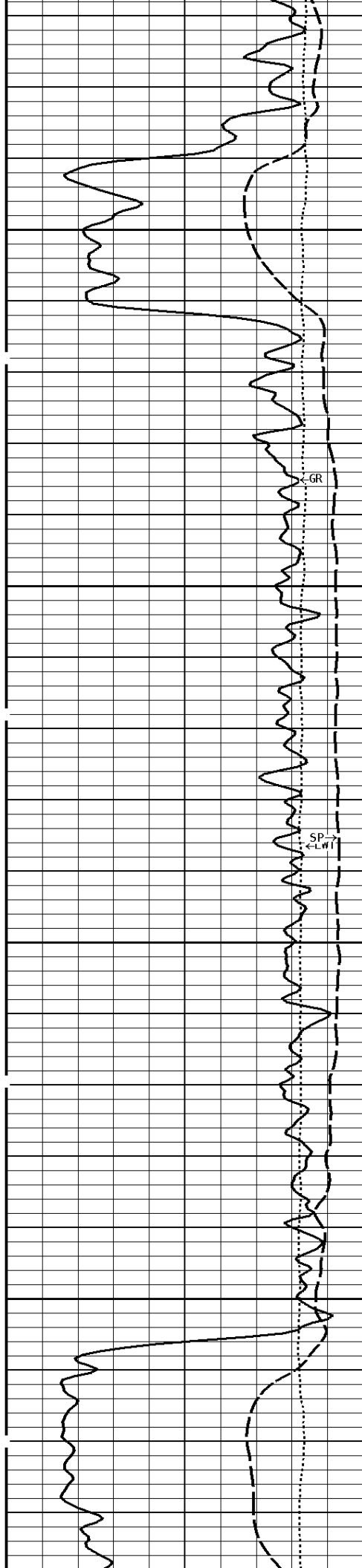




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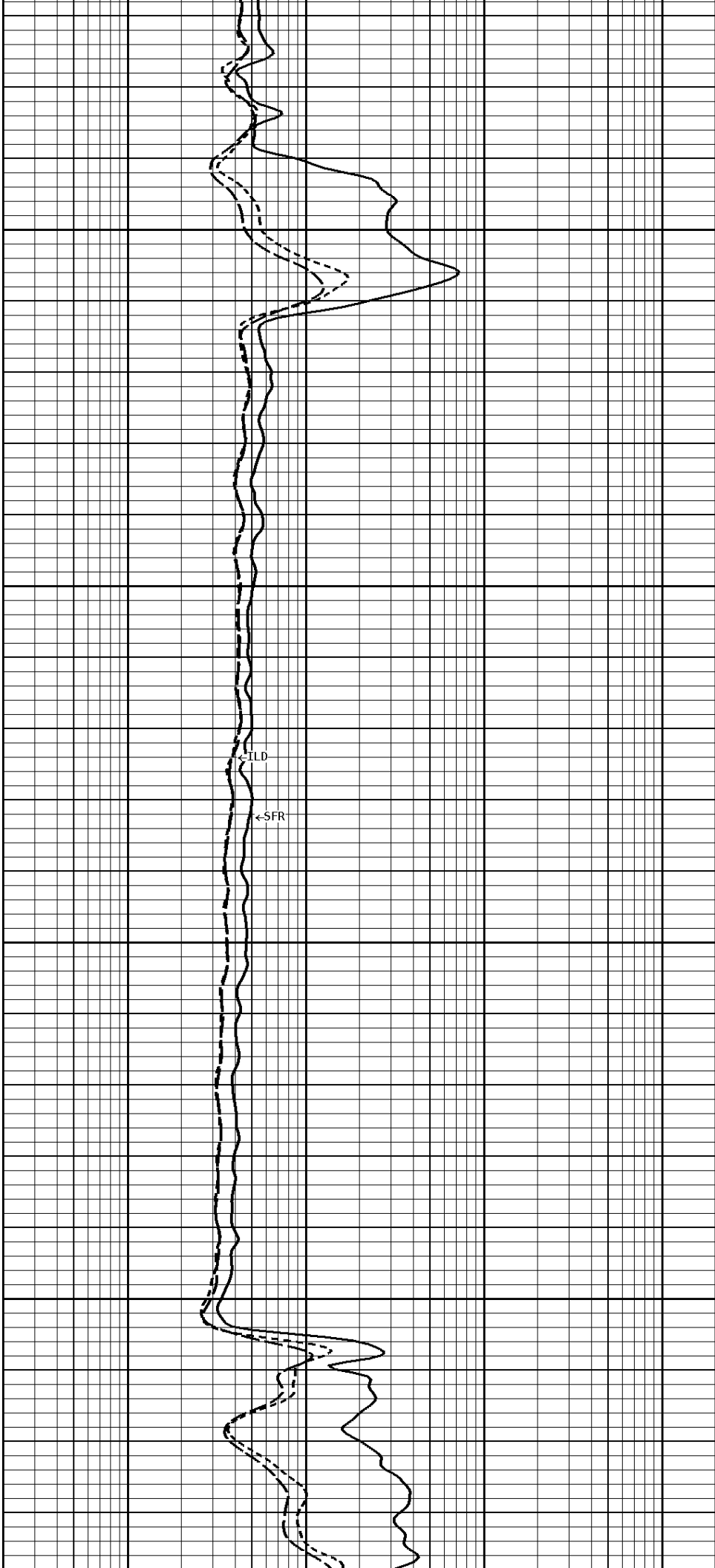
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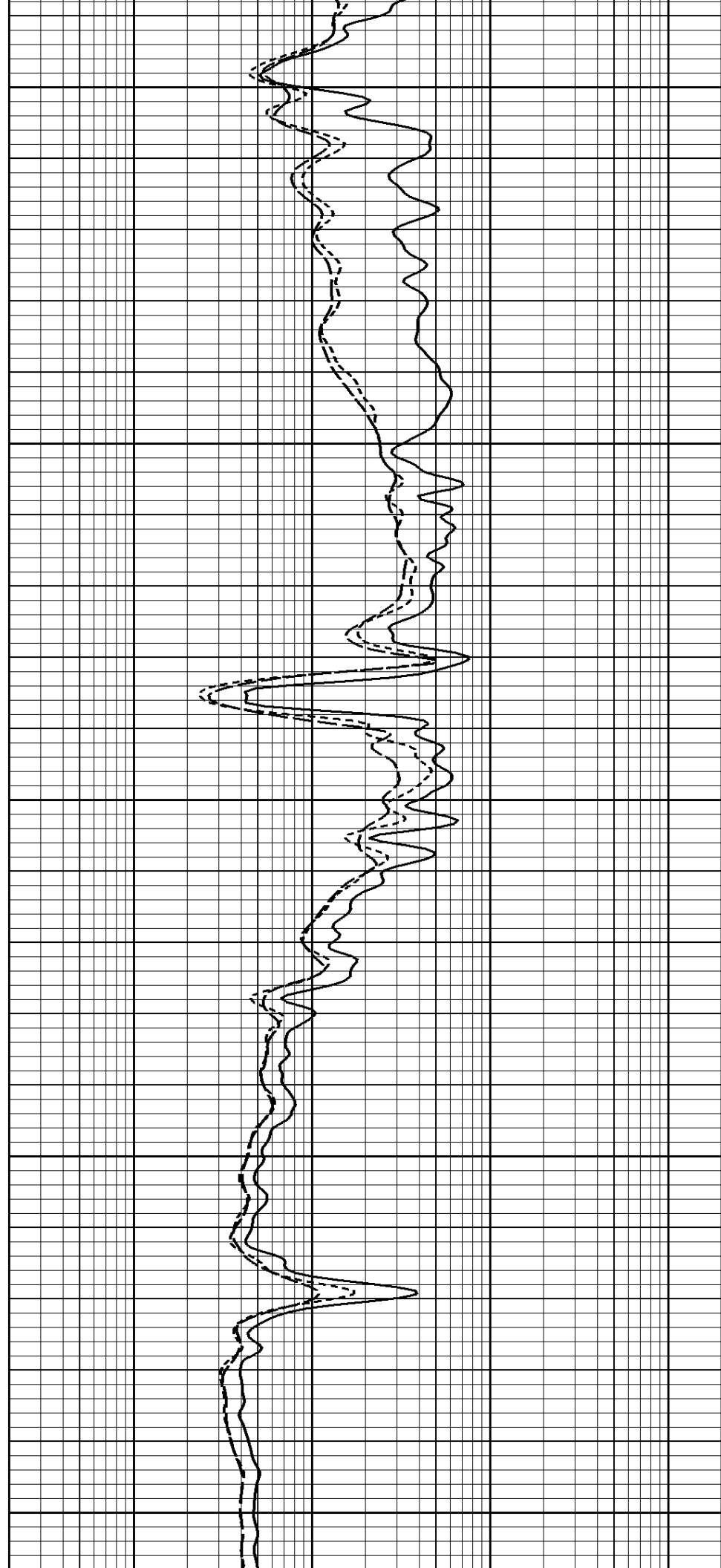
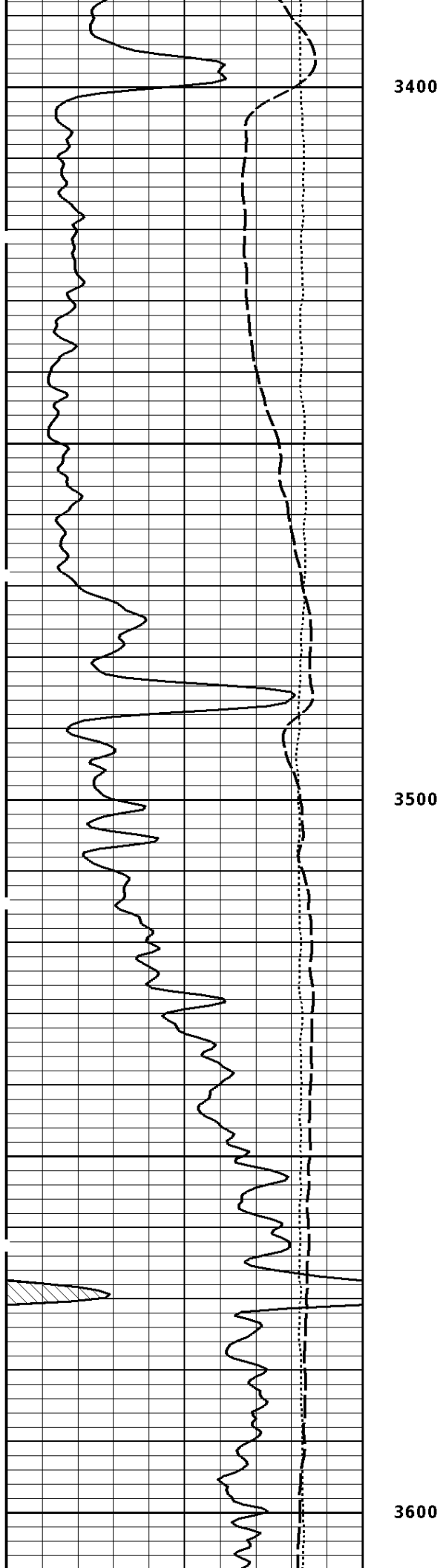


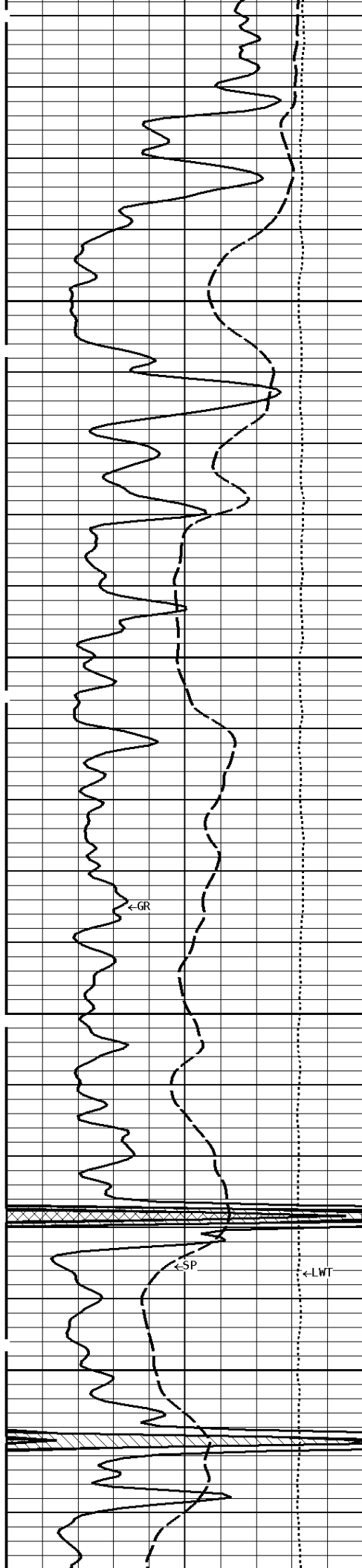


3200

3300

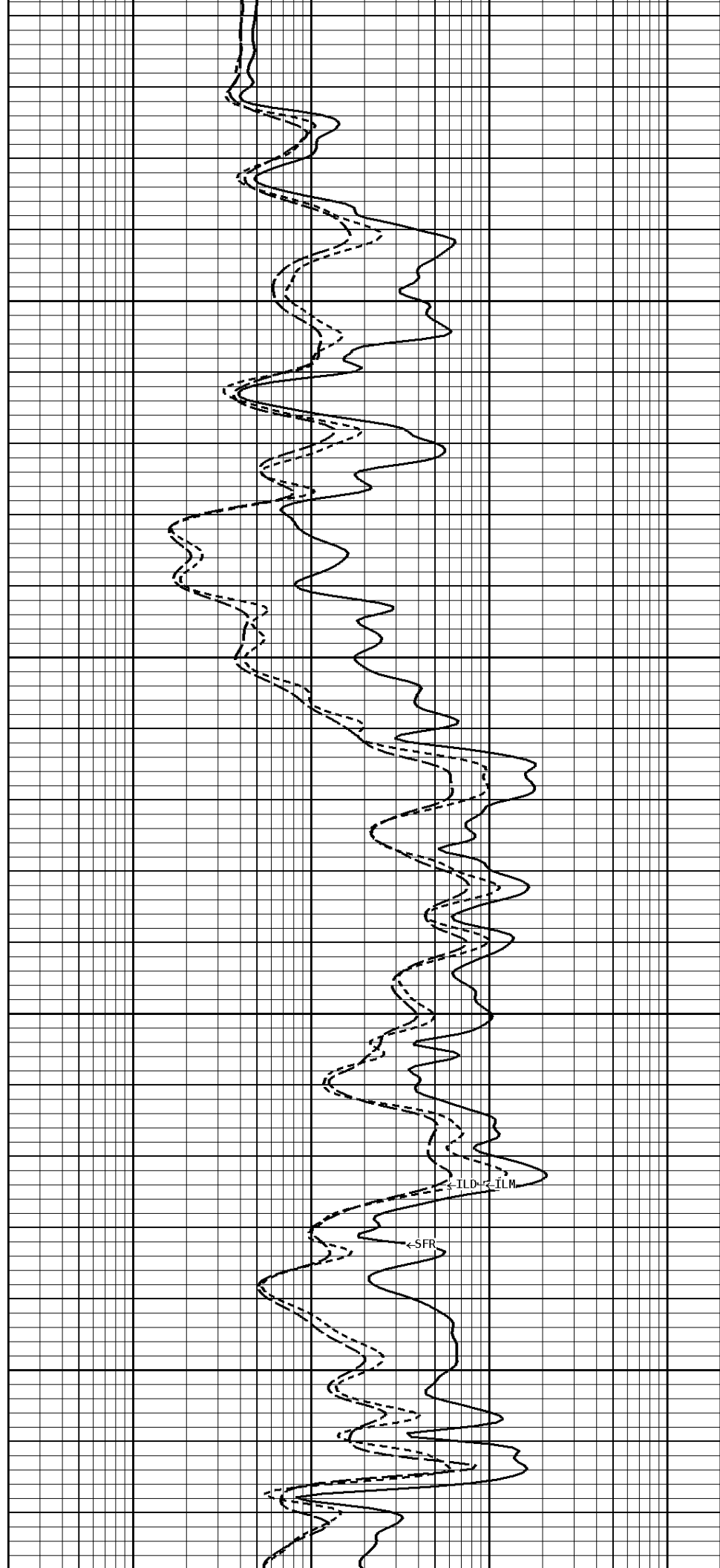


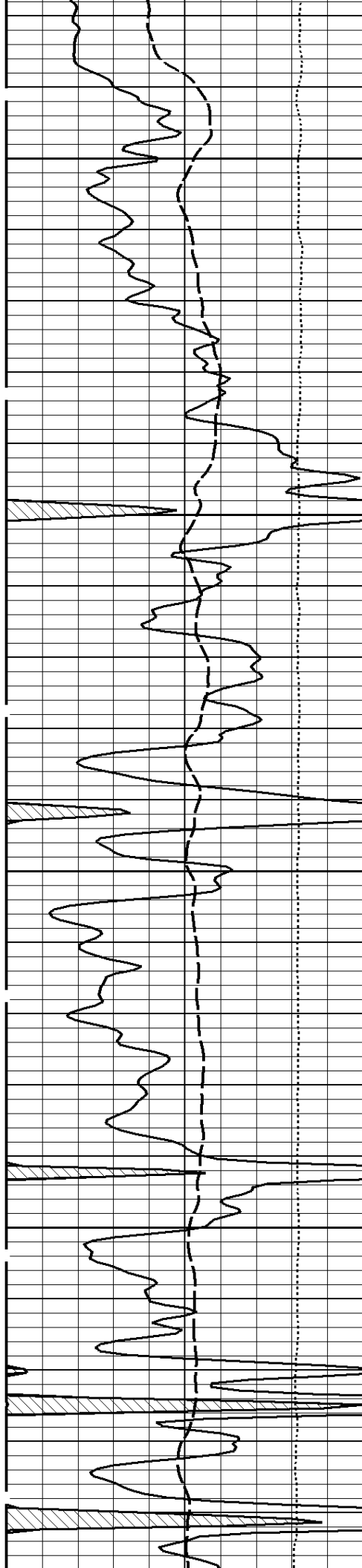




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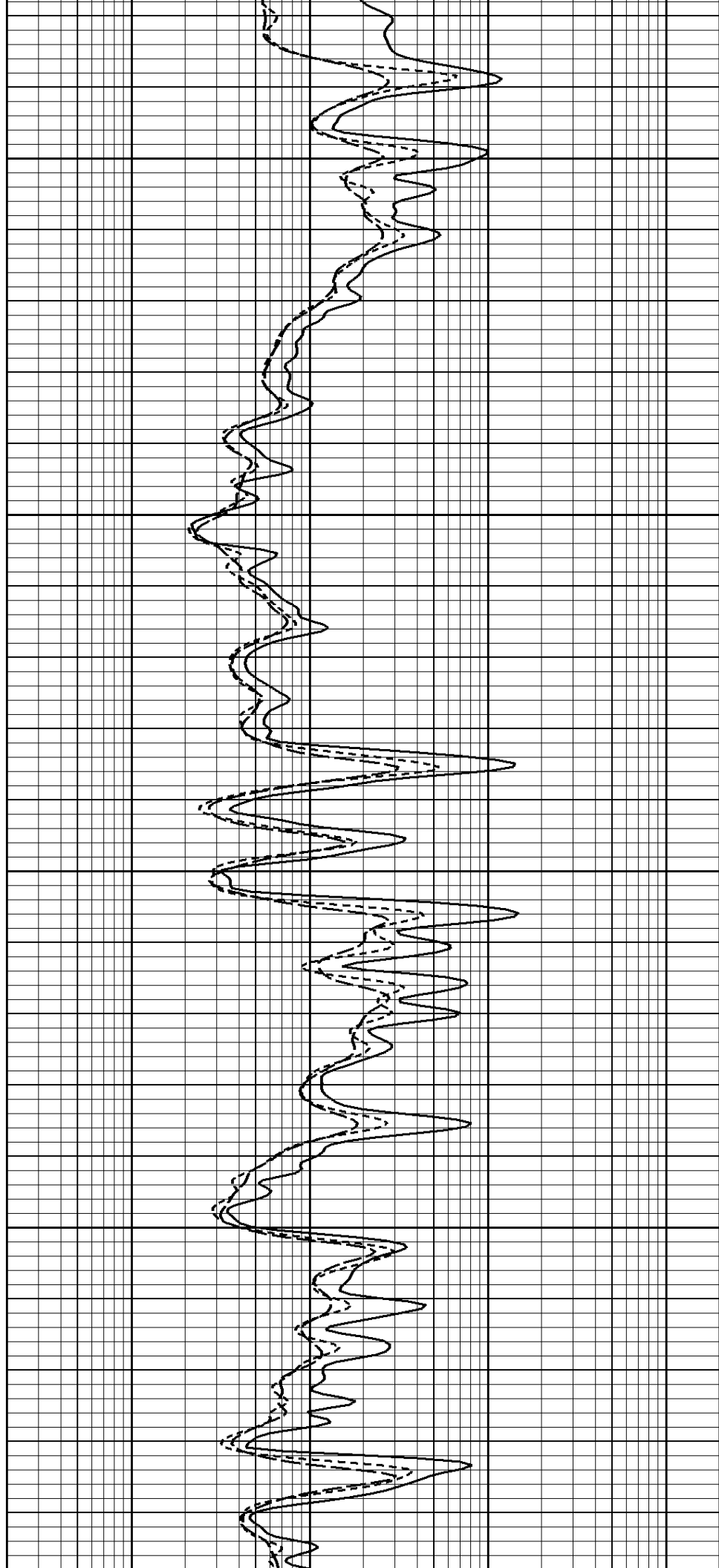
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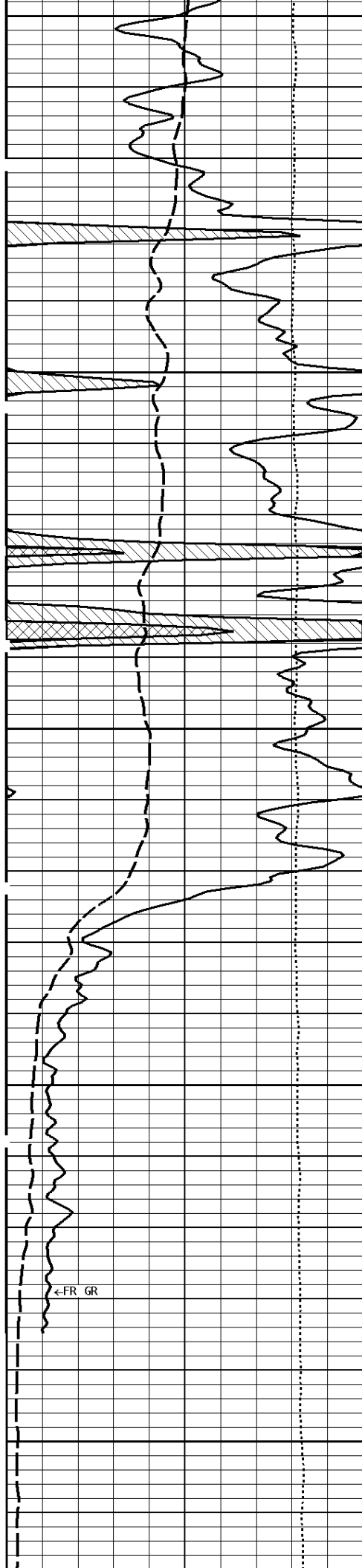




3900

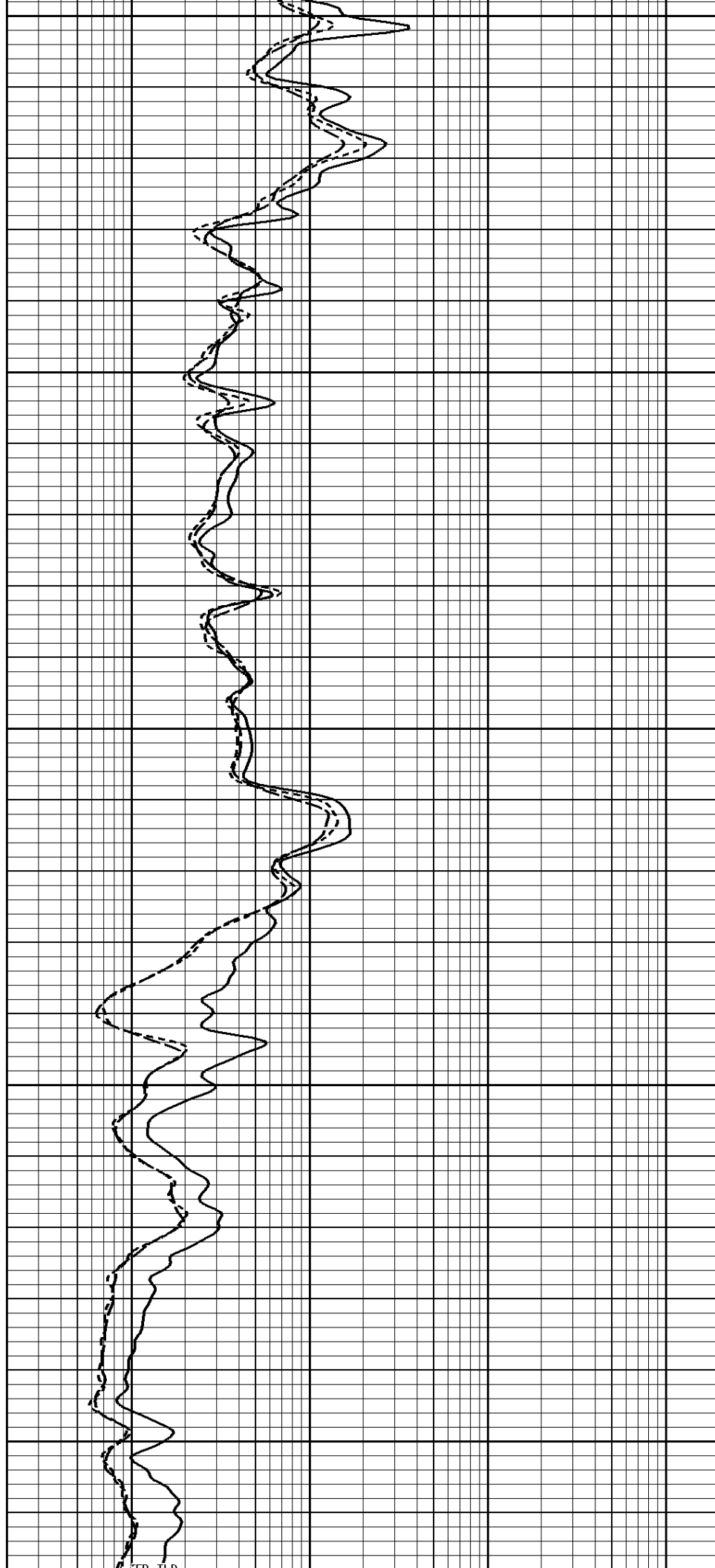
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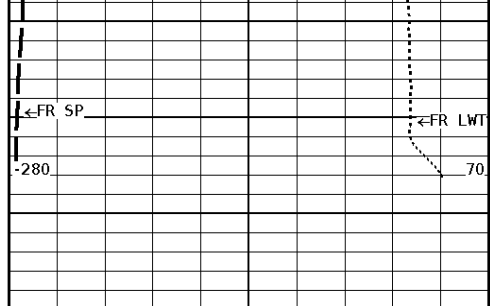




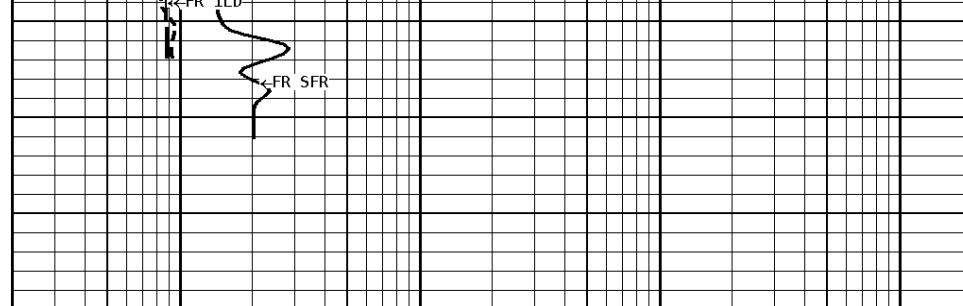
4100

4200

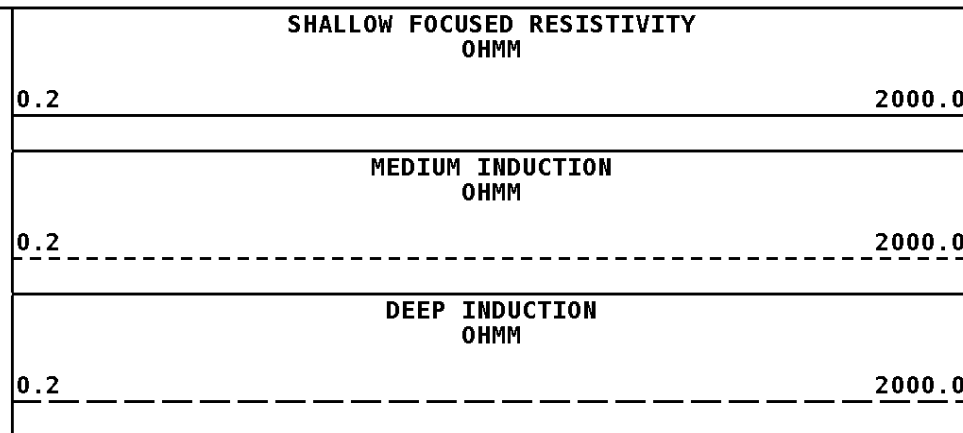
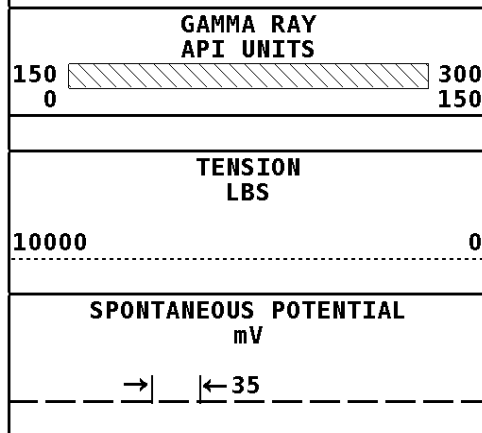




4282



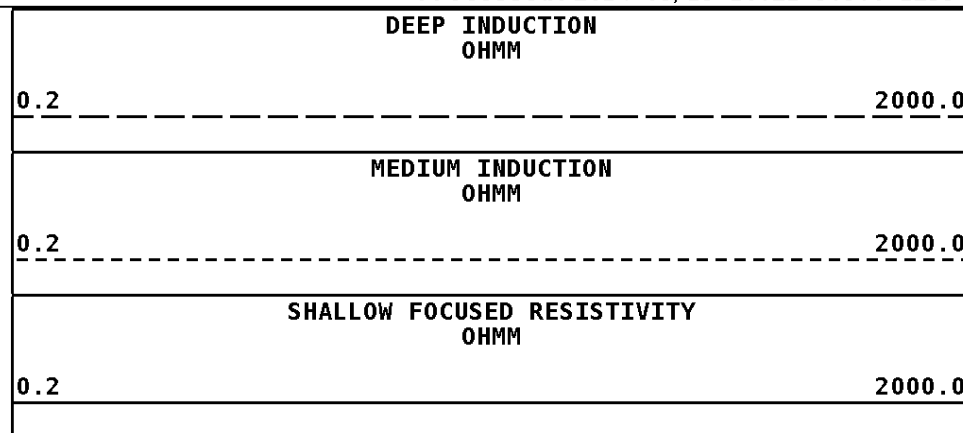
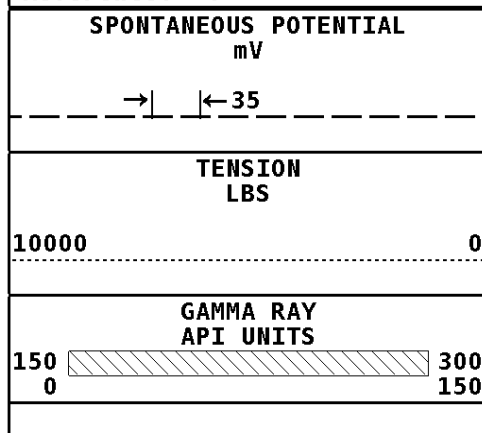
1:240 MAIN SECTION



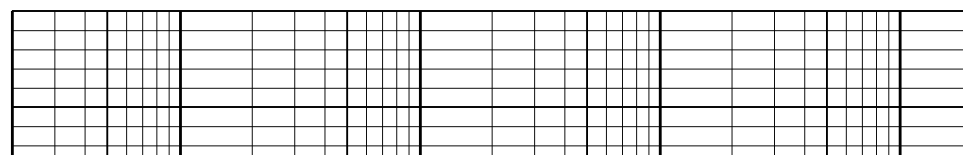
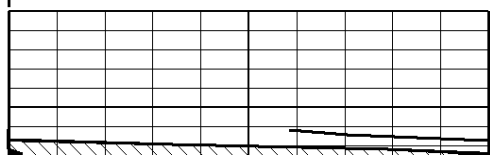
* Borehole Zone Factors *

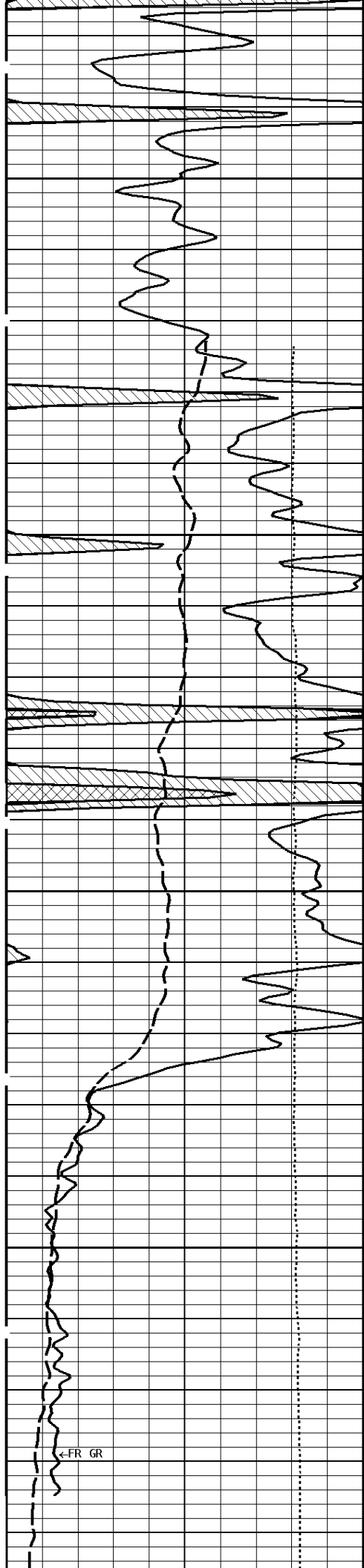
Zone 1 99999.0 to 0.0 Feet		
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
BHT Depth	4292.000	ft
Borehole Temperature	125.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	1.500	ohm/m
Standoff	1.5	
Resistivity Of Mud Temperature	80.00	degF

Well File: mtm-huff-1-23-mstk-aug-19 Scale: 1:240 Format: DIL-240
 Segment: V1.D1.S8 Accordion Shift re match main Acquired: 2014-08/19 08:53 3.3.0-12594
 Reference: 0 Processed: 2014-08/19 10:21 3.3.0-12594



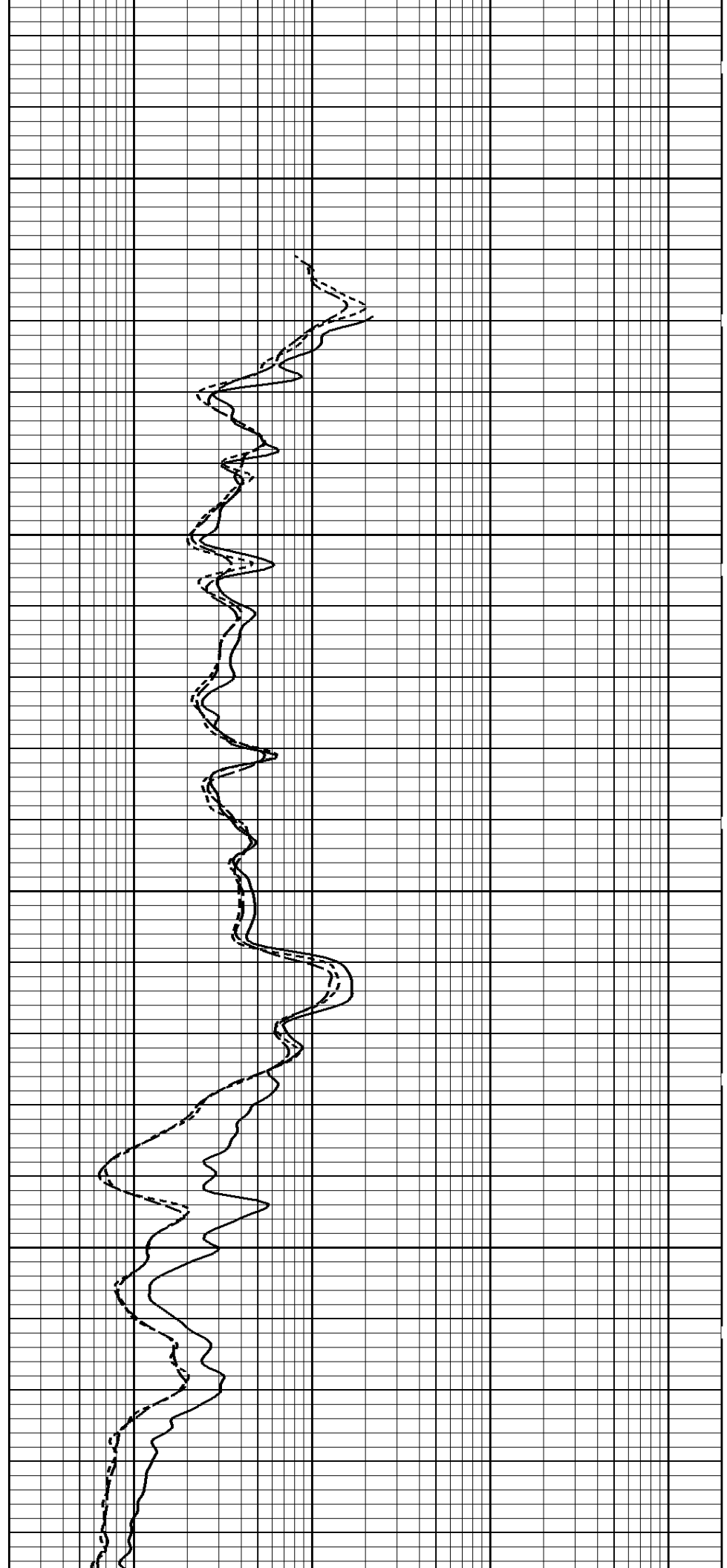
1:240 REPEAT SECTION

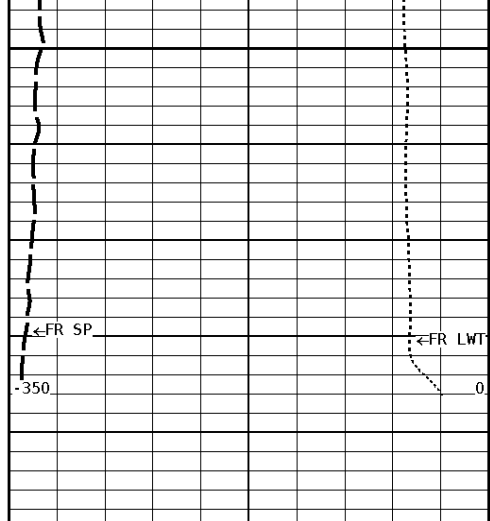




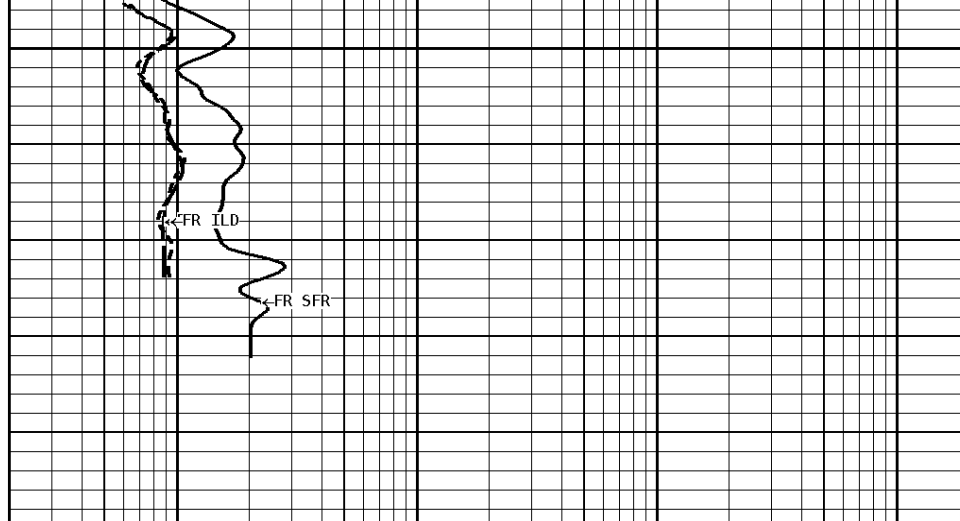
4100

4200





4282



1:240 REPEAT SECTION

GAMMA RAY API UNITS	
150	300
0	150
TENSION LBS	
10000	0
SPONTANEOUS POTENTIAL mV	
→	← 35

SHALLOW FOCUSED RESISTIVITY OHMM	
0.2	2000.0
MEDIUM INDUCTION OHMM	
0.2	2000.0
DEEP INDUCTION OHMM	
0.2	2000.0

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet			
Drill Bit Size	7.875	in	
Casing Diameter	5.500	in	
BHT Depth	4292.000	ft	
Borehole Temperature	125.0	degF	
Temperature Gradient	1.00	DFHF	
Resistivity Of Mud	1.500	ohm/m	
Standoff	1.5		
Resistivity Of Mud Temperature	80.00	degF	

* Calibration Summary *

Shop Calibration GRT-B					
Performed : 21-APR-2014			Time : 11:21		
Sensor Suite : GR-GR5			ID : GRT-BB-107		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig		
	75	381	175	GRAPI	
Shop Calibration PIT-CA					
Performed : 20-MAY-2014			Time : 12:16		
Sensor Suite : P-IND-T			ID : PIT-AB-005		
	Measured		Calibrated		Units
	R	X	R	X	
Air	130436	130973	0.3	0.3	MMHOS
Zero	131064	131069	27.2	2.3	MMHOS
Reference	250278	251098	5142.2	4745.2	MMHOS
Loop	127822	217880	3591.7	3538.5	MMHOS
Scale Factor			1.6	2.3	MMHOS

Sonde Error	-1.6	-2.1	MMHOS		
Cond	5142.2	4745.2	MMHOS		
Deep					
	Measured		Calibrated		
	R	X	R	X	Units
Air	128989	131106	-3.7	-3.9	MMHOS
Zero	131083	131072	40.1	-10.7	MMHOS
Reference	232597	234445	2030.7	1916.3	MMHOS
Loop	125792	219397	1633.8	1702.6	MMHOS
Sonde Error			-3.5	-9.0	MMHOS
Cond			2030.7	1916.3	MMHOS
Temperature					
	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 20-MAY-2014			Time : 12:07		
Sensor Suite : SFL			ID : PIT-AB-005		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32773.9	49477.8	0.0	7028.0	uA
Ib	32760.9	48718.2	0.0	1750.0	mA
MOM1	32720.3	56560.2	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 20-MAY-2014			Time : 12:05		
Sensor Suite : P-SP			ID : PIT-AB-005		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32770.1	58920.2	0.0	1000.0	mV

Well File: mtm-huff-1-23-mstk-aug-19

Scale: 1:1200 Format: DIL1200

Segment: V1.D1.S7 Accordion Shift main 10 td

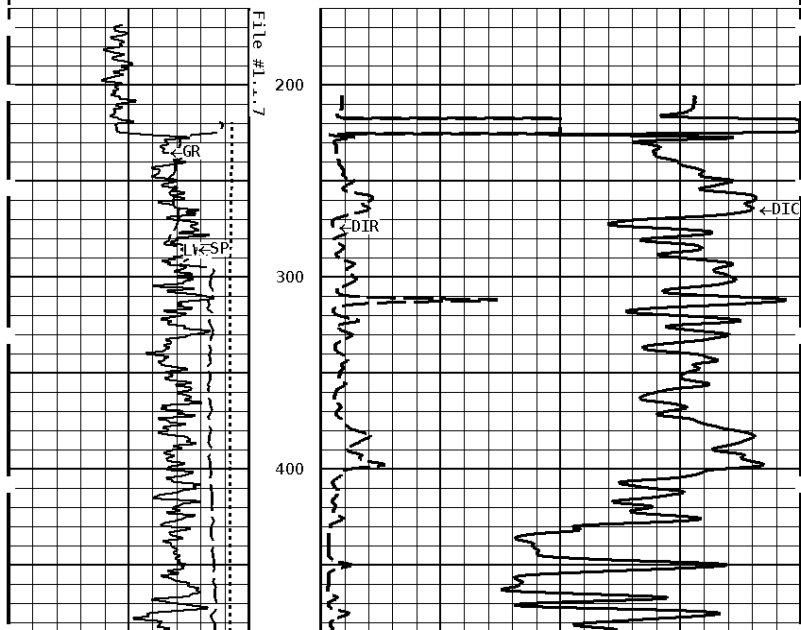
Acquired: 2014-08/19 09:07 3.3.0-12594

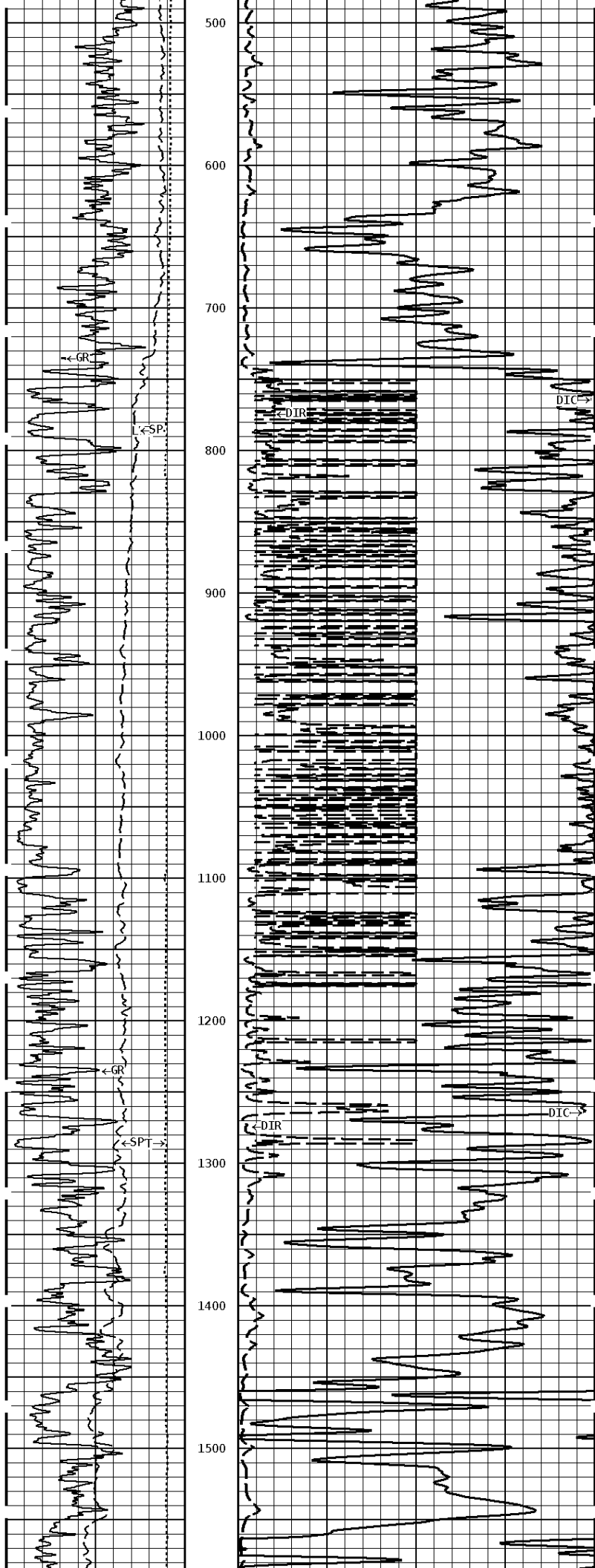
Reference: 0

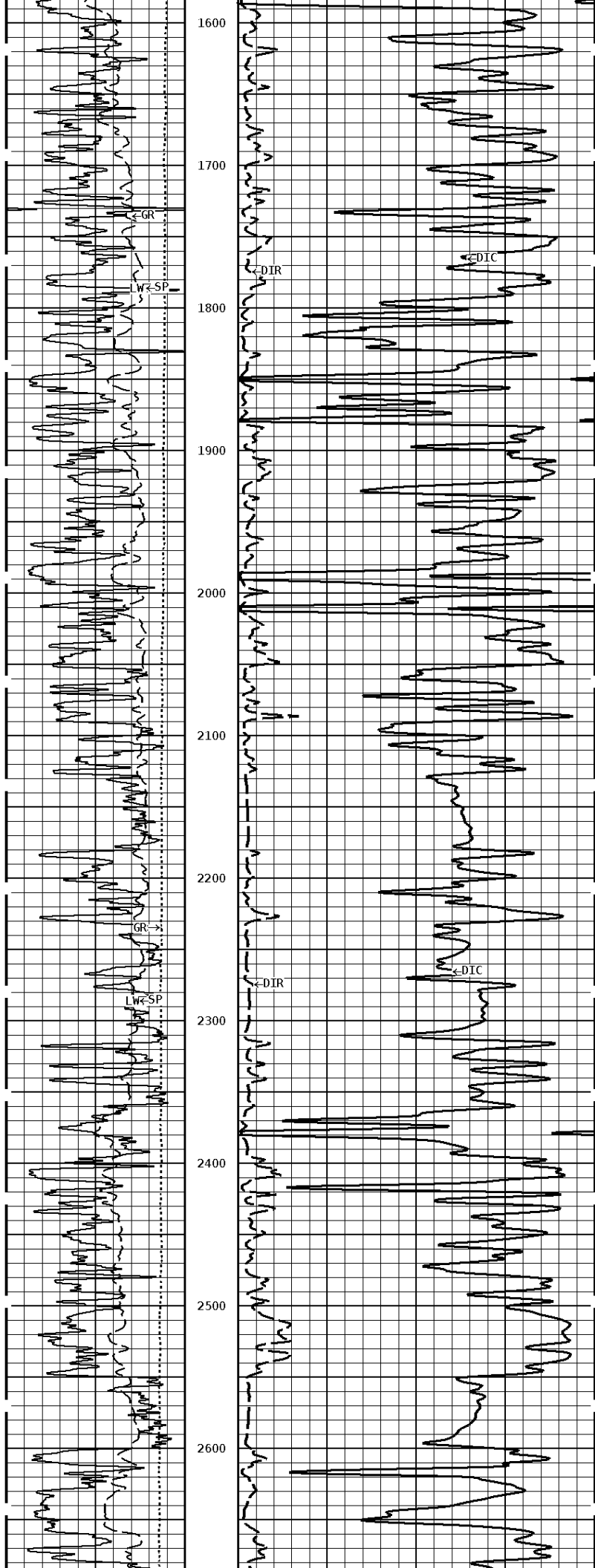
Processed: 2014-08/19 10:22 3.3.0-12594

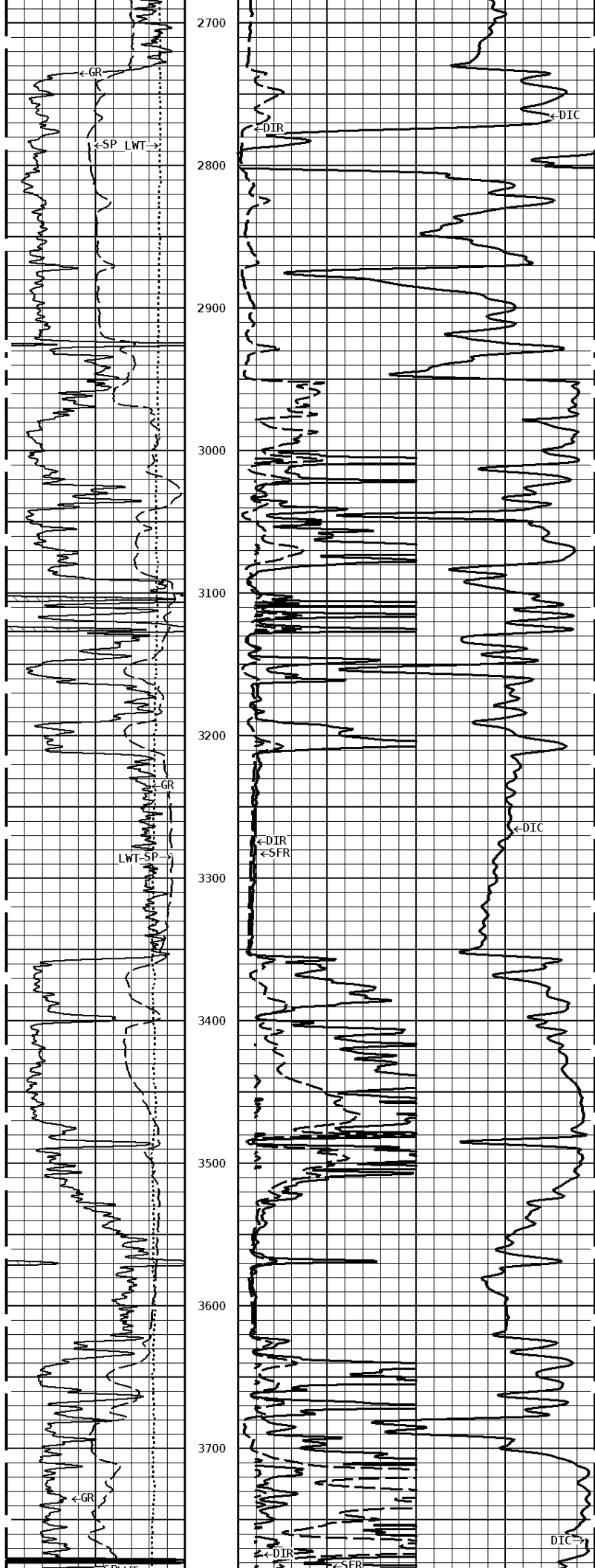
TENSION LBS		DEEP INDUCTION OHMM	
10000	0	0.0	500.0
		0.0	50.0
SPONTANEOUS POTENTIAL mV		SHALLOW FOCUSED OHMM	
→ ← 35		0.0	500.0
		0.0	50.0
GAMMA RAY API UNITS		DEEP CONDUCTIVITY MHMO	
150	300	2000	1000
0	150	1000	0

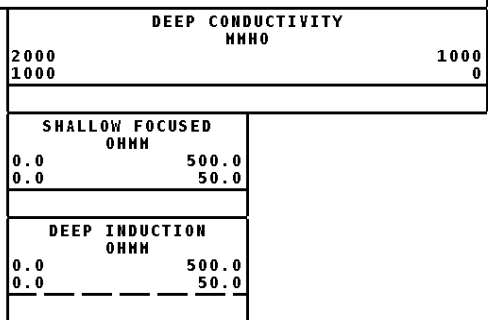
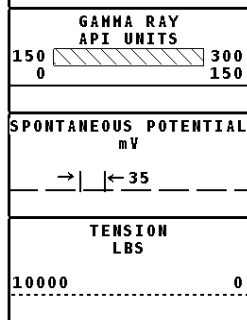
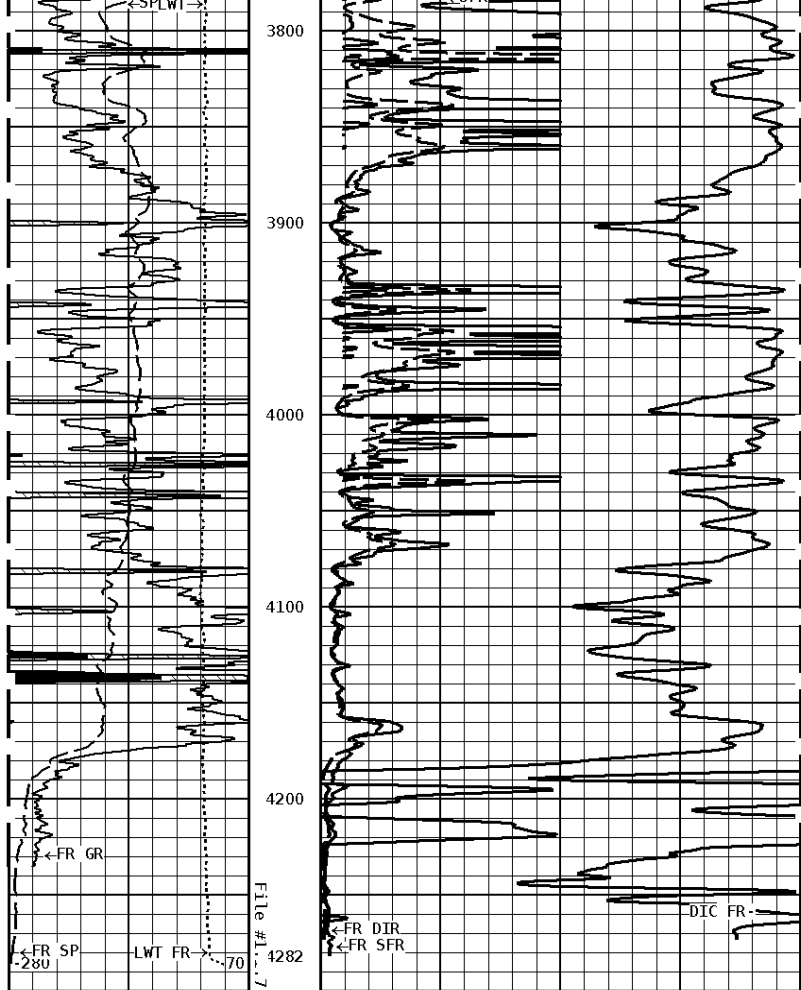
1:1200 MAIN SECTION











Company: MTM PETROLEUM INC.
 Well: HUFFORD #1-23
 Location: 2310' FSL & 330' FEL
 Logged: 2014-08-19
 K.B. Elev: 1488.0 Ft