

Tucker
ENERGY SERVICES

PHASED INDUCTION
SHALLOW FOCUS SP LOG

File No : TUL-62046
Company : VAL ENERGY, INC
Well : BIRDZELL #1-23 OWWO
Field :
Country : COWLEY
State : KANSAS
Country : USA
API No : 15-035-22441-0001

Location :
660' FSL & 3630' FEL

LSD : Sect : 23 Twp : 33S Rge : 4E

Company VAL ENERGY, INC
Well BIRDZELL #1-23 OWWO
Field
Country COWLEY
State KANSAS
Country USA
API No. 15-035-22441-0001

Permanent Datum: GL Elevations: KB 0.00 Ft
Drilling Measured From: KB DF 0.00 Ft
Log Measured From: KB DF 0.00 Ft
Above Permanent Datum: 0.00 Ft GL 1117.00 Ft

Date	11-03-2018	
Run Number	1	
Depth--Driller	3480.0	Ft
Depth--Logger	3472.0	Ft
First Reading	3472.0	Ft
Last Reading	234.0	Ft
Casing--Driller	234.0	Ft
Casing--Logger	234.0	Ft
Bit Size	7.875	In
Casing Size	8.625	In
Hole Fluid Type	WBM	
Density	9.0	
Fluid Loss	16.0	
PH/Viscosity	9.0	38.0
Sample Source	MEASURED	
RM@Measured Temp.	2.000	@ 70 F
RMF@Measured Temp	1.600	@ 70 F
RMC@Measured Temp.	2.400	@ 70 F
Source RMF/RMC	CALCULATED/CALCULATED	
RM@BHT	0.000	@ 110 F
Time Circulation Stopped	11-03-2018 14:00	
Max Recorded Temp.	110	F
Equipment/Base	1022	TULSA, OK
Recorded By	SHELDON TYLER	
Witnessed By	JOE BAKER	

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	3480.00	8.625	32.00	234.00	0.00

Run Number	1	
Date	11-03-2018	
Date/Time On Bottom	11-03-2018 17:00	
Depth to Fluid	0.0	Ft
Salinity	9000.000	
RMF@BHT	0.000	@ 110 F
RMC@BHT	0.000	@ 110 F

Run Number 1

Comments

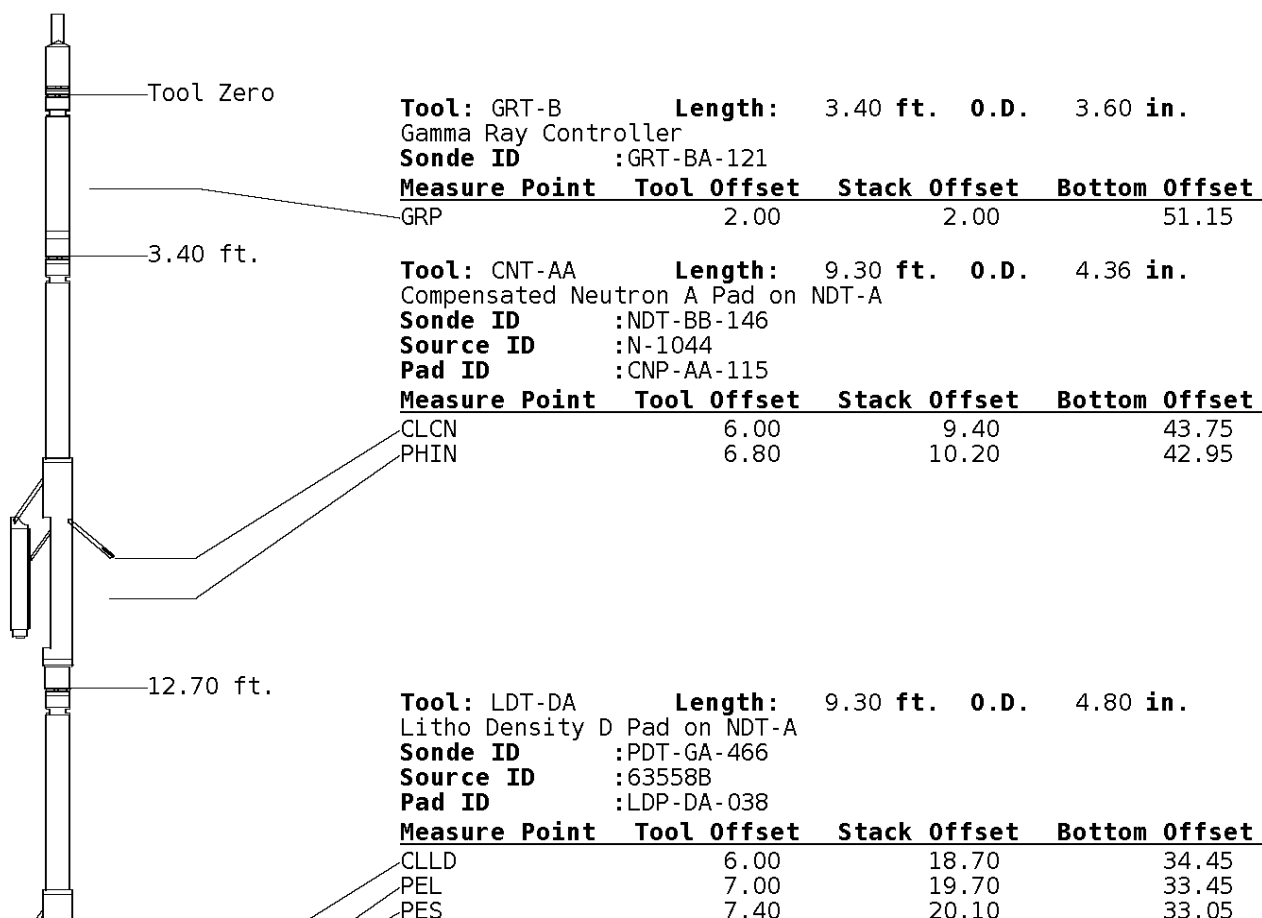
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED

GRT: GRP, GRX
 CNT: PHIN, CLCNIN, PHXN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX
 MLT: NOR_RF, INV_RF, MSCLPIN
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:
 B.BAILEY
 K.WARREN

Tool String Schematic

Total Tool Length - 53.15 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.





	7.20	19.90	33.25
	7.20	19.90	33.25

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MST-DA-021

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-069

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

Well File: VAL ENERGY BIRDZELL OWWO 1-23 NOV3 MSTK **Scale:** 1:600 **Format:** DIL-600
Segment: V1.D1.S5 FINAL MAIN **Acquired:** Not Available
Reference: 0 **Processed:** Not Available

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

→ ← 20

0.0 500.0
0.0 50.0

GAMMA RAY
API UNITS

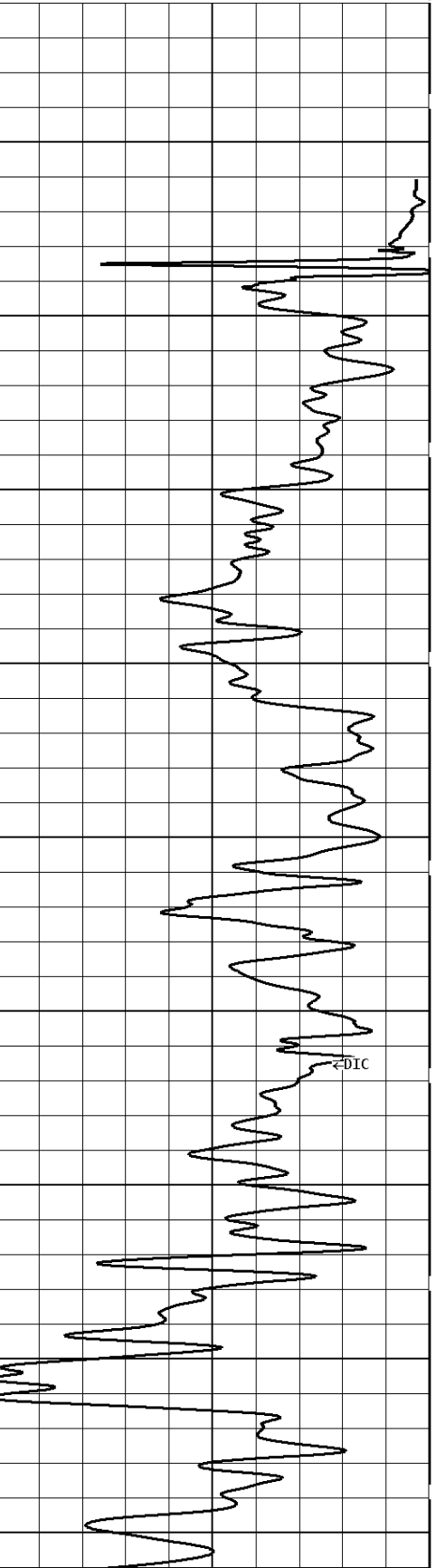
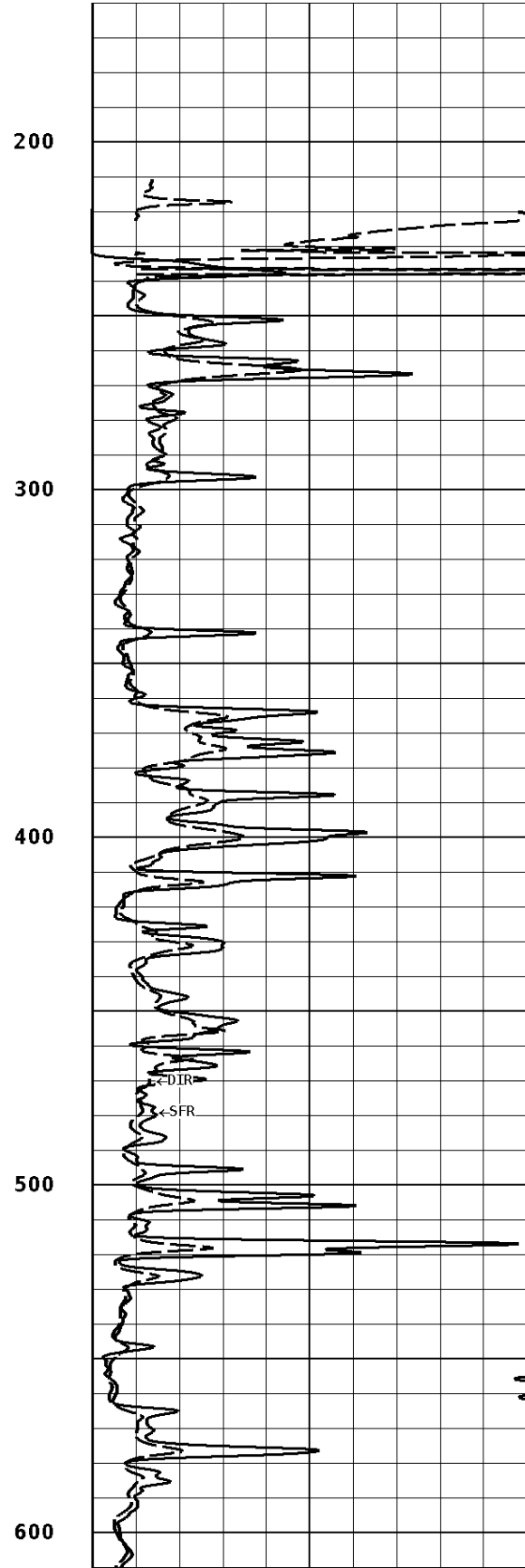
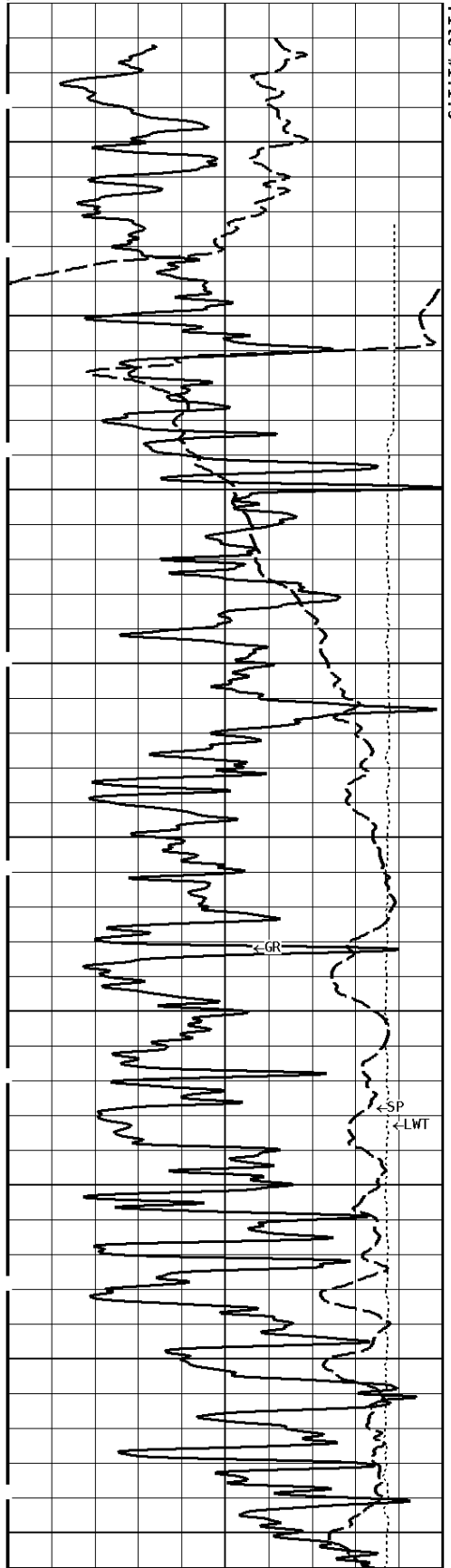
DEEP CONDUCTIVITY
MMHO

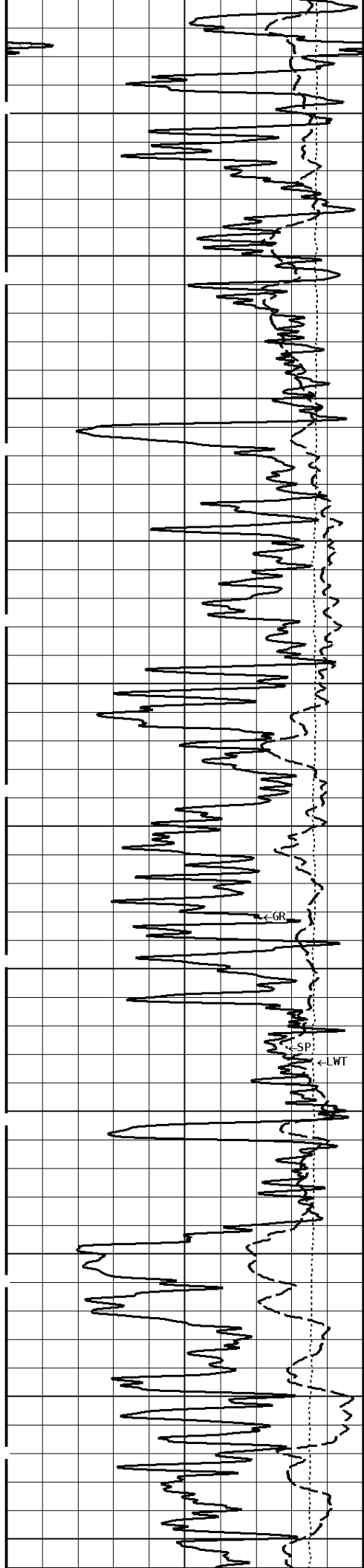
150 0 300 150

2000 1000

1000 0

1:600 MAIN SECTION





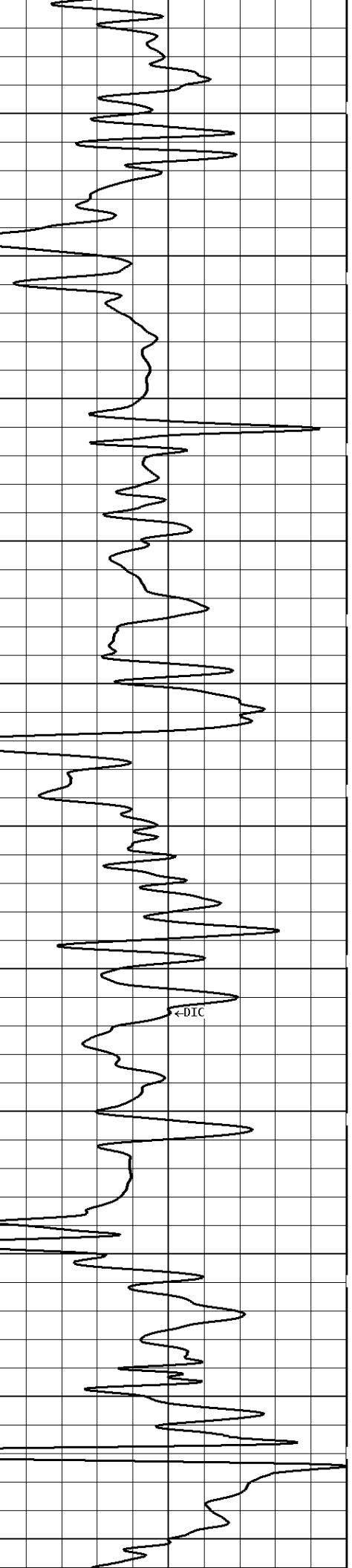
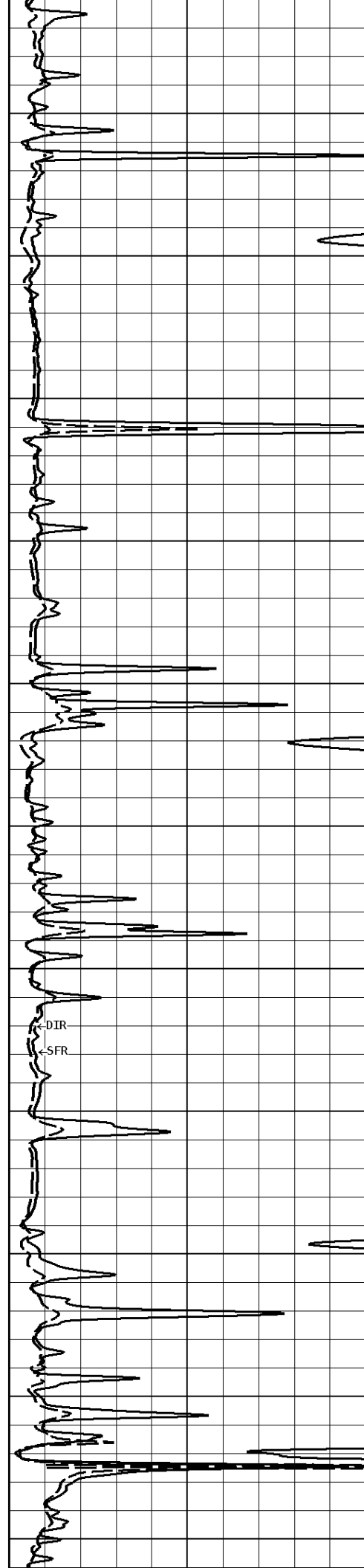
700

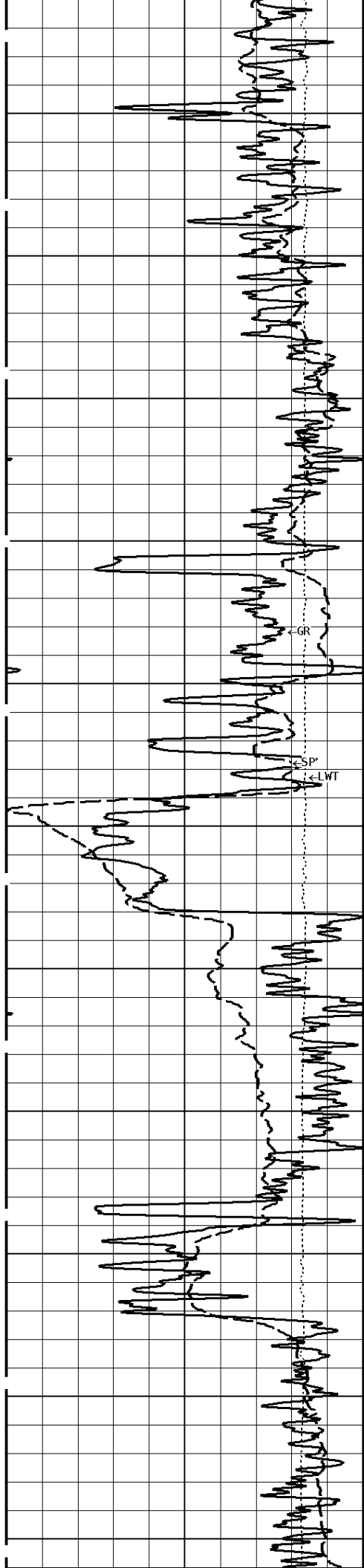
800

900

1000

1100





1800

1900

2000

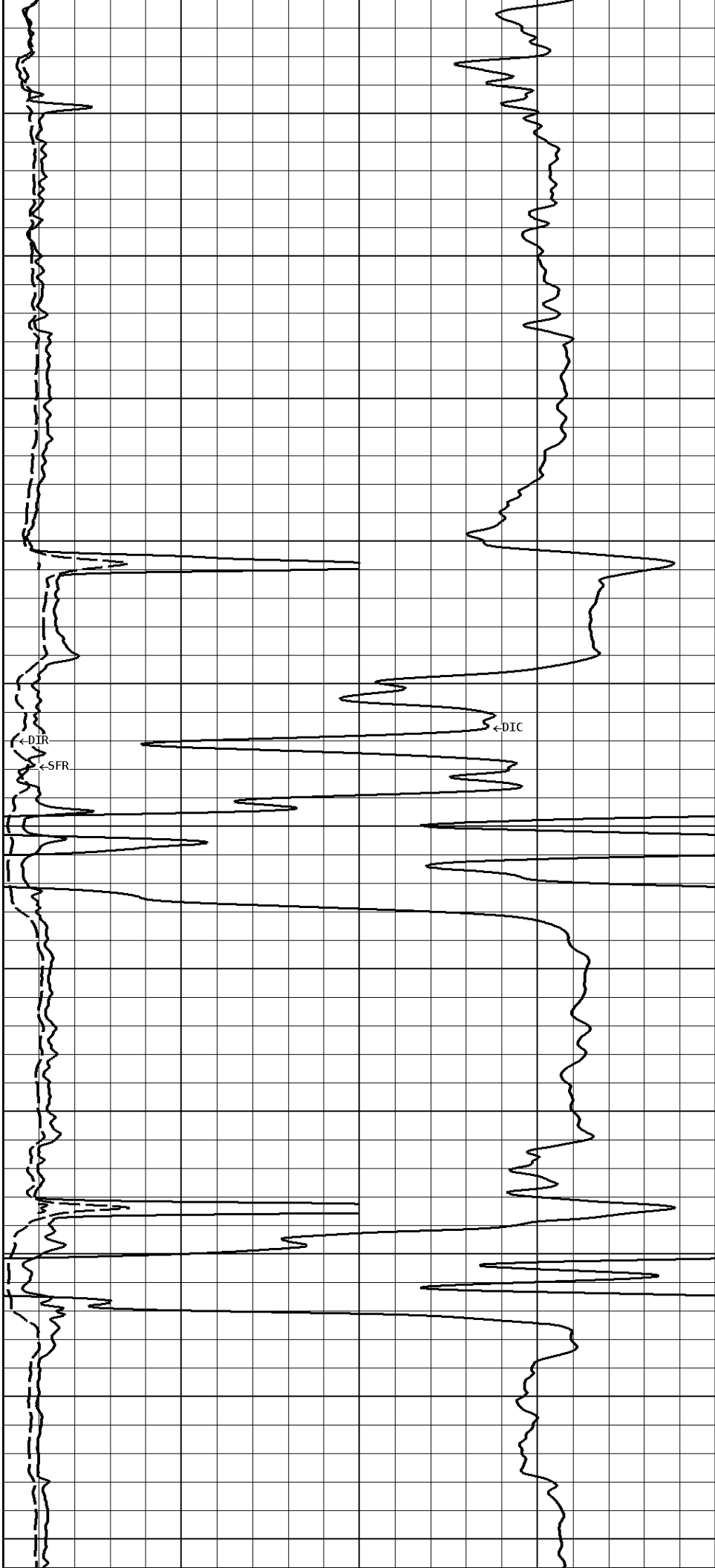
2100

2200

GR

SP

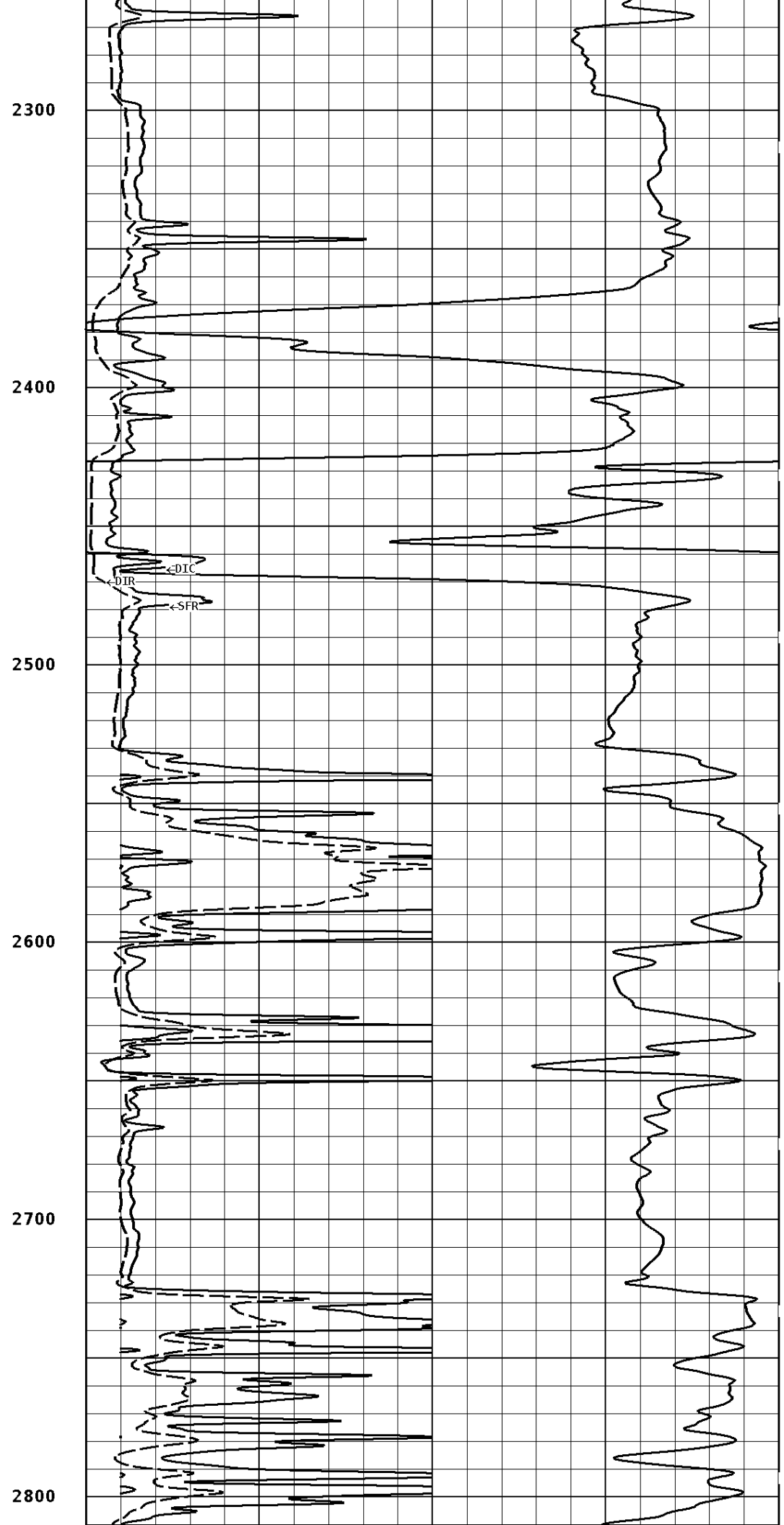
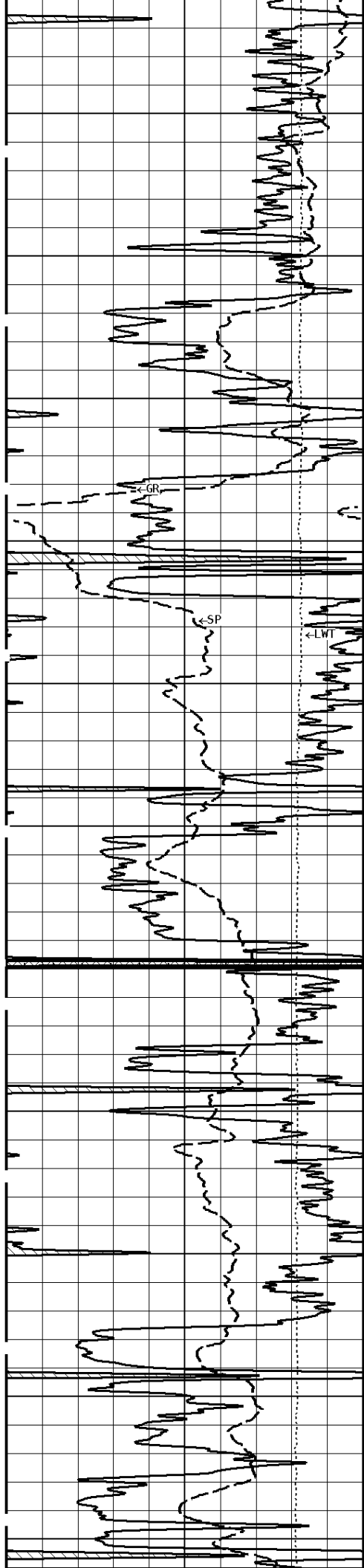
LWT

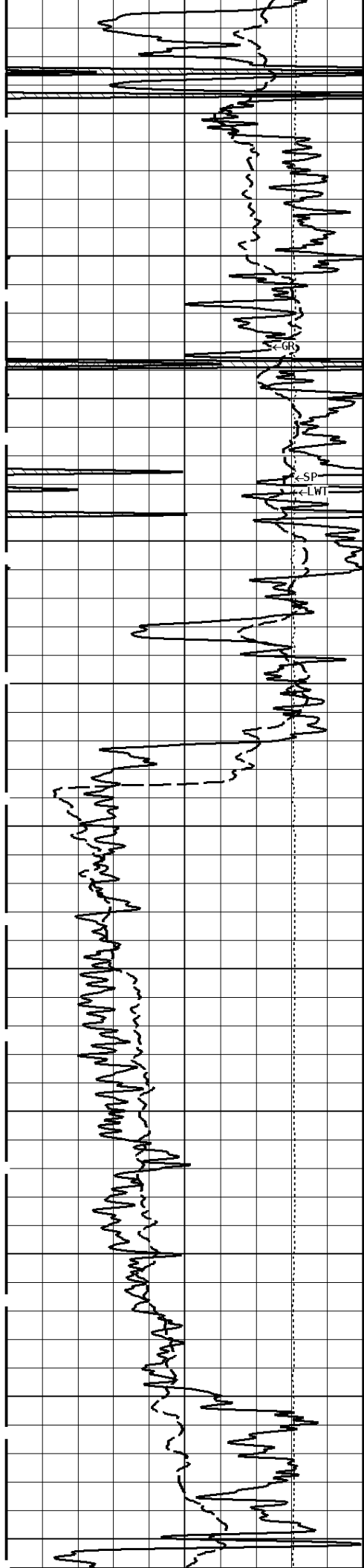


DIR

SFR

DIC





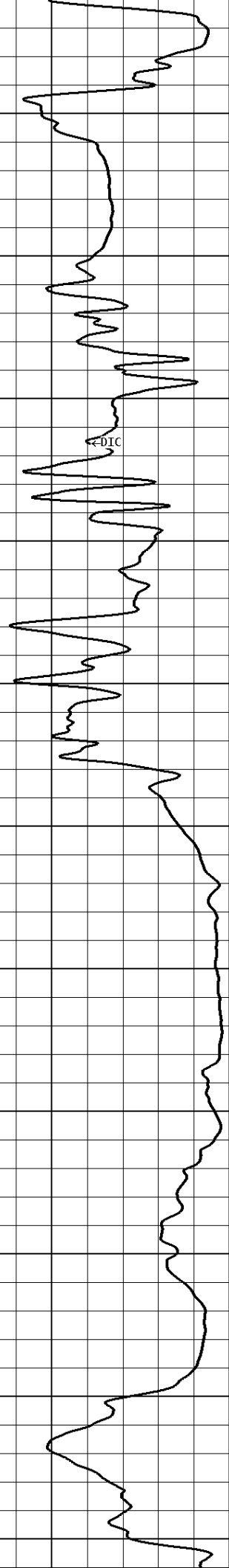
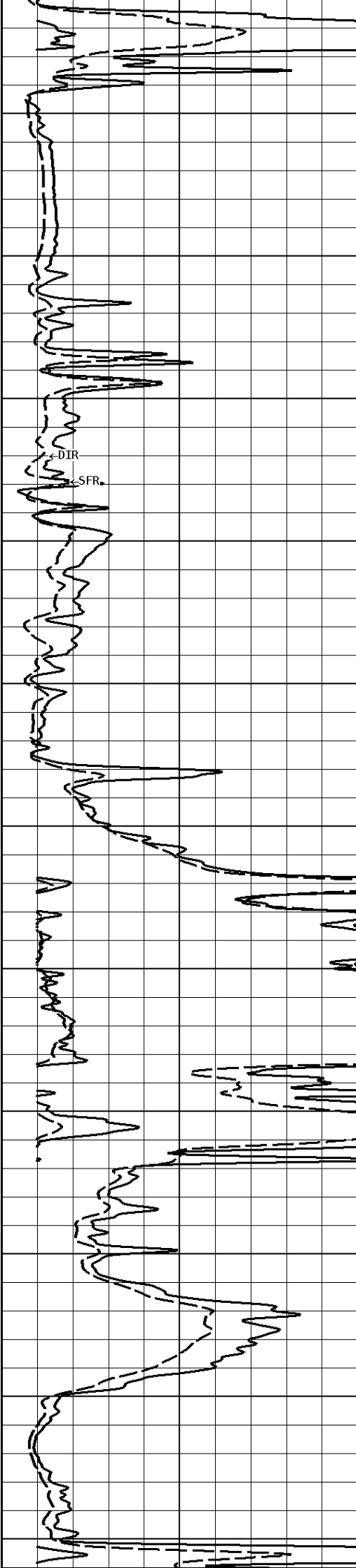
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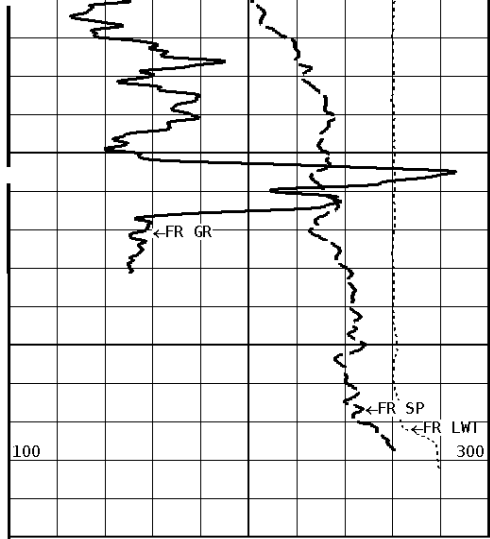
3000

3100

3200

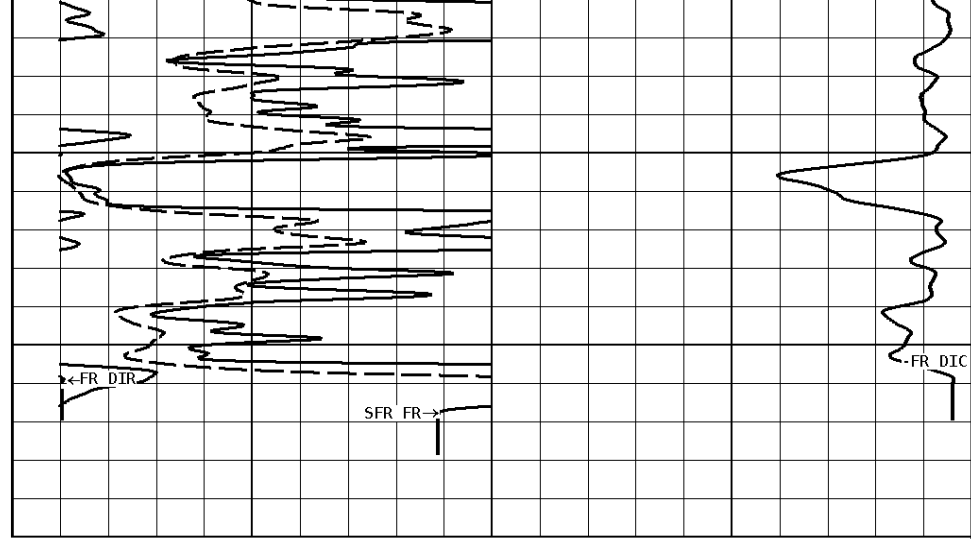
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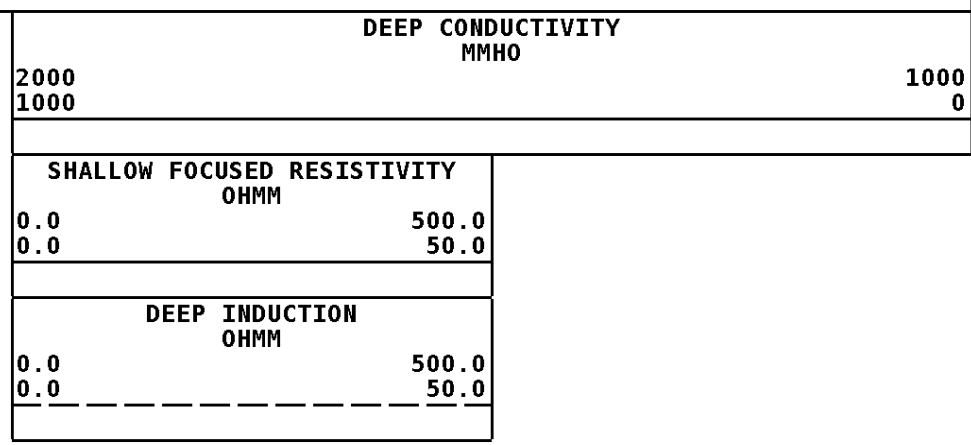
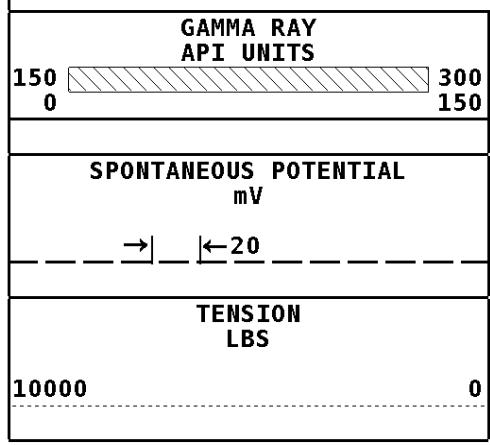


File #1.1.5

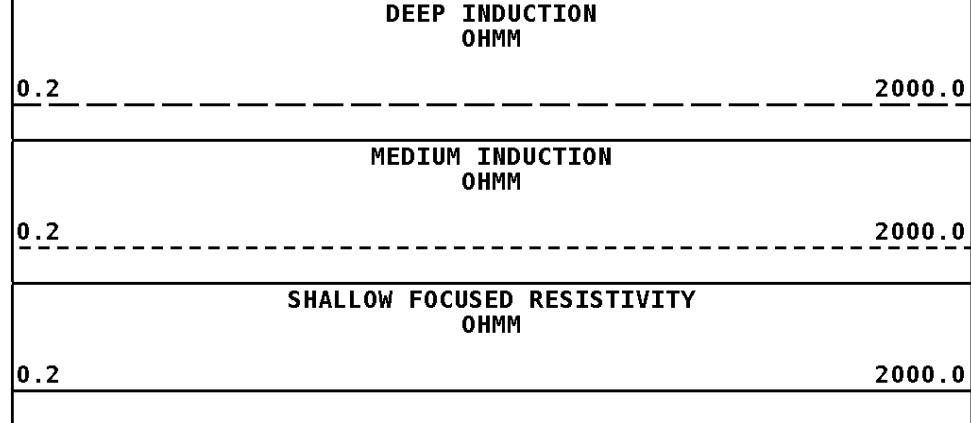
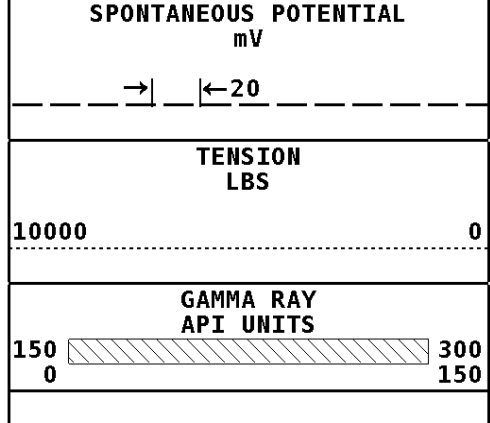
3400
3472



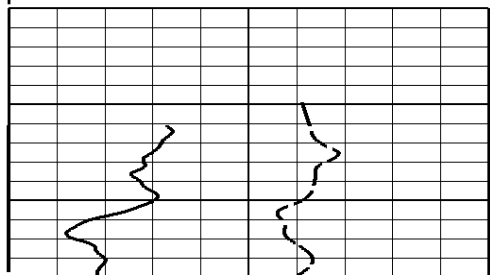
1:600 MAIN SECTION



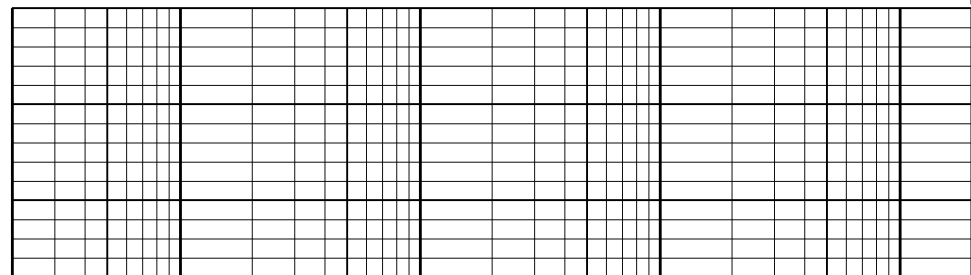
Well File: VAL ENERGY BIRDZELL OWWO 1-23 NOV3 MSTK Scale: 1:240 Format: DIL-240
 Segment: V1.D1.S5 FINAL MAIN Acquired: Not Available
 Reference: 0 Processed: Not Available

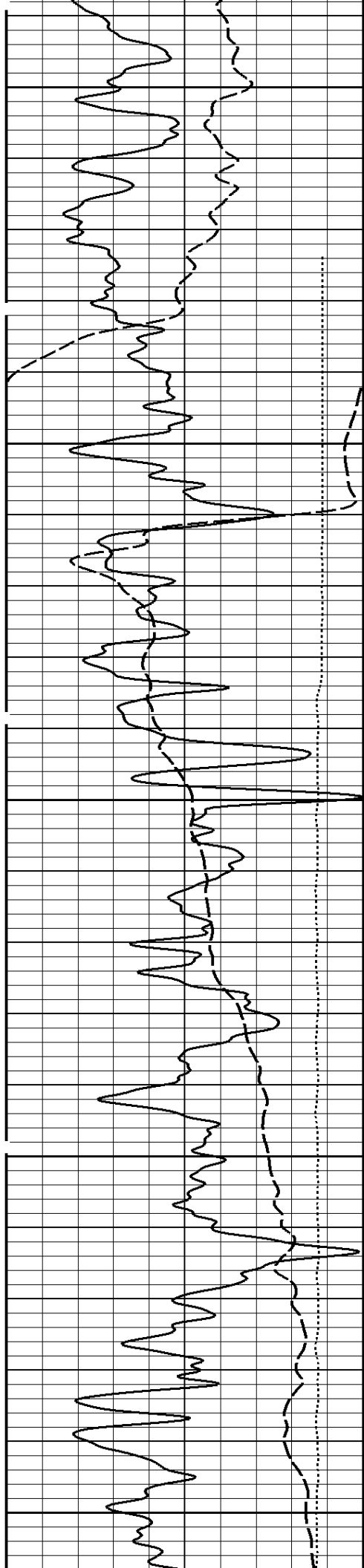


1:240 MAIN SECTION



File #1.1.5

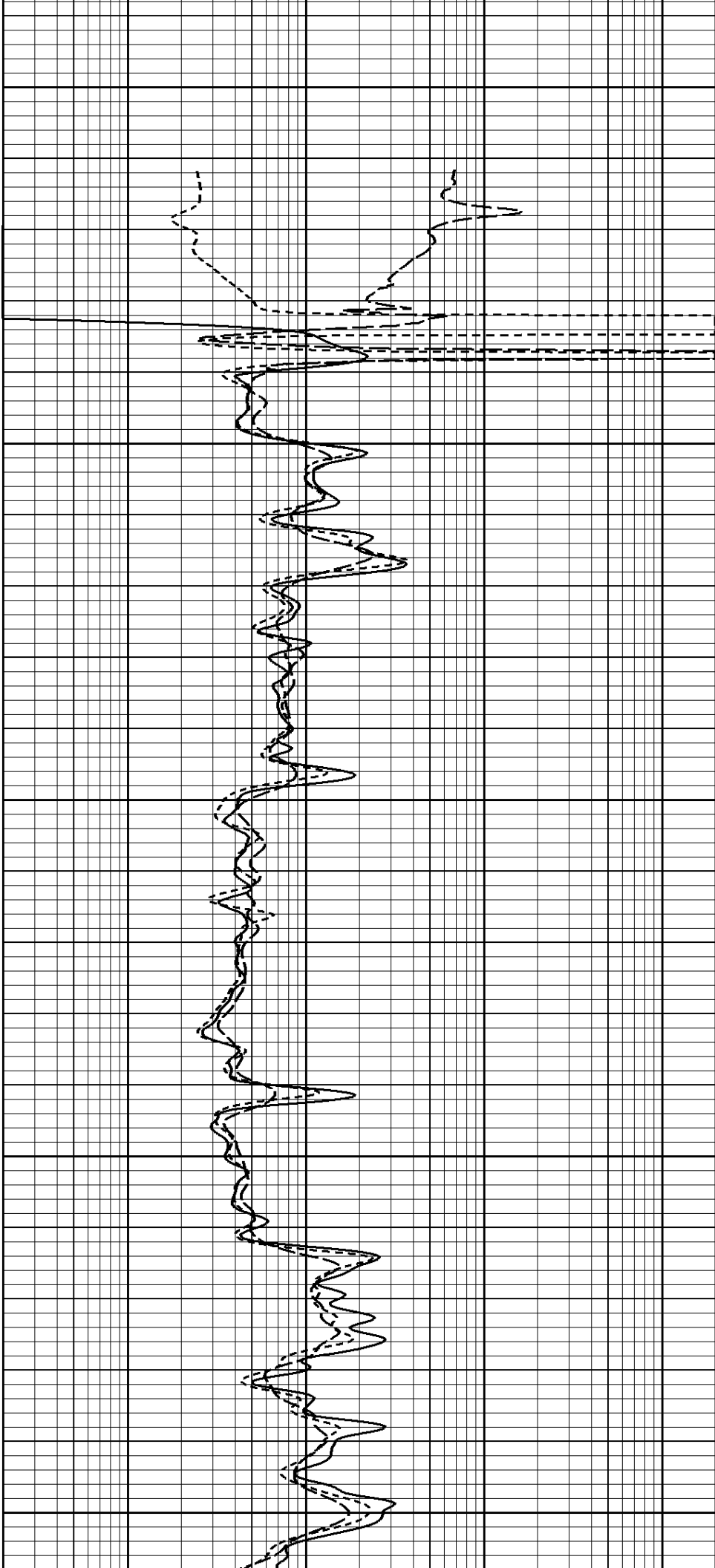


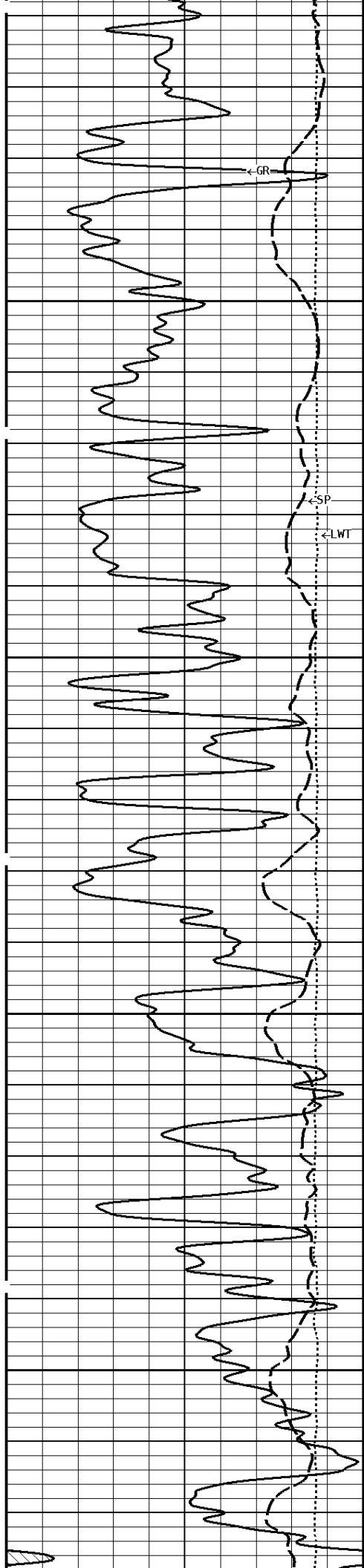


200

300

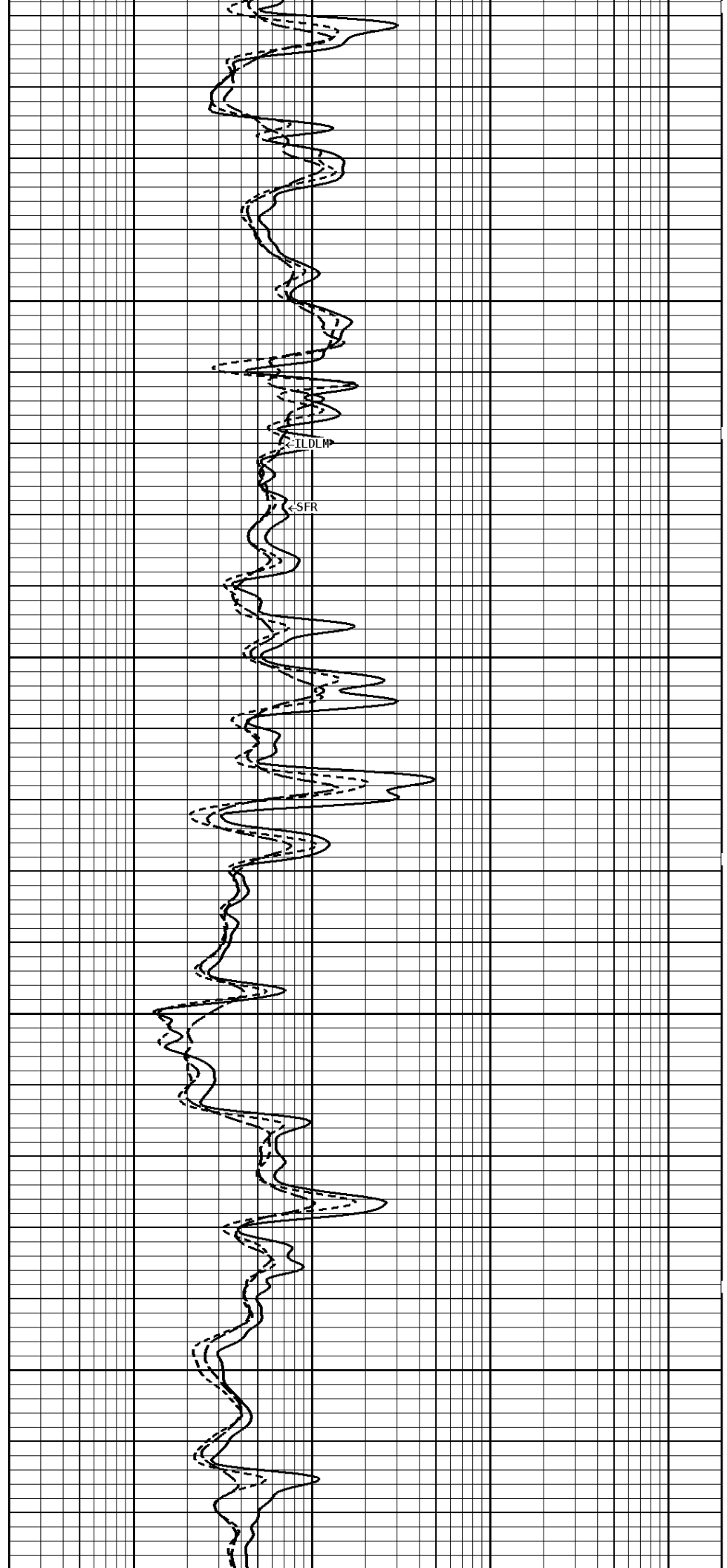
400

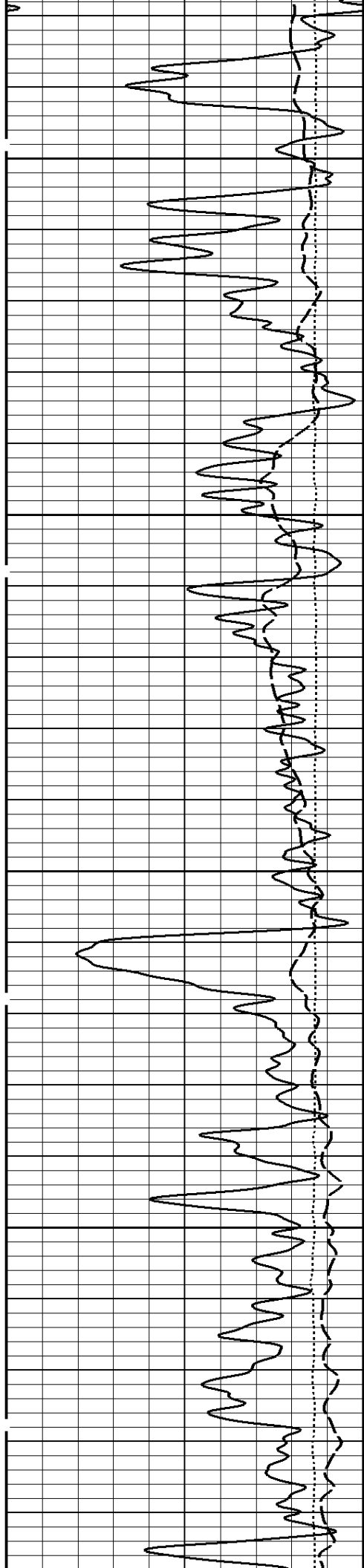




500

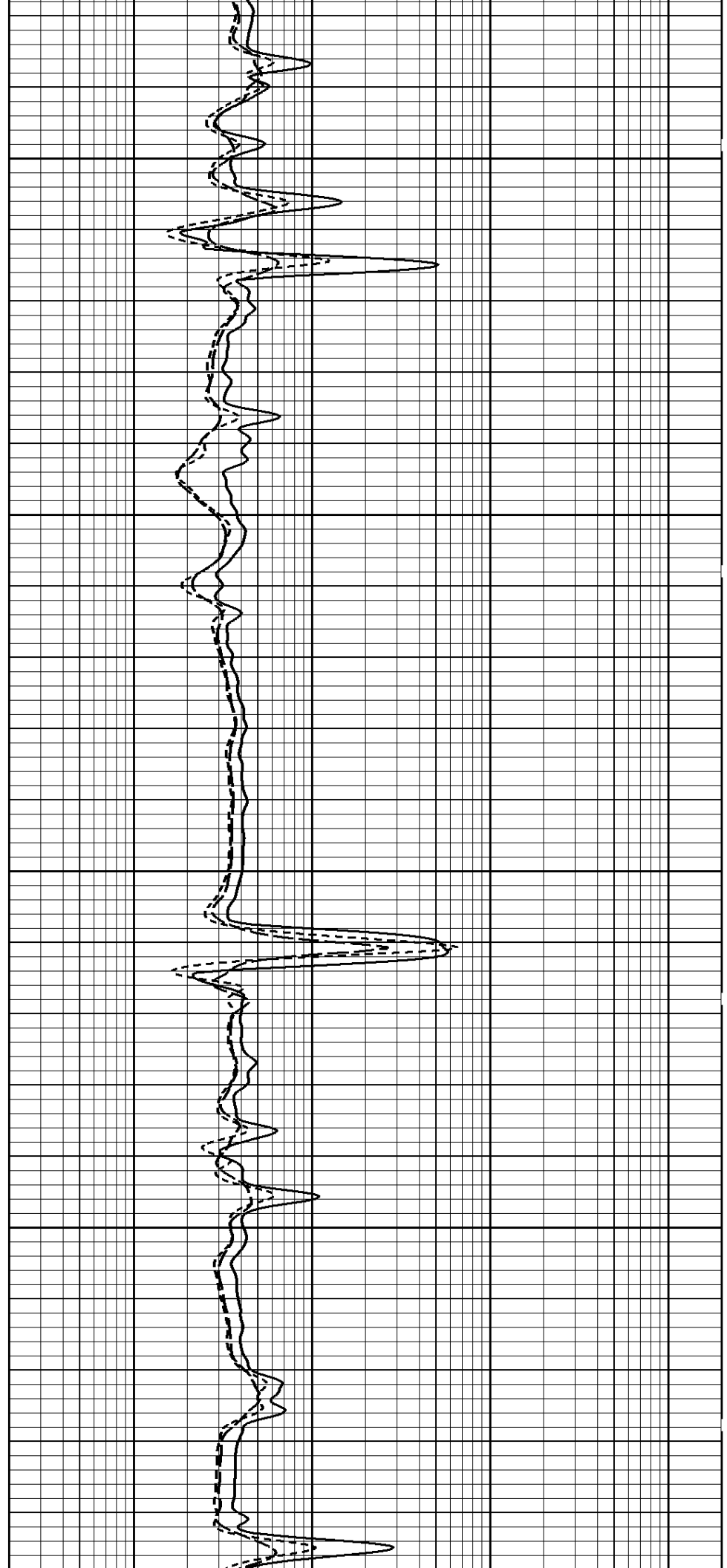
600

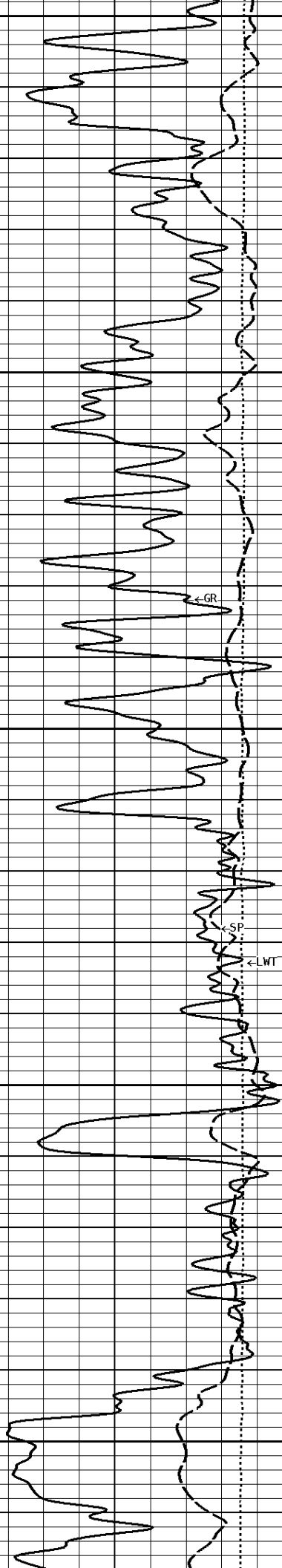




700

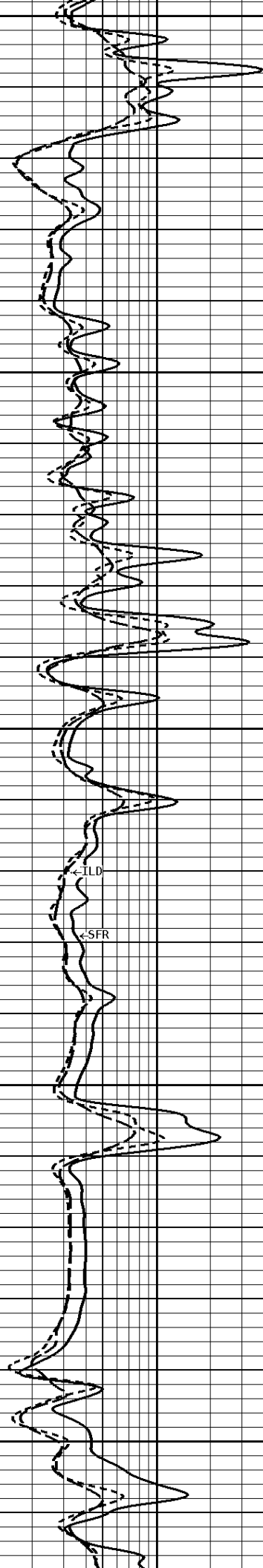
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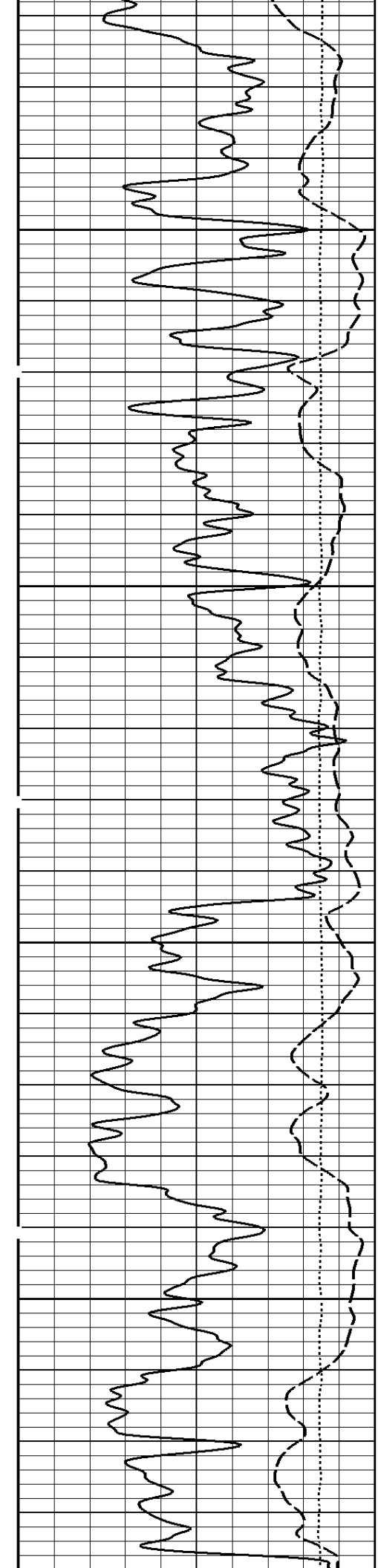




900

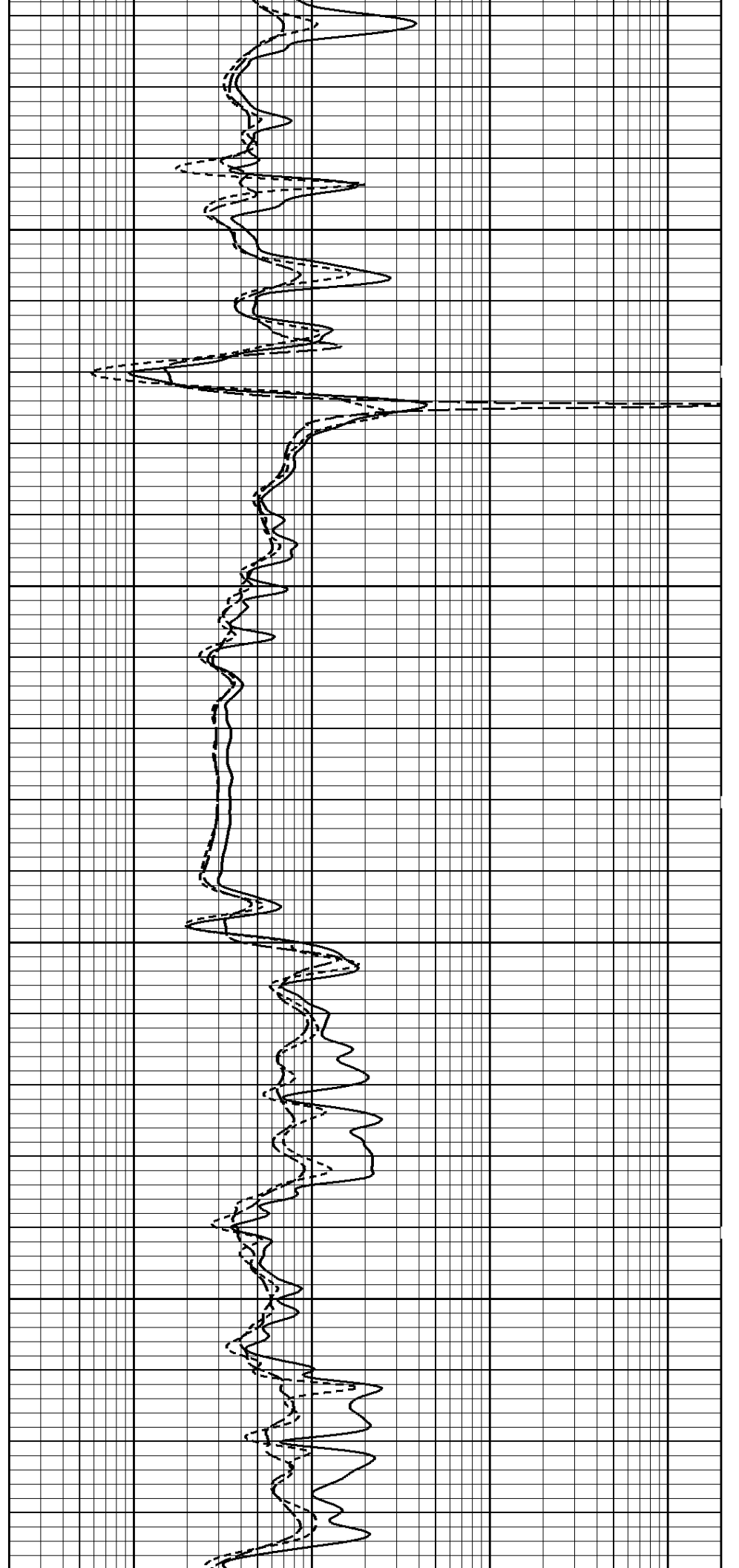
1000

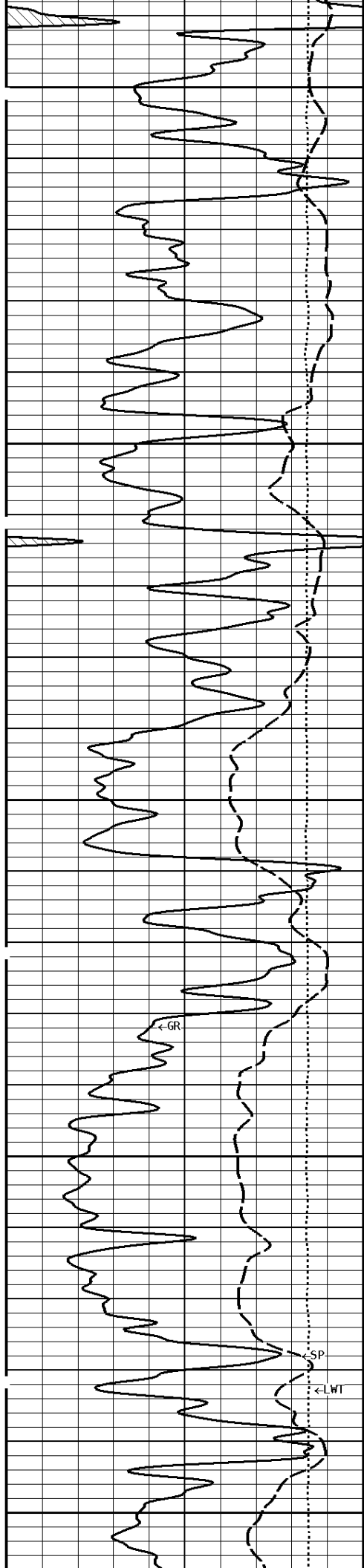




1100

1200

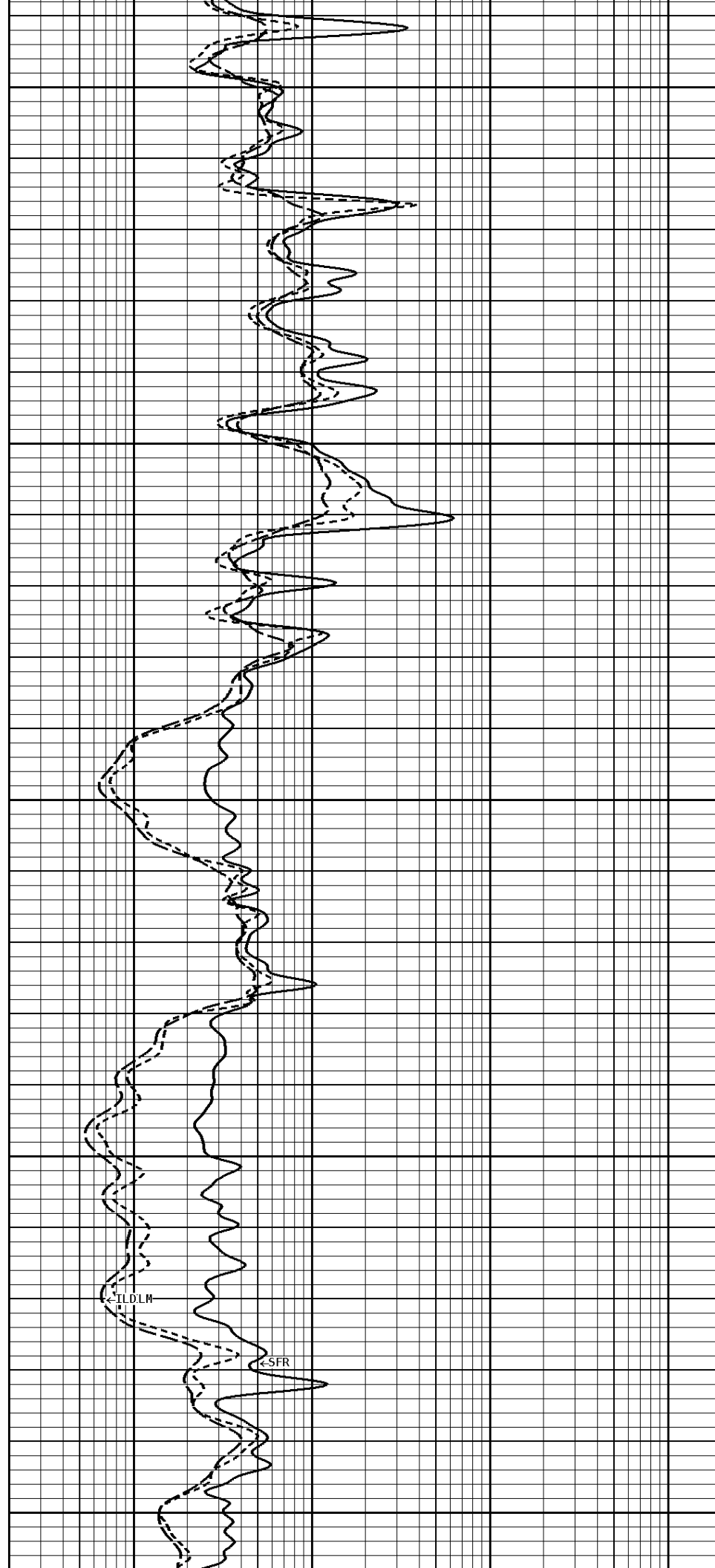




1300

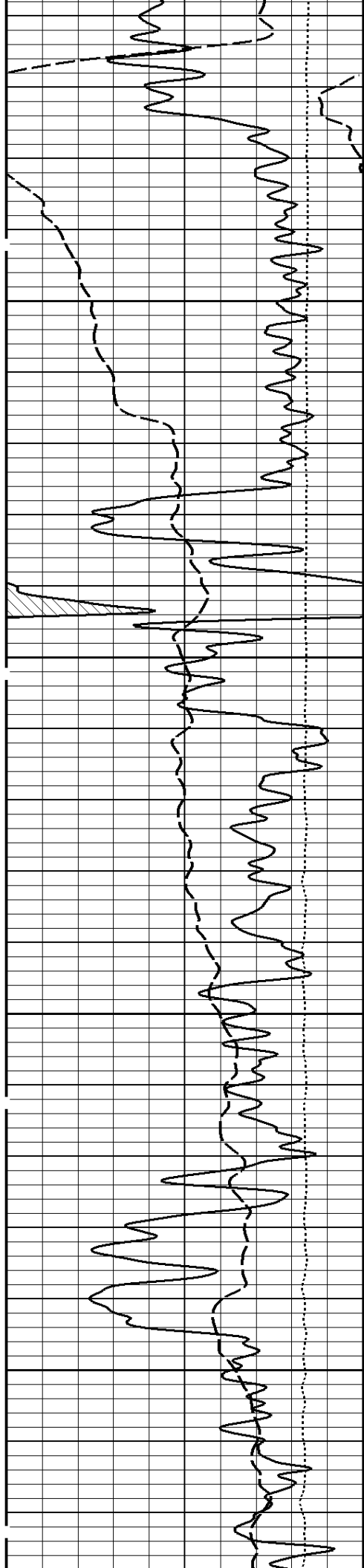
1400

1500



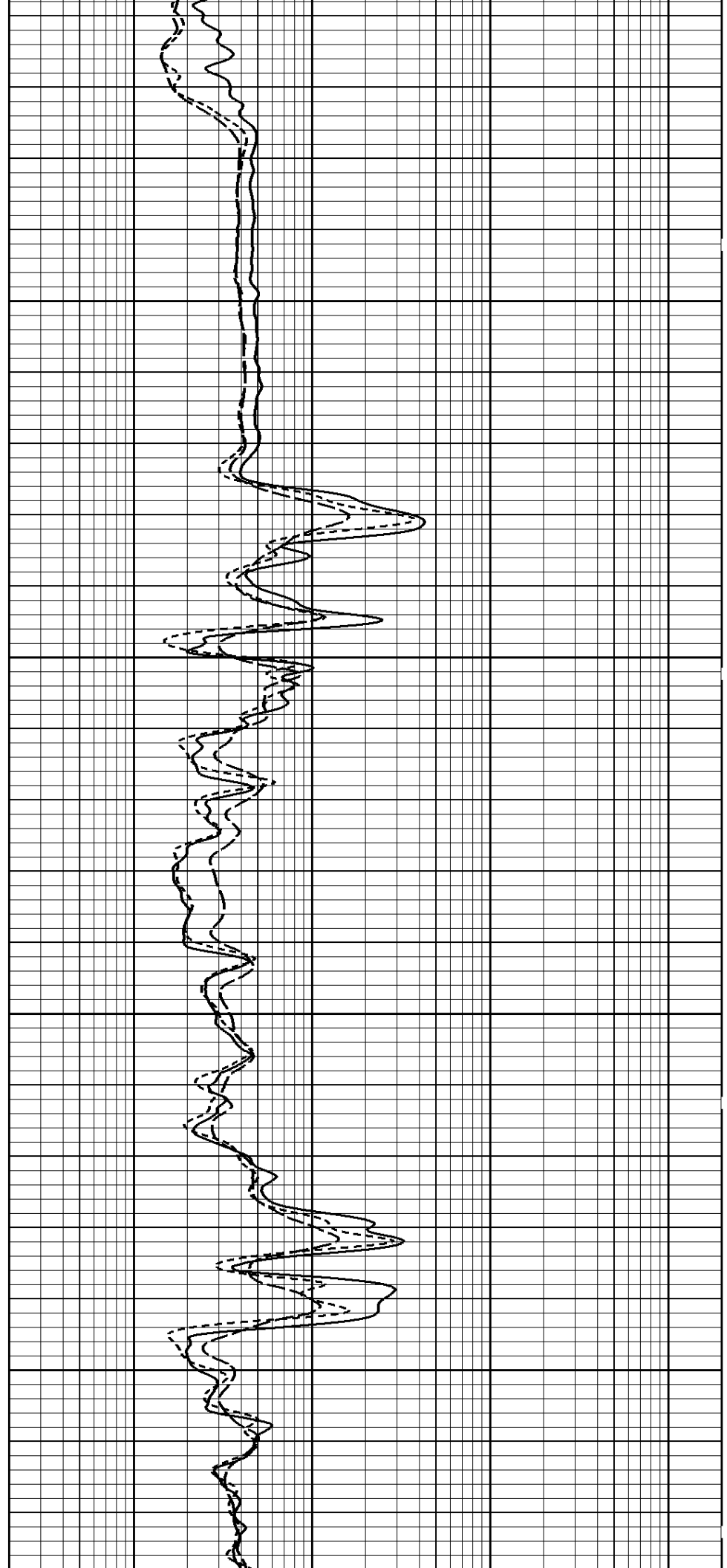
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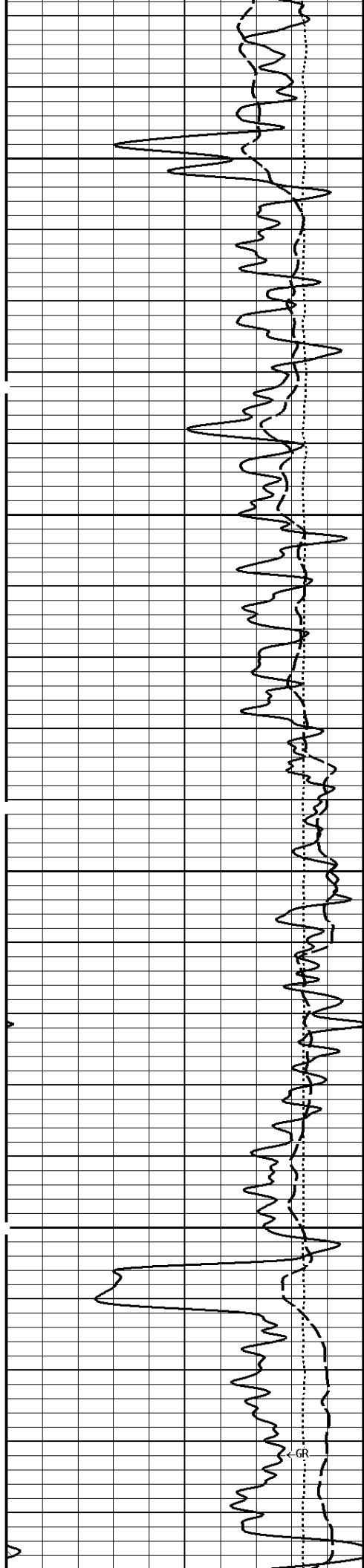
<-SFR



1600

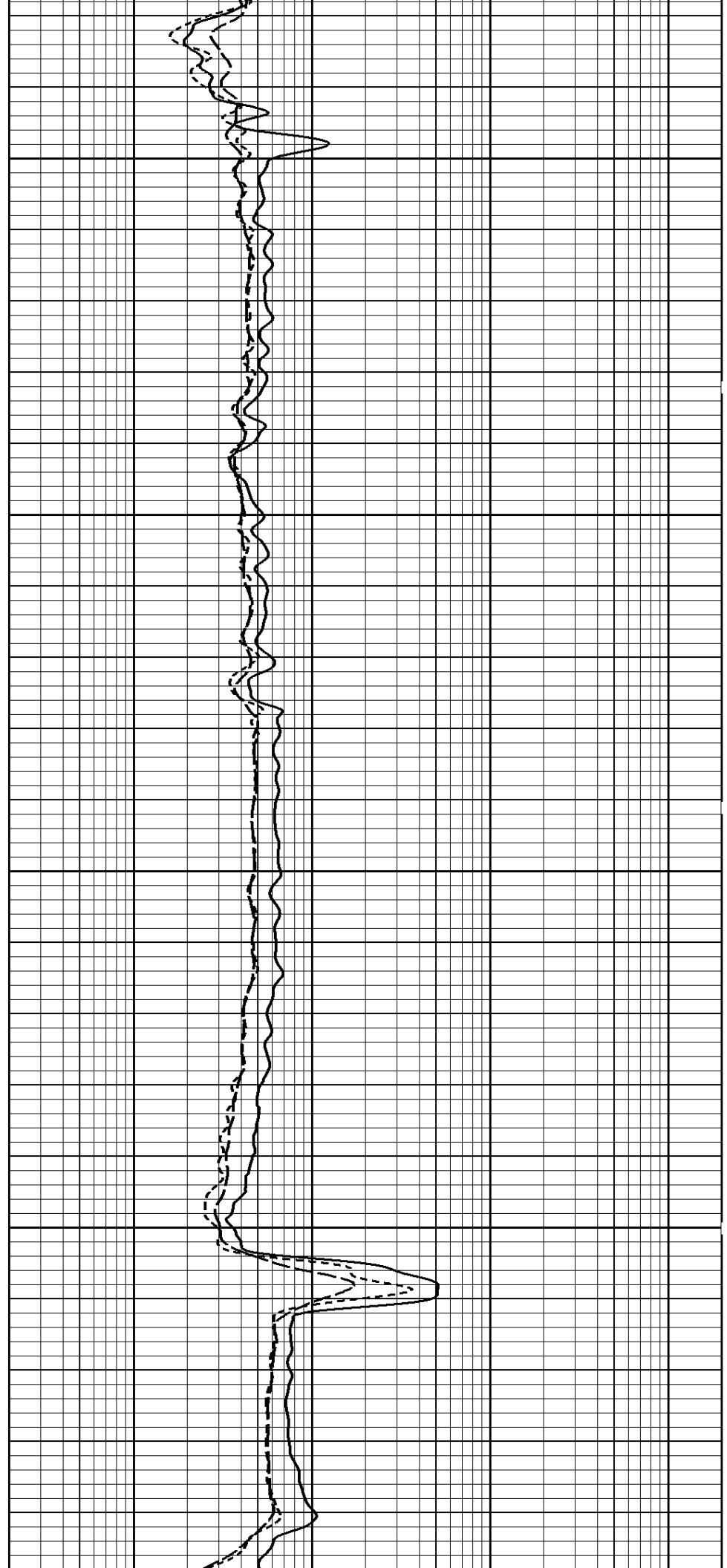
1700

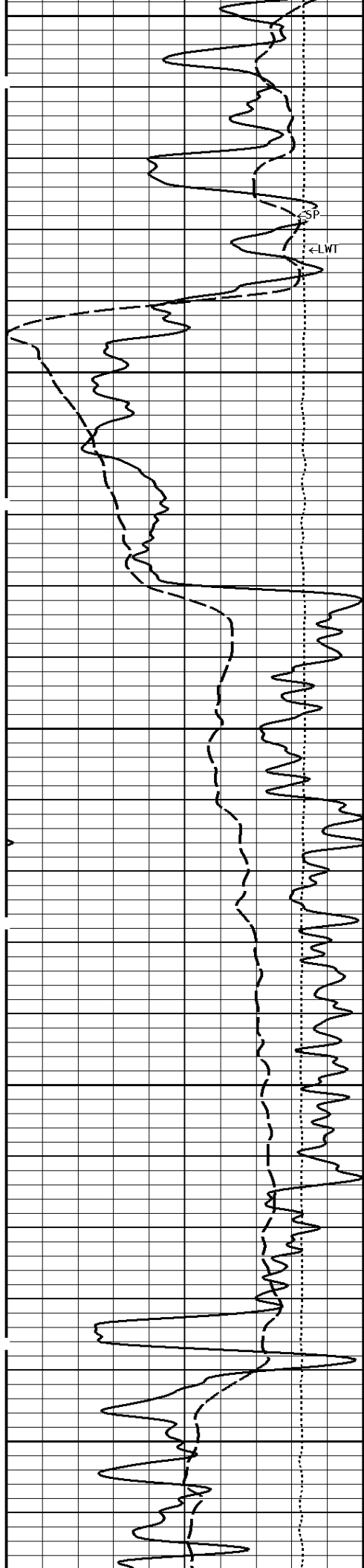




1800

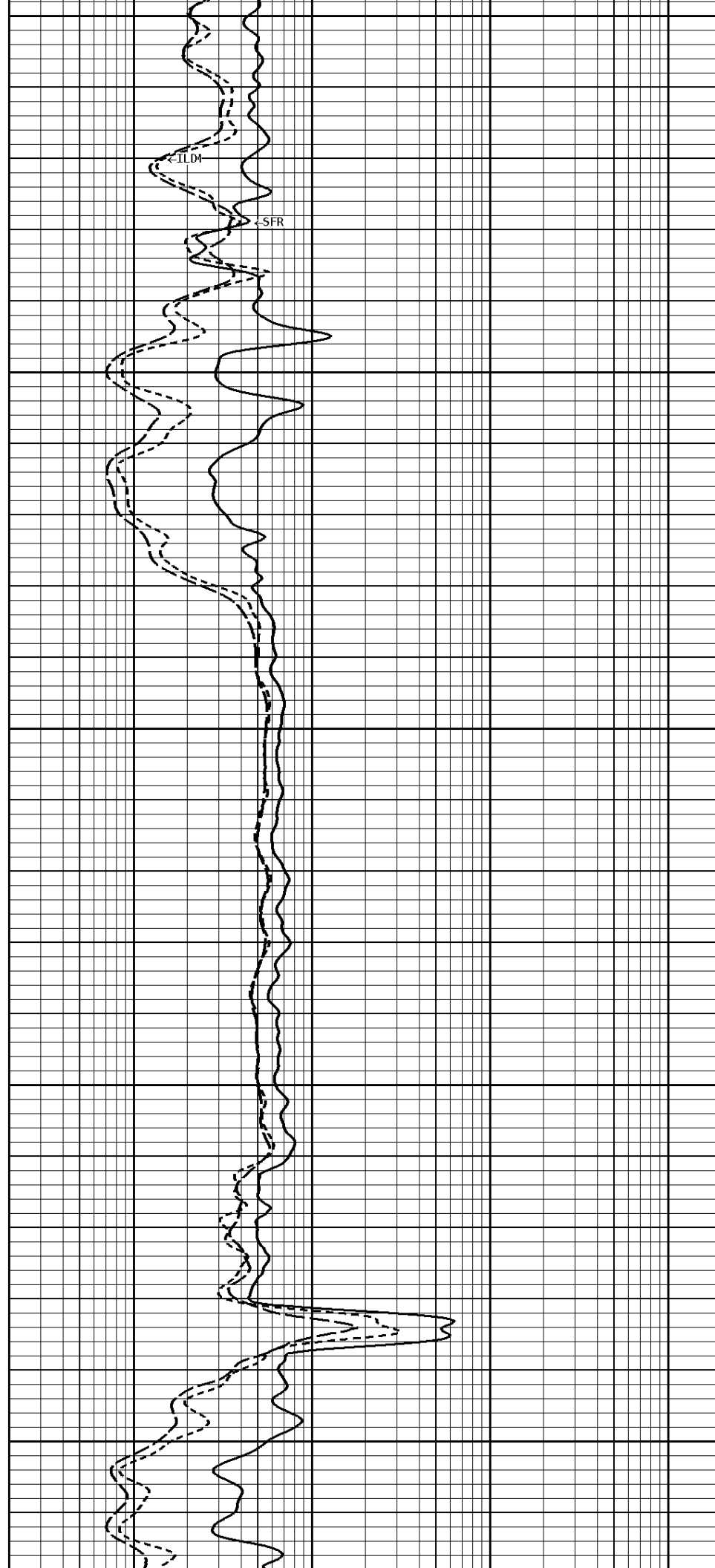
1900

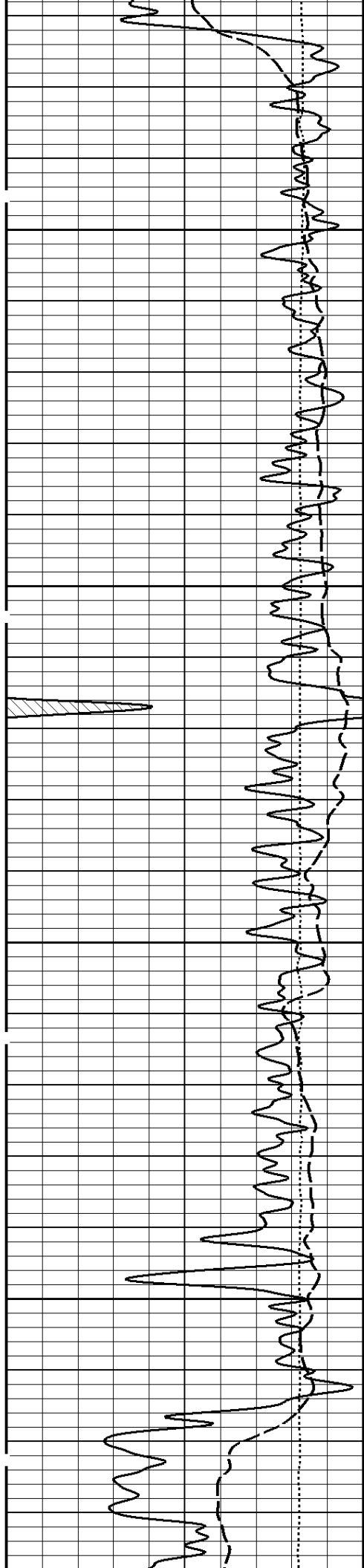




2000

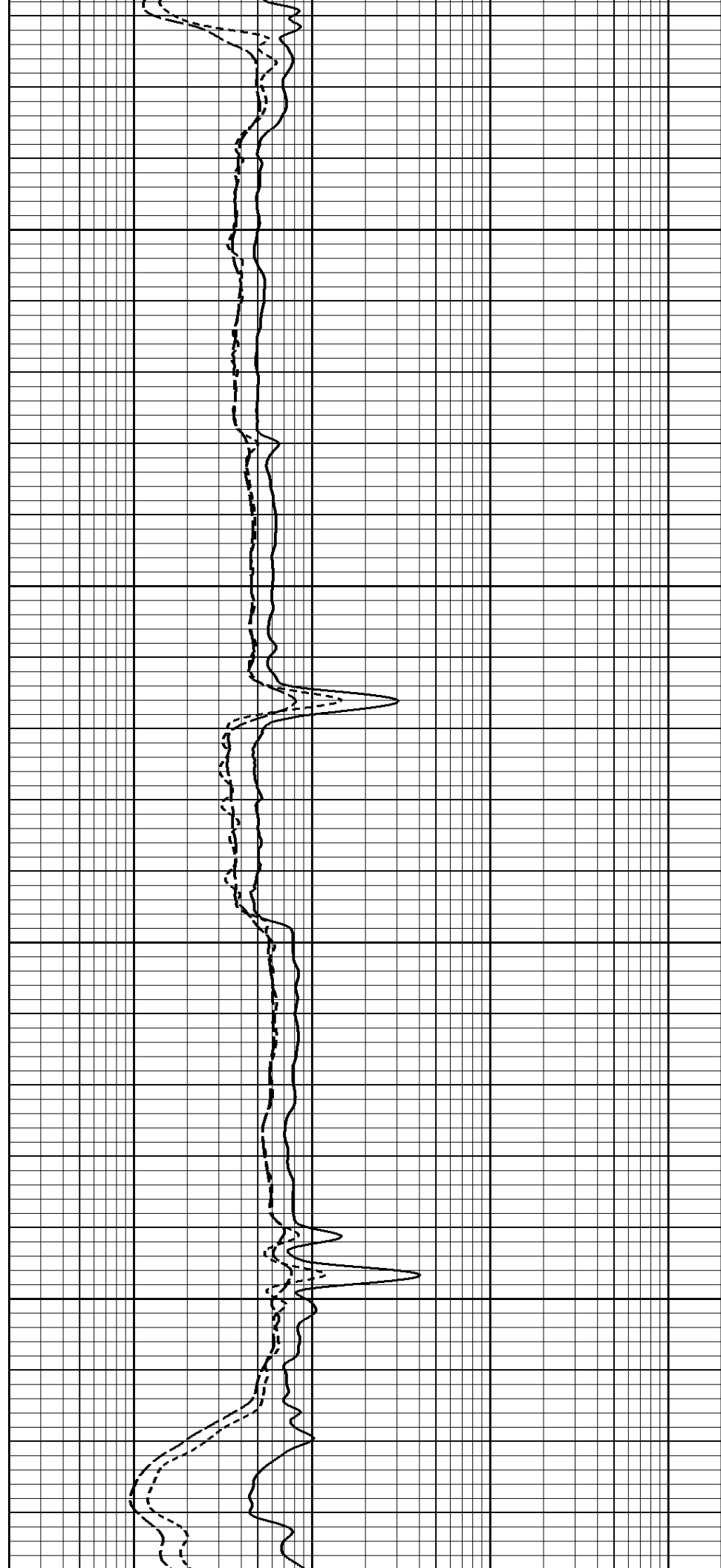
2100

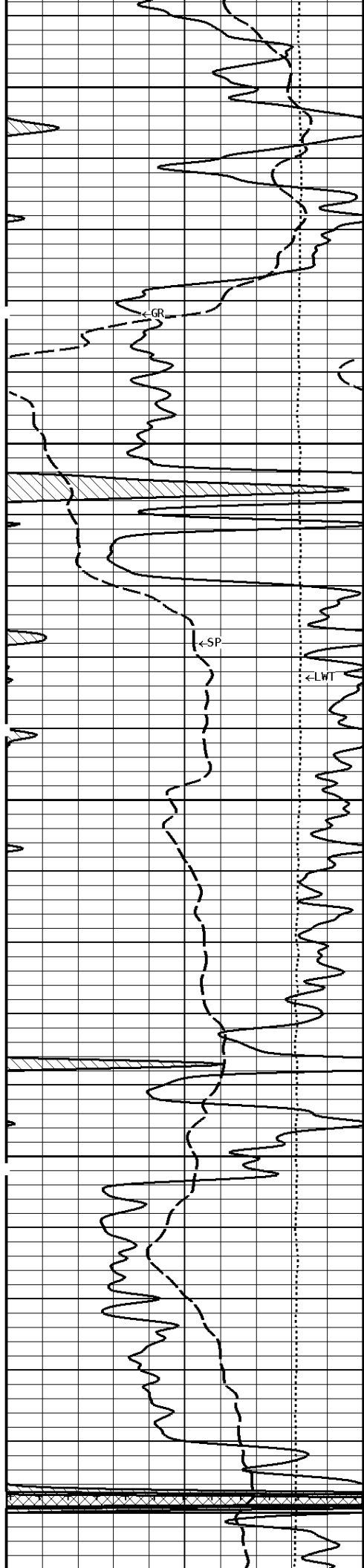




2200

2300

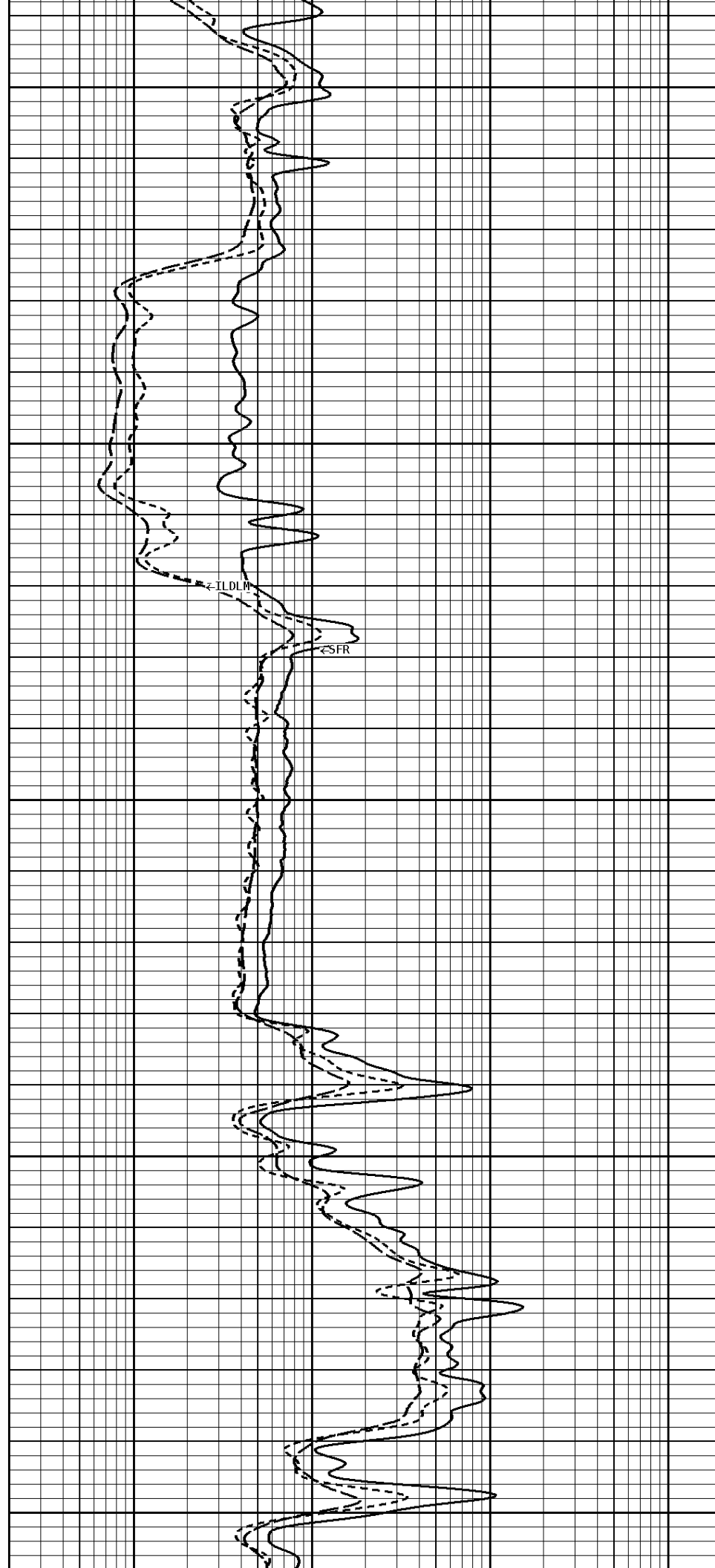


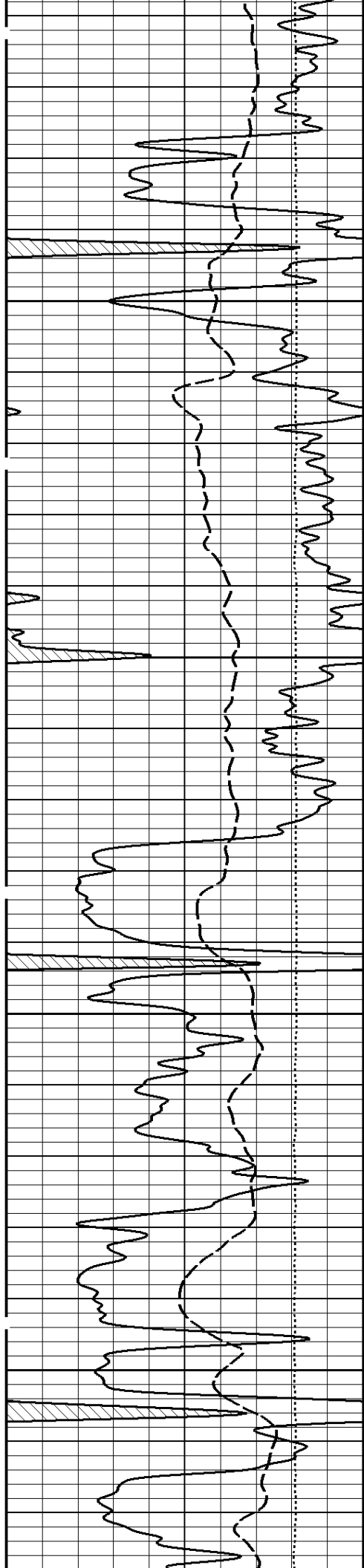


2400

2500

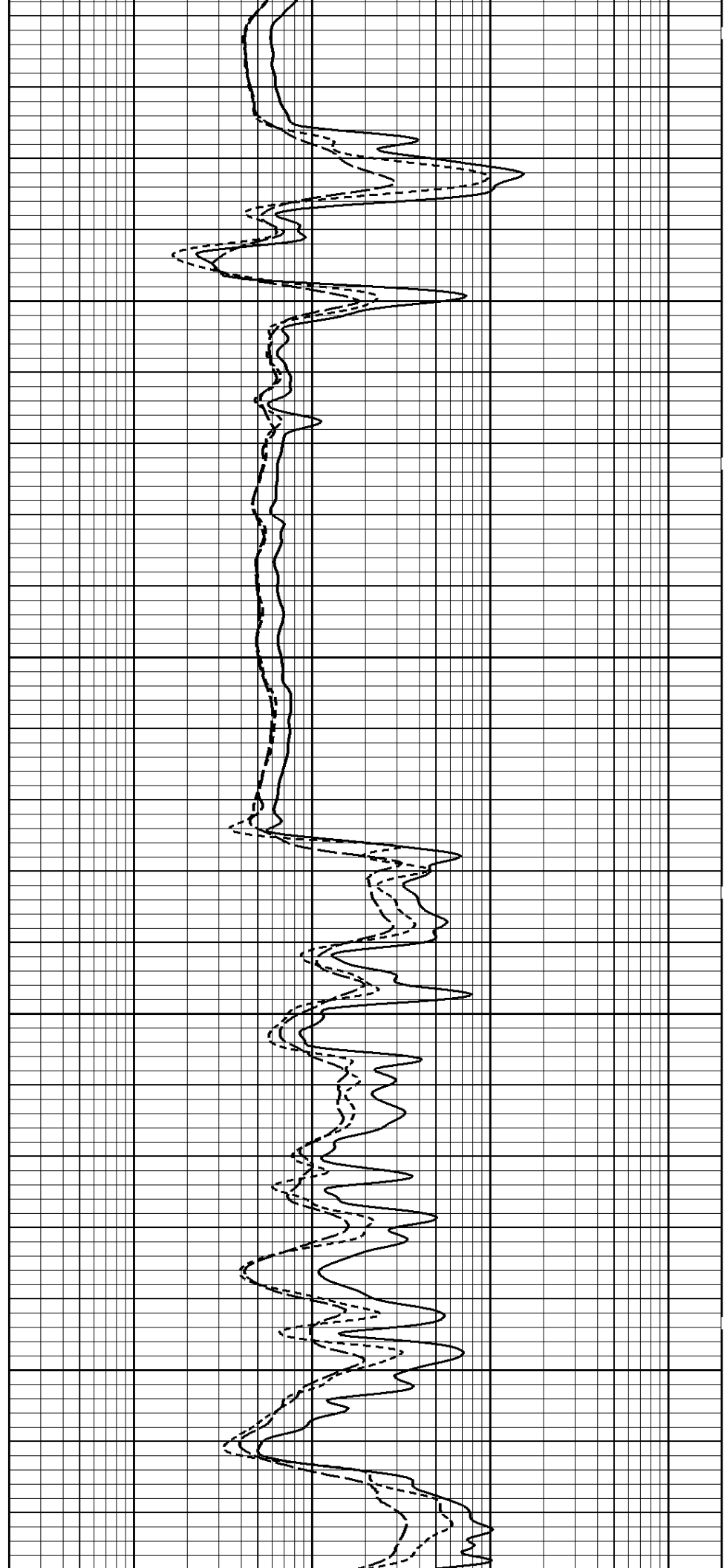
2600

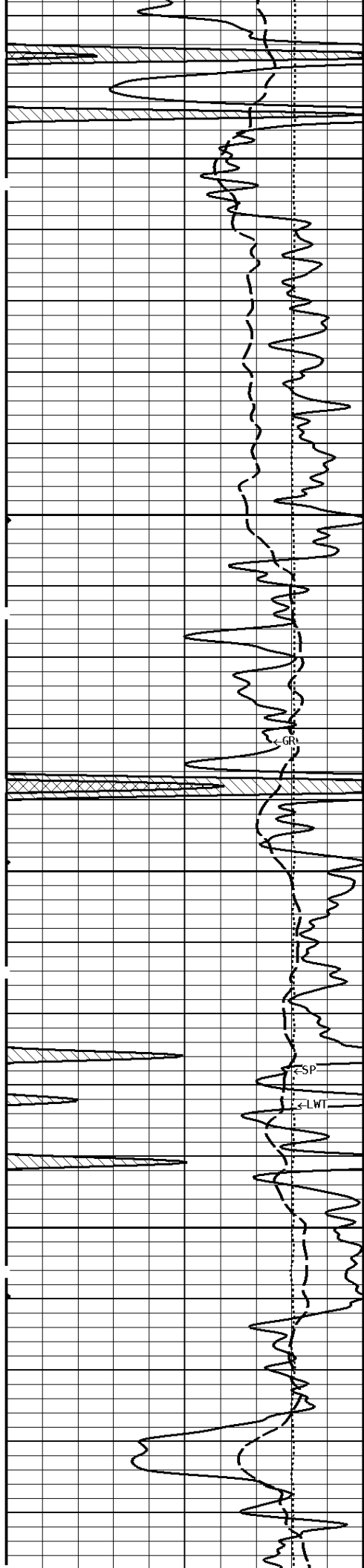




2700

2800





2900

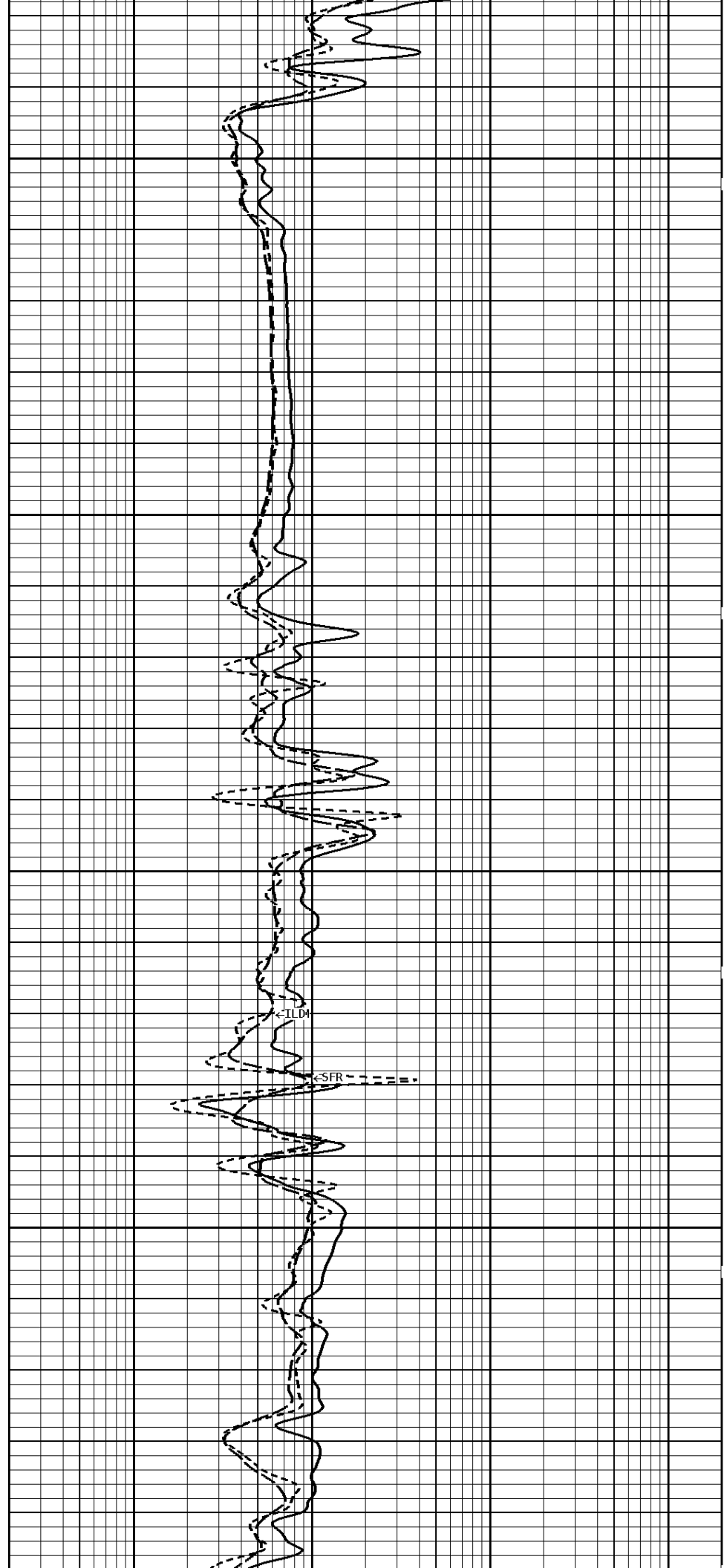
3000

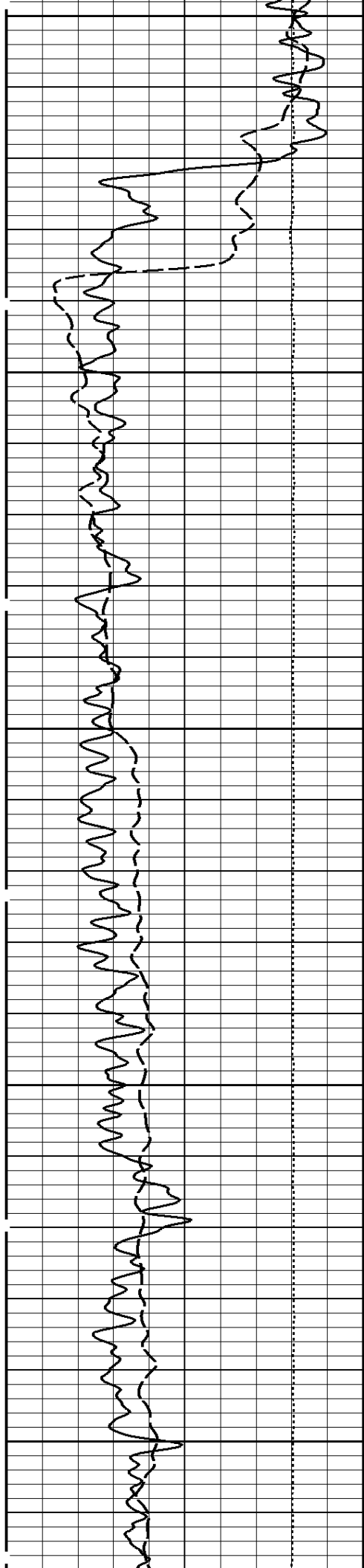
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<LWI

<TLDH

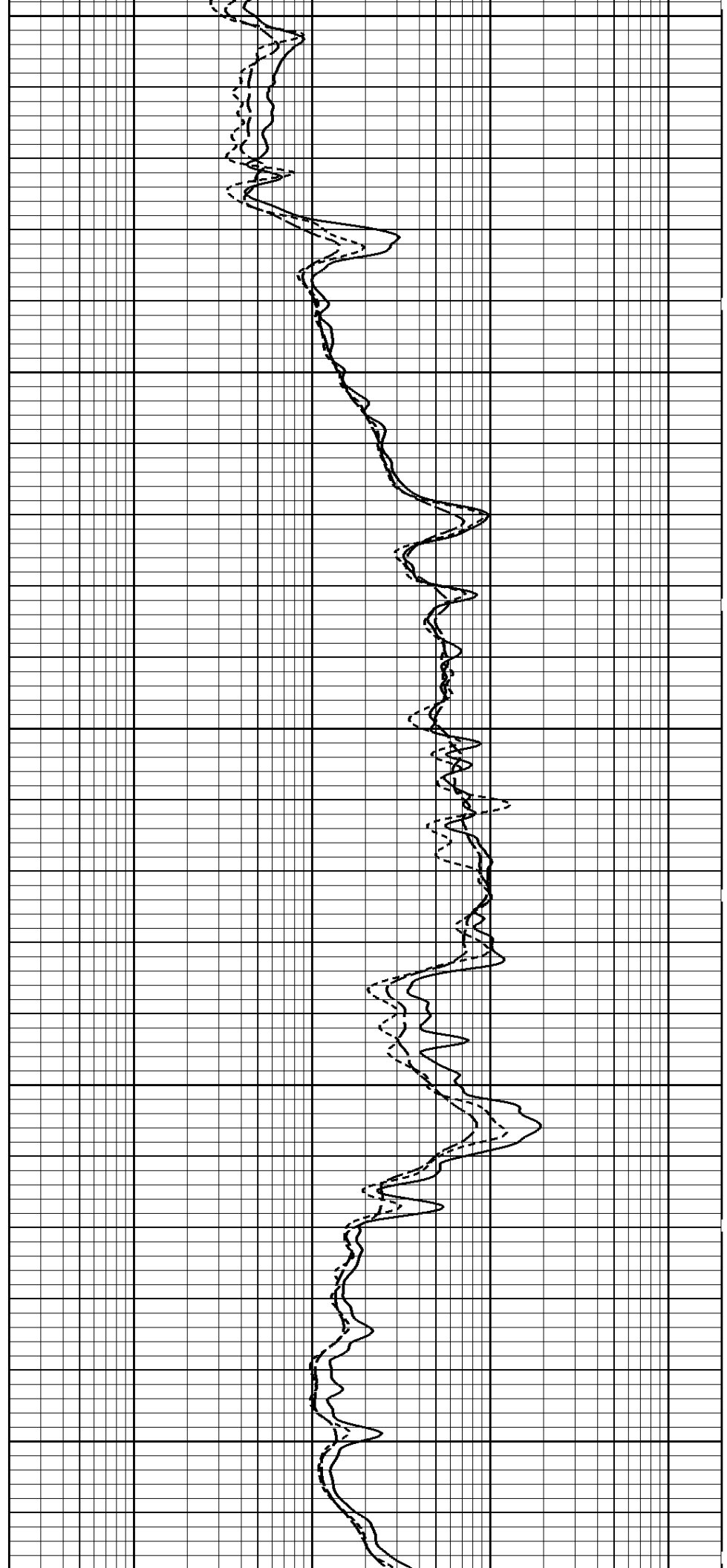
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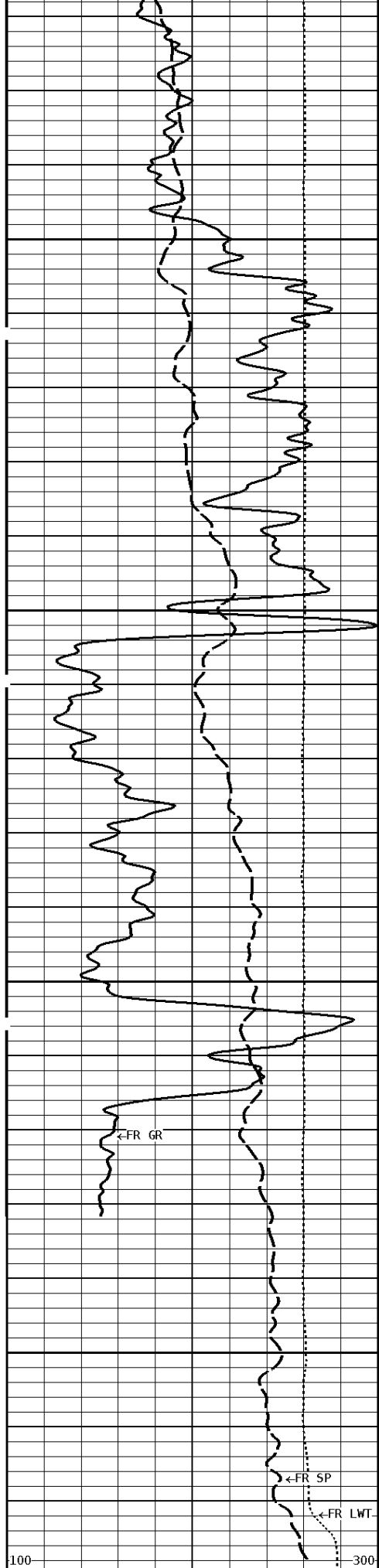




3100

3200

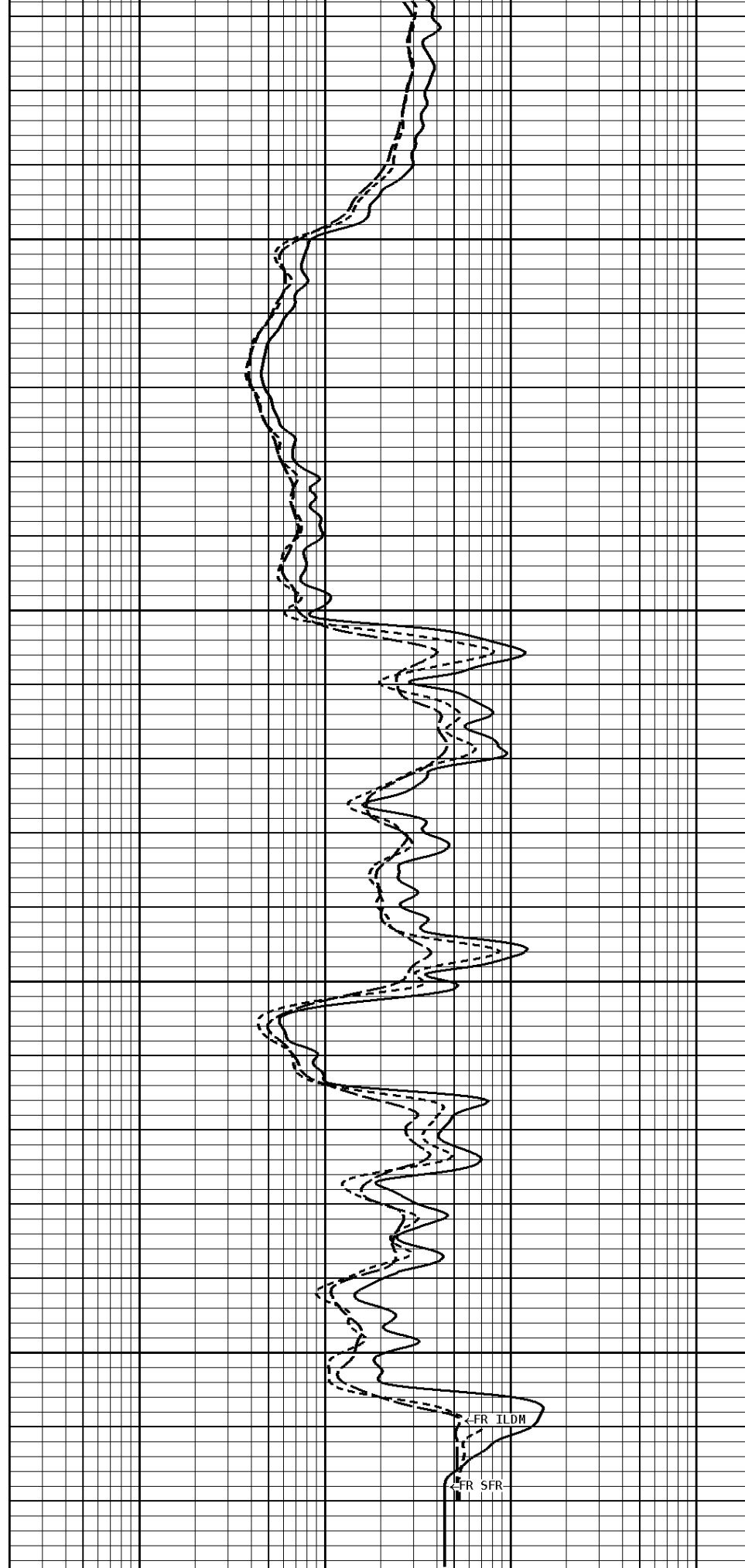




3300

3400

3472



1:240 MAIN SECTION

GAMMA RAY API UNITS	
150 0	300 150
TENSION LBS	
10000	0
SPONTANEOUS POTENTIAL mV	
→	← 20

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

*** Calibration Summary ***

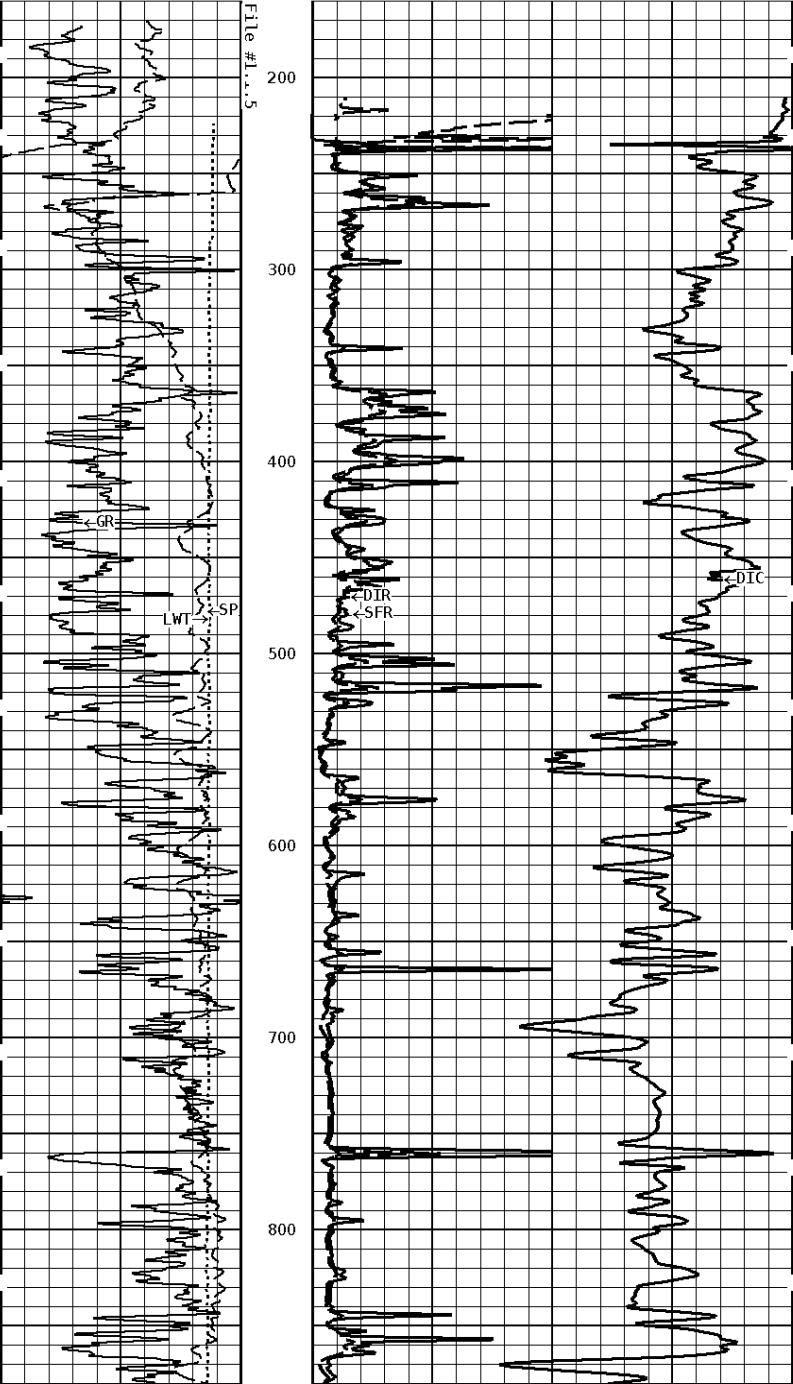
Shop Calibration GRT-B						
Performed : 18-SEP-2018			Time : 09:08			
Sensor Suite : GR-GR5			ID : GRT-BA-121			
	Measured	Units	Calibrated	Units		
GR	Background	Jig	Jig			
	44	309	160	GRAPI		
Shop Calibration PIT-CA						
Performed : 02-Mar-2018			Time : 10:18			
Sensor Suite : P-IND-T			ID : PIT-CA-069			
Medium						
	Measured		Calibrated		Units	
	R	X	R	X		
Air	130175	131167	-0.0	-0.0	MMHOS	
Zero	131071	131067	42.2	-8.2	MMHOS	
Reference	249263	248373	5042.2	4991.8	MMHOS	
Loop	129045	219221	3705.4	3800.9	MMHOS	
Sonde Error			0.4	-8.2	MMHOS	
Cond			5042.2	4991.8	MMHOS	
Deep						
	Measured		Calibrated		Units	
	R	X	R	X		
Air	128286	131989	0.0	0.0	MMHOS	
Zero	131062	131069	56.4	-22.2	MMHOS	
Reference	234731	233611	2056.4	1977.8	MMHOS	
Loop	127367	223347	1764.1	1799.6	MMHOS	
Sonde Error			-1.4	-7.2	MMHOS	
Cond			2056.4	1977.8	MMHOS	
Temperature						
	Measured		Calibrated		Units	
	Low	High	Low	High		
	16980.0	56920.0	70.0	350.0	DEGF	
Performed : 02-Mar-2018			Time : 10:08			
Sensor Suite : SFL			ID : PIT-CA-069			
Internal						
	Measured		Calibrated		Units	
	Zero	Reference	Zero	Reference		
Im	32769.8	49558.8	0.0	7028.0	uA	
Ib	32765.9	49862.4	0.0	1750.0	mA	
MOM1	32785.1	59407.5	0.0	175.0	mV	
Equivalent SFL			43.97		OHMM	
Performed : 02-Mar-2018			Time : 10:05			
Sensor Suite : P-SP			ID : PIT-CA-069			

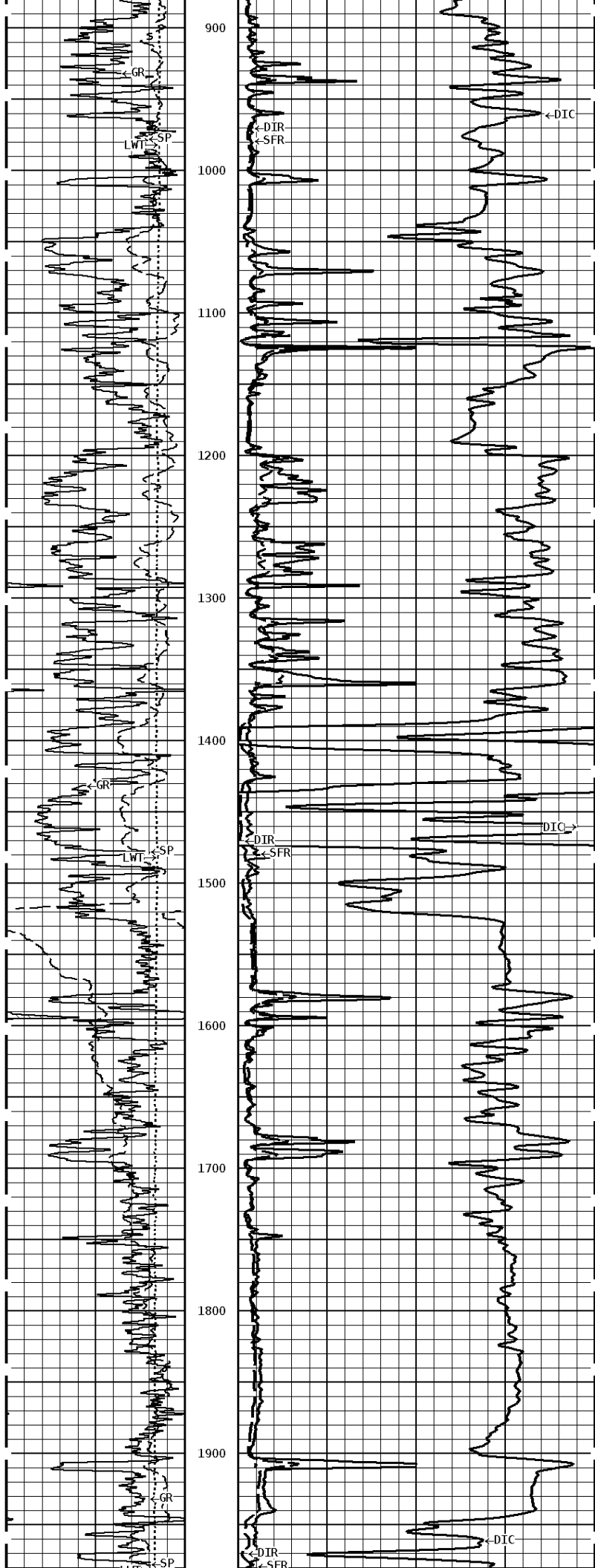
	Measured	Internal	Calibrated	
	Zero	Reference	Zero	Reference
	32793.5	58829.7	0.0	1000.0
				Units
				mV

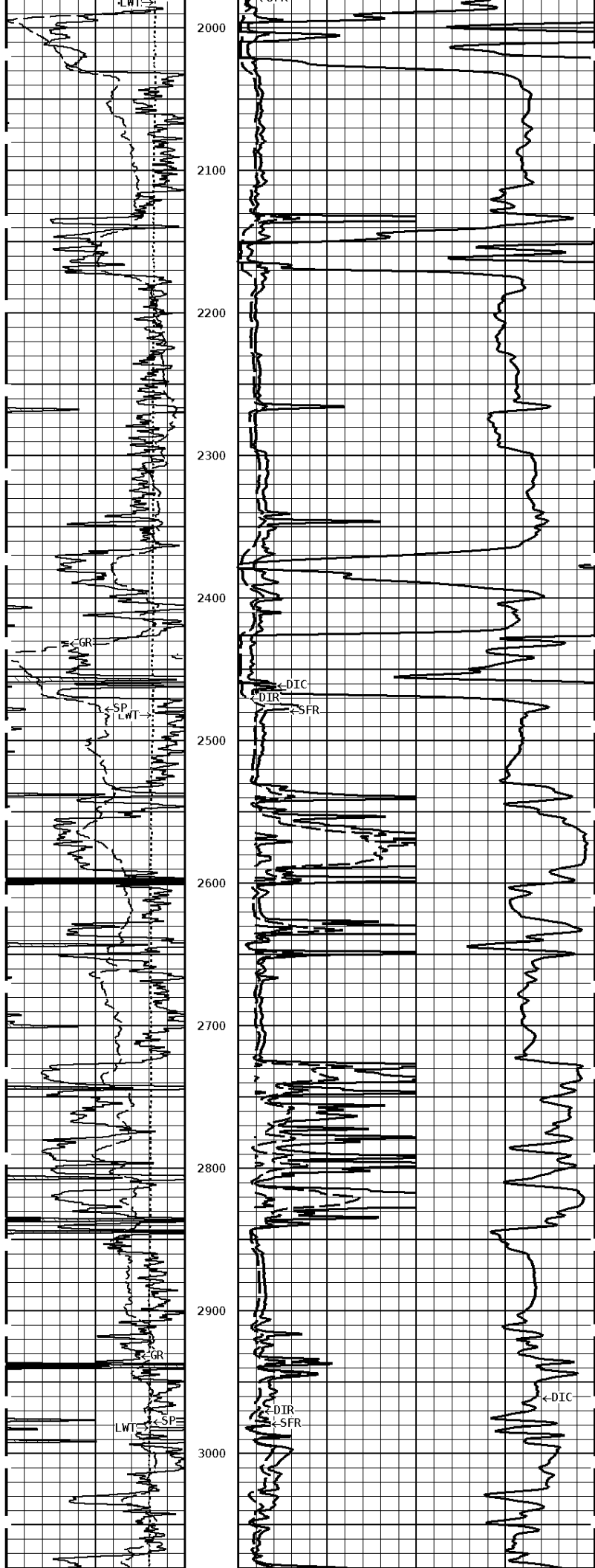
Well File: VAL ENERGY BIRDZELL 0WWO 1-23 NOV3 MSTK Scale: 1:1200 Format: DIL1200
Segment: V1.D1.S5 FINAL MAIN Acquired: Not Available
Reference: 0 Processed: Not Available

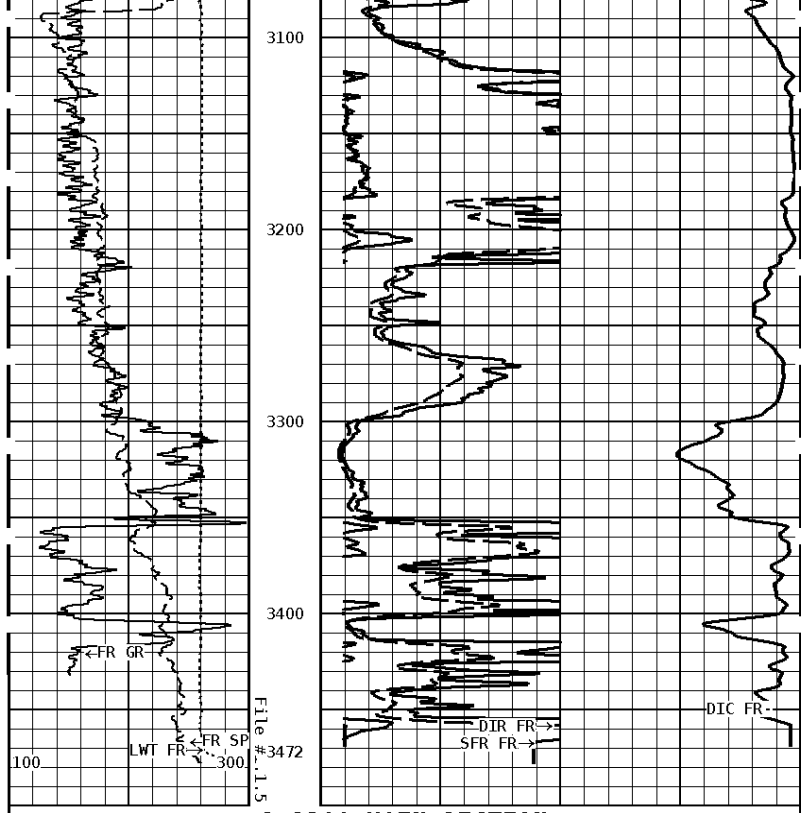
TENSION LBS 10000 ----- 0	DEEP INDUCTION OHMM 0.0 ----- 500.0 0.0 ----- 50.0
SPONTANEOUS POTENTIAL mV → ← 20	SHALLOW FOCUSED OHMM 0.0 ----- 500.0 0.0 ----- 50.0
GAMMA RAY API UNITS 150 [hatched box] 300 0 ----- 150	DEEP CONDUCTIVITY MHMO 2000 ----- 1000 1000 ----- 0

1:1200 MAIN SECTION









1:1200 MAIN SECTION

GAMMA RAY API UNITS 150 300 0 150	DEEP CONDUCTIVITY MHM 2000 1000 1000 0
SPONTANEOUS POTENTIAL mV → ← 20	SHALLOW FOCUSED OHMM 0.0 500.0 0.0 50.0
TENSION LBS 10000 0	DEEP INDUCTION OHMM 0.0 500.0 0.0 50.0



Company: VAL ENERGY, INC
 Well: BIRDZELL #1-23 OWWO
 Location: 660' FSL & 3630' FEL
 Logged: 11-03-2018
 K.B. Elev: 0.0 Ft