

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

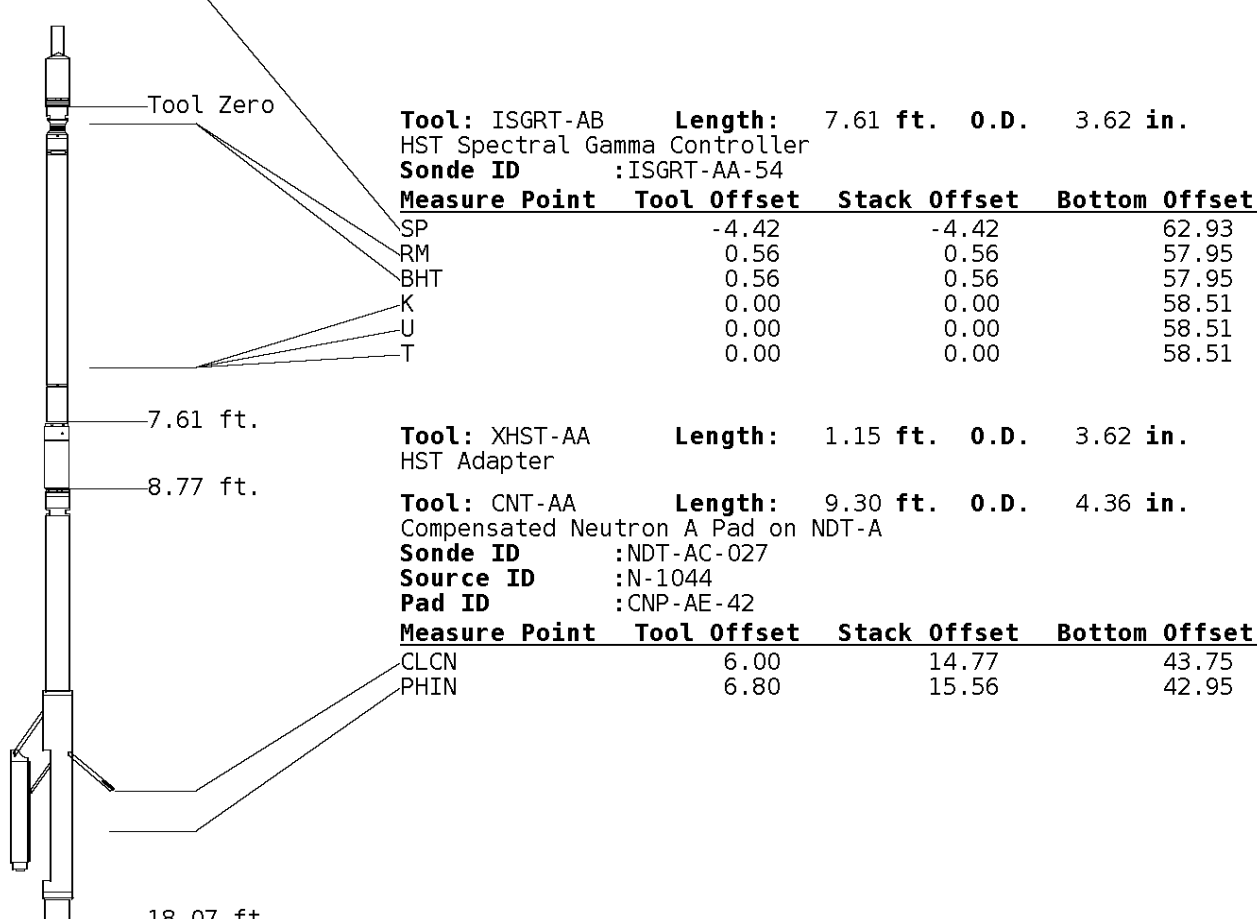
CUSTOMER REQUESTED DETAIL PULLED TO 3700'

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:
 J.JOHNSON
 B.BROWN

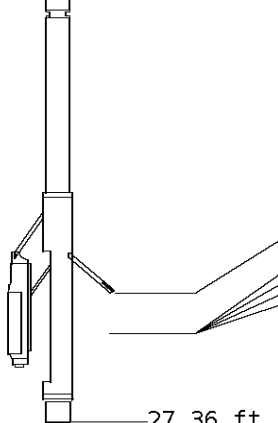
Tool String Schematic

Total Tool Length - 58.51 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1002.50 lbs.



Tool: LDI-DA **Length:** 9.30 ft. **O.D.:** 4.80 in.
 Litho Density D Pad on NDT-A
Sonde ID : NDT-CA-137
Source ID : CSV-587
Pad ID : LDP-DA-02

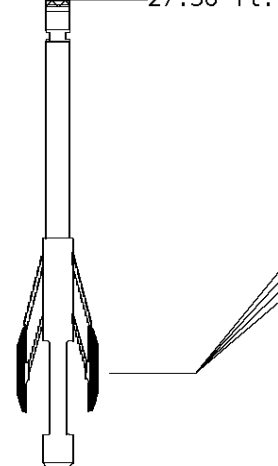
Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	24.07	34.45
PEL	7.00	25.07	33.45
PES	7.40	25.46	33.05
LDEN	7.20	25.27	33.25
LCOR	7.20	25.27	33.25



27.36 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.:** 6.00 in.
 Micro Spherically Focused (IC,D)
Sonde ID : MST-DA-25

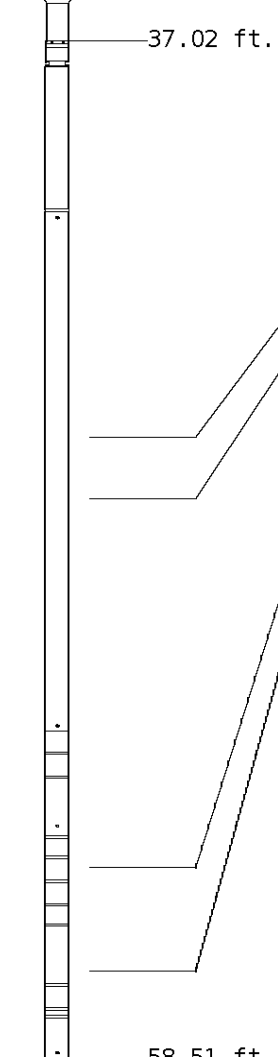
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	34.97	23.55
MSCLP	7.60	34.97	23.55
INV	7.60	34.97	23.55
NOR	7.60	34.97	23.55



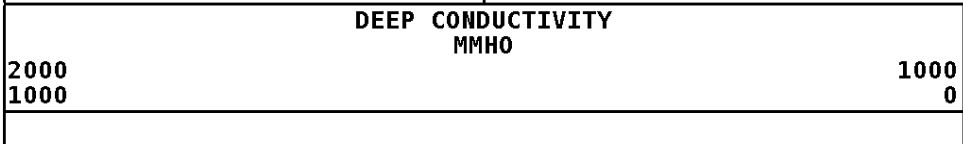
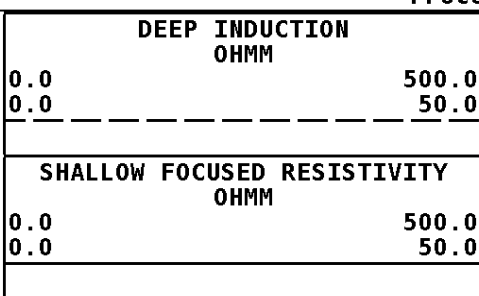
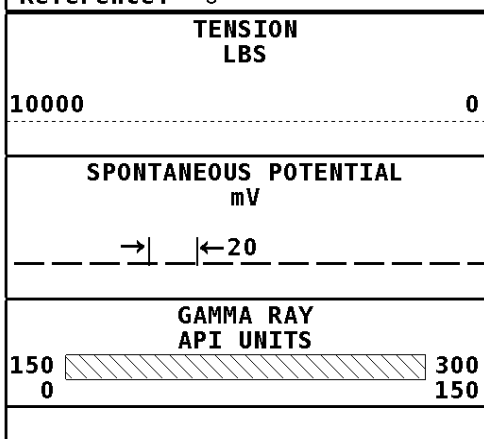
37.02 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.:** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID : PIT-CA-062

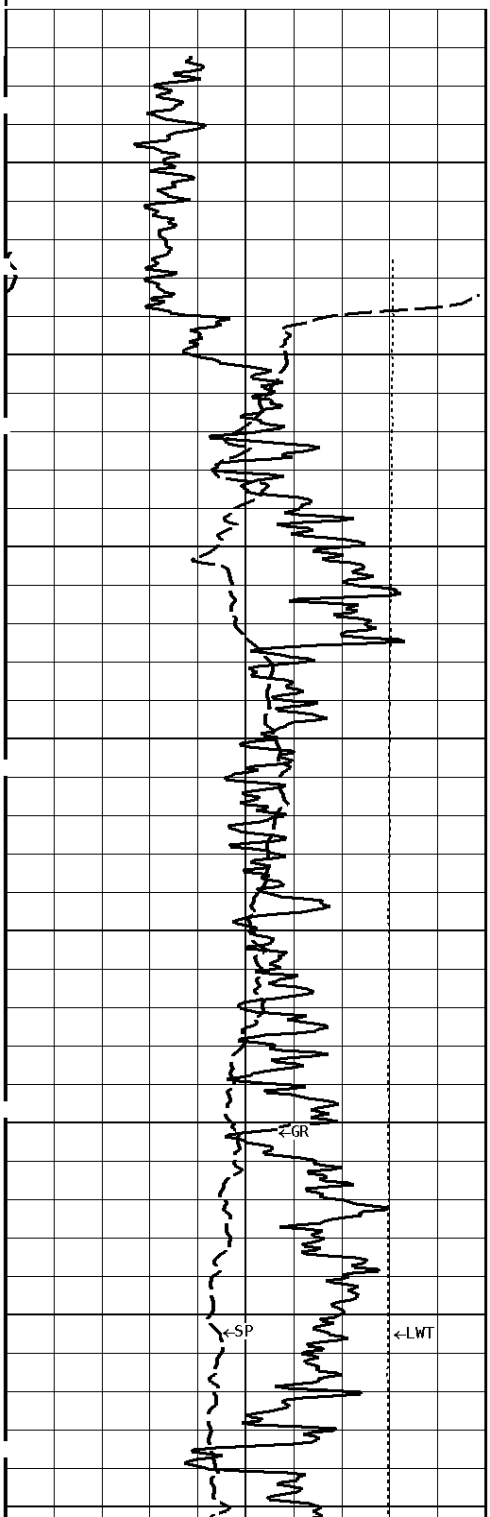
Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	45.95	12.56
ILM	10.10	47.12	11.39
SFLU	17.49	54.51	4.00
SP	20.60	57.63	0.88



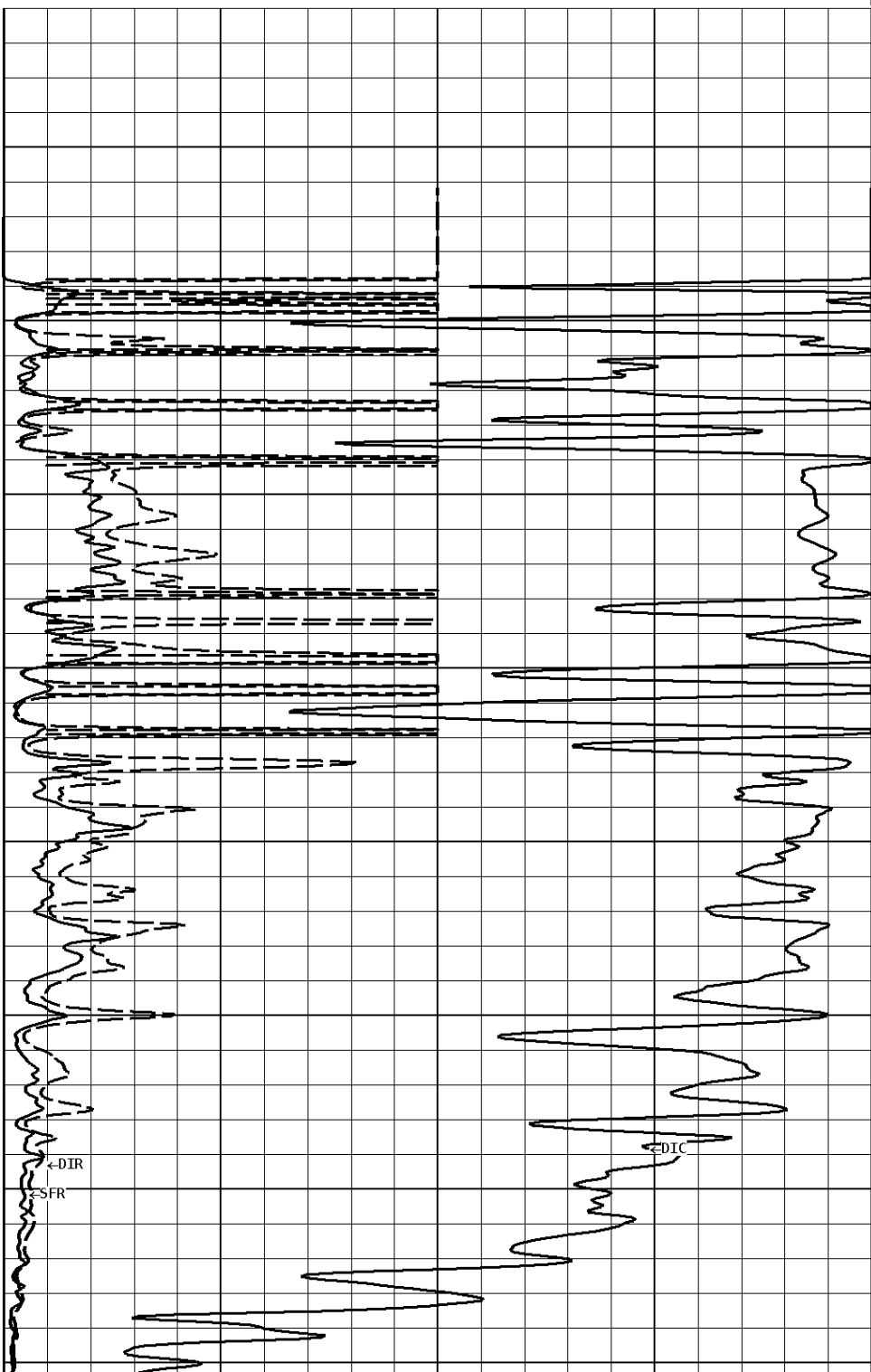
LWT 58.51 ft.



1:600 MAIN SECTION



300
400
500
600

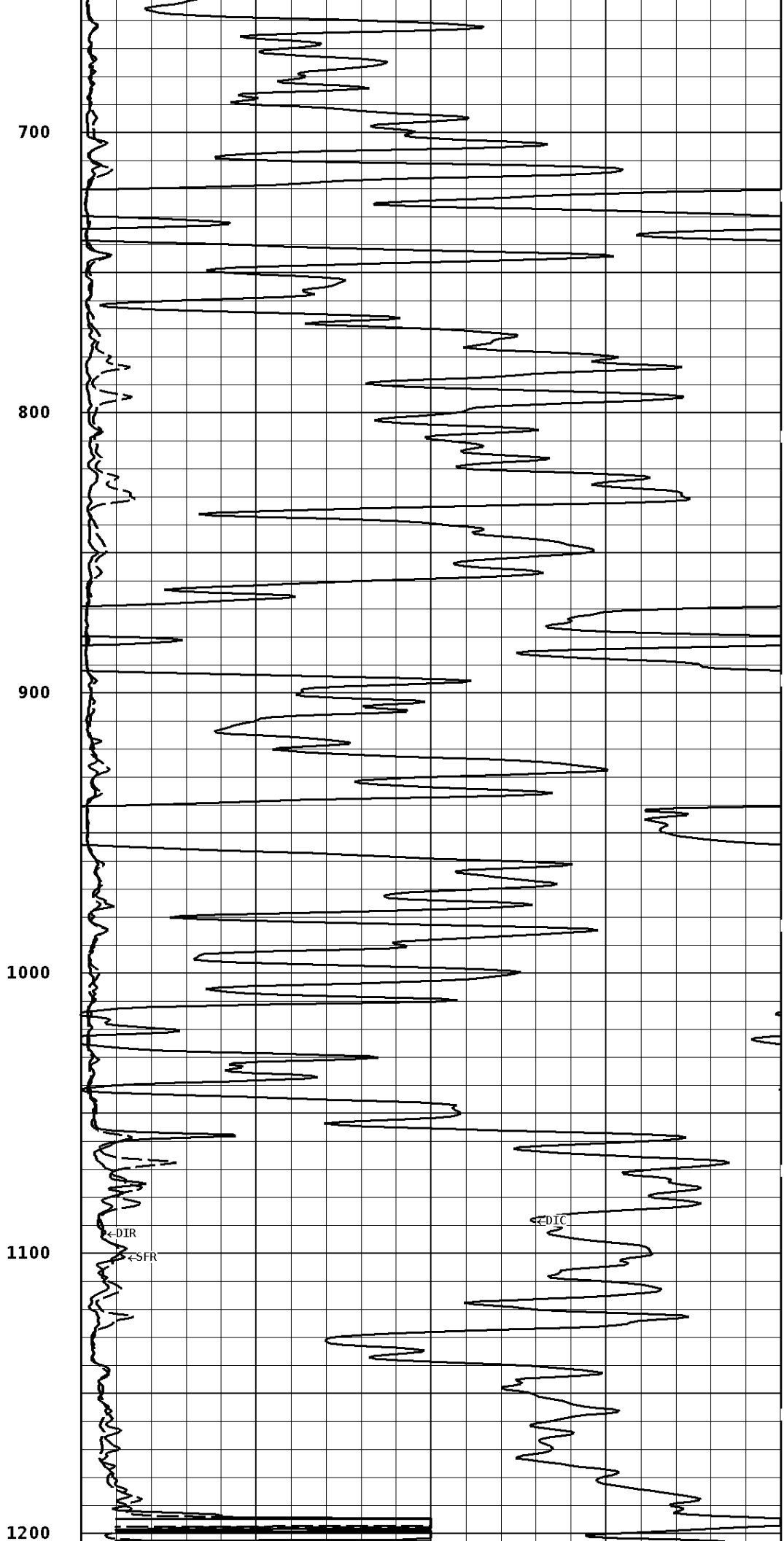
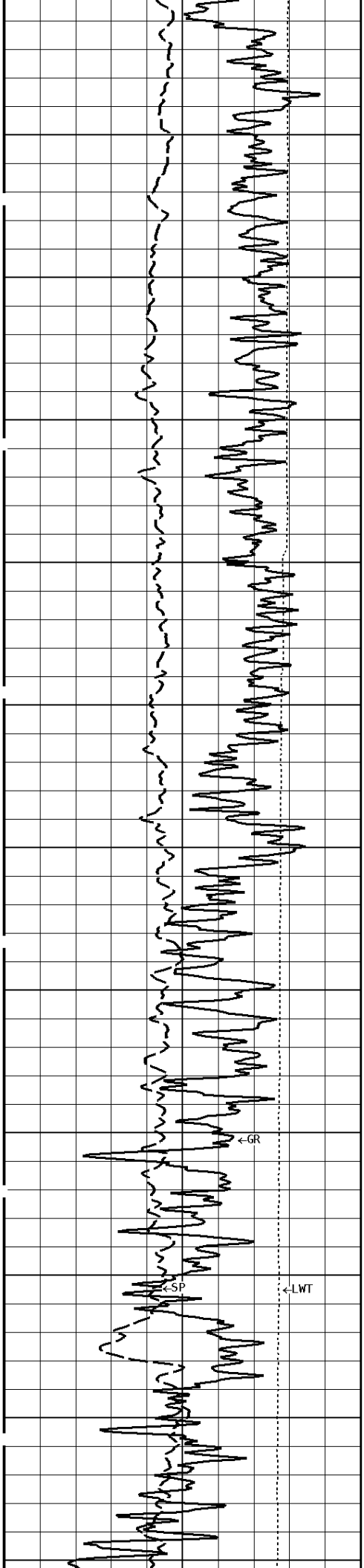


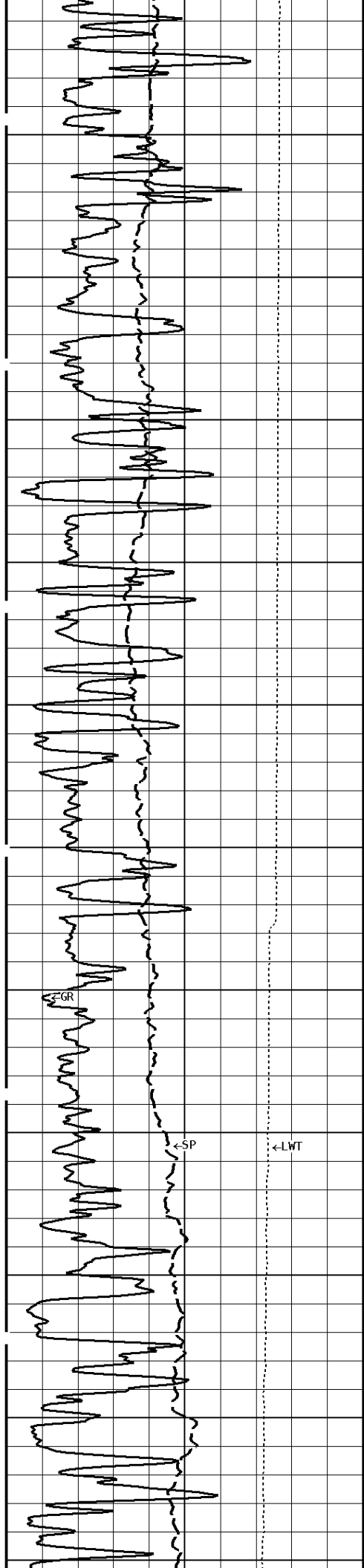
←DIR
←SFR

←DIC

←SP

←LWT





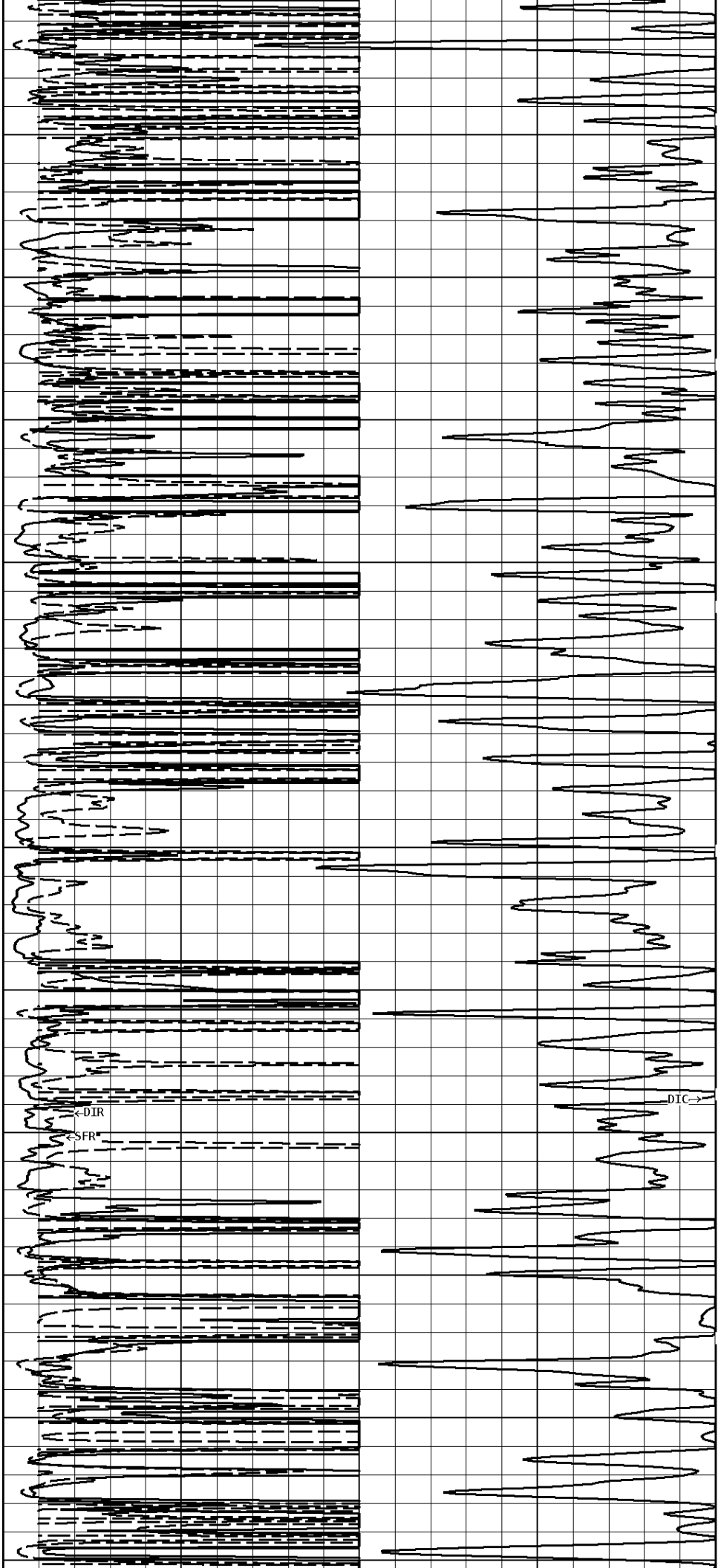
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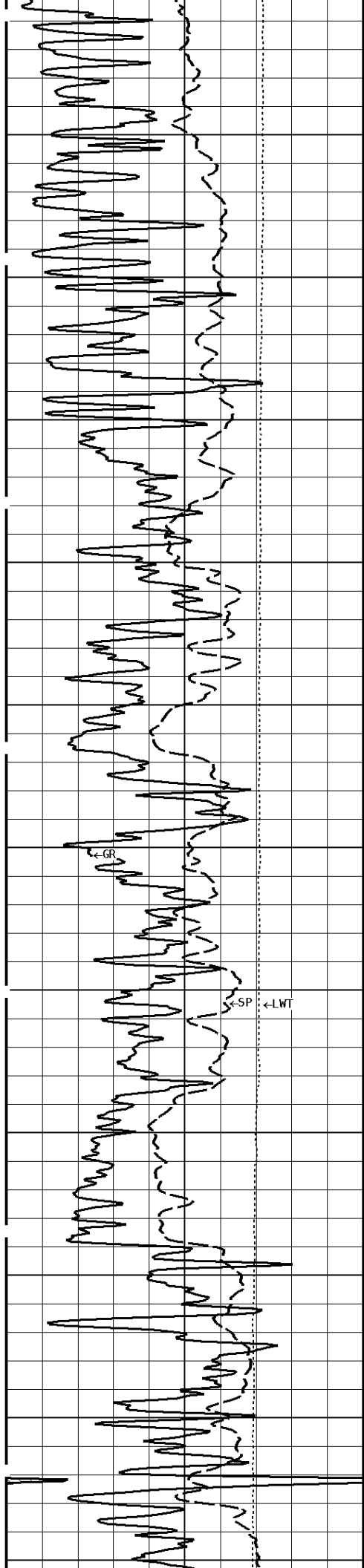
1400

1500

1600

1700





1800

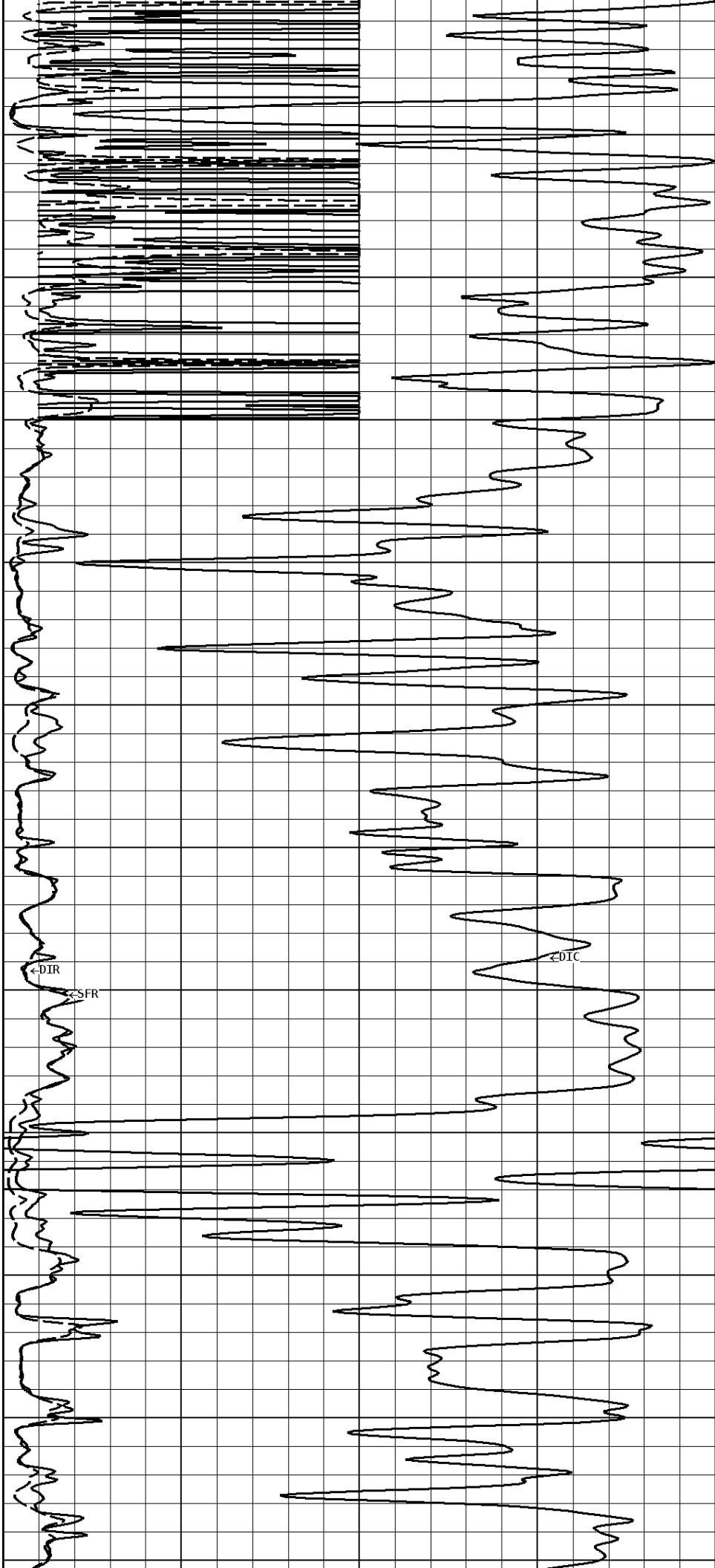
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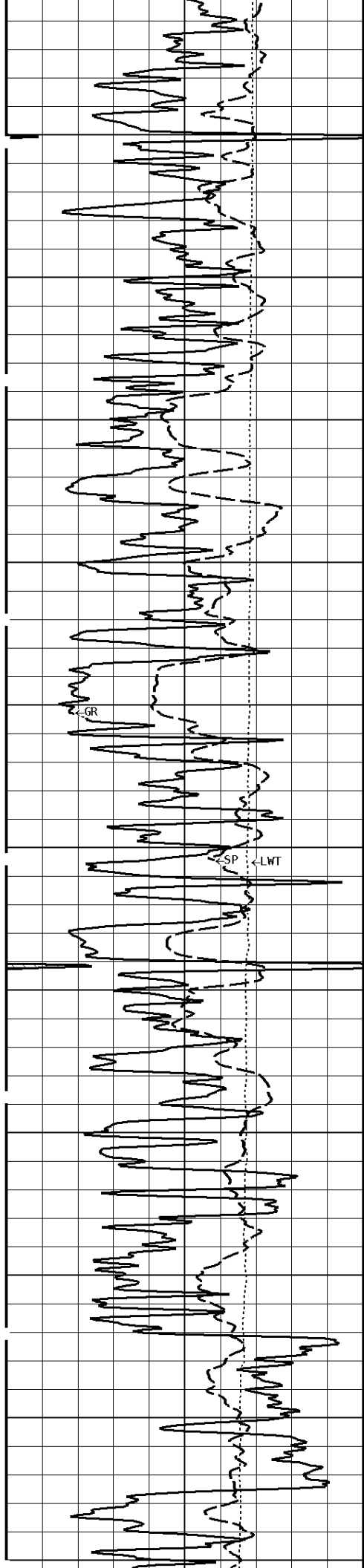
2000

2100

2200

2300





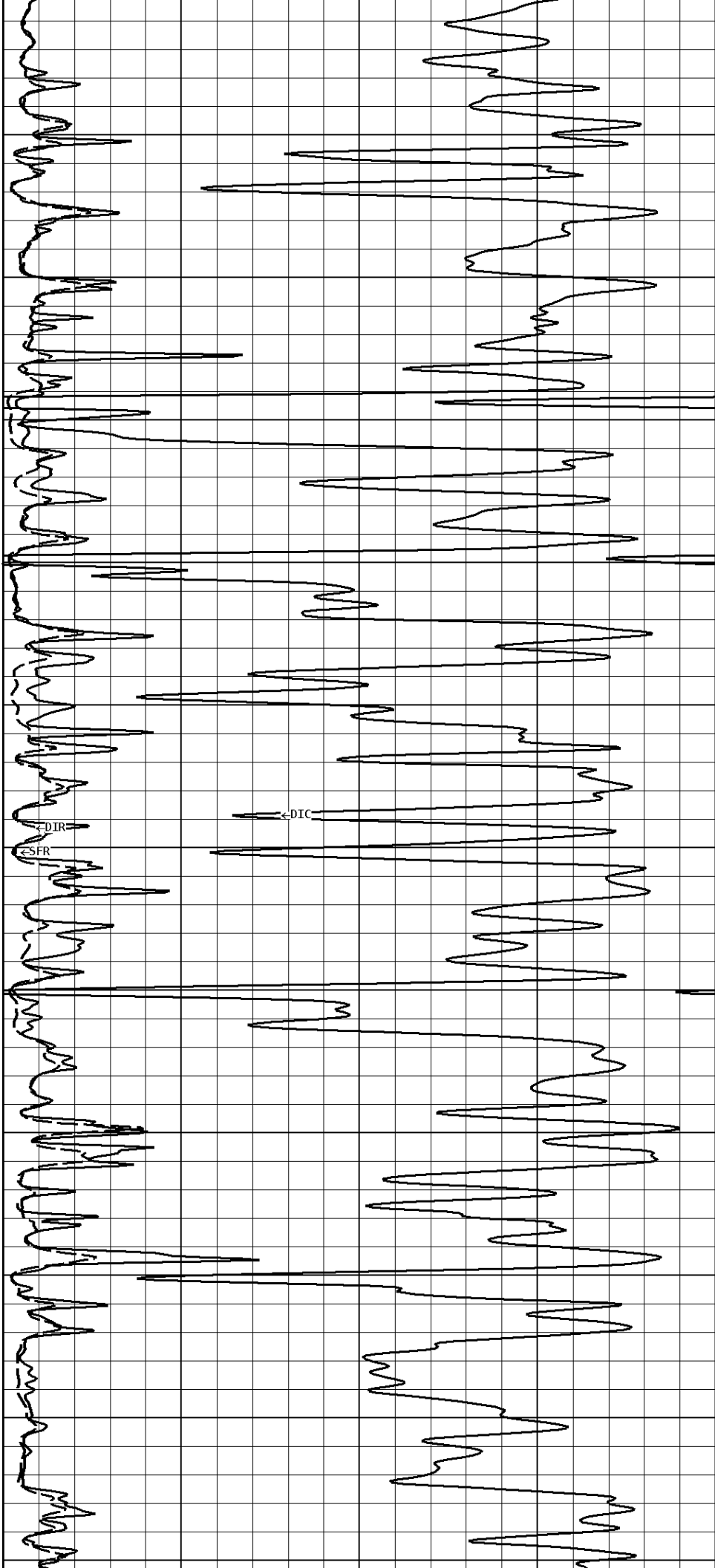
2400

2500

2600

2700

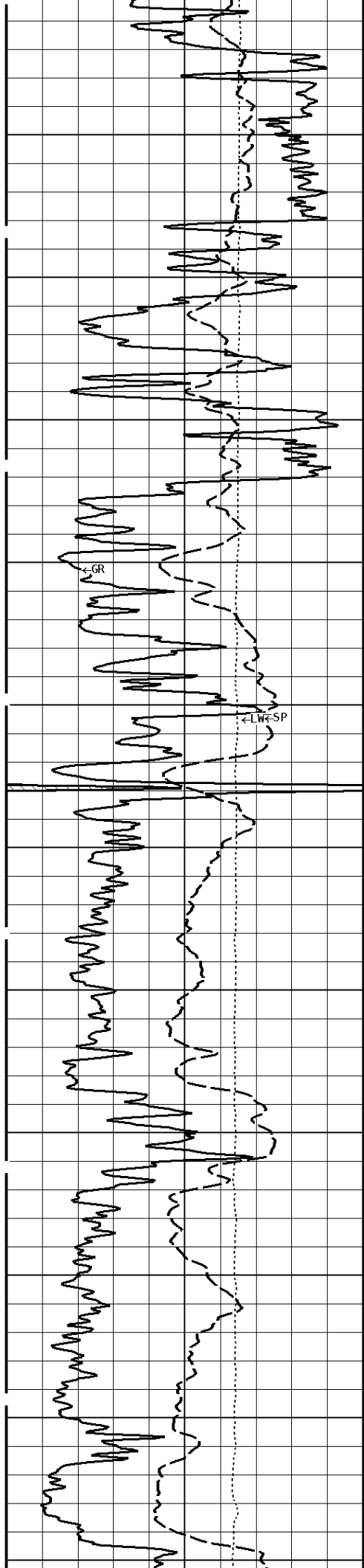
2800



DIR

SFR

DTC



2900

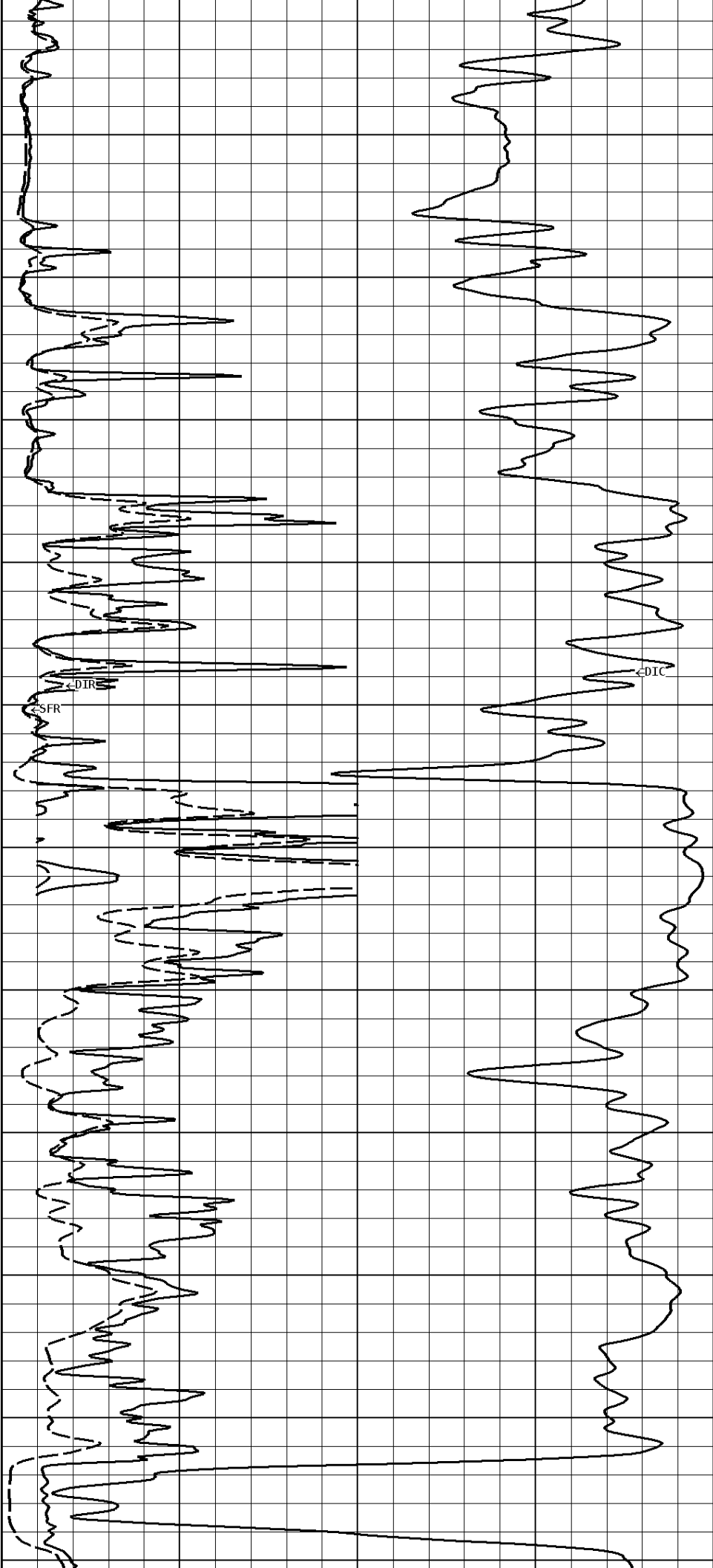
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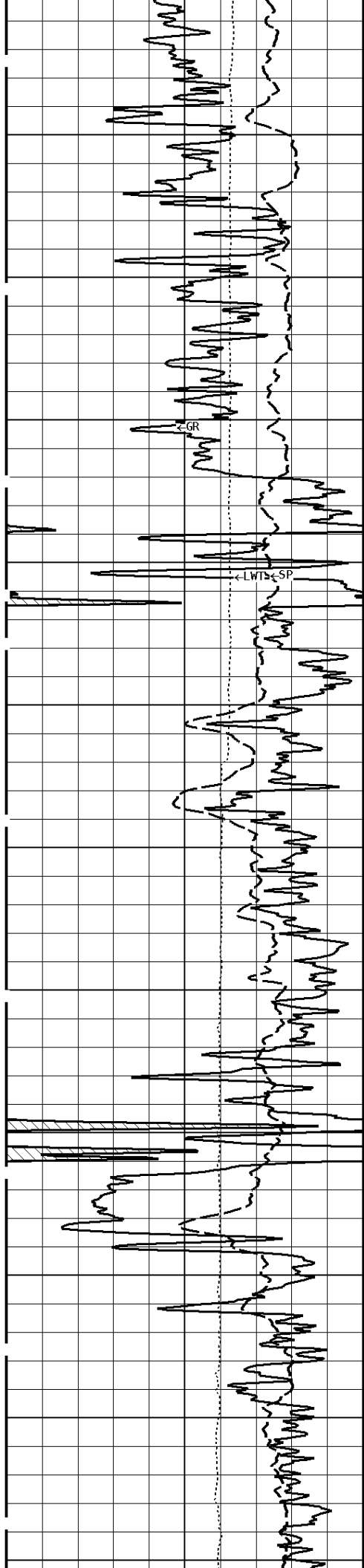
3100

3200

3300

3400





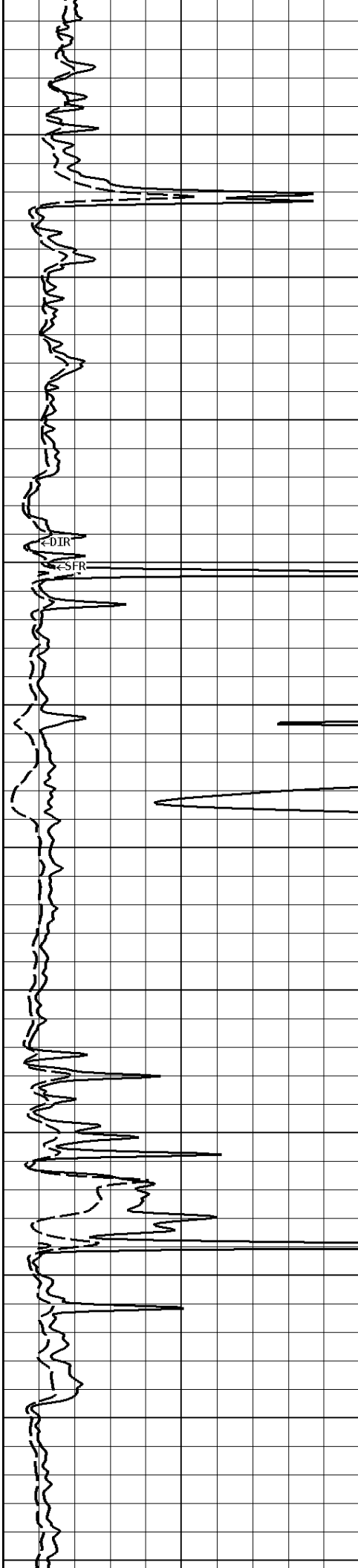
3500

3600

3700

3800

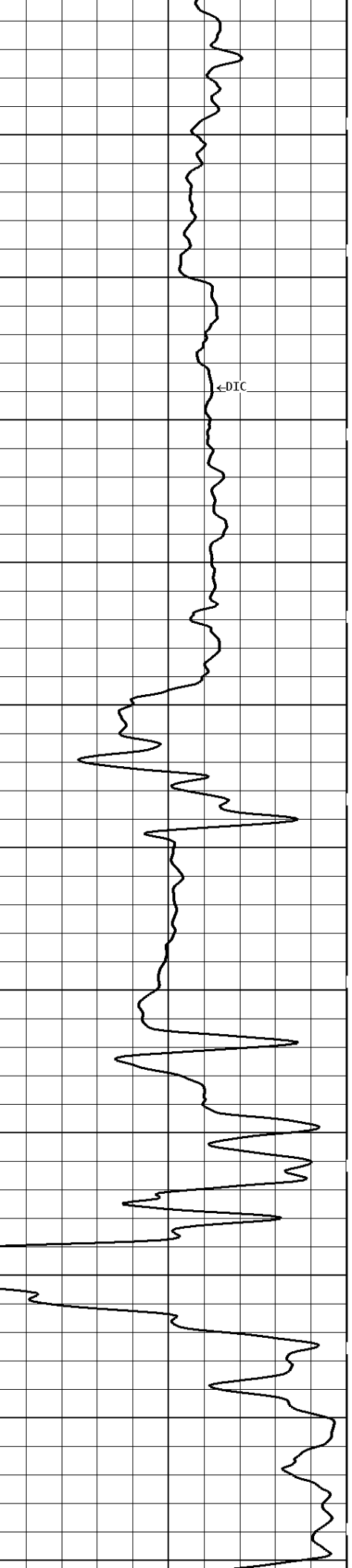
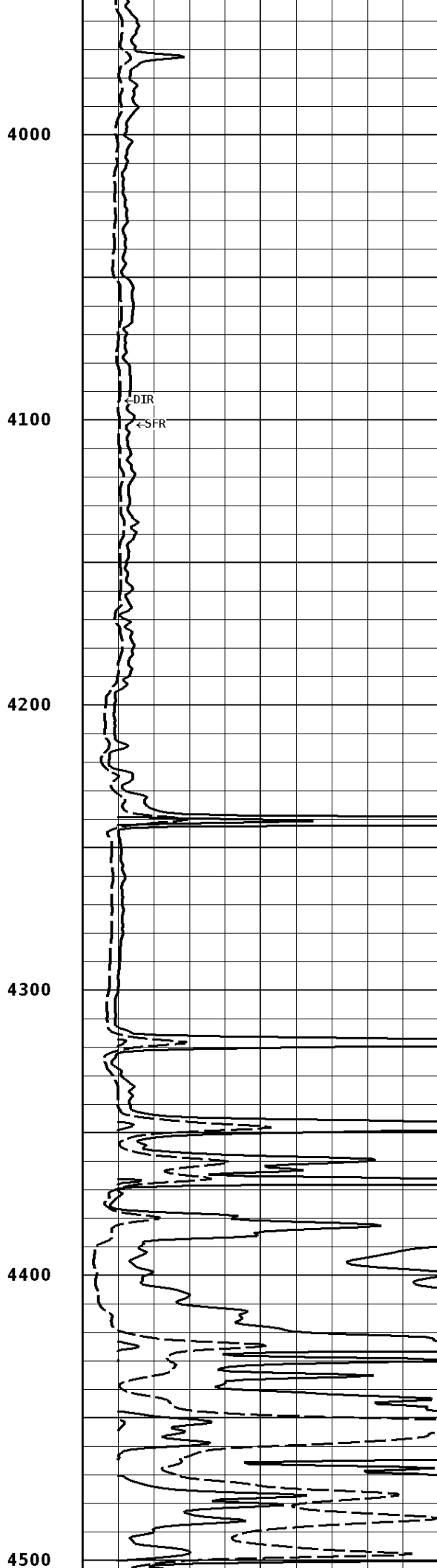
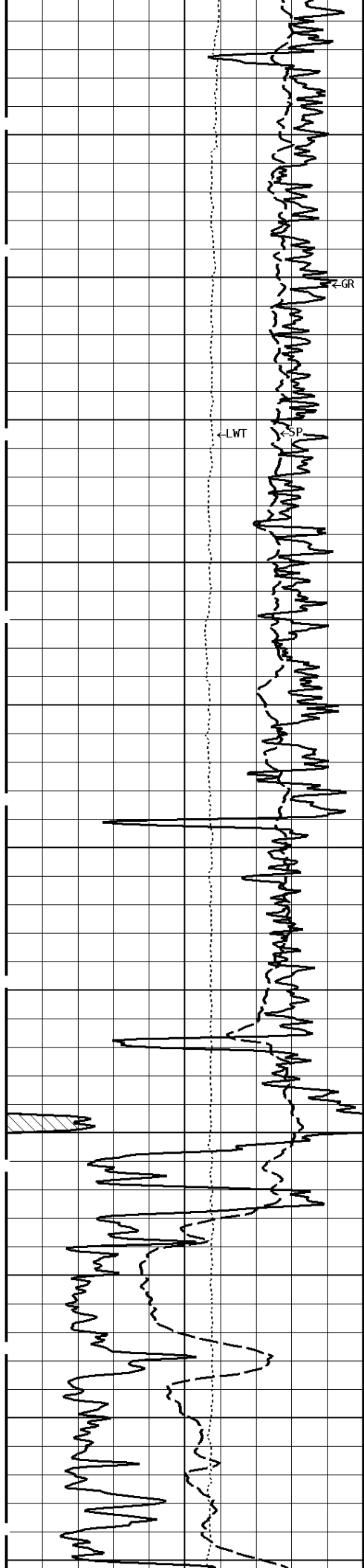
3900

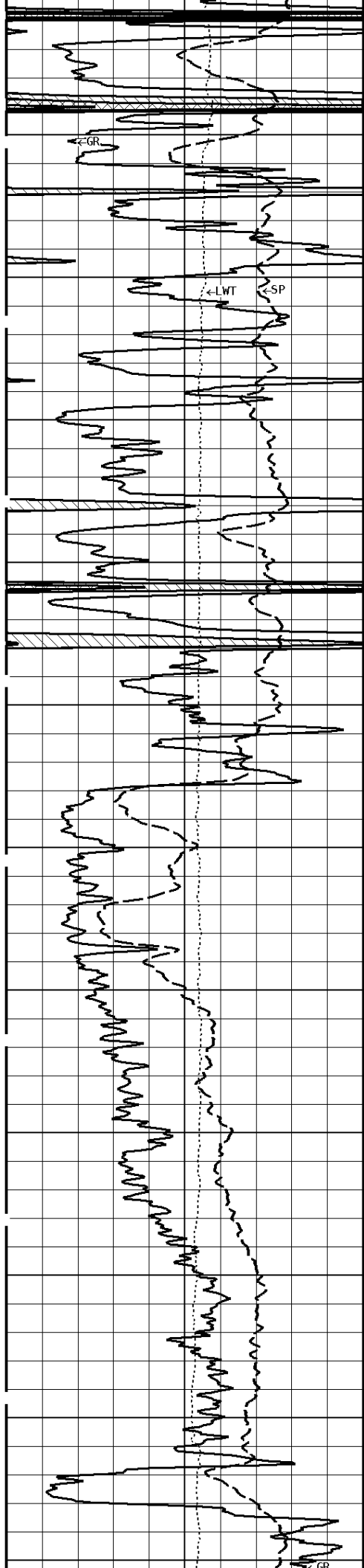


ε-DIR

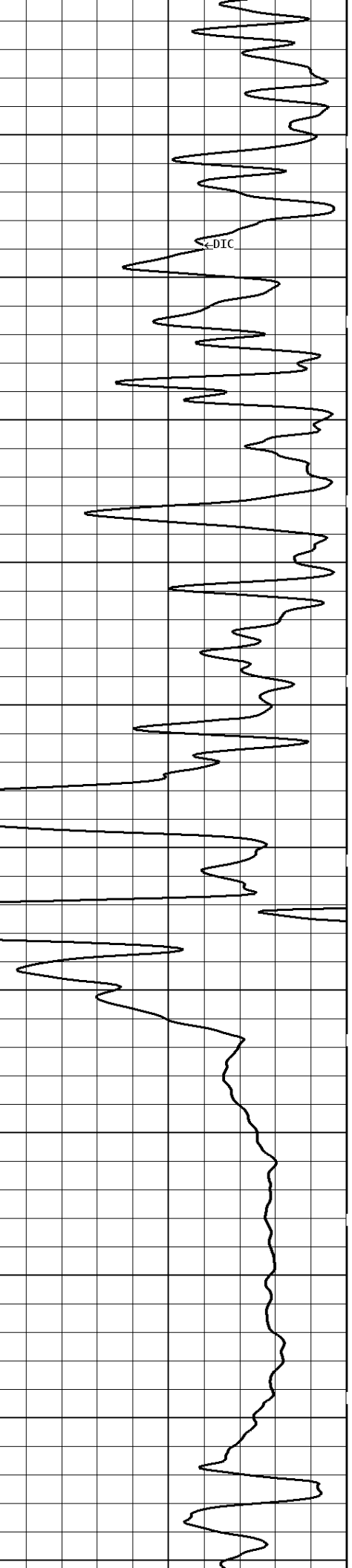
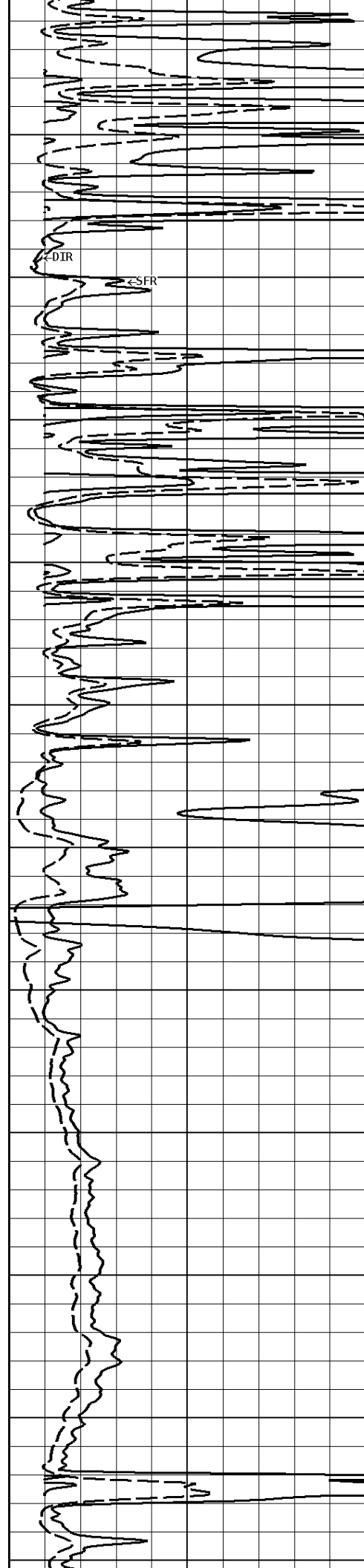
ε-SFR

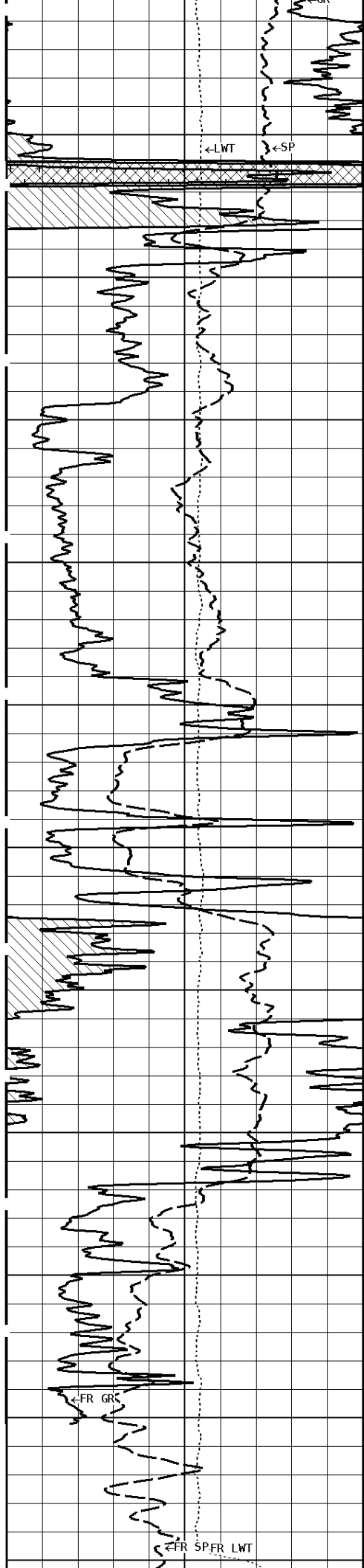
ε-DIC





4600
4700
4800
4900
5000





5100

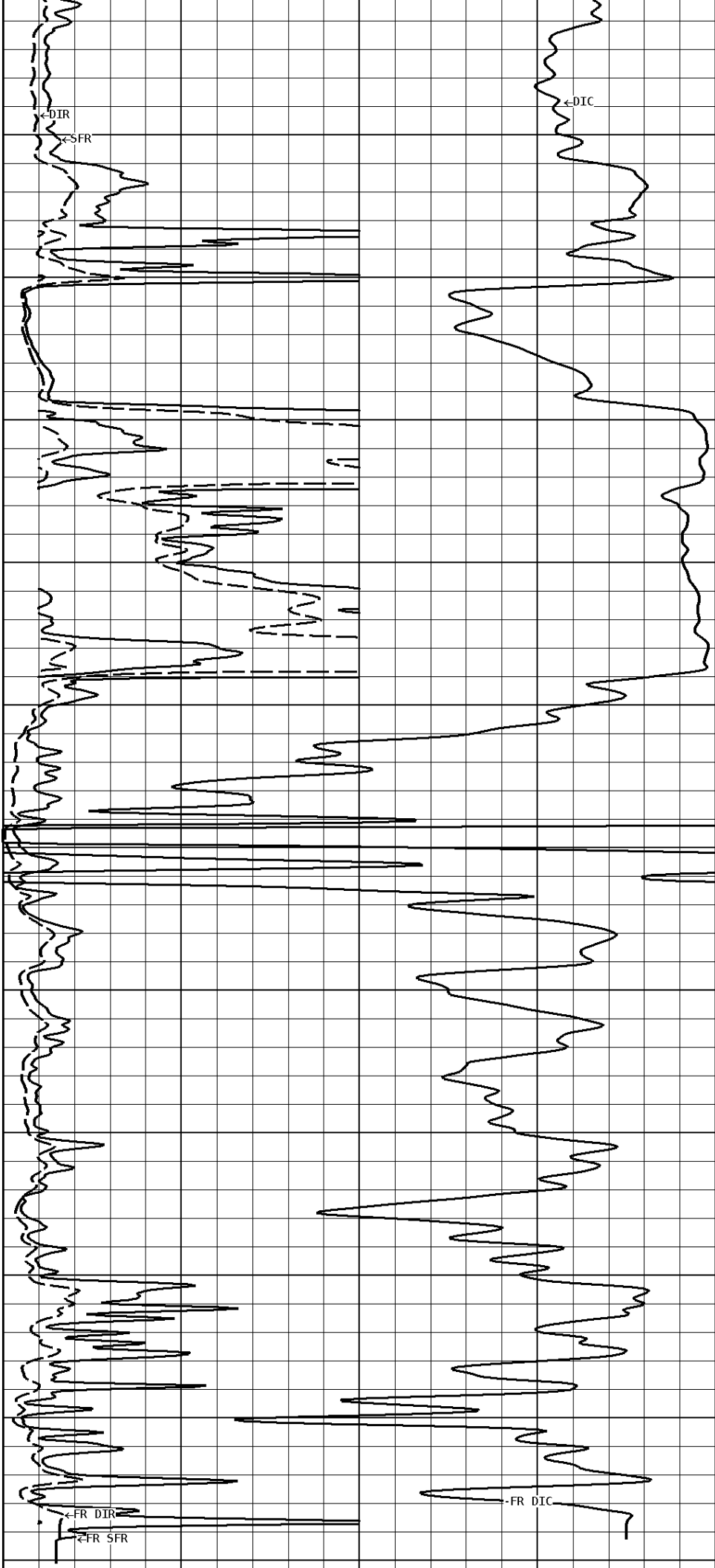
5200

5300

5400

5500

5597



←DIR

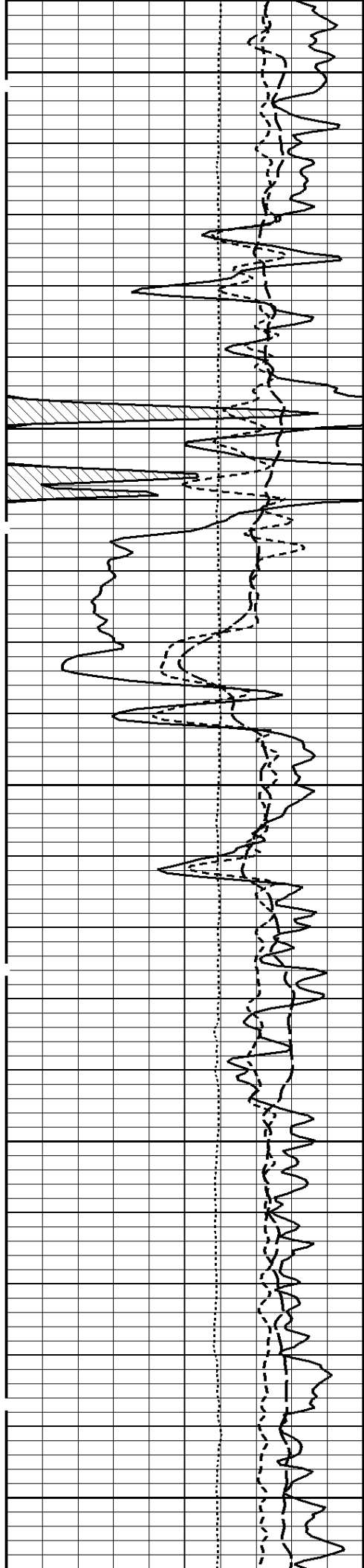
←SFR

←DIC

←FR DIR

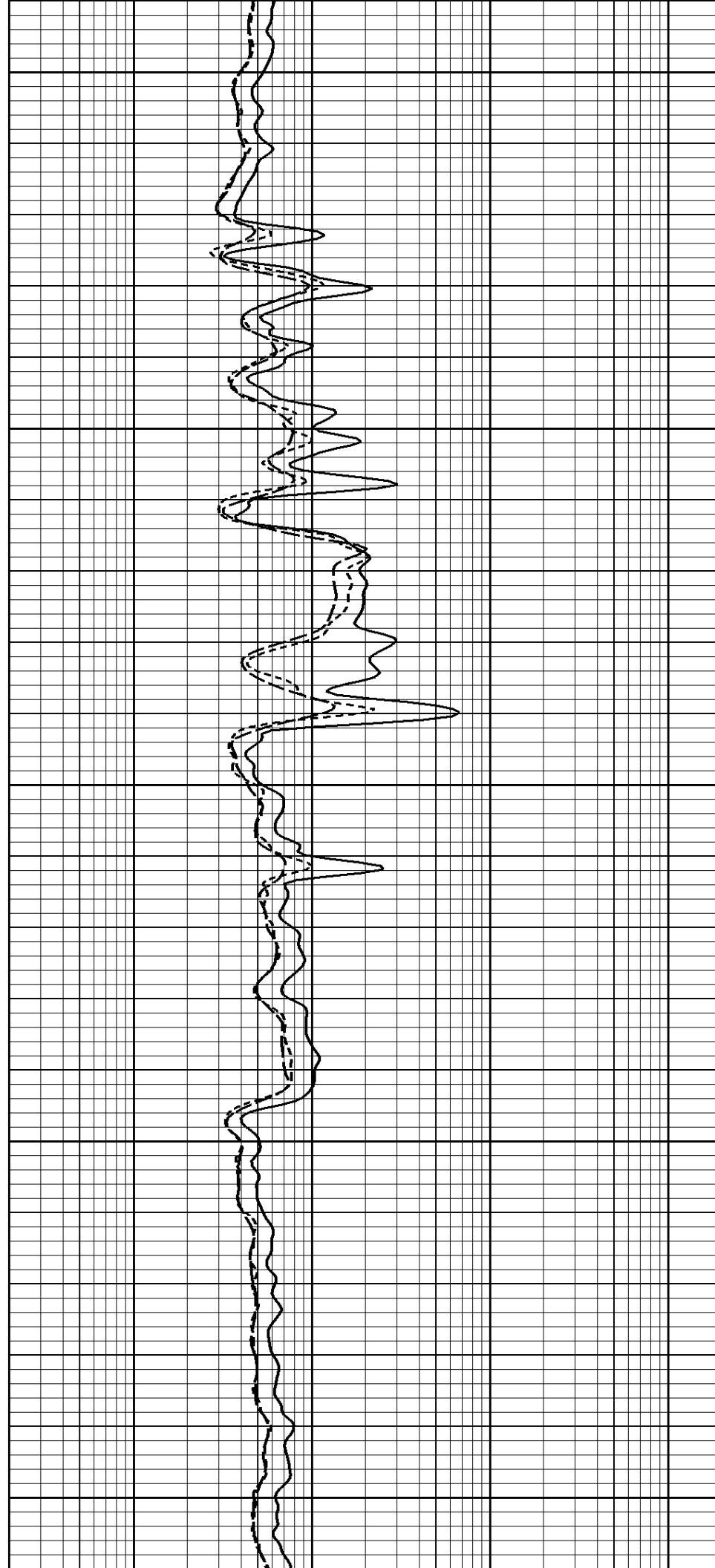
←FR SFR

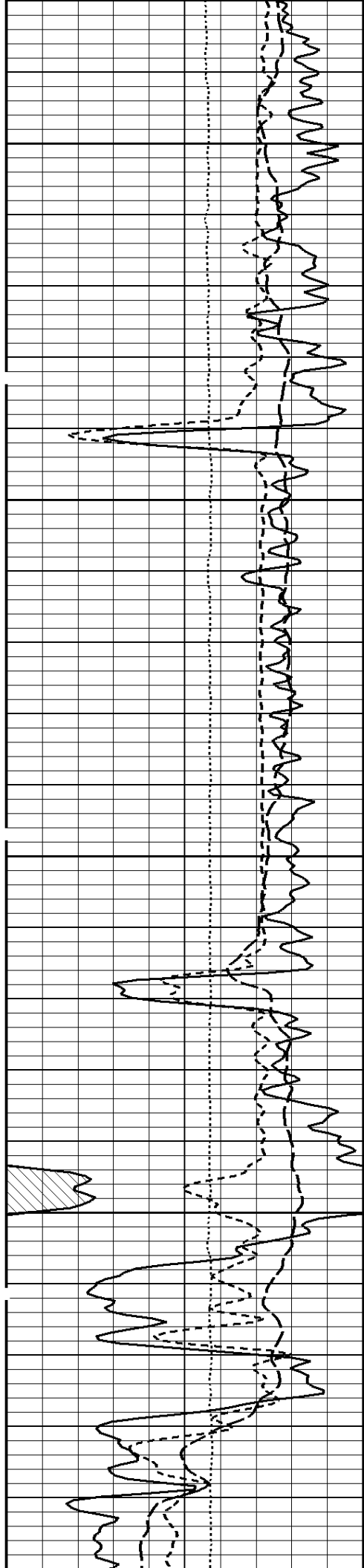
←FR DIC



3800

3900

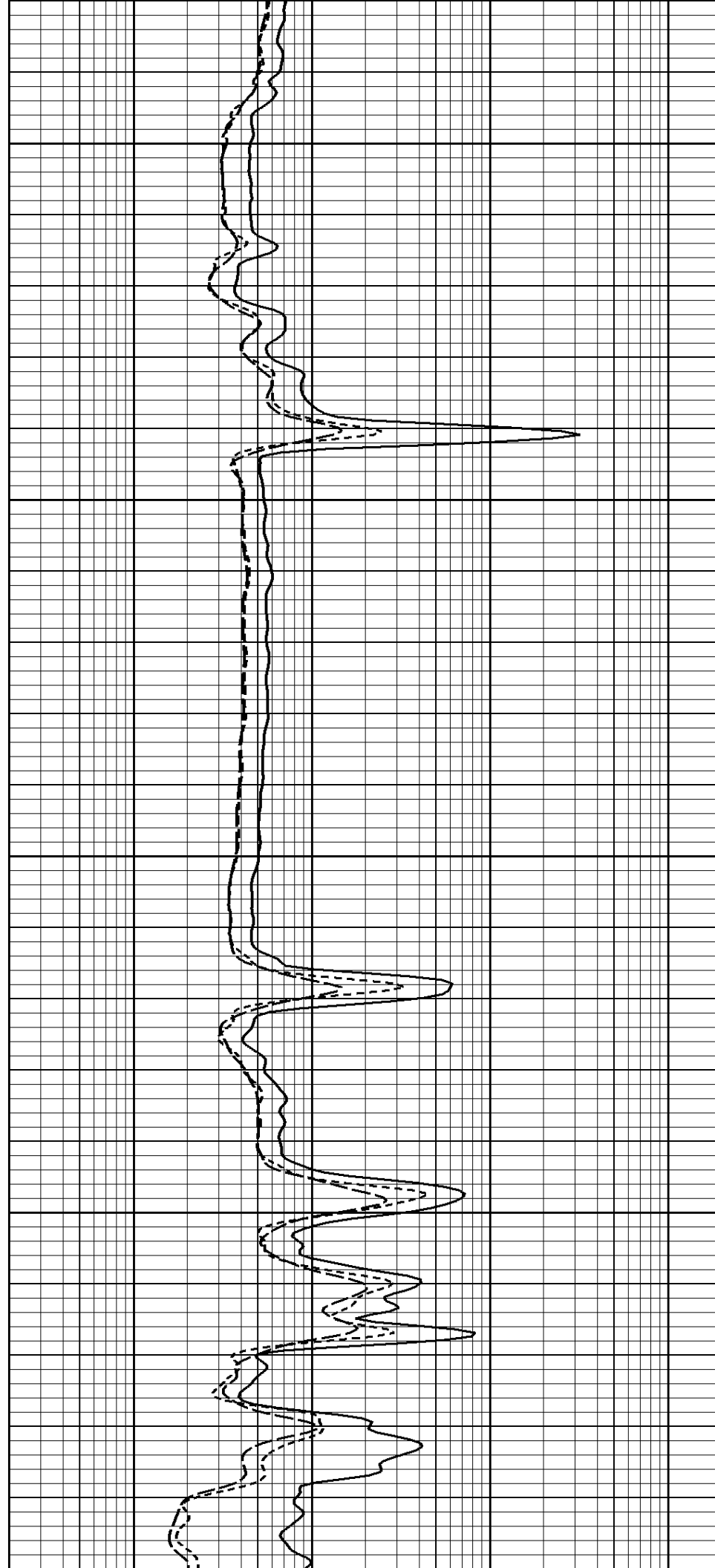




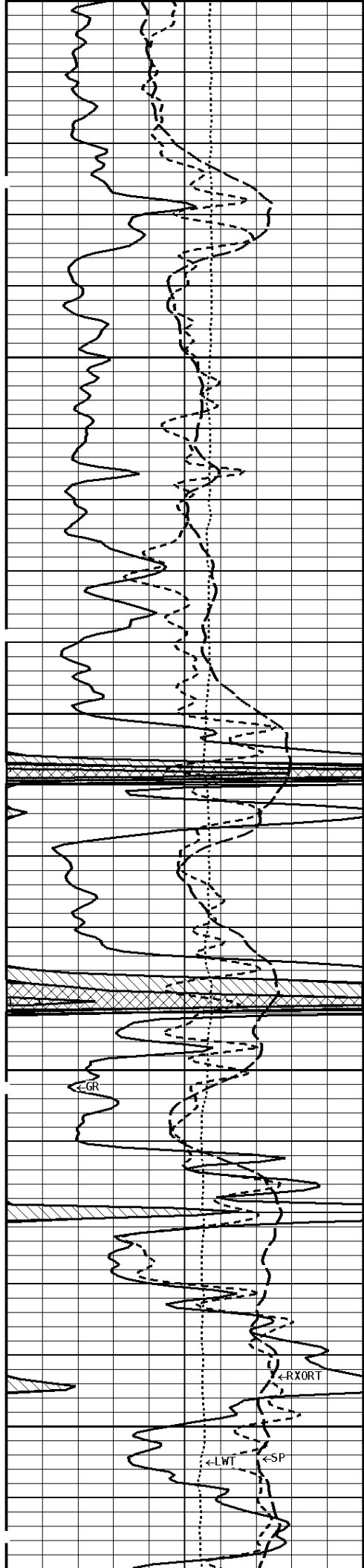
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4300

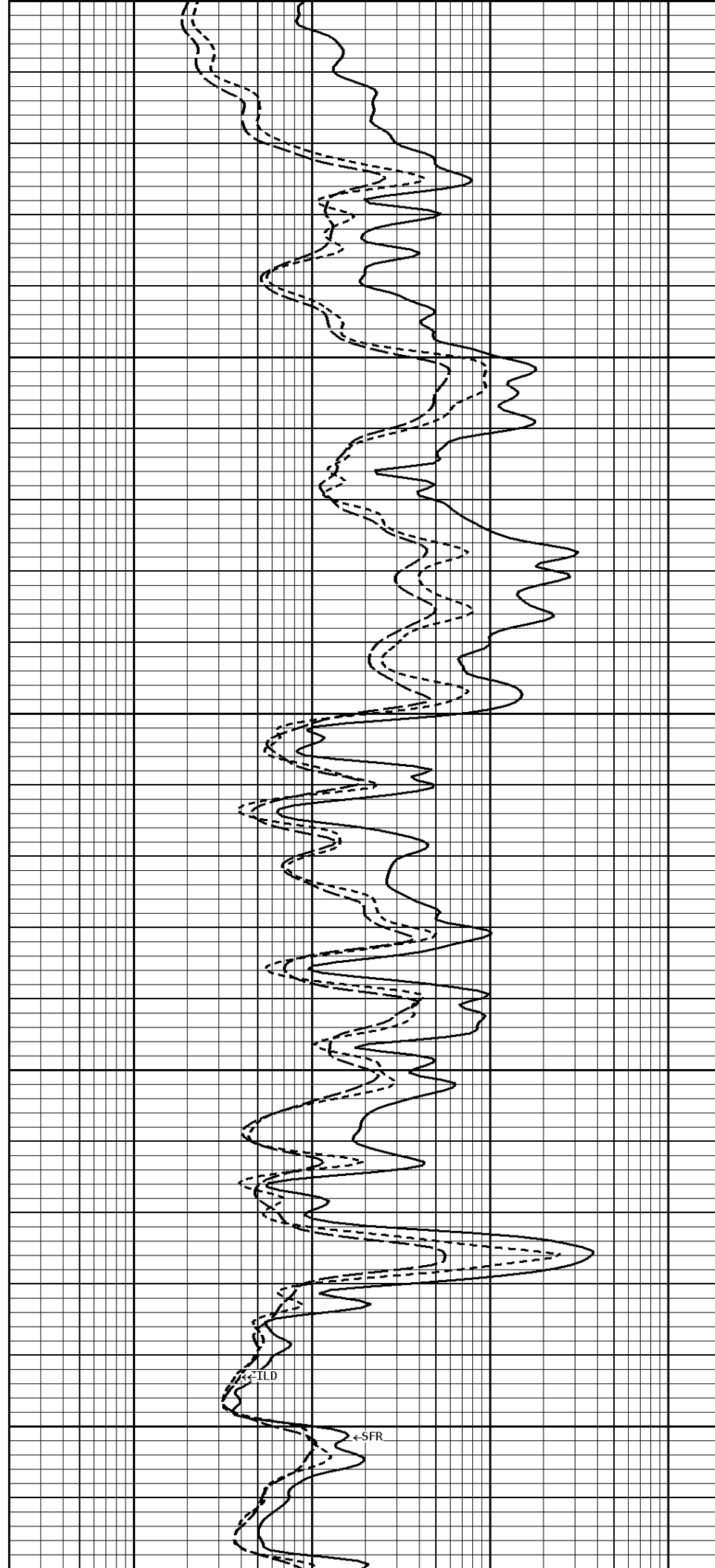
4400



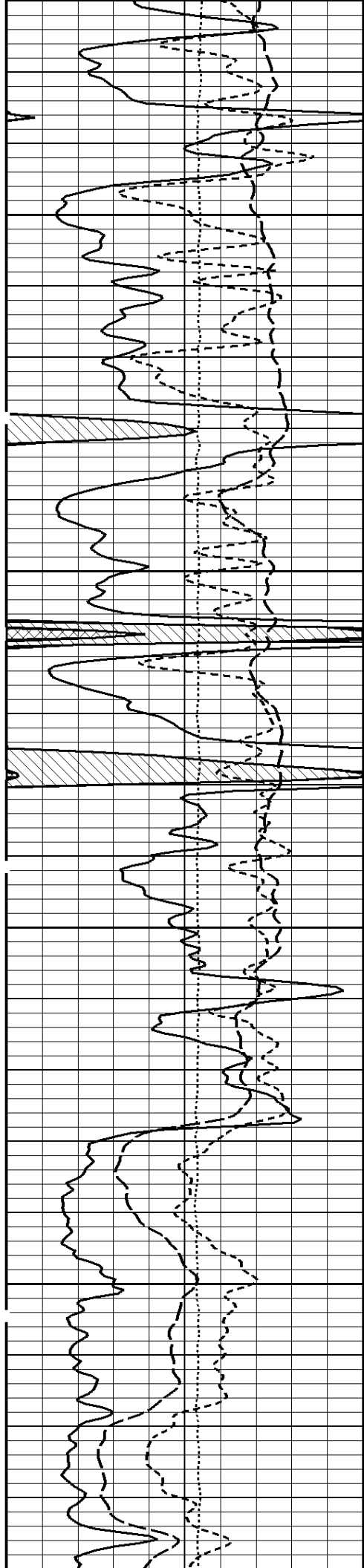
4400



4500

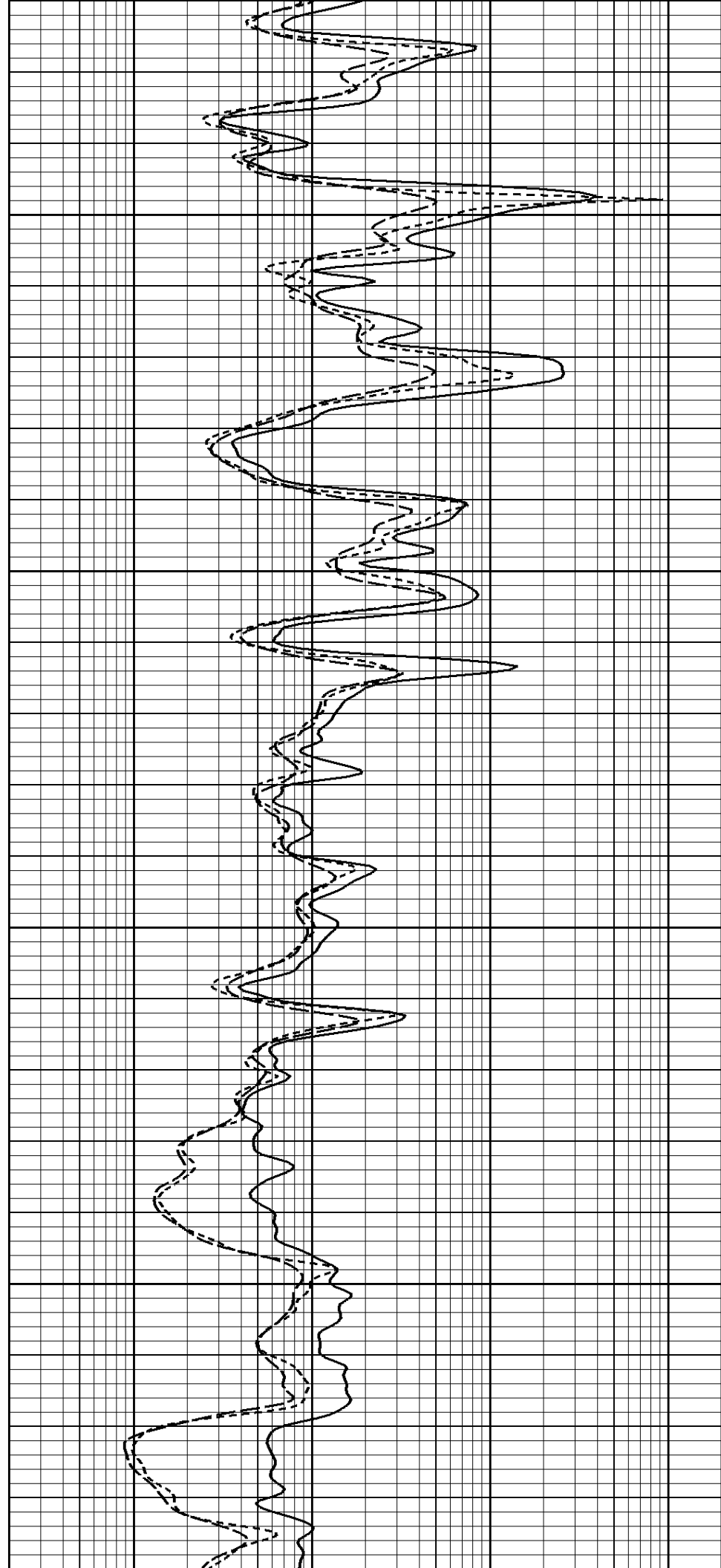


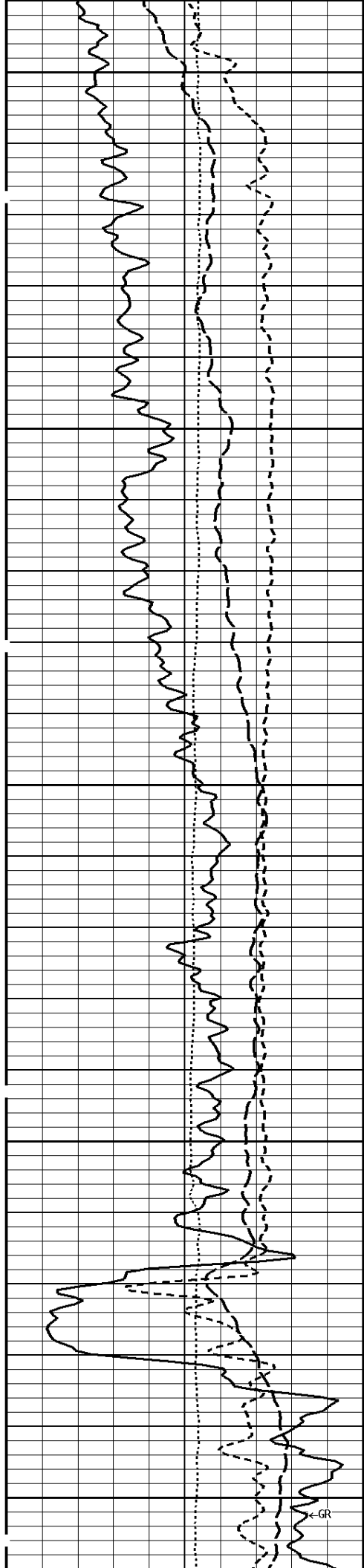
4600



4700

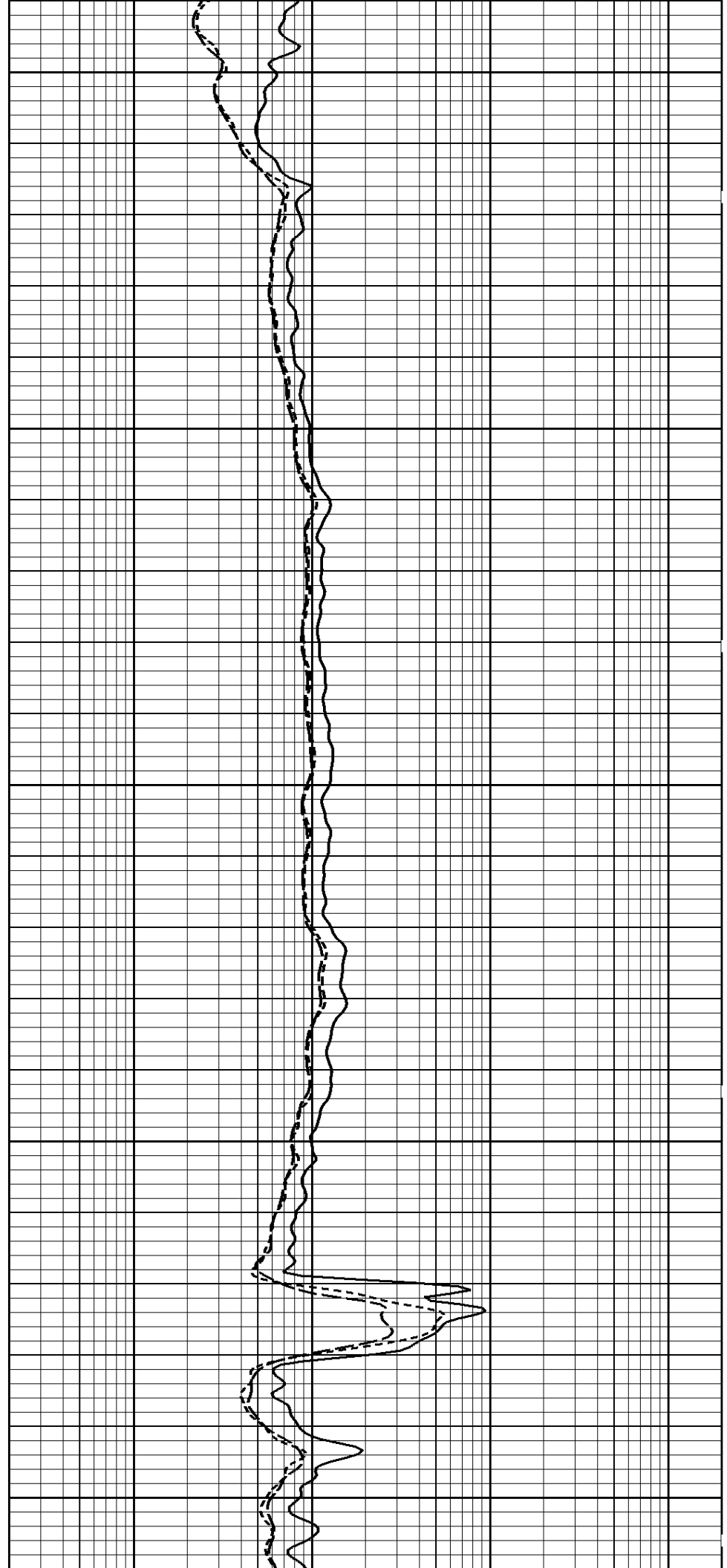
4800

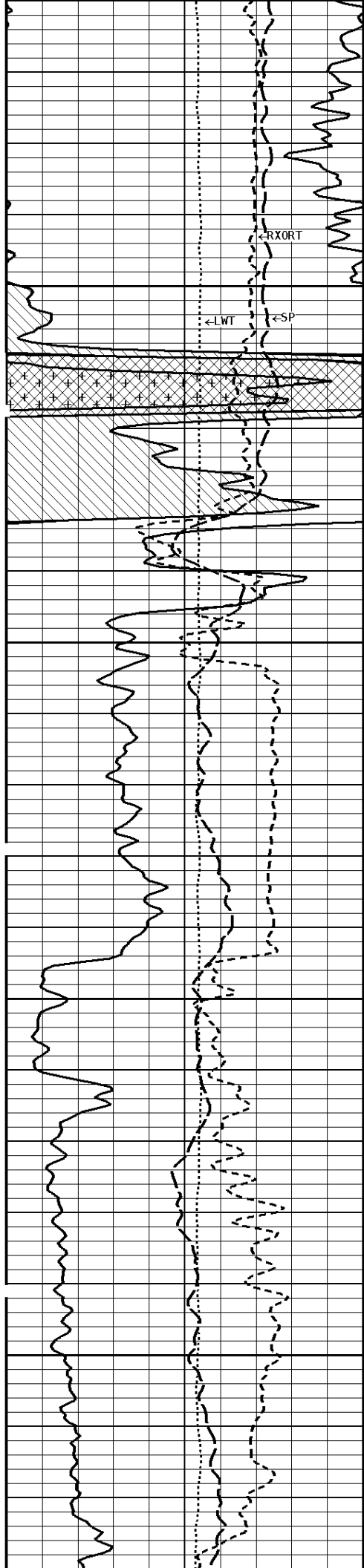




4900

5000





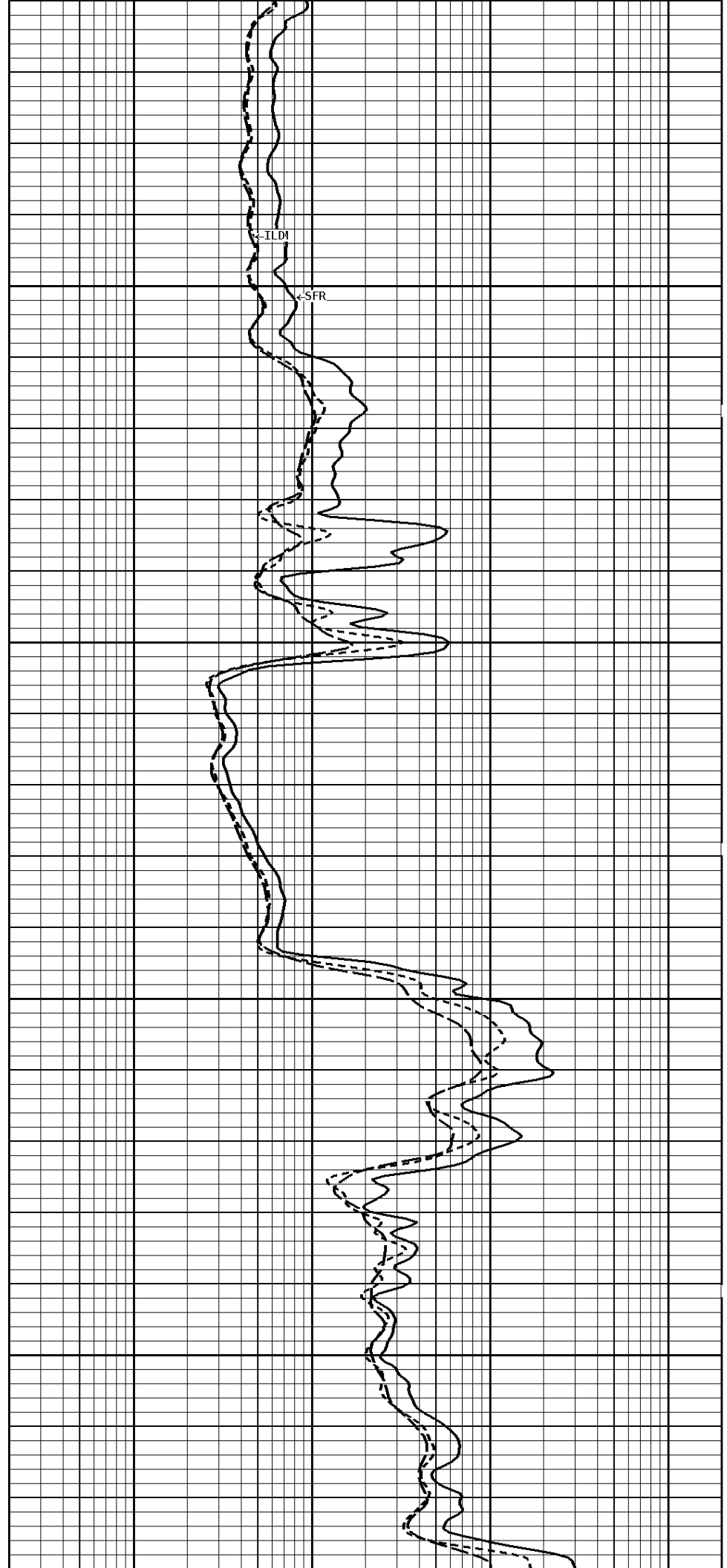
←RXORT

←LWT

←SP

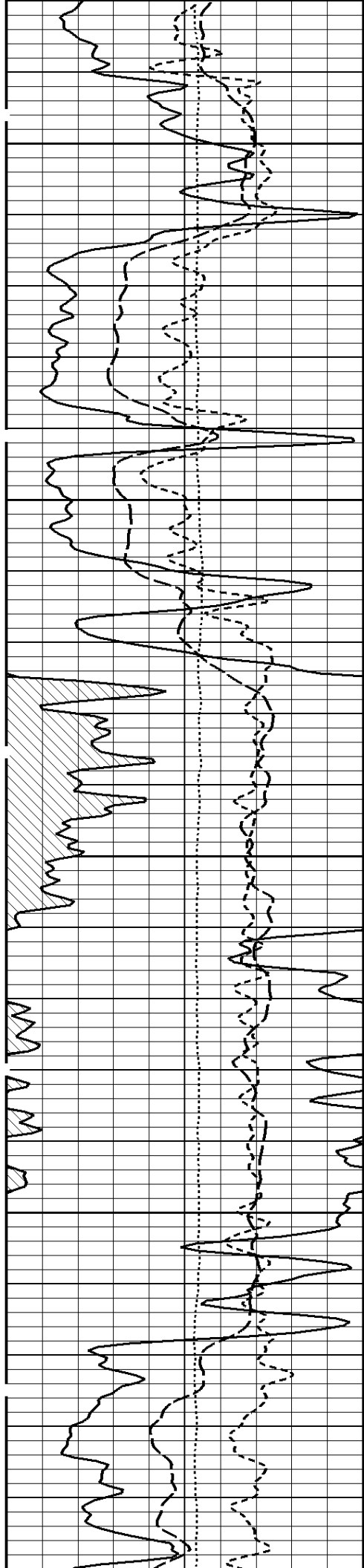
5100

5200



←TLD

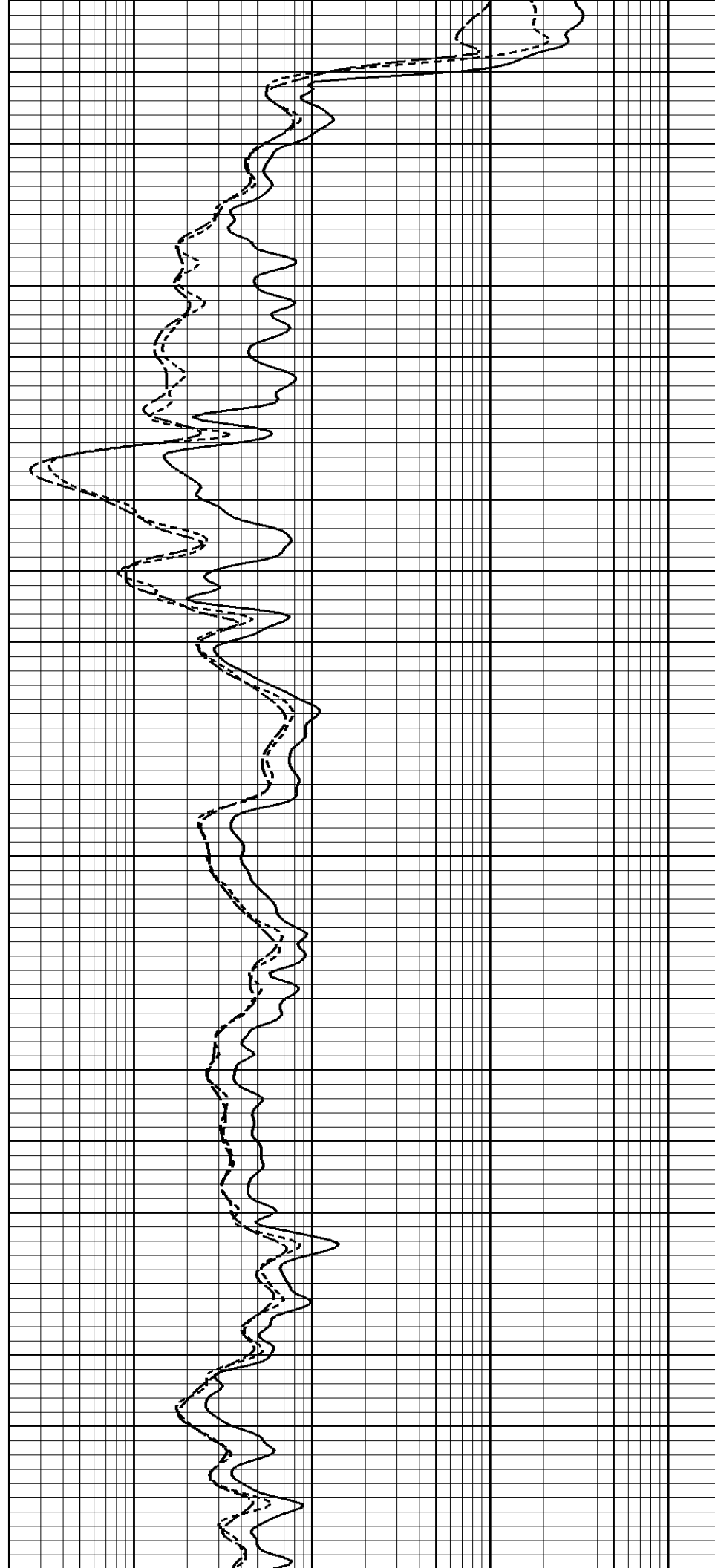
←SFR



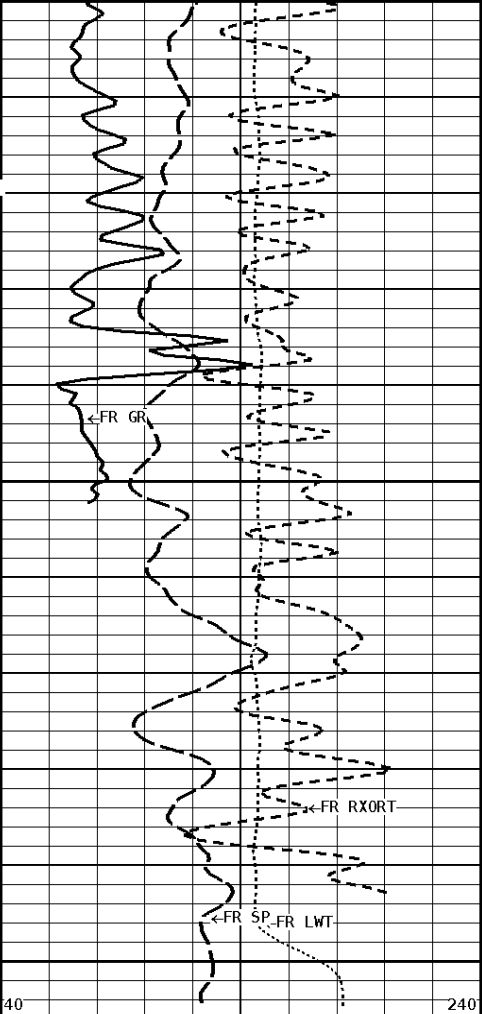
5300

5400

5500



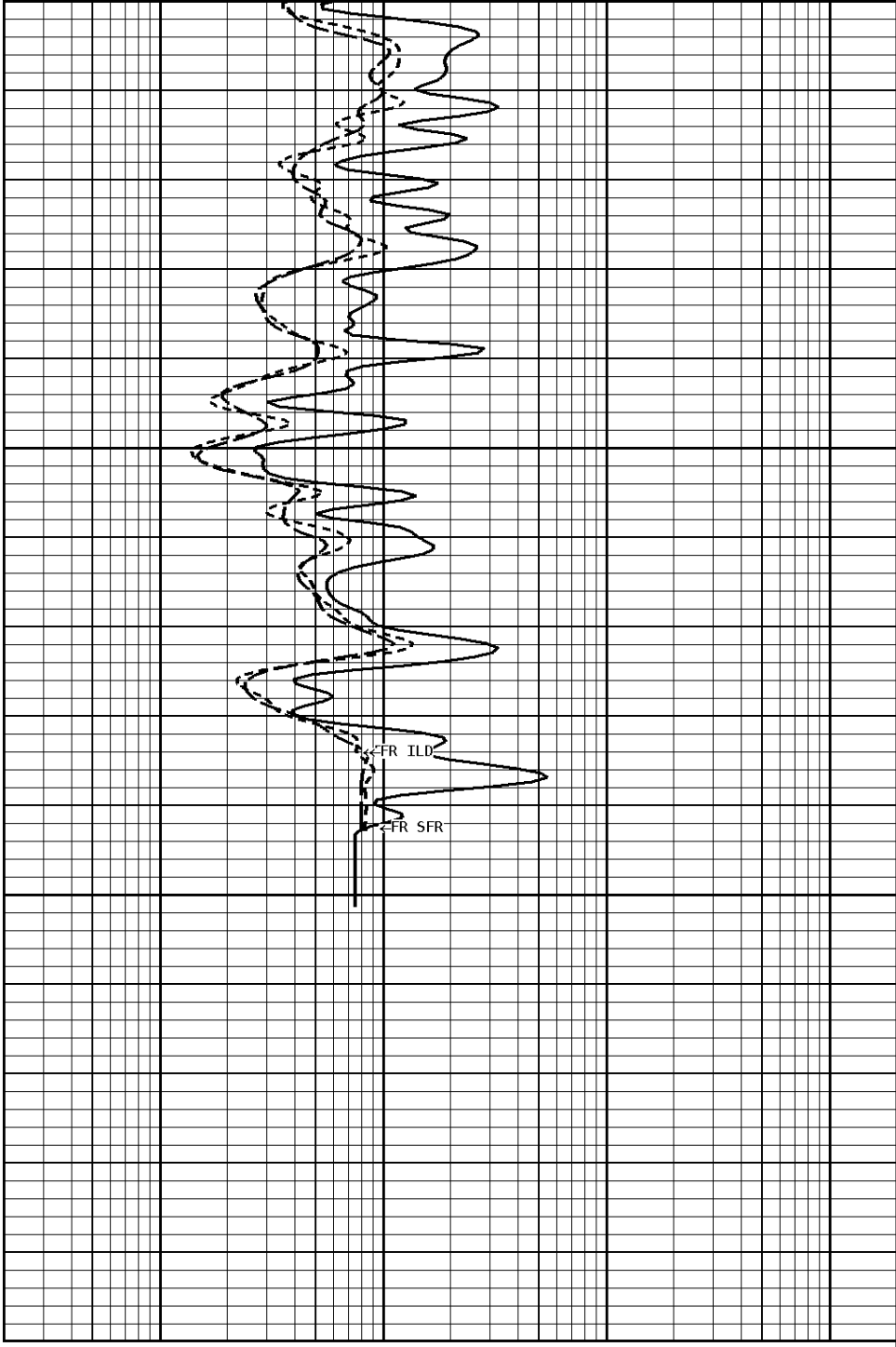
5500



5597
5600

40 240

File #1.2.3



1:240 MAIN SECTION

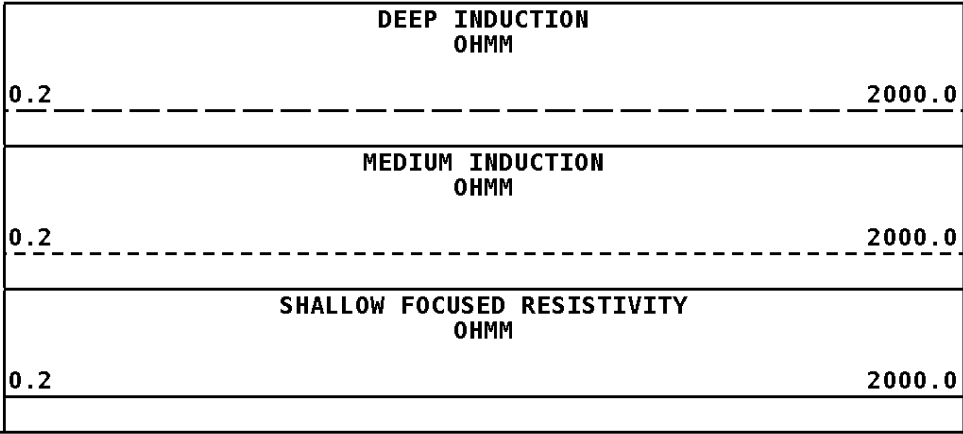
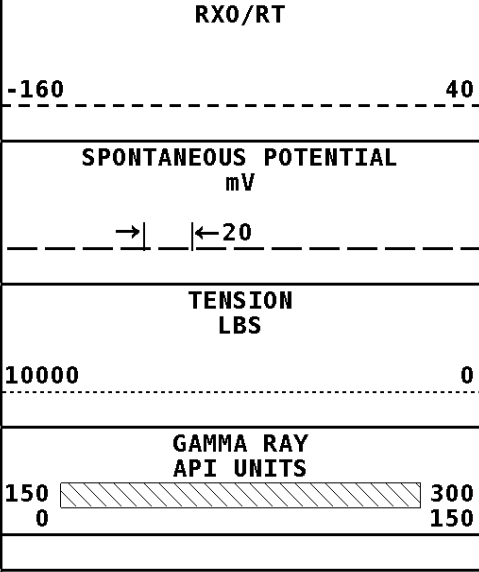
GAMMA RAY API UNITS	
150 0	300 150
TENSION LBS	
10000	0
SPONTANEOUS POTENTIAL mV	
→	←20
RXO/RT	

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

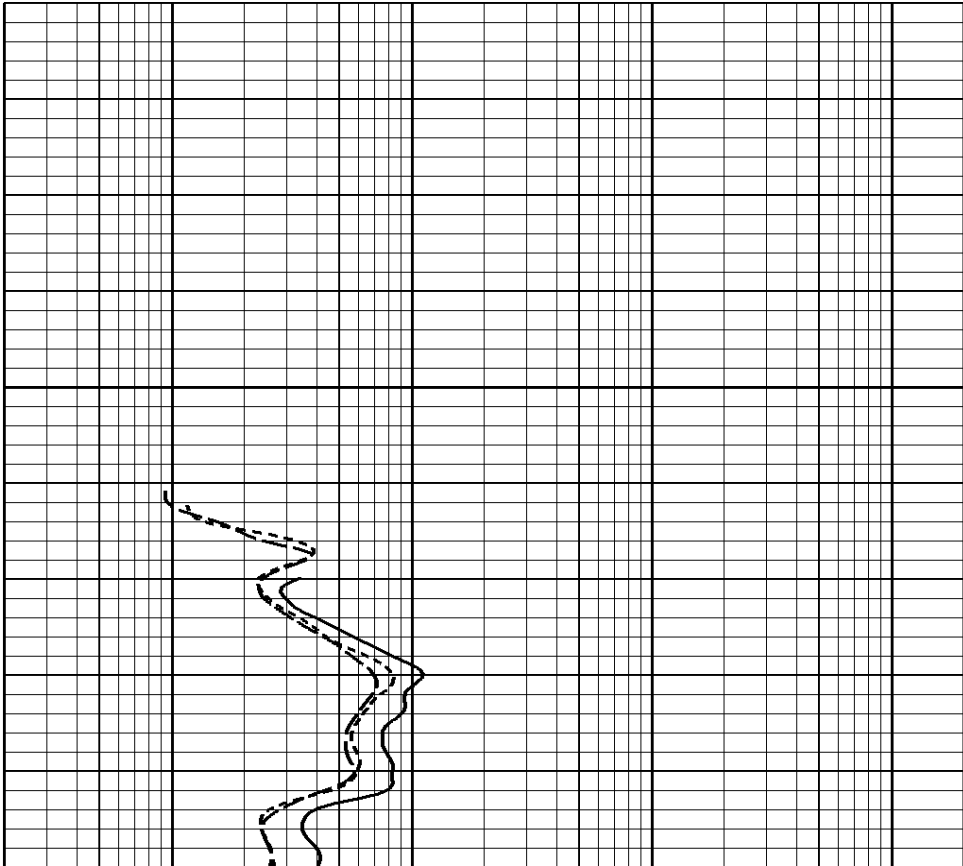
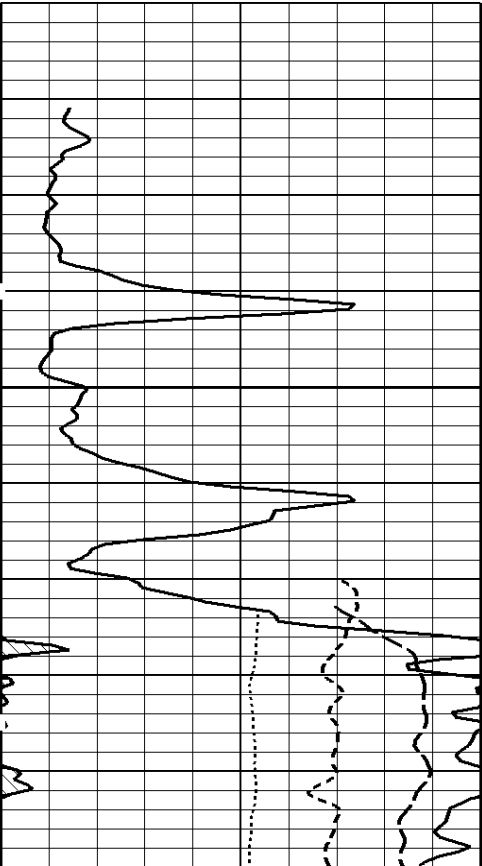
*** Borehole Zone Factors ***

Zone 1 9999.0 to 0.0 Feet		
Drill Bit Size _____	7.875	in
Casing Diameter _____	5.500	in
BHT Depth _____	5597.000	ft
Borehole Temperature _____	134.0	degF
Temperature Gradient _____	1.00	DFHF
Resistivity Of Mud _____	2.000	ohm/m
Resistivity Of Mud Temperature _____	75.00	degF

Well File: CHIEFTAIN OIL_ACHENBACHB 5_JUNE13_MSTK_MSTK **Scale:** 1:240 **Format:** DIL-240
Segment: V1.D1.S4 Reprocess of REPEAT **Acquired:** 2014-06/13 16:44 3.5.0-12850
Reference: 0 **Processed:** 2014-06/13 18:37 3.5.0-12850



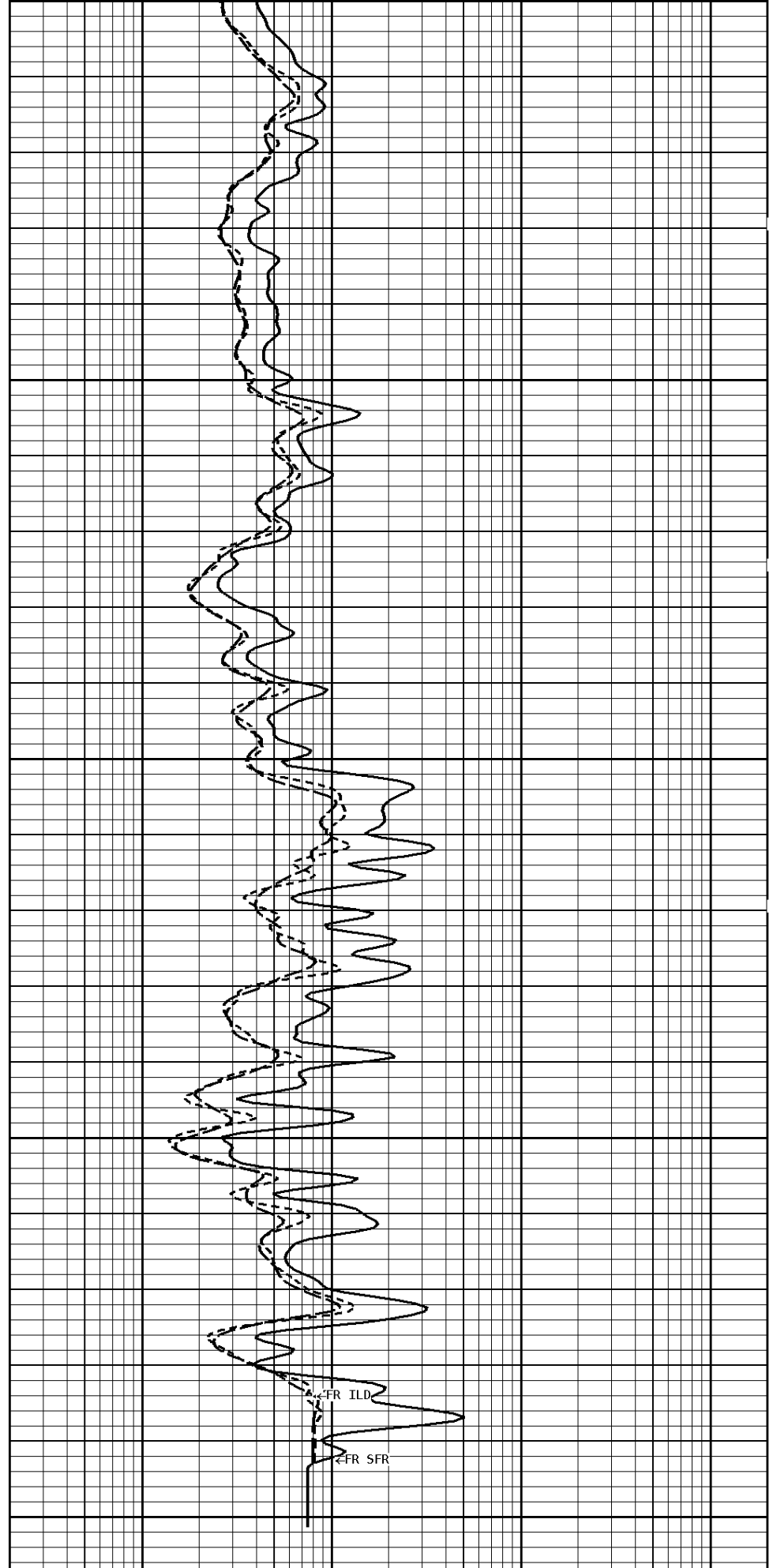
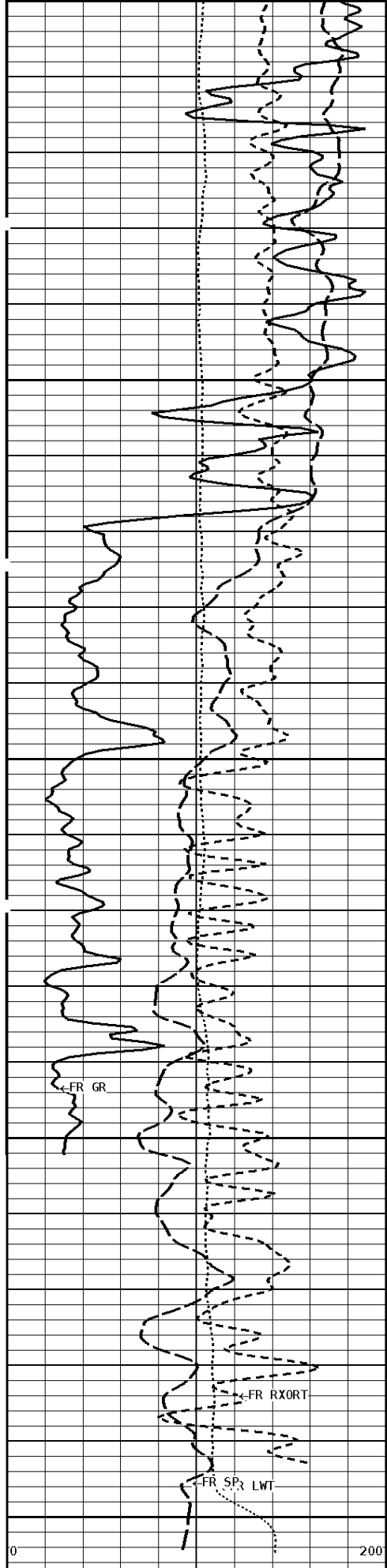
1:240 REPEAT SECTION



5400

5500

5597
5600



File #1.1.4

1:240 REPEAT SECTION

GAMMA RAY API UNITS
TENSION LBS
10000 ----- 0
SPONTANEOUS POTENTIAL mV
→ ← 20 -----
RXO/RT
-160 ----- 40

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 ***

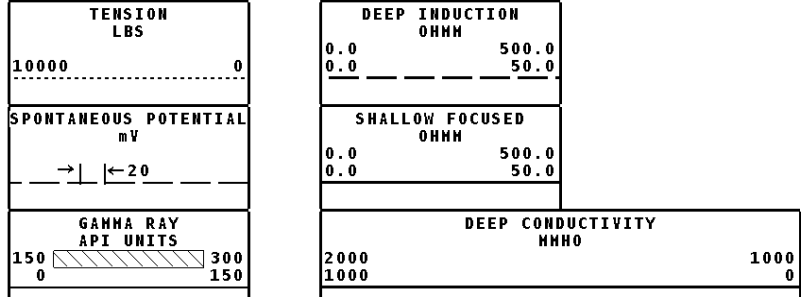
Zone 1	99999.0	to	0.0	Feet
Drill Bit Size	_____		7.875	in
Casing Diameter	_____		5.500	in
BHT Depth	_____		5597.000	ft
Borehole Temperature	_____		134.0	degF
Temperature Gradient	_____		1.00	DFHF
Resistivity Of Mud	_____		2.000	ohm/m
Resistivity Of Mud Temperature	_____		75.00	degF

*** Calibration Summary ***

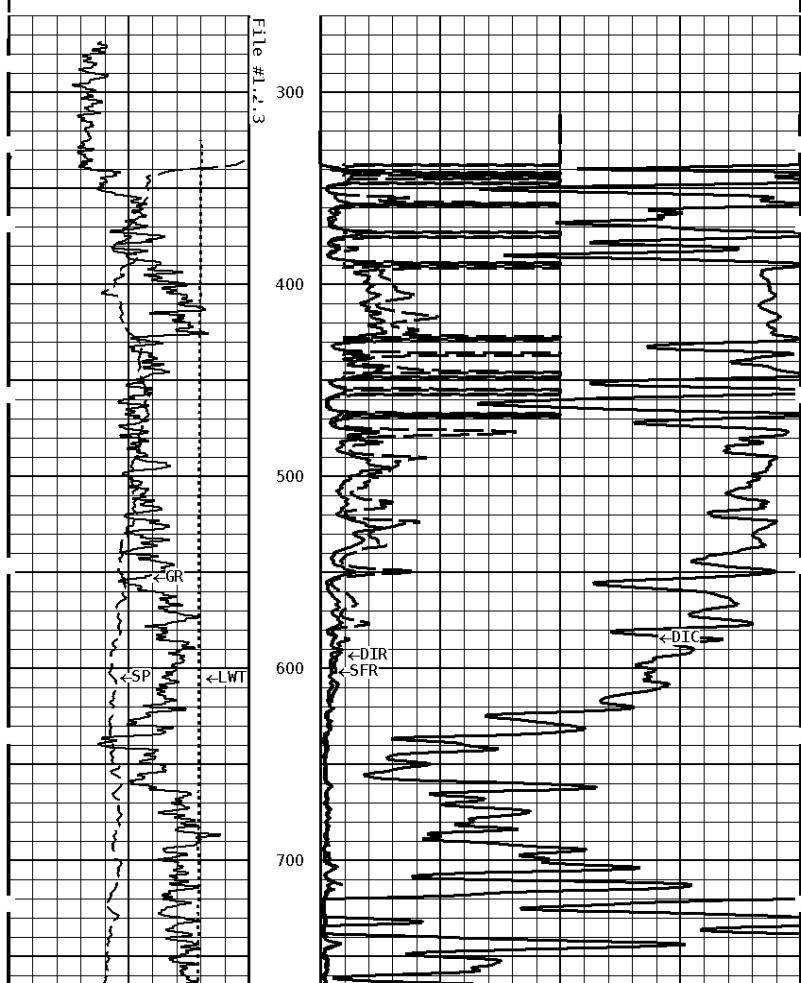
Shop Calibration						
PIT-CA						
Performed : 15-APR-2014			Time : 14:04			
Sensor Suite : P-IND-T			ID : PIT-CA-062			
Medium						
	Measured		Calibrated			
	R	X	R	X		Units
Air	130583	130713	-0.1	-0.1		MMHOS
Zero	131074	131072	27.3	6.4		MMHOS
Reference	253427	250043	5027.3	5006.4		MMHOS
Loop	130592	221688	3823.7	3823.0		MMHOS
Sonde Error			-1.3	-15.8		MMHOS
Cond			5027.3	5006.4		MMHOS
Deep						
	Measured		Calibrated			
	R	X	R	X		Units
Air	129032	131483	-0.0	0.1		MMHOS
Zero	131074	131059	39.8	-17.0		MMHOS
Reference	233823	231658	2039.8	1983.0		MMHOS
Loop	129039	222242	1804.5	1804.3		MMHOS
Sonde Error			-8.5	-8.7		MMHOS
Cond			2039.8	1983.0		MMHOS
Temperature						

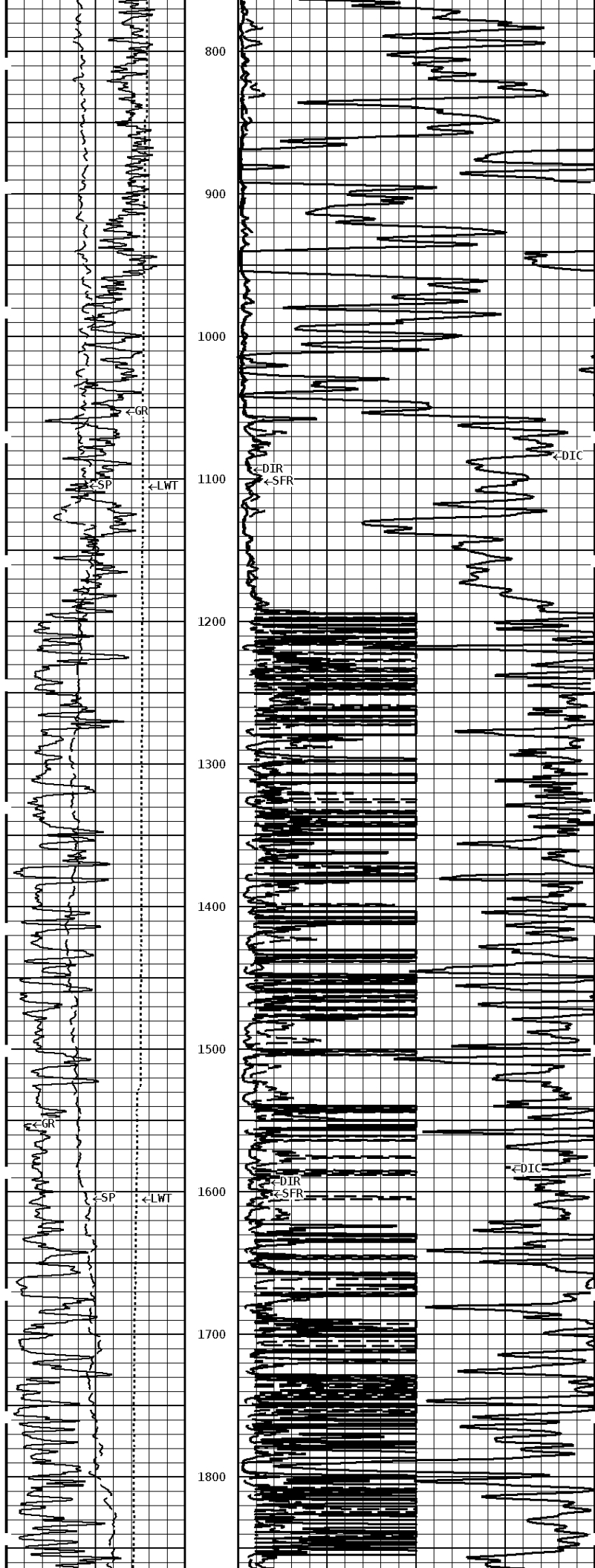
Measured		Calibrated		Units	
Low	High	Low	High	DEGF	
16980.0	56920.0	70.0	350.0		
Performed : 15-Apr-2014		Time : 13:51			
Sensor Suite : SFL		ID : PIT-CA-062			
Internal					
Measured		Calibrated		Units	
Zero	Reference	Zero	Reference		
Im	32763.3	48949.7	0.0	7028.0	uA
Ib	32767.3	48756.3	0.0	1750.0	mA
MOM1	32726.5	57507.3	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 15-Apr-2014		Time : 13:49			
Sensor Suite : P-SP		ID : PIT-CA-062			
Internal					
Measured		Calibrated		Units	
Zero	Reference	Zero	Reference		
32765.9	58980.4	0.0	1000.0	mV	

Well File: CHIEFTAIN OIL ACHENBACHB_5 JUNE13_MSTK_MSTK Scale: 1:1200 Format: DIL1200
Segment: V1.D2.S3 SMAIN Acquired: Not Available
Reference: 0 Processed: Not Available



1:1200 MAIN SECTION





800

900

1000

1100

1200

1300

1400

1500

1600

1700

1800

← GR

← LWT

← SP

← LWT

← LWT

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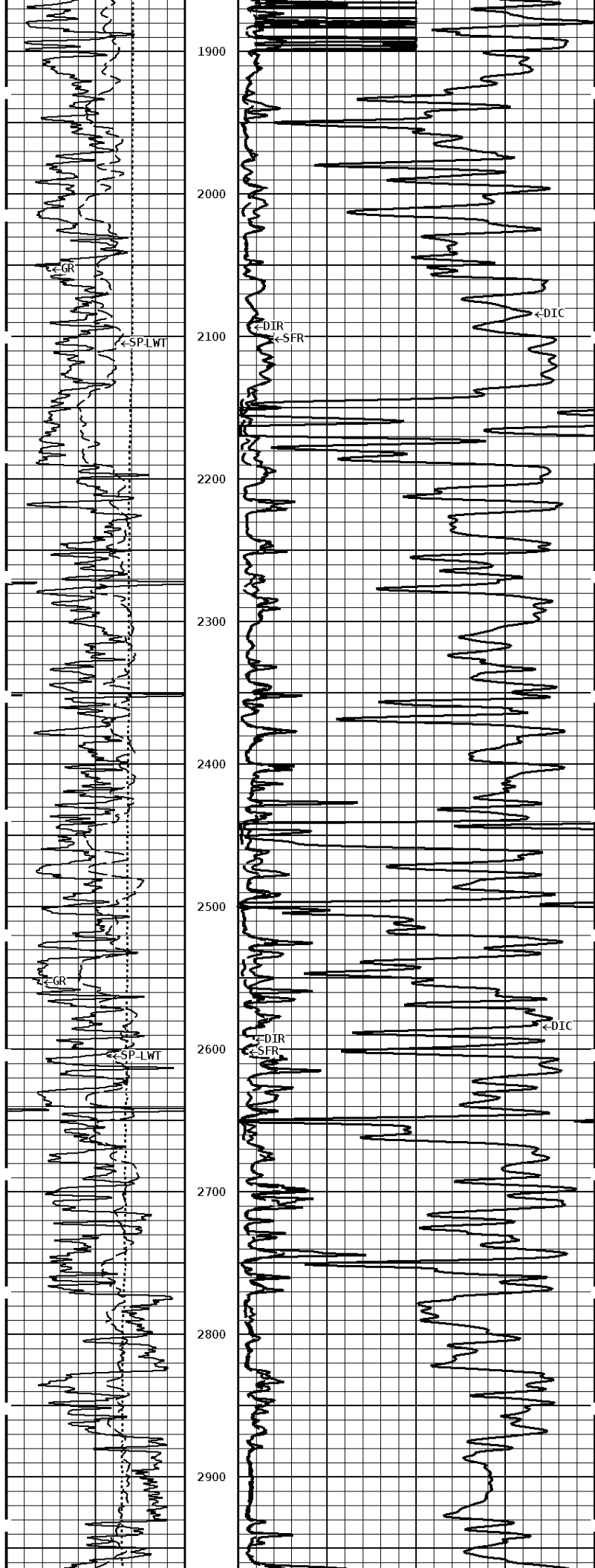
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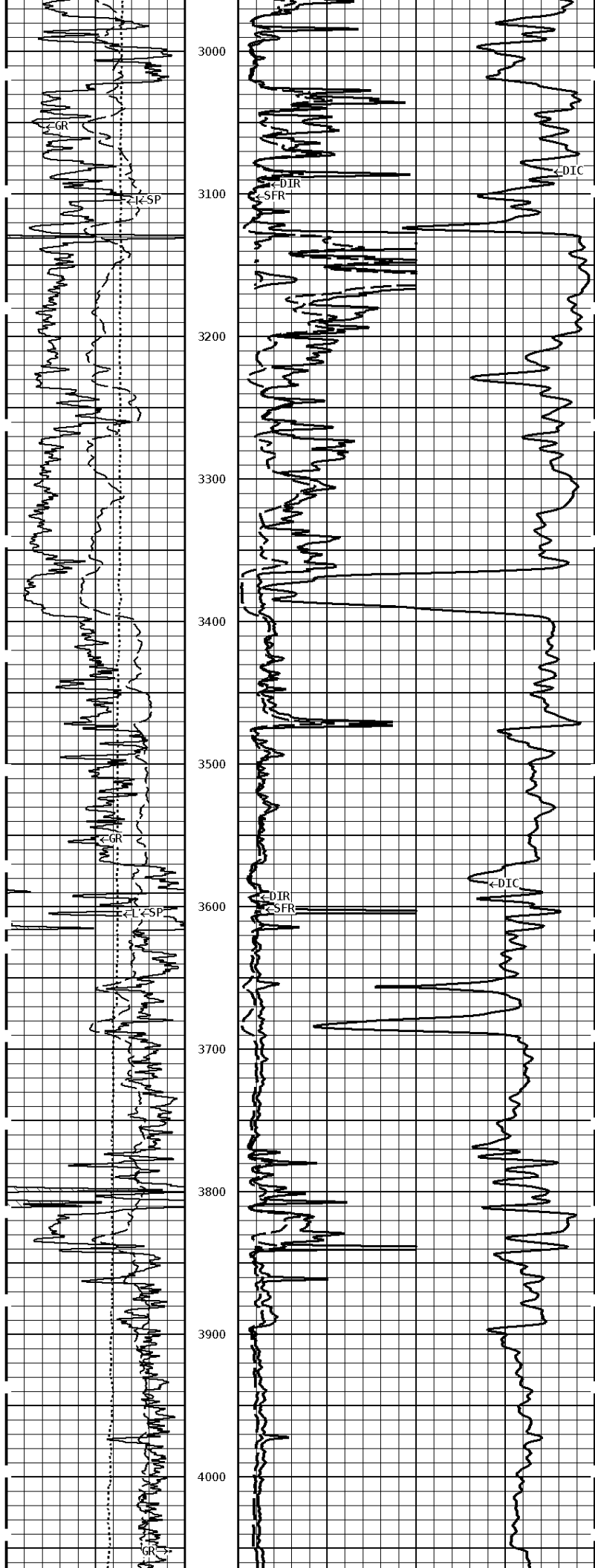
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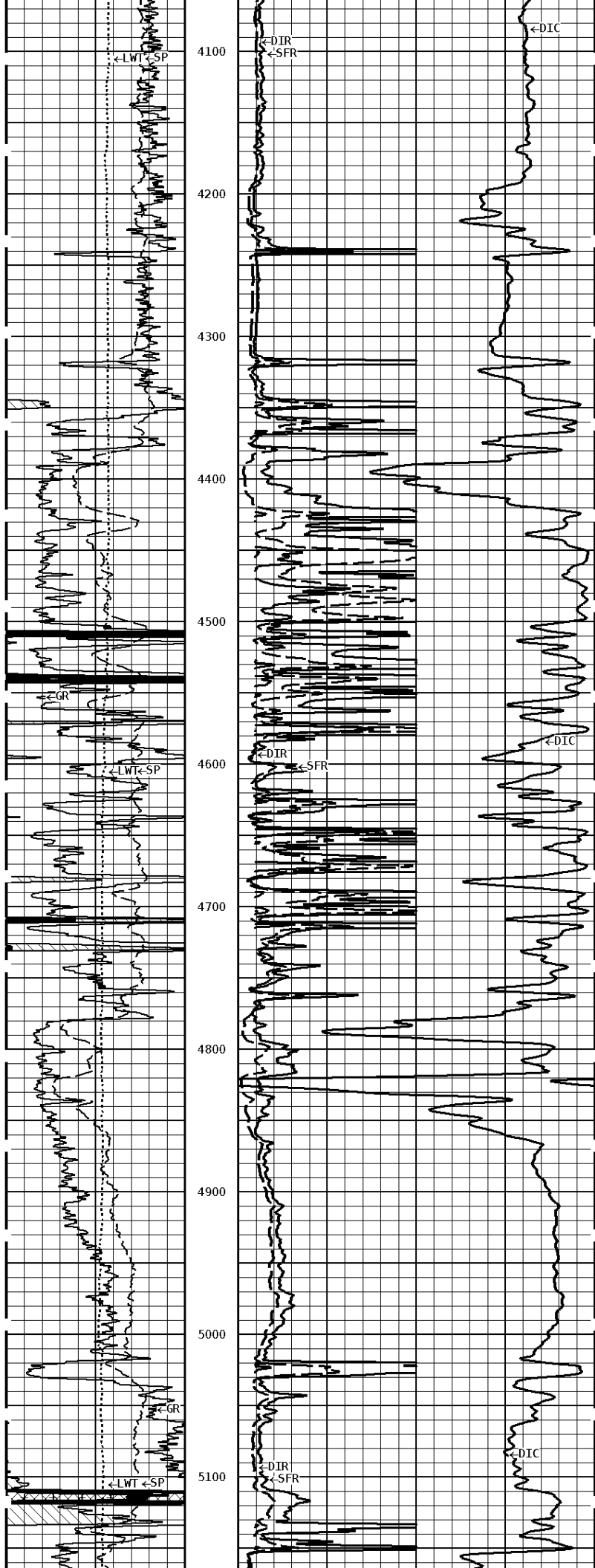
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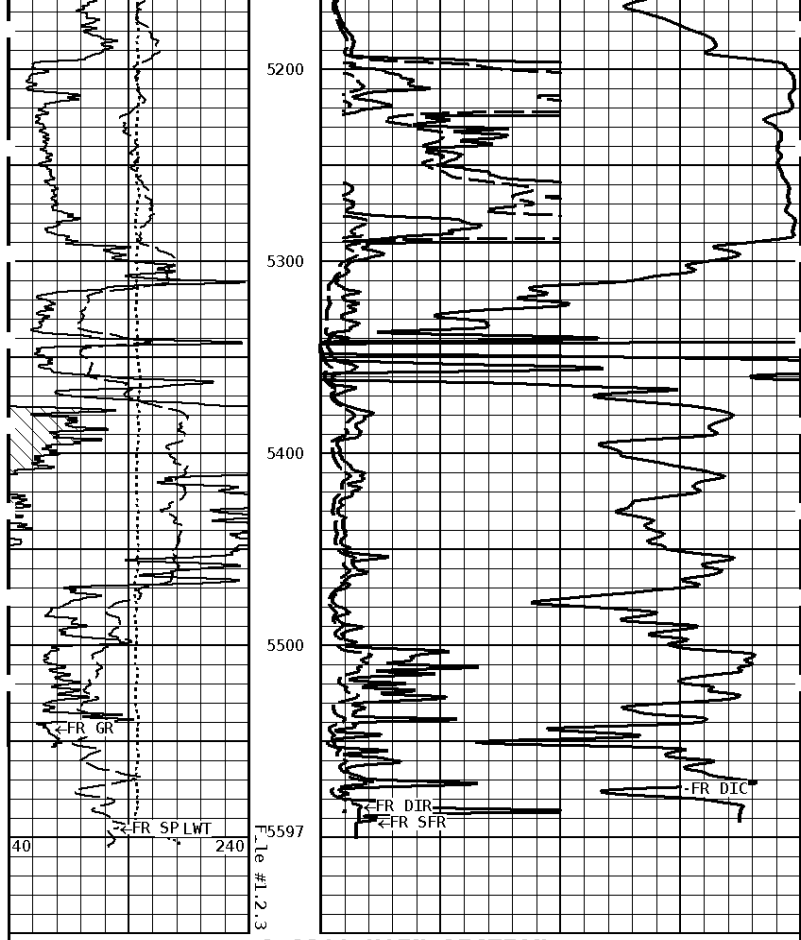
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1:1200 MAIN SECTION

GAMMA RAY API UNITS 150 300 0 150	DEEP CONDUCTIVITY MHO 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: CHIEFTAIN OIL CO., INC.
 Well: ACHENBACH B #5
 Location: 2970' FSL & 2310' FWL
 Logged: 06-13-2014
 K.B. Elev: 1413.0 Ft