

PHASED INDUCTION

Company VAL ENERGY, INC. SAWYER #2-31 WILSON COWLEY KANSAS USA 15-035-24704-0000		File No : TUL-70310 Company : VAL ENERGY, INC. Well : SAWYER #2-31 Field : WILSON County : COWLEY State : KANSAS Country : USA API No : 15-035-24704-0000	
Location : 1650' FNL & 2800' FEL E/2 NE SE NW			
LSD :		Sect : 31	Twp : 32S
		Rge : 6E	
Permanent Datum: Drilling Measured From: Log Measured From: Above Permanent Datum:	GL KB KB 9.00 Ft	Elevations: KB 1293.00 DF 1292.00 GL 1284.00	Services: NLD LDT PTT MLT
Date	06-17-2019		
Run Number	1		
Depth--Driller	3475.0 Ft		
Depth--Logger	3475.0 Ft		
First Reading	3475.0 Ft		
Last Reading	305.0 Ft		
Casing--Driller	305.0 Ft		
Casing--Logger	305.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	WBM		
Density	9.1		
Fluid Loss	8.8		
PH/Viscosity	9.5	49.0	
Sample Source	MEASURED		
RM@Measured Temp.	2.000 @ 70 F		
RMF@Measured Temp	1.600 @ 70 F		
RMCG@Measured Temp.	2.400 @ 70 F		
Source RMF/RMCG	CALCULATED CALCULATED		
RM@BHT	1.320 @ 110 F		
Time Circulation Stopped	06-17-2019 08:30		
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, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services 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 STEP Energy Services 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 STEP Energy Services 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	3475.00	8.625	32.00	305.00	0.00

Run Number	1		
Date	06-17-2019		
Date/Time On Bottom	06-17-2019 11:30		
Depth to Fluid	0.0 Ft		
Salinity	1000.000		
RMF@BHT	1.060 @ 110 F		
RMC@BHT	1.580 @ 110 F		

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 1750 & NO REPEAT

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

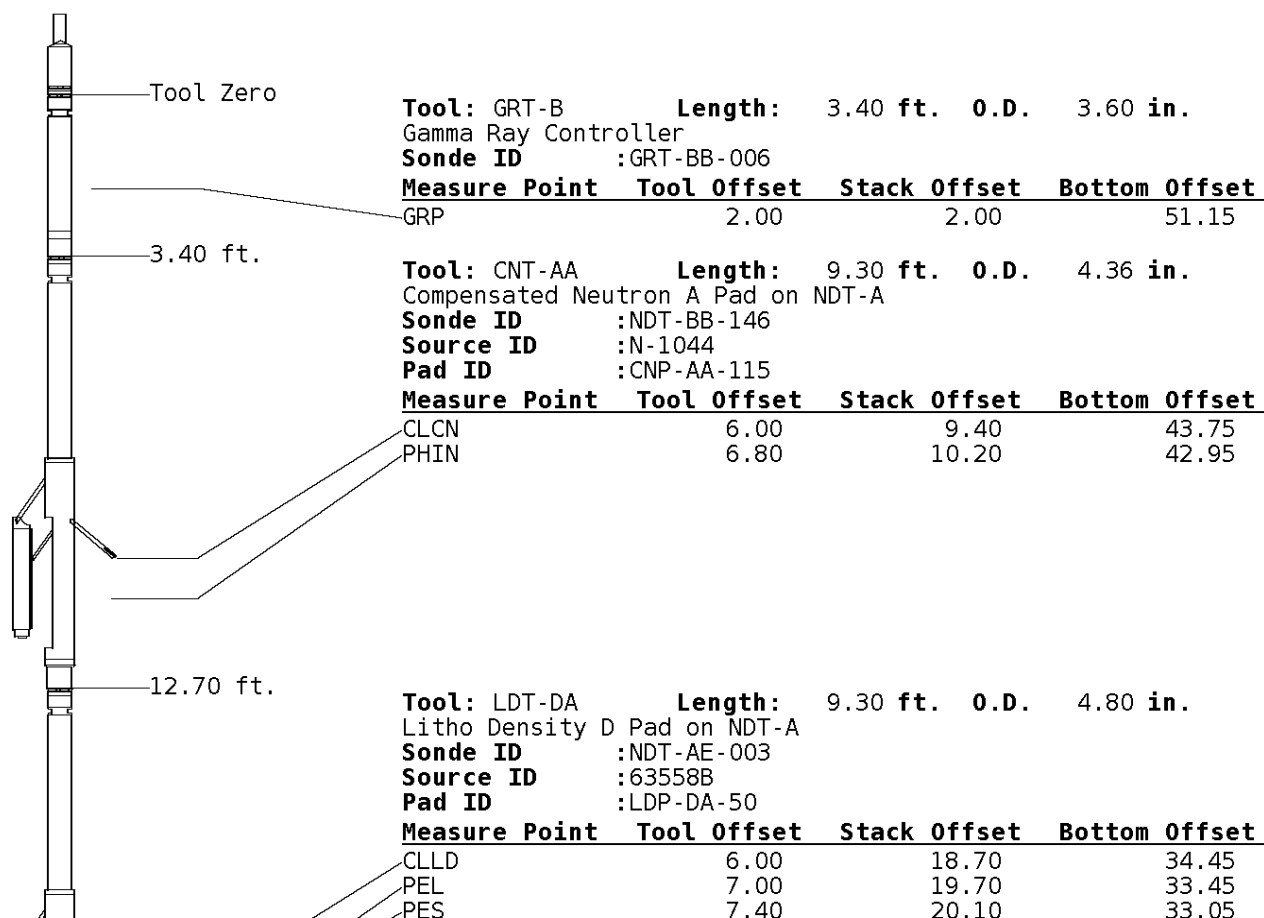
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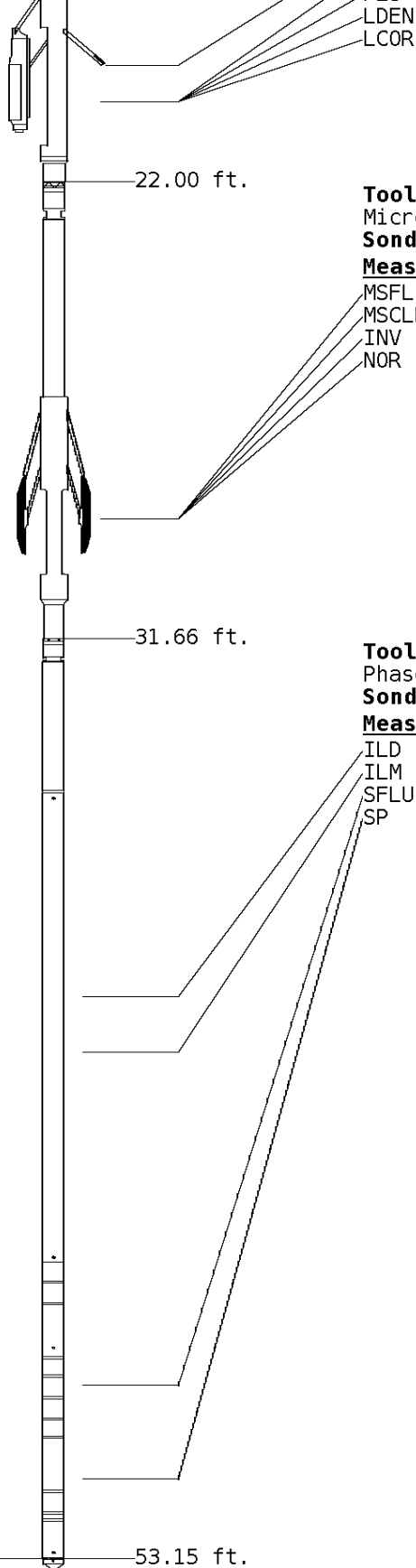
B. BROWN

S. KEELEY

Tool String Schematic

Total Tool Length - 53.15 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-024

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 SAWYER 2-31_JUNE17_MSTK

Scale: 1:600 **Format:** DIL-600

Segment: V1.D1.S3 Reprocess of MAIN

Acquired: 2019-06/17 11:16 3.4.1-13968

Reference: 0

Processed: 2019-06/17 12:31 3.4.1-13968

TENSION
LBS

10000

0

DEEP INDUCTION
OHMM

0.0

500.0

0.0

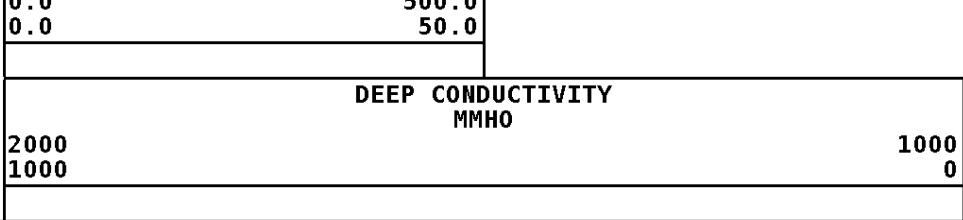
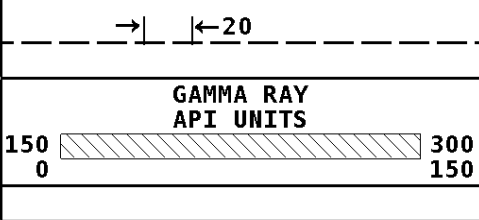
50.0

SPONTANEOUS POTENTIAL
mV

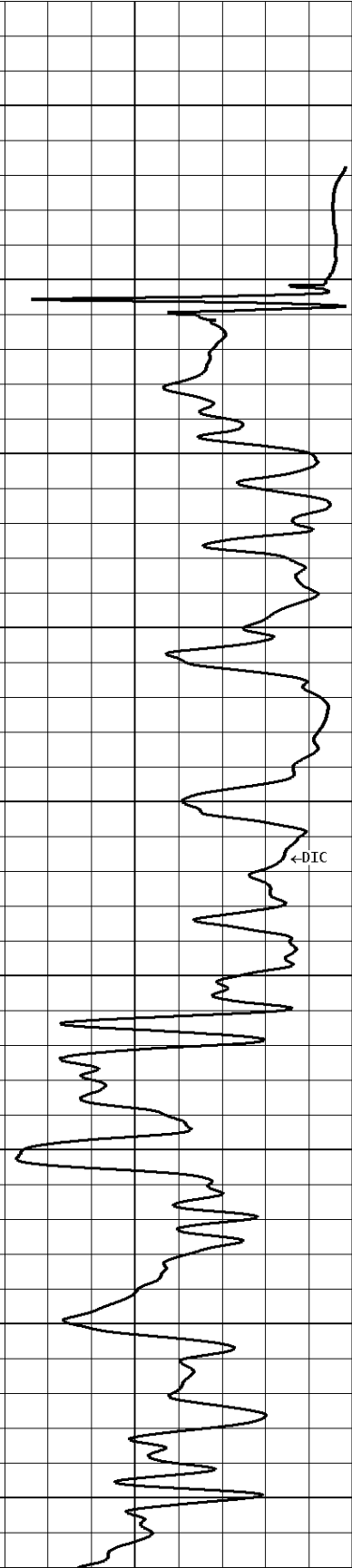
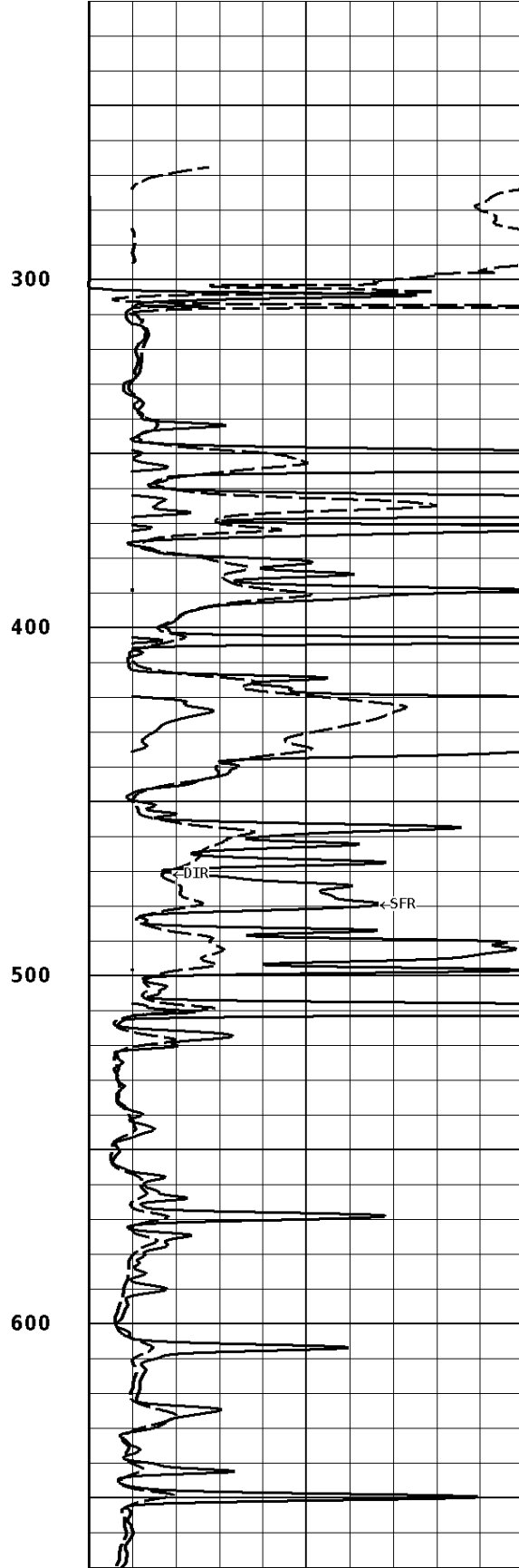
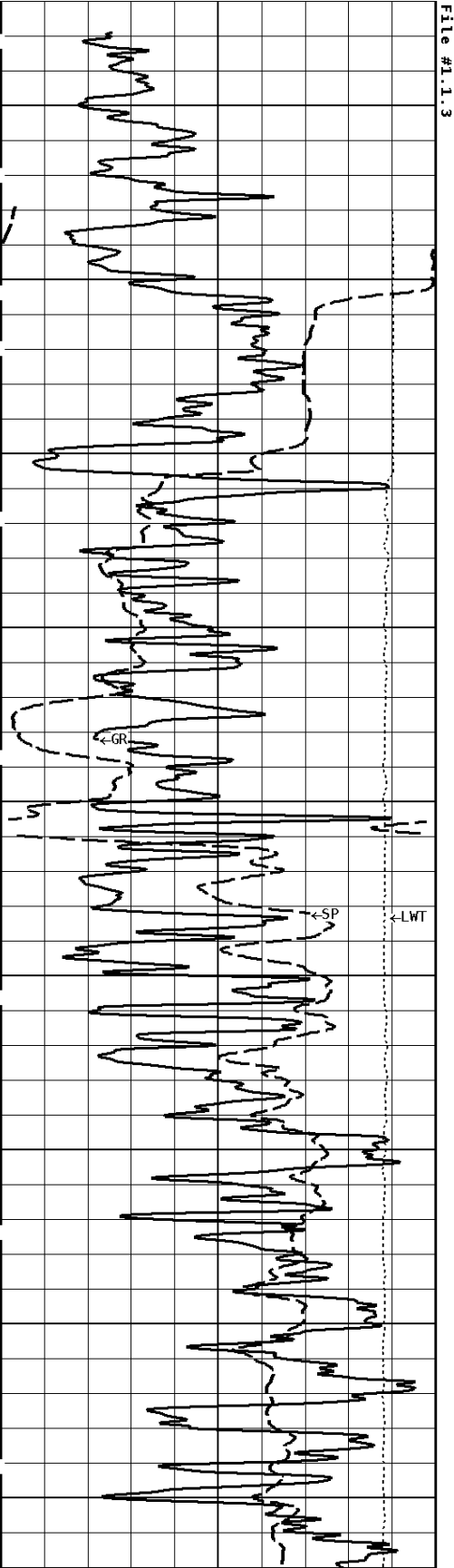
SHALLOW FOCUSED RESISTIVITY
OHMM

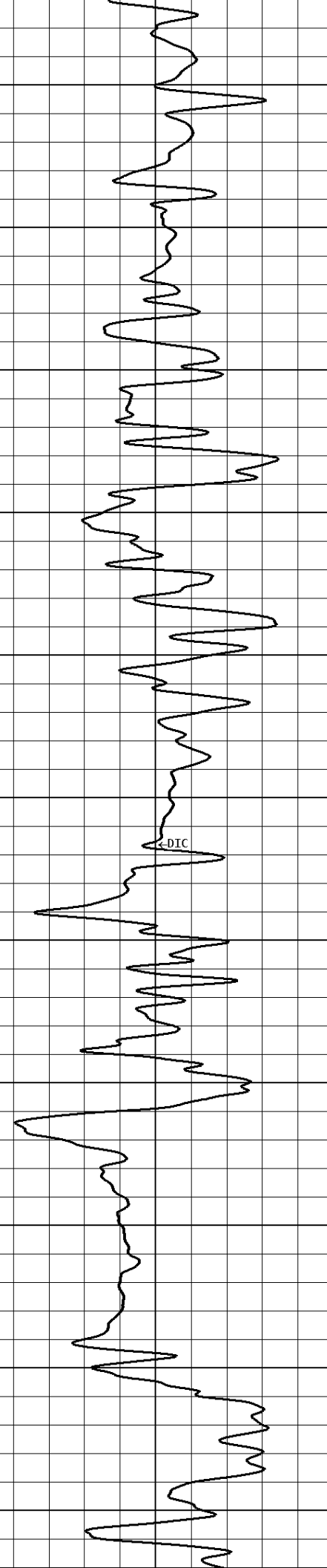
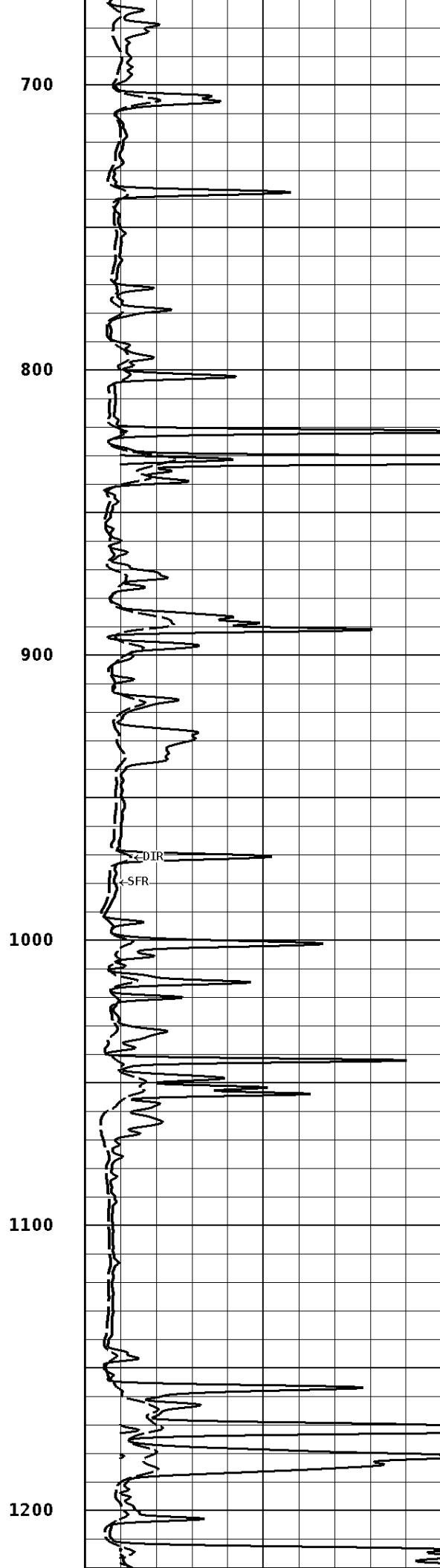
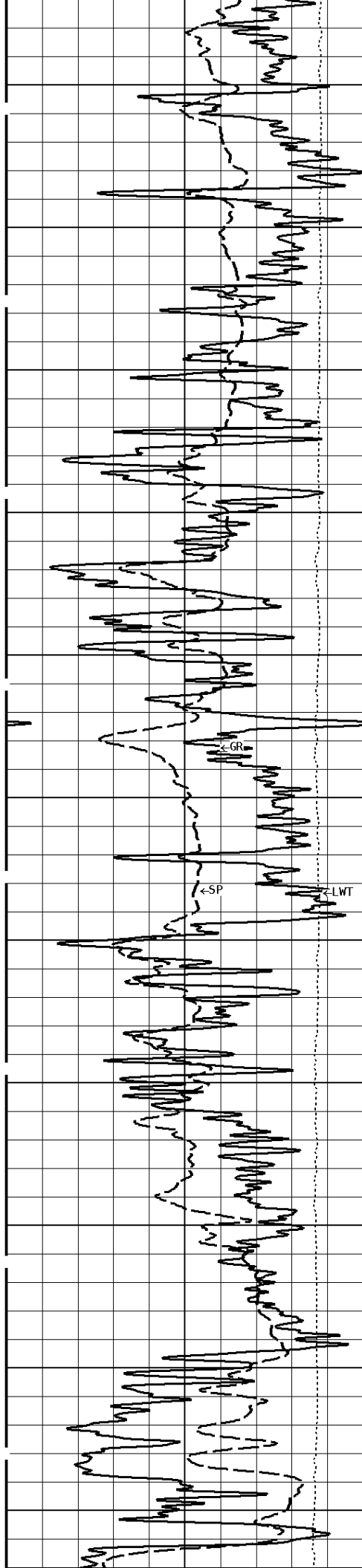
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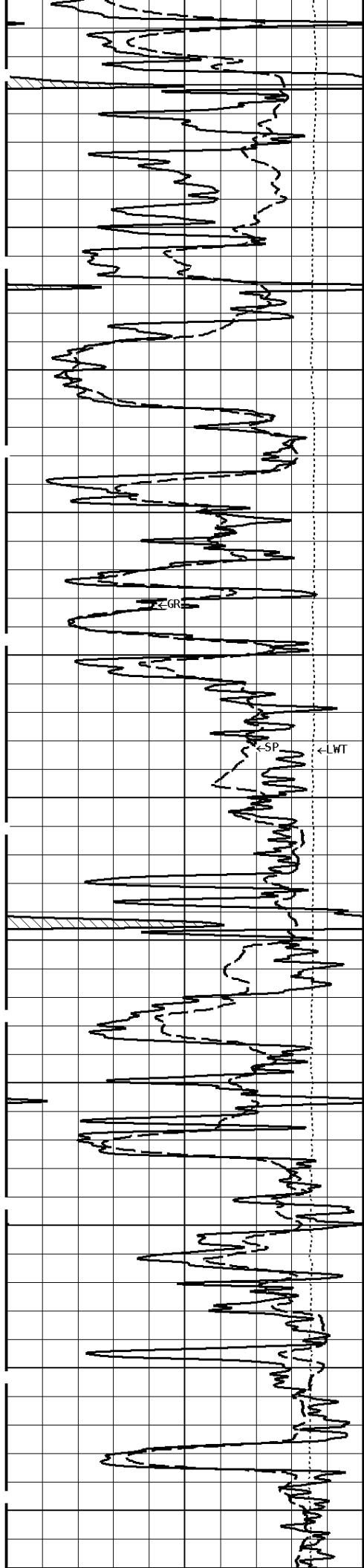
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1:600 MAIN SECTION







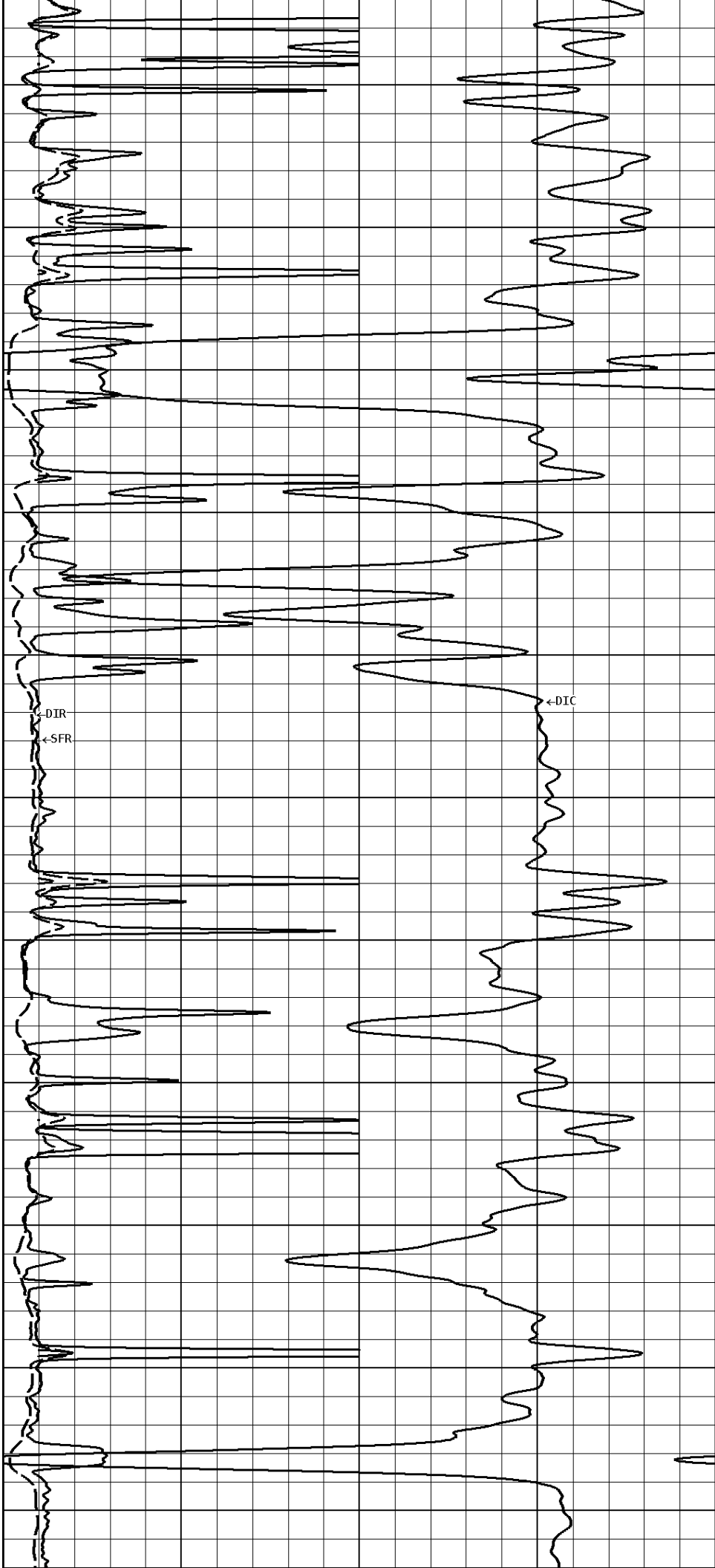
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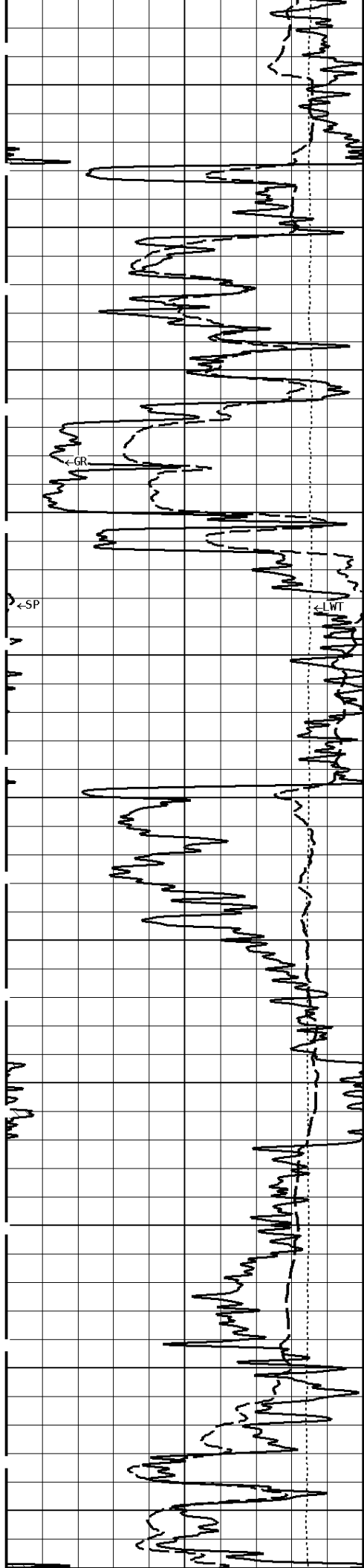
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1500

1600

1700





1800

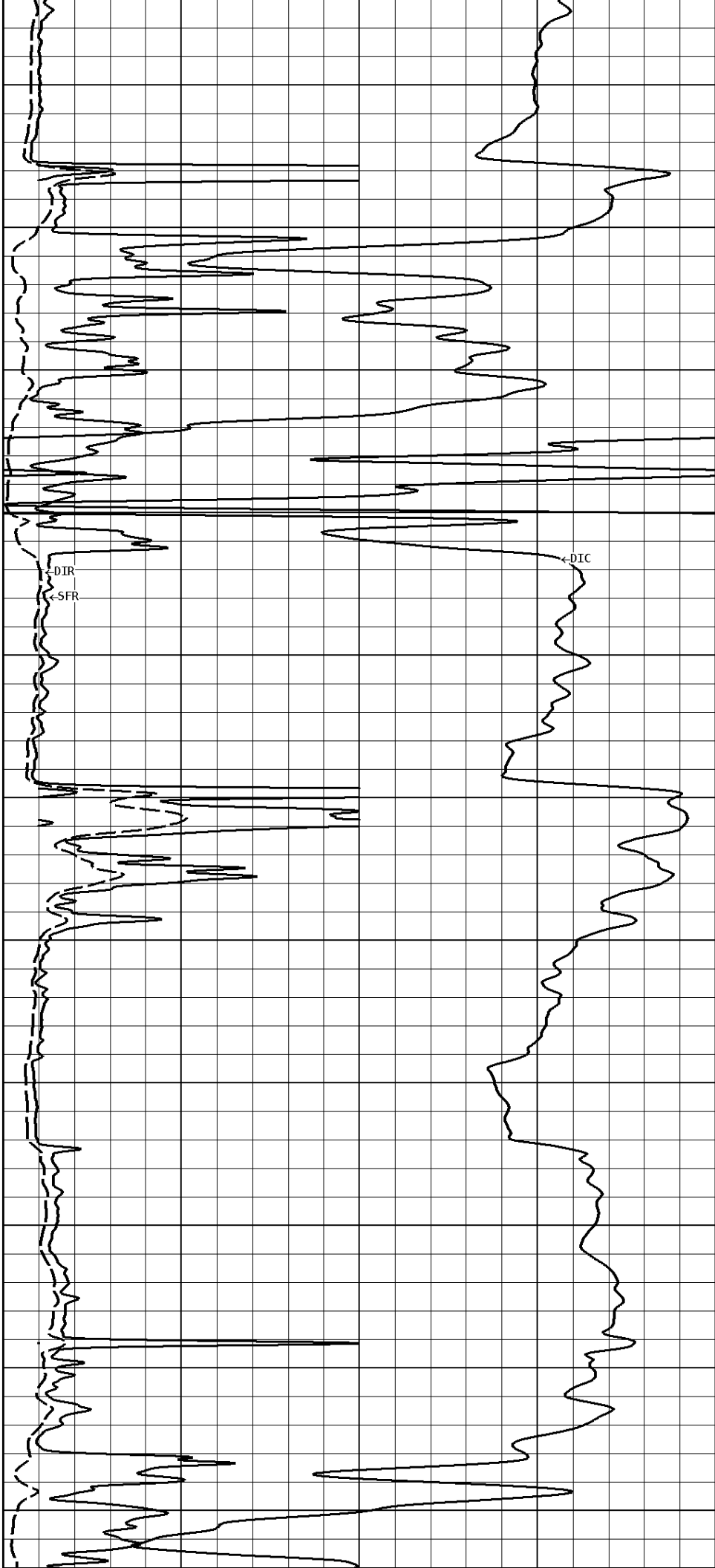
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2000

2100

2200

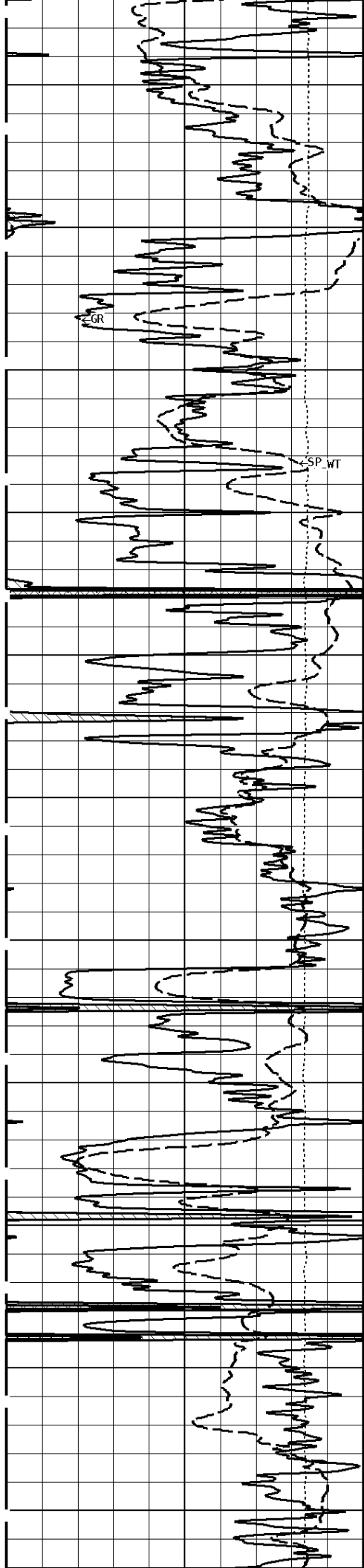
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DIR

SFR

DIC



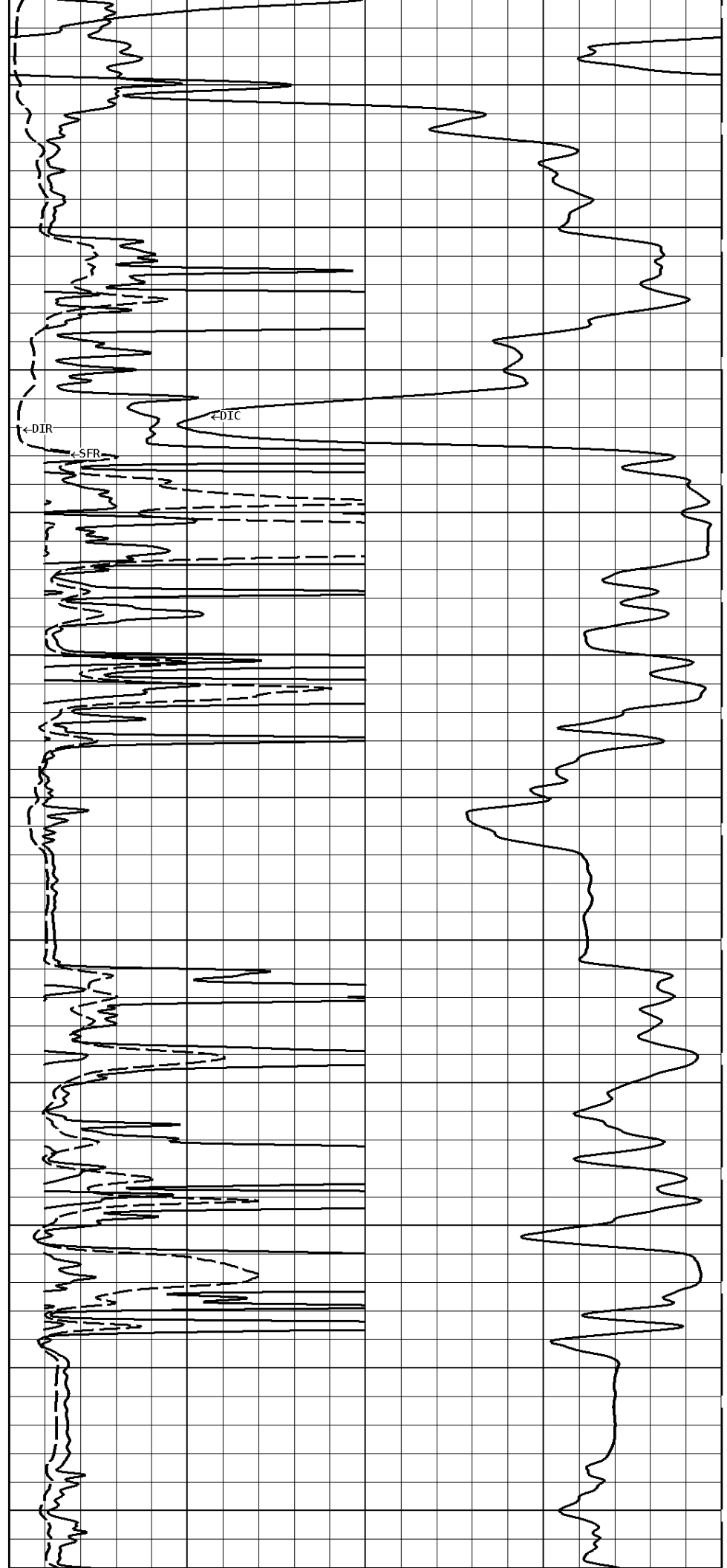
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2500

2600

2700

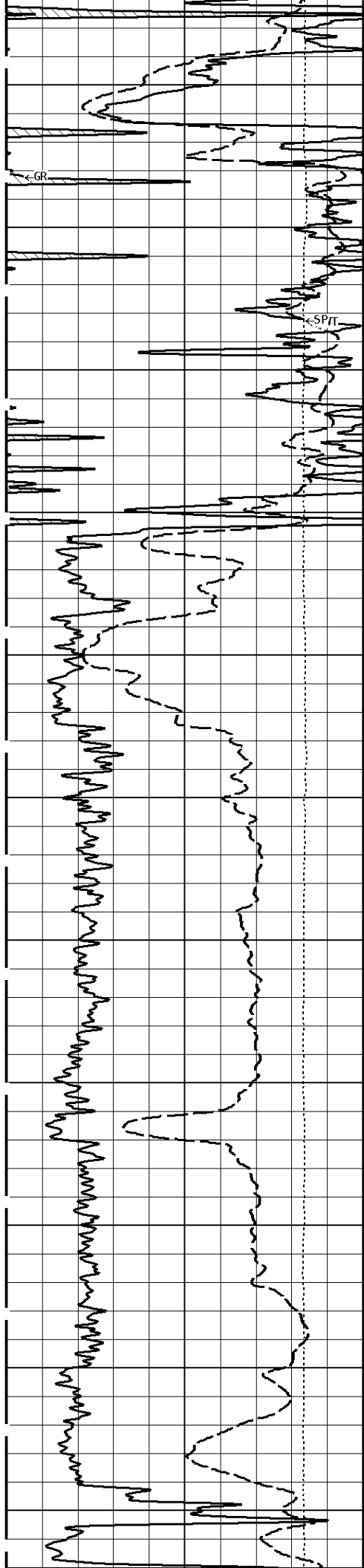
2800



←DIR

←SFR

←DIC



2900

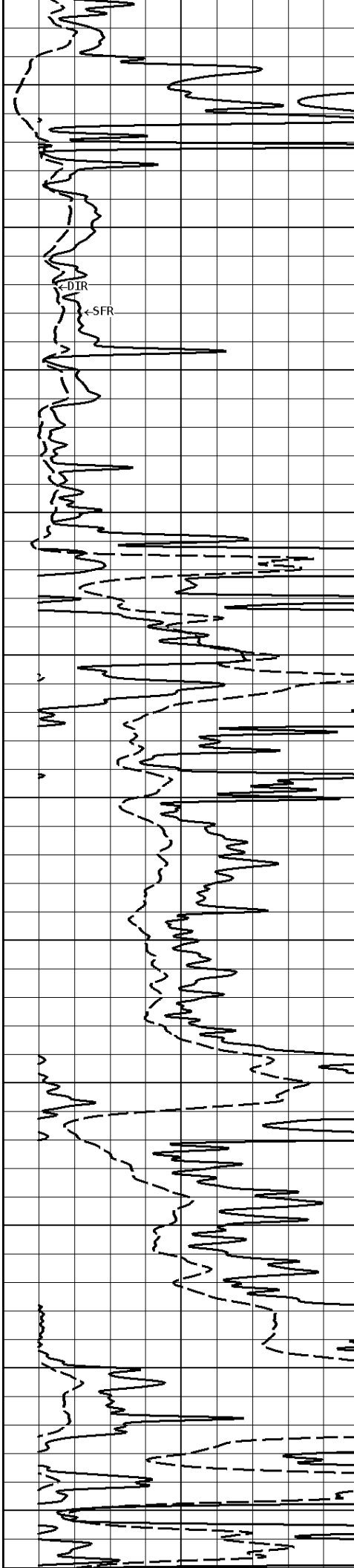
3000

3100

3200

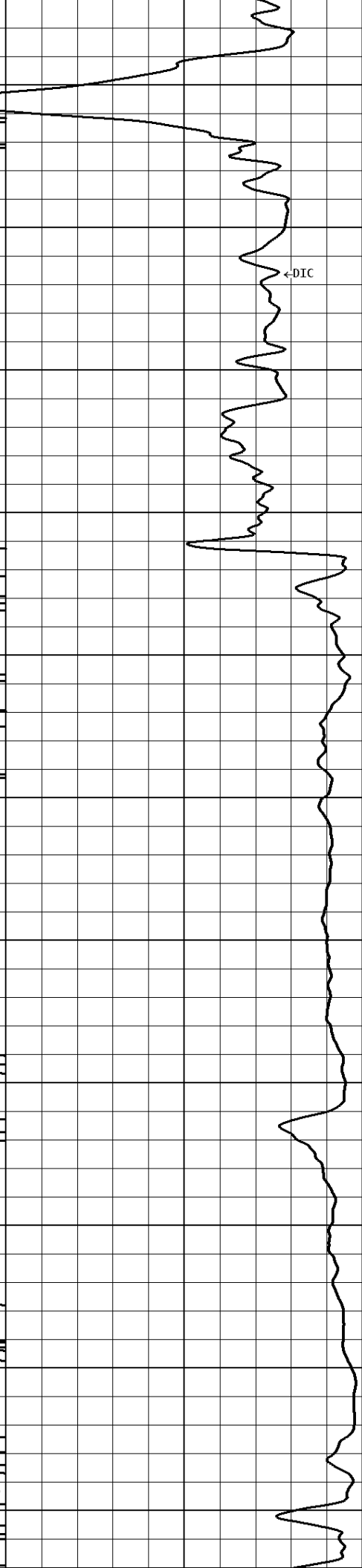
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3400

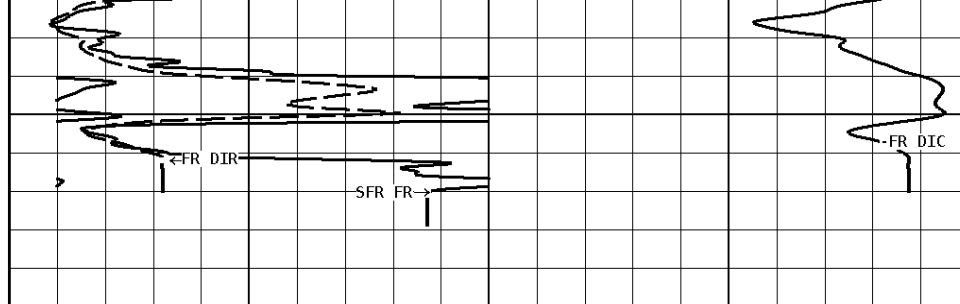
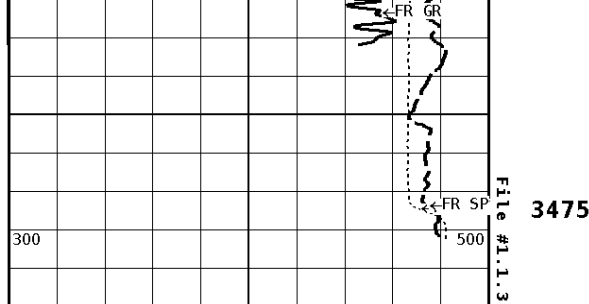


←DTR

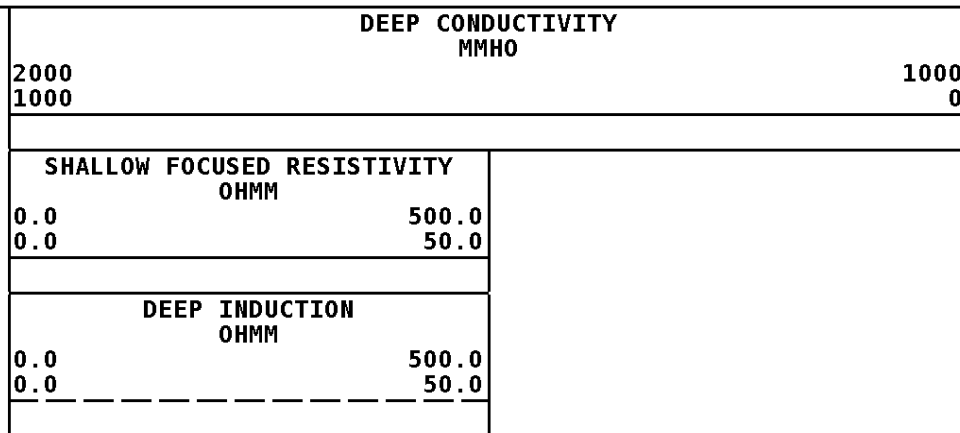
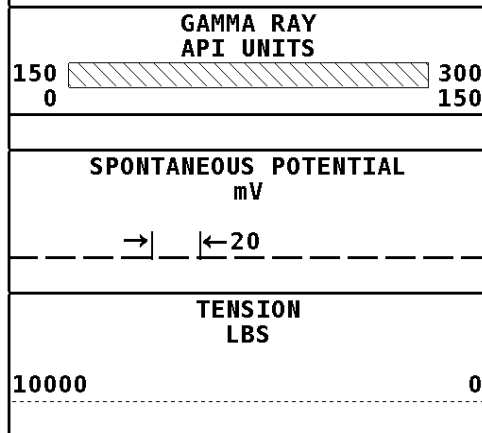
←SFR



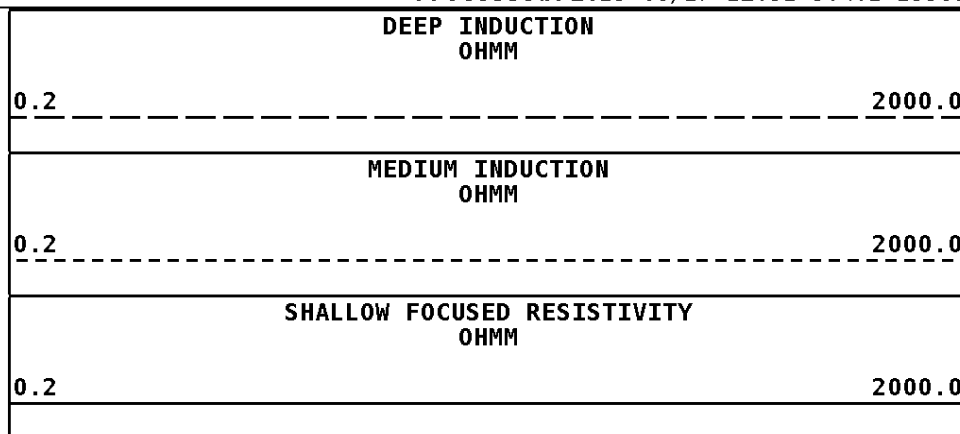
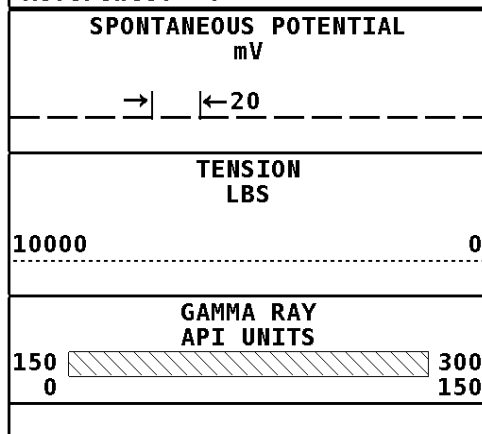
←DIC



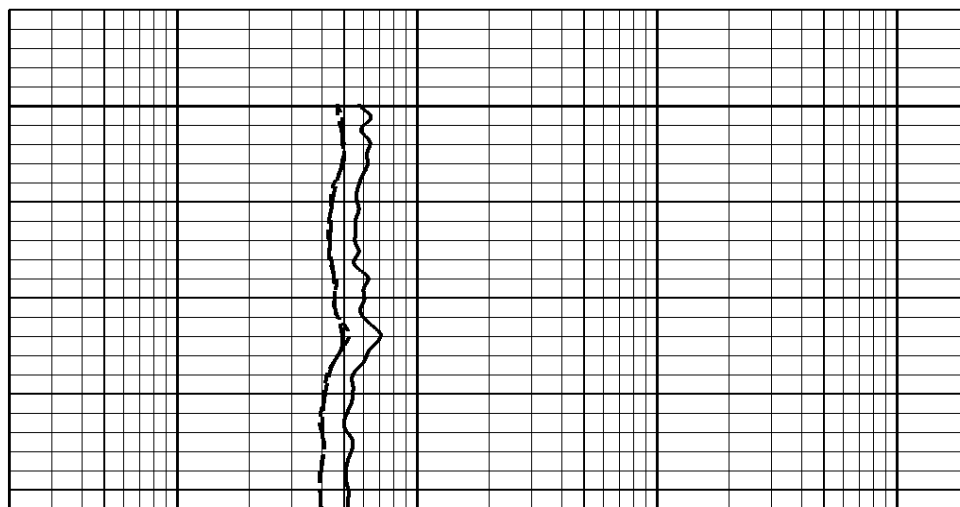
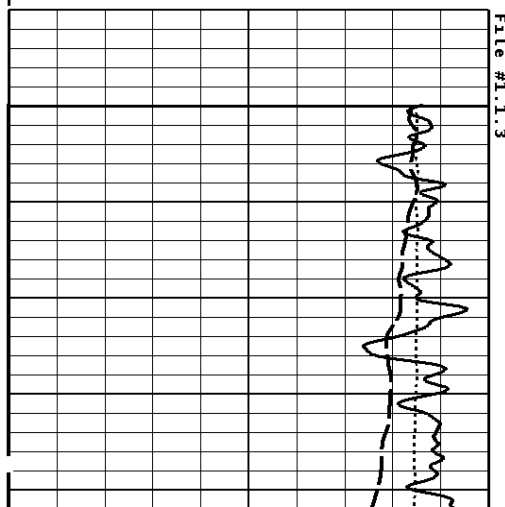
1:600 MAIN SECTION

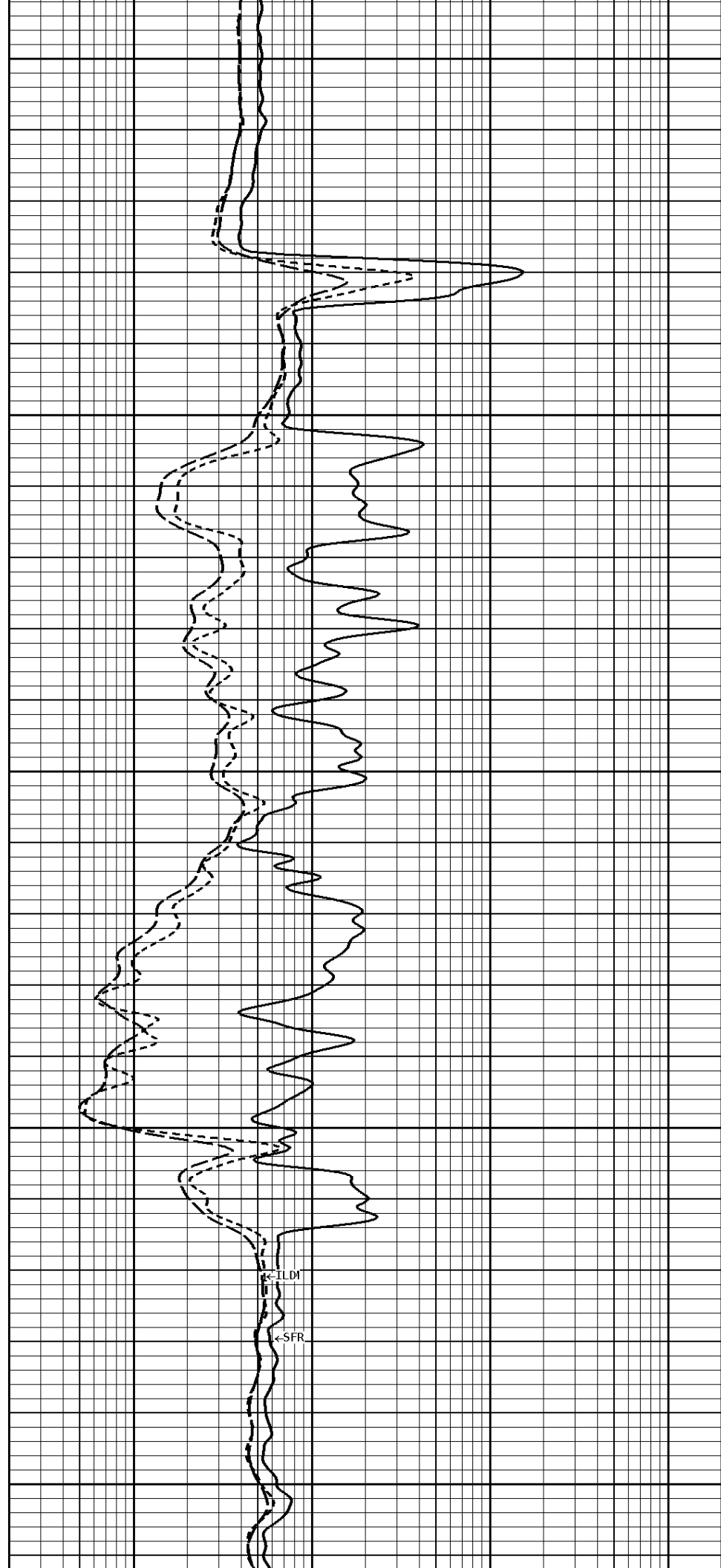
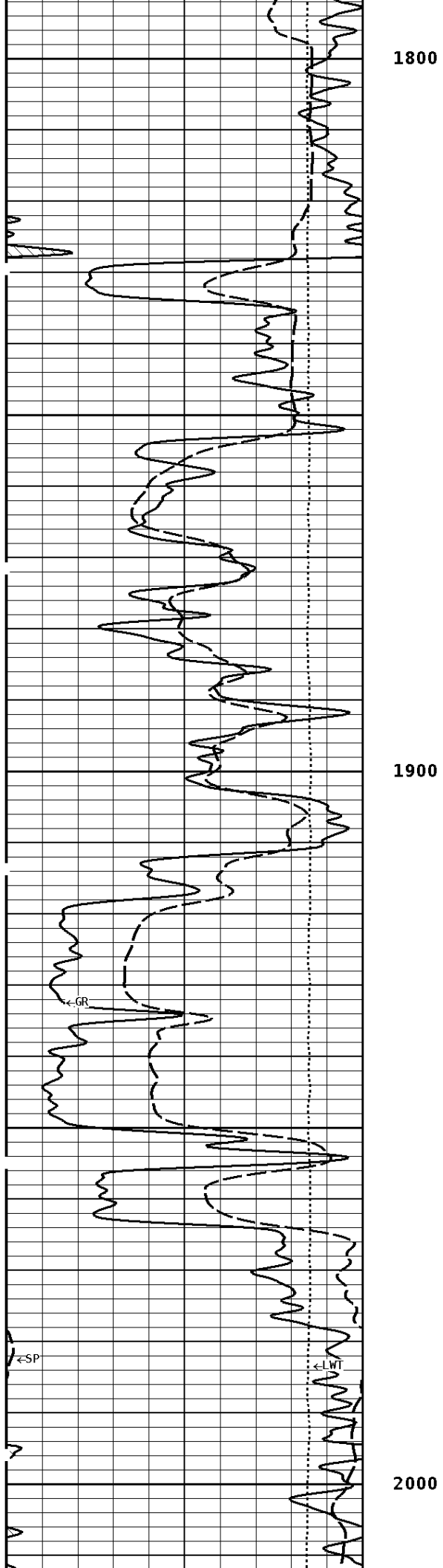


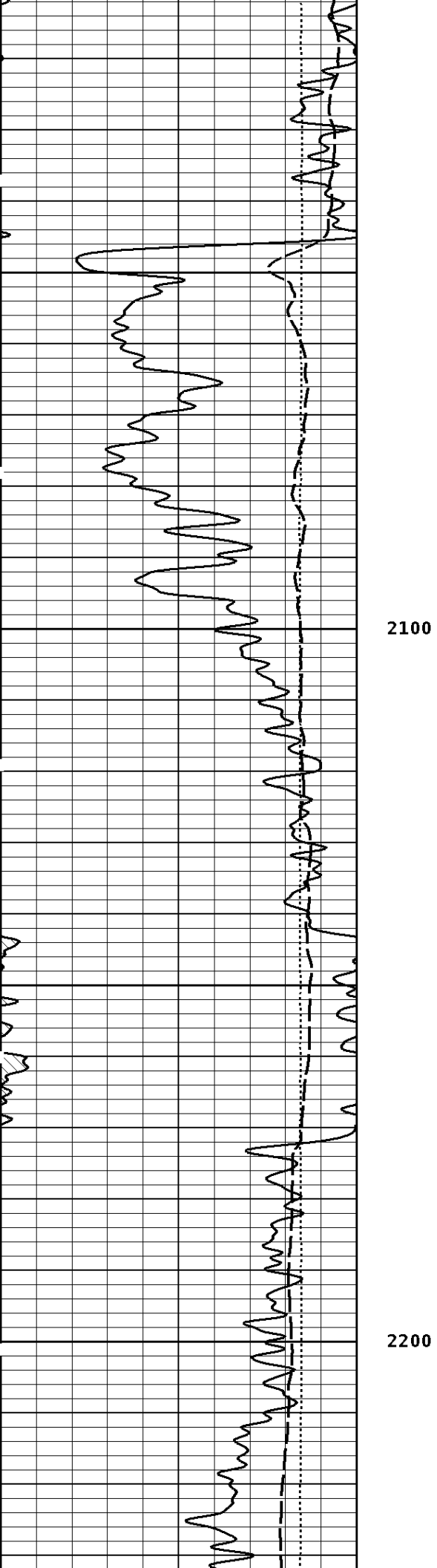
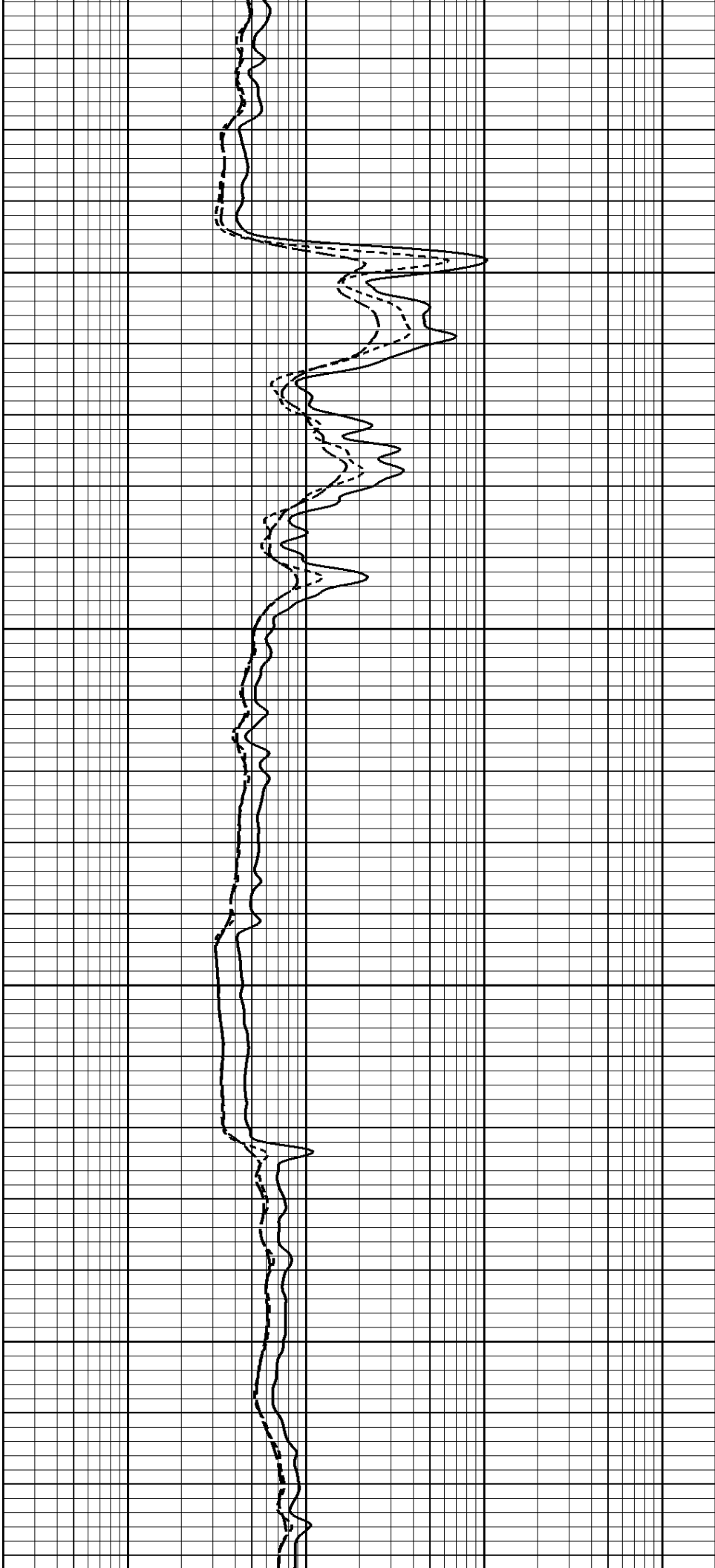
Well File: VAL ENERGY SAWYER 2-31_JUNE17_MSTK Scale: 1:240 Format: DIL-240
 Segment: V1.D1.S3 Reprocess of MAIN Acquired: 2019-06/17 11:16 3.4.1-13968
 Reference: 0 Processed: 2019-06/17 12:31 3.4.1-13968

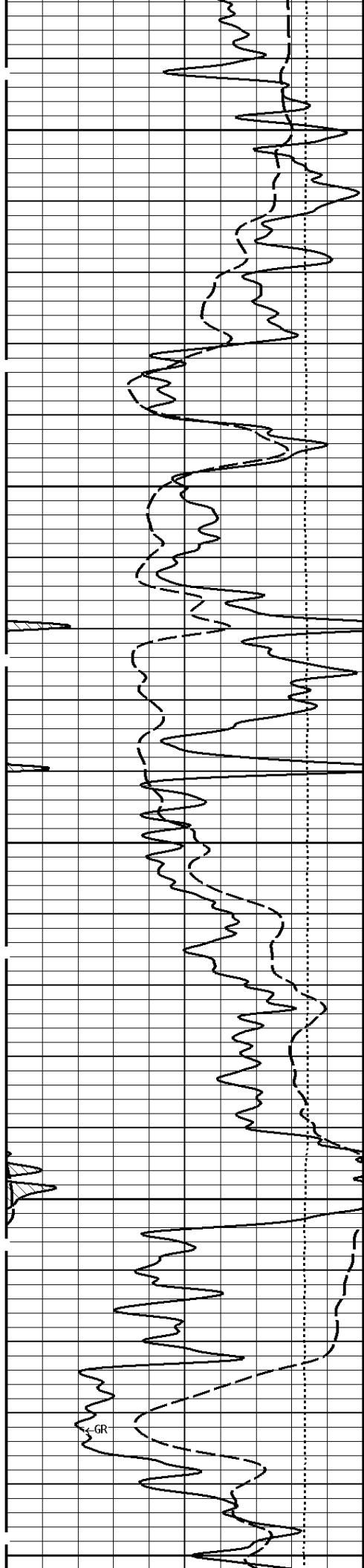


1:240 MAIN SECTION



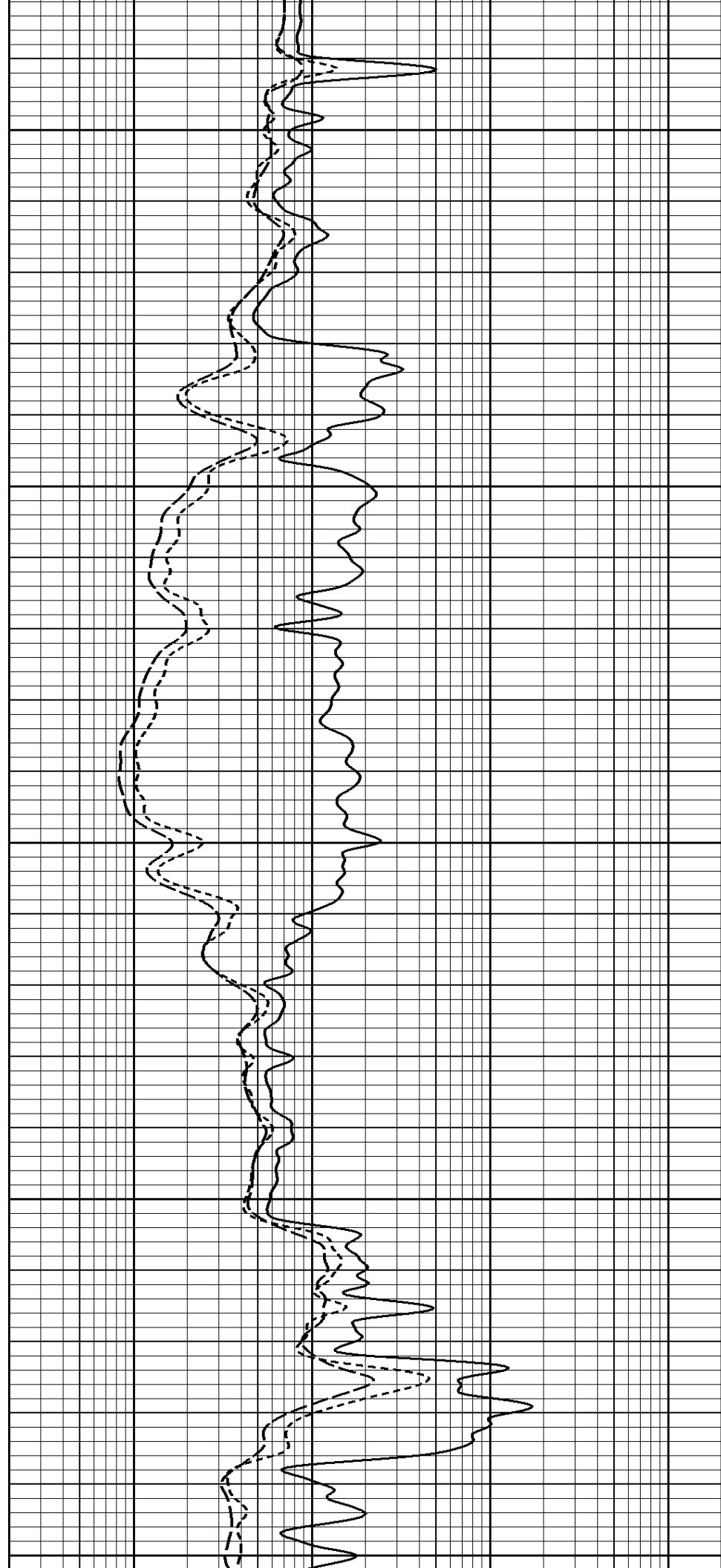


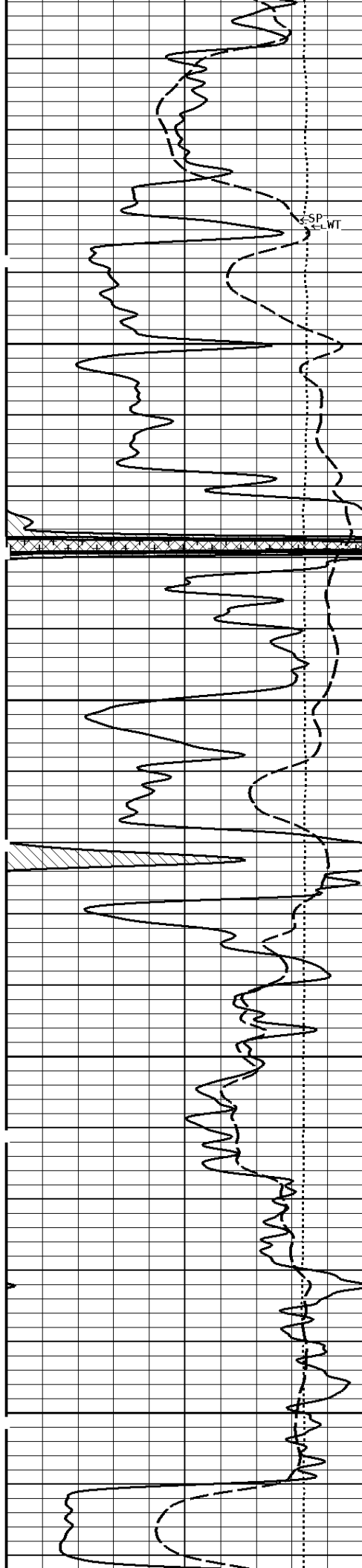




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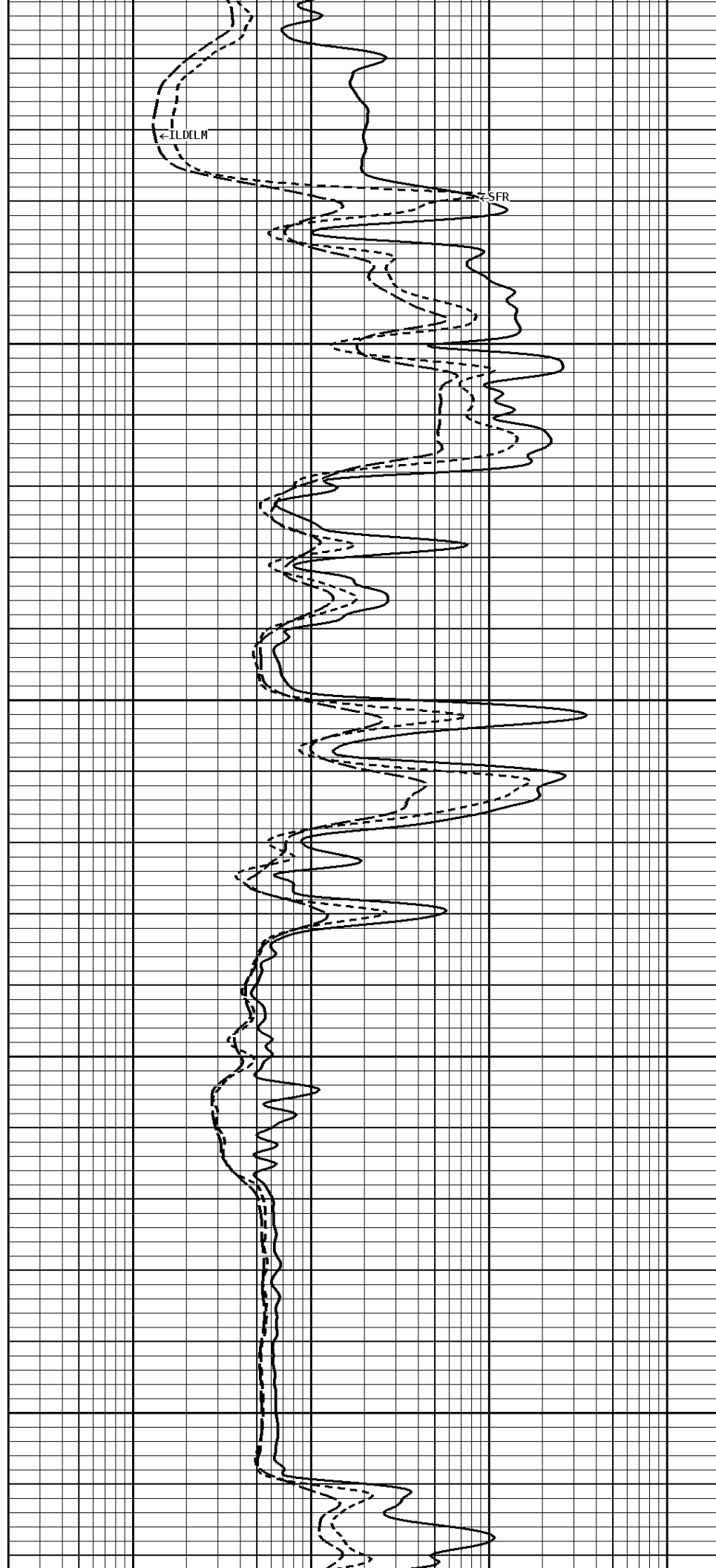
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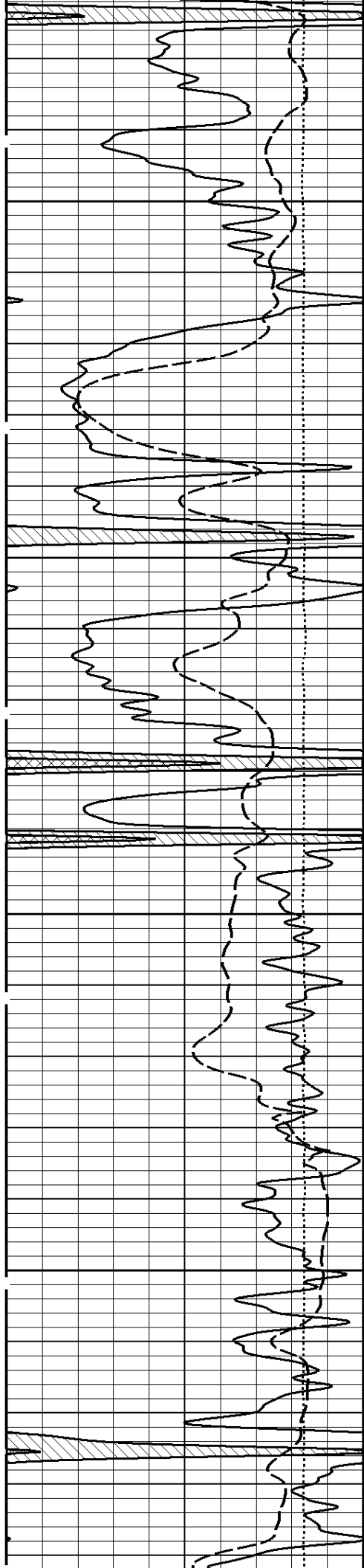




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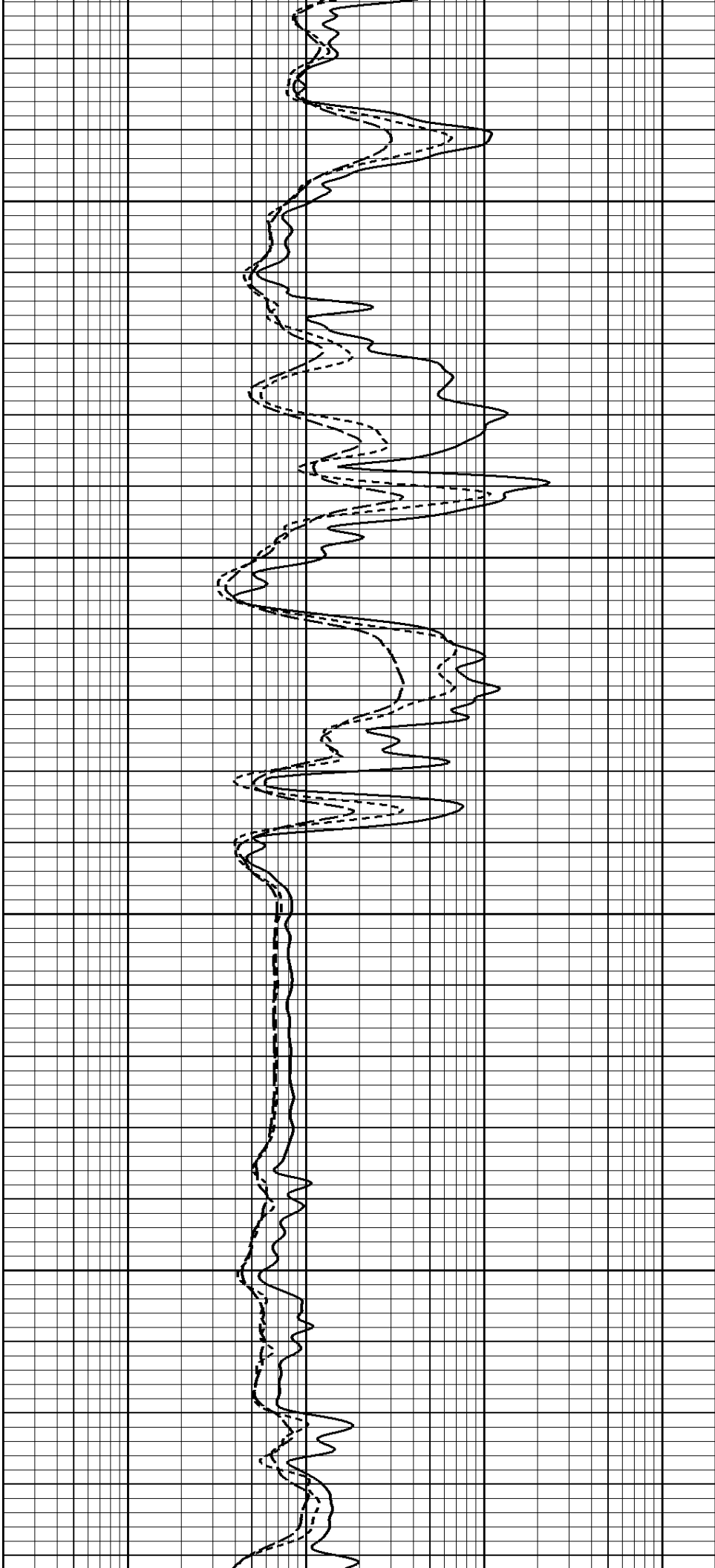
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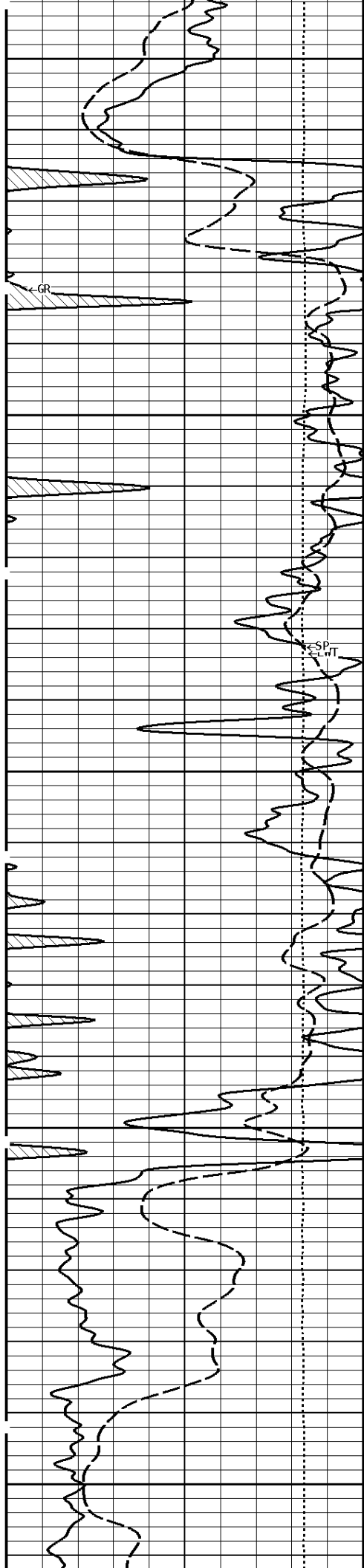




2700

2800

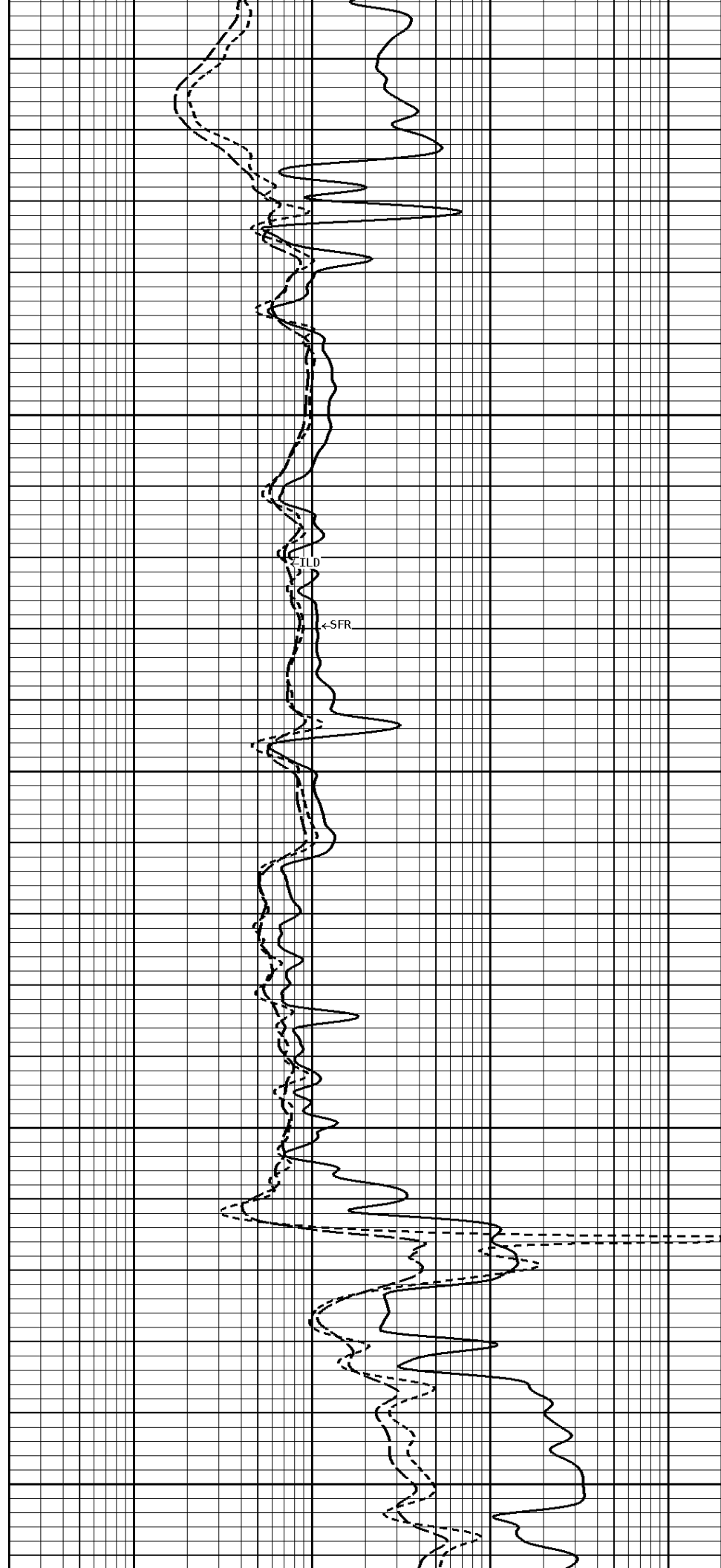


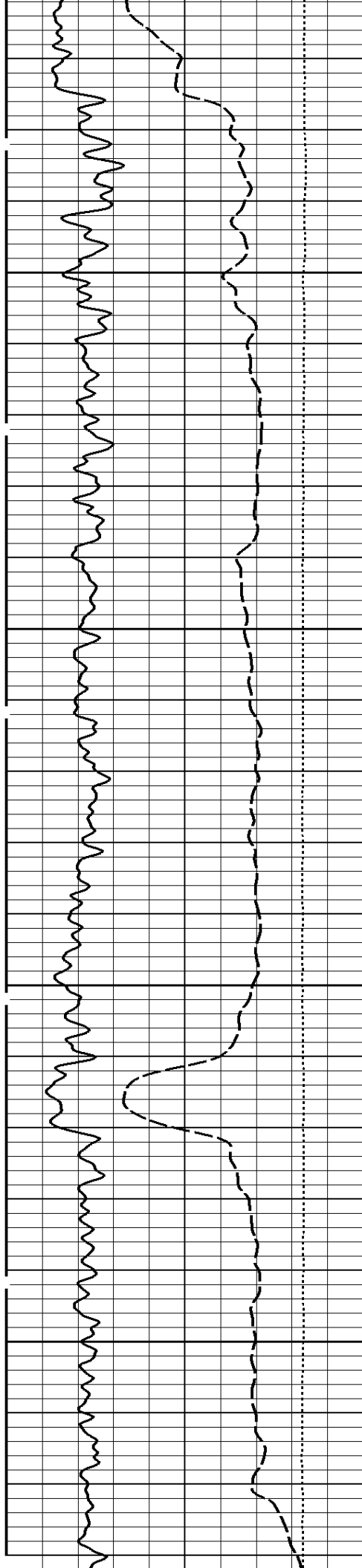


2900

3000

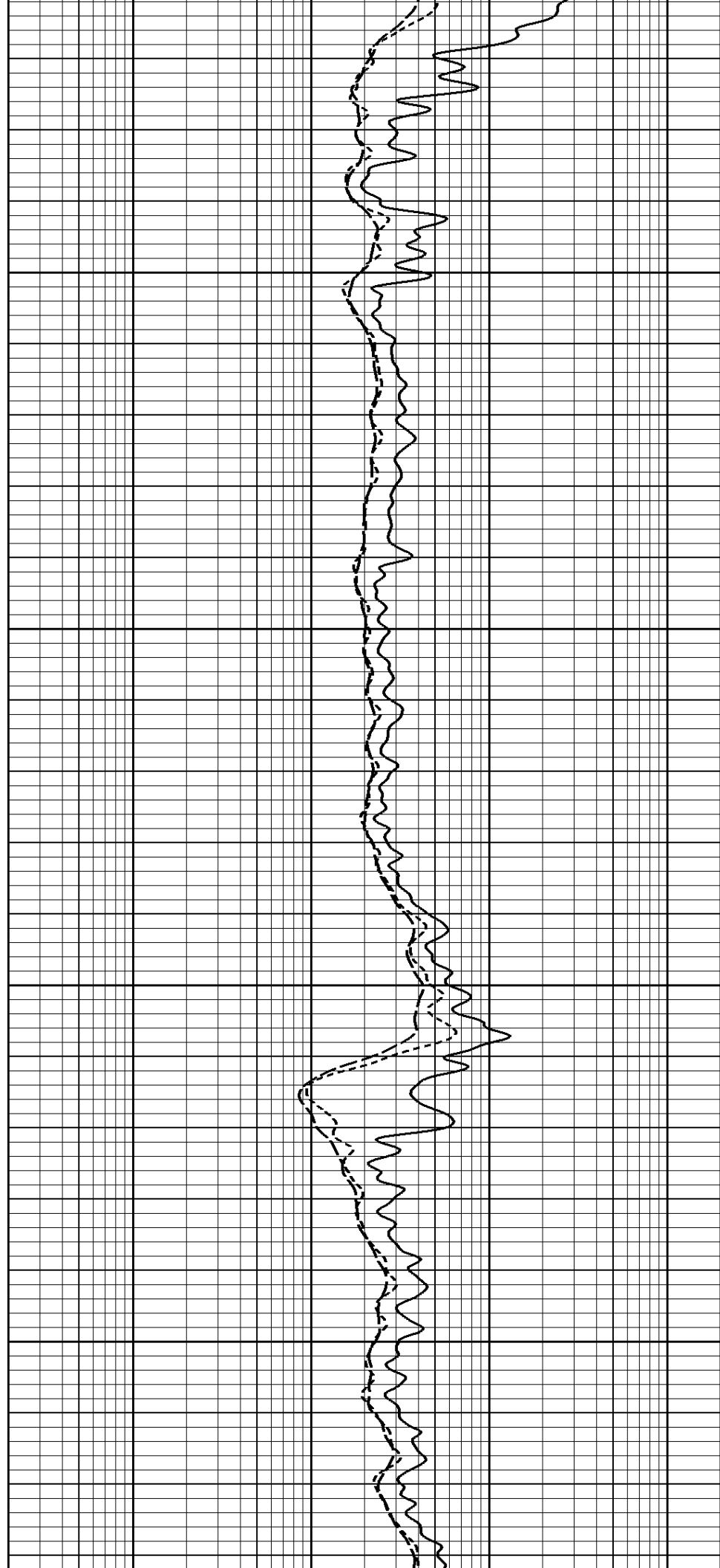
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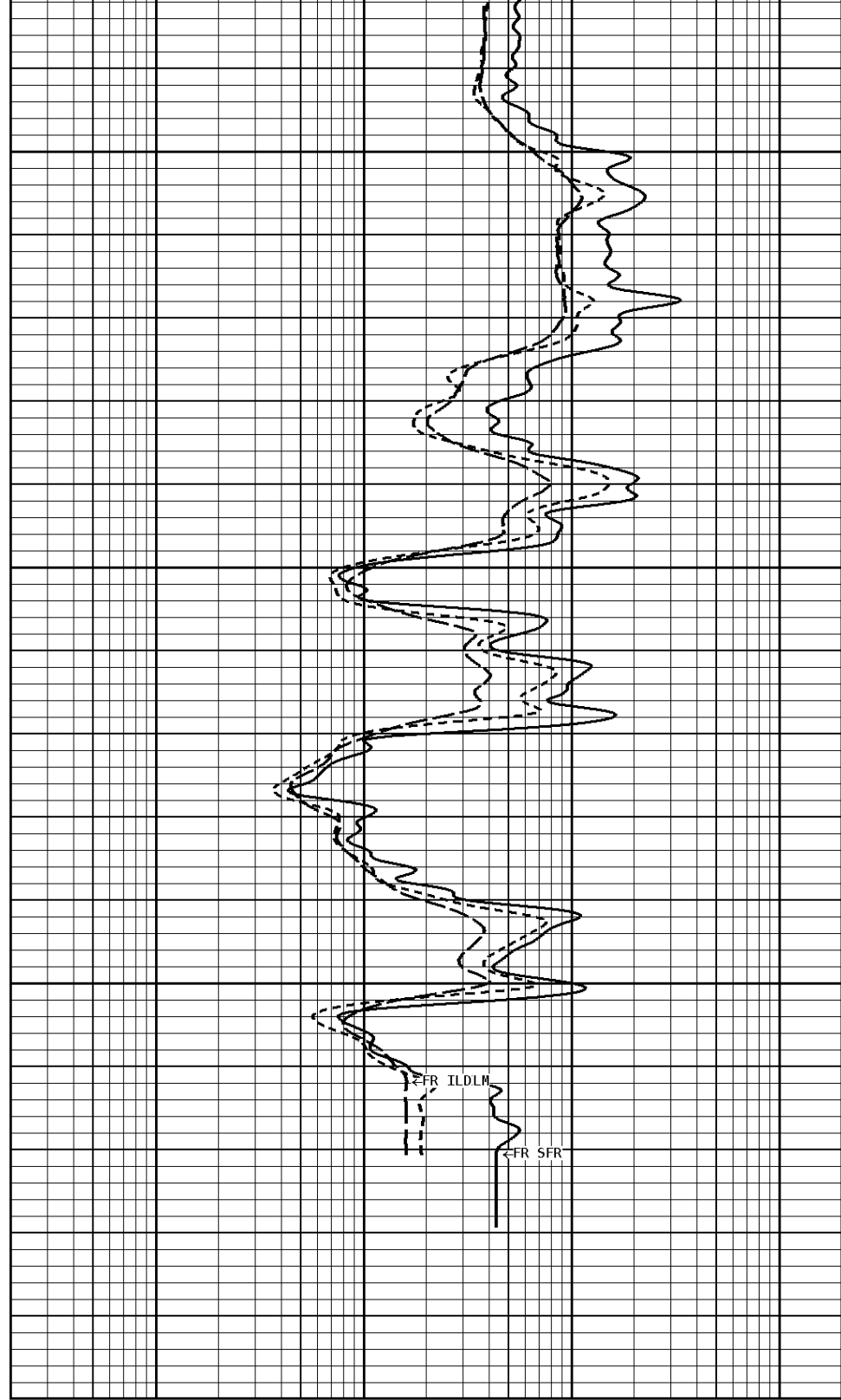
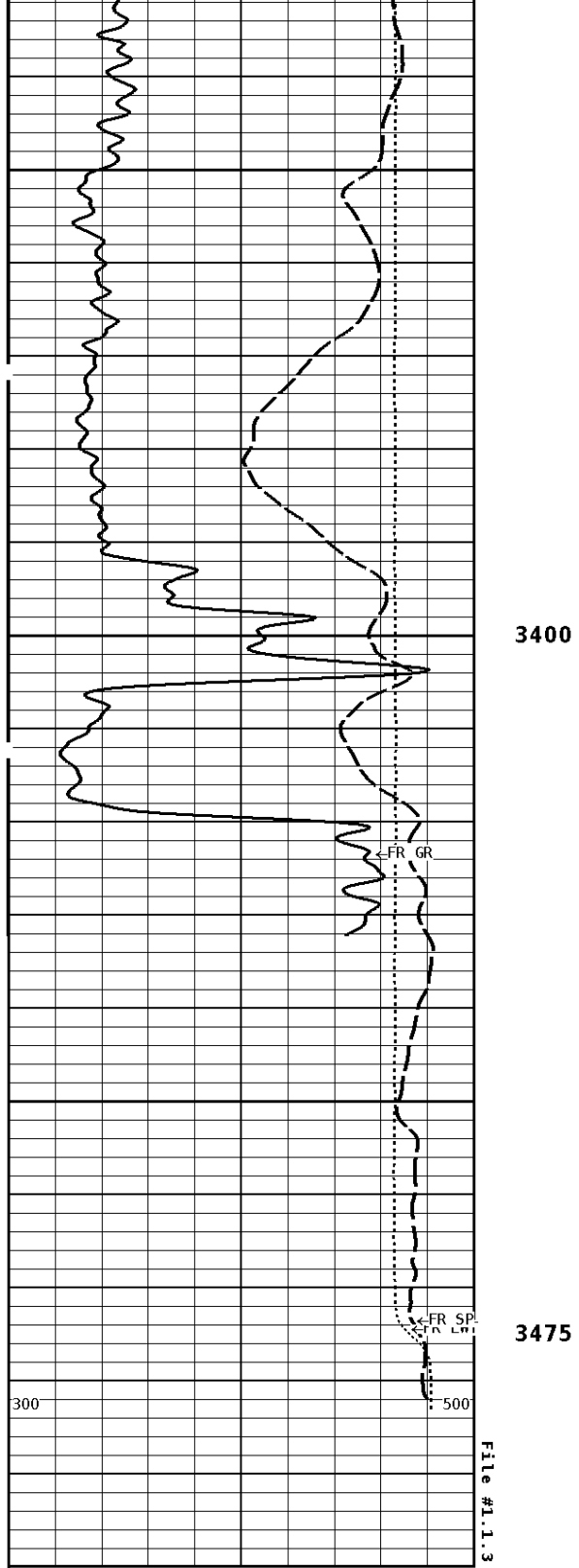




3200

3300





1:240 MAIN SECTION

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

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

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet			
Drill Bit Size		7.875	in
Casing Diameter		5.500	in
BHT Depth		3475.000	ft
Borehole Temperature		110.0	degF
Temperature Gradient		1.00	DFHF
Resistivity Of Mud		2.000	ohmm
Resistivity Of Mud Temperature		75.00	degF

* Calibration Summary *

Shop Calibration GRT-B						
Performed : 16-May-2019			Time : 10:48			
Sensor Suite : GR-GR5			ID : GRT-BB-006			
	Measured	Units	Calibrated	Units		
	Background	Jig	Jig			
GR	68	335	160	GRAPI		

Shop Calibration PIT-CA						
Performed : 10-May-2019			Time : 12:41			
Sensor Suite : P-IND-T			ID : PIT-CA-069			
Medium						
	Measured		Calibrated		Units	
	R	X	R	X		
Air	130176	131174	0.1	0.0	MMHOS	
Zero	131068	131070	42.1	-8.1	MMHOS	
Reference	249686	249128	5042.1	4991.9	MMHOS	
Loop	130809	217169	3668.9	3615.4	MMHOS	
Sonde Error			0.7	-8.2	MMHOS	
Cond			5042.1	4991.9	MMHOS	
Deep						
	Measured		Calibrated		Units	
	R	X	R	X		
Air	128272	132045	-0.0	-0.1	MMHOS	
Zero	131066	131073	56.3	-22.1	MMHOS	
Reference	235111	234256	2056.3	1977.9	MMHOS	
Loop	129176	221230	1746.0	1711.2	MMHOS	
Sonde Error			-0.7	-5.8	MMHOS	
Cond			2056.3	1977.9	MMHOS	
Temperature						
	Measured		Calibrated		Units	
	Low	High	Low	High		
	16980.0	56920.0	70.0	350.0	DEGF	

Performed : 10-May-2019			Time : 12:32			
Sensor Suite : SFL			ID : PIT-CA-069			
Internal						
	Measured		Calibrated		Units	
	Zero	Reference	Zero	Reference		
Im	32771.0	49574.9	0.0	7028.0	uA	
Ib	32764.7	49879.2	0.0	1750.0	mA	
MOM1	32784.7	59428.5	0.0	175.0	mV	
Equivalent SFL				43.97	OHMM	

Performed : 10-May-2019			Time : 12:29			
Sensor Suite : P-SP			ID : PIT-CA-069			
Internal						
	Measured		Calibrated		Units	
	Zero	Reference	Zero	Reference		
	32795.0	58829.0	0.0	1000.0	mV	

Well File: VAL ENERGY SAWYER 2-31 JUNE17_MSTK

Scale: 1:1200

Format: DIL1200

Segment: V1.D1.S3 Reprocess of MAIN

Acquired: 2019-06/17 11:16 3.4.1-13968

Reference: 0

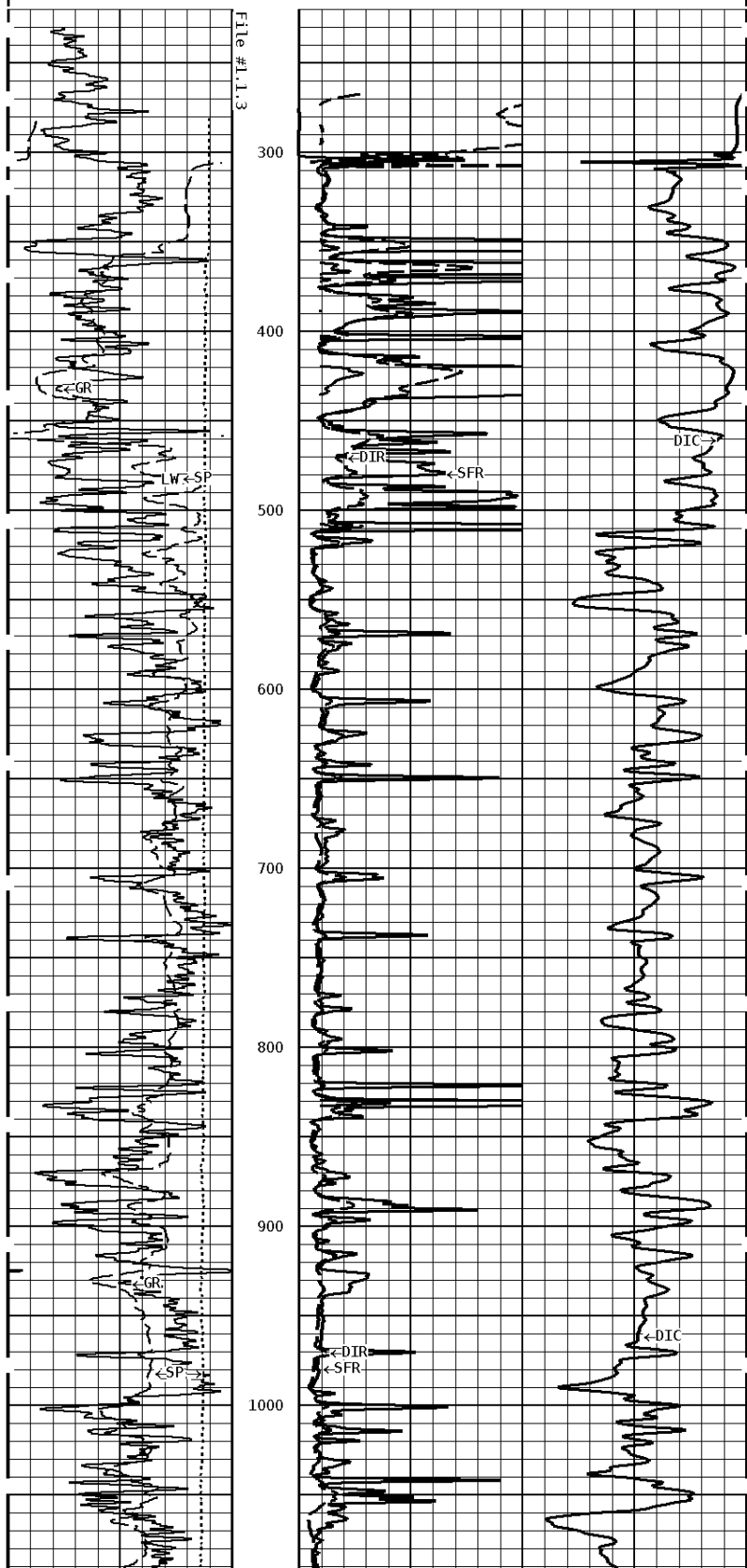
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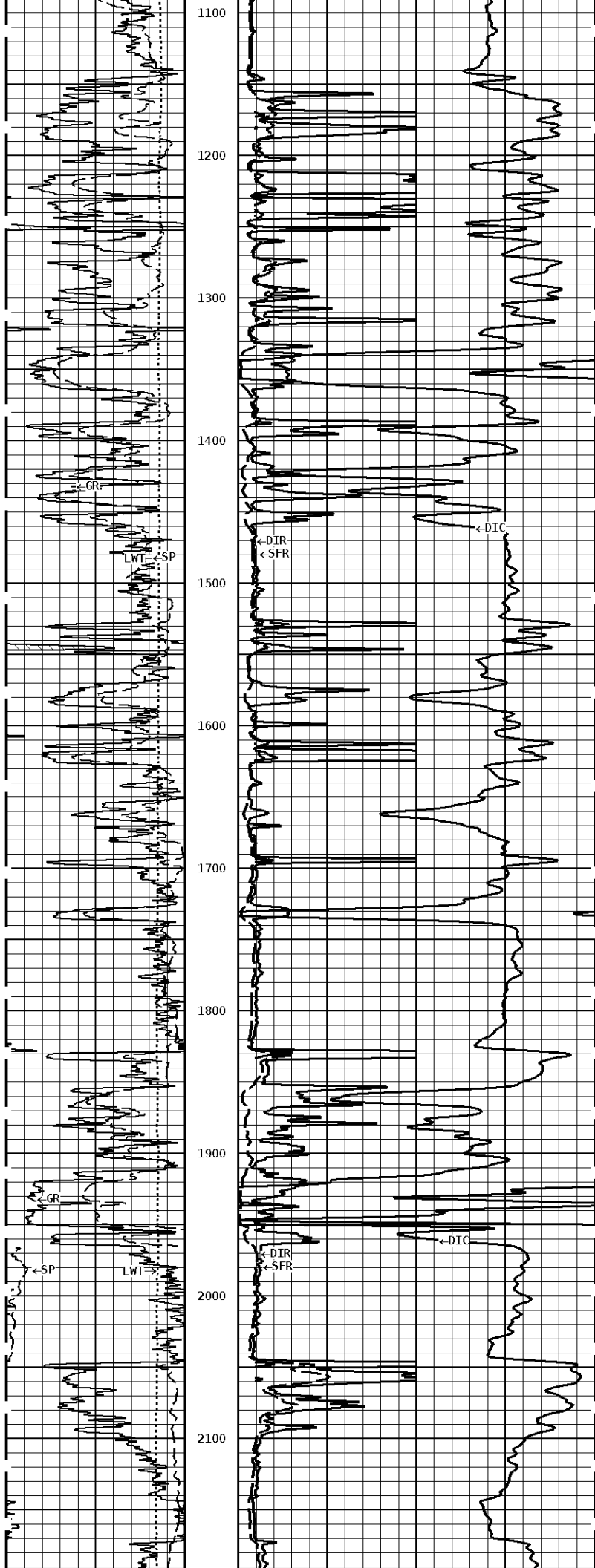
TENSION

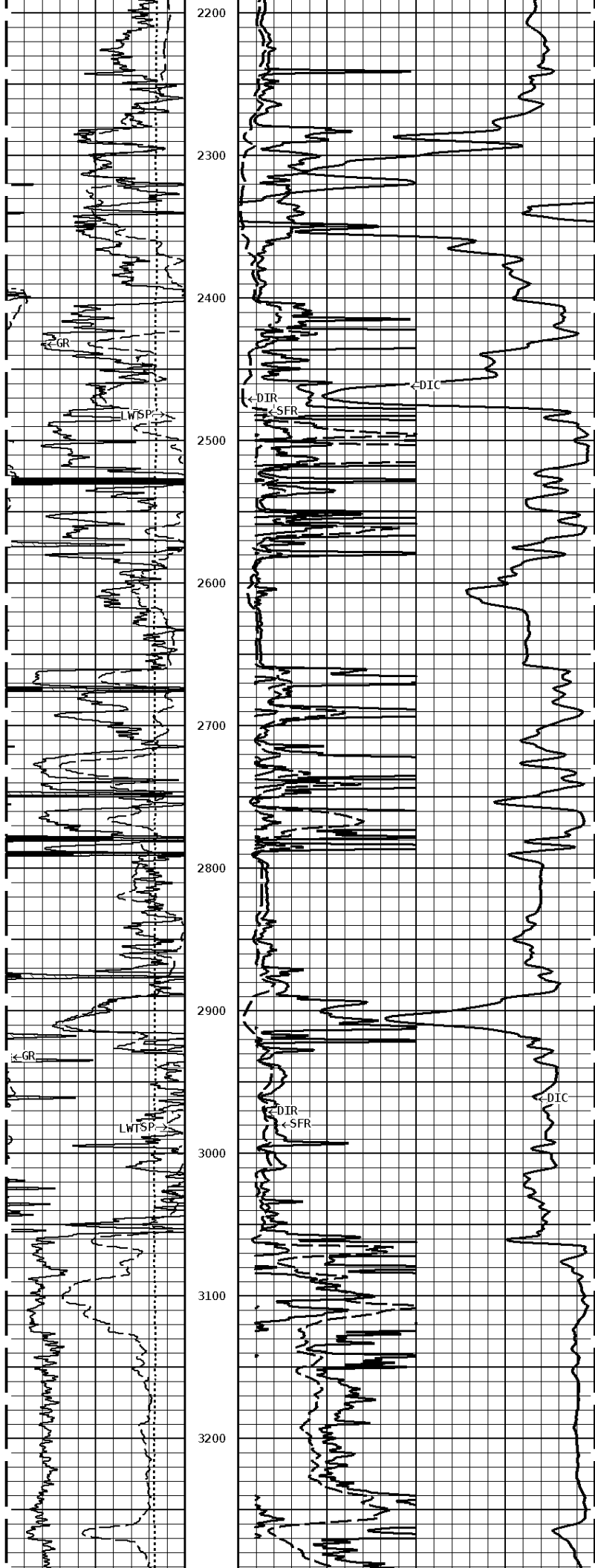
DEEP INDUCTION

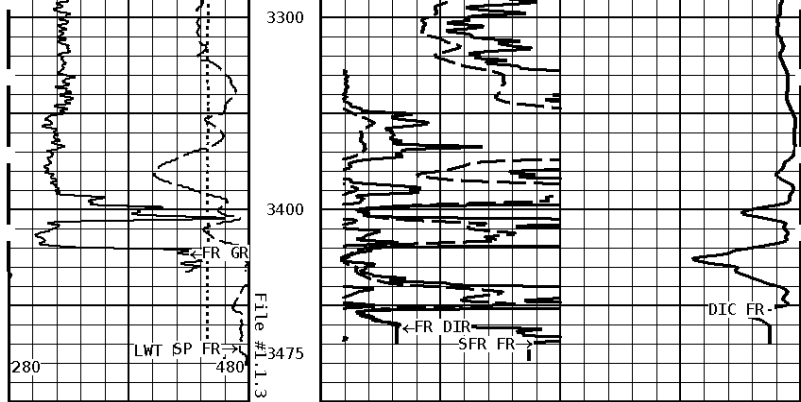
LBS		OHMM	
10000	0	0.0	500.0
		0.0	50.0
SPONTANEOUS POTENTIAL mV		SHALLOW FOCUSED OHMM	
→ ← 20		0.0	500.0
		0.0	50.0
GAMMA RAY API UNITS		DEEP CONDUCTIVITY MHMO	
150	300	2000	1000
0	150	1000	0

1:1200 MAIN SECTION









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

DEEP CONDUCTIVITY MMHO 2000 1000 1000 0	
SHALLOW FOCUSED OHMM 0.0 500.0 0.0 50.0	
DEEP INDUCTION OHMM 0.0 500.0 0.0 50.0	

STEP energy services	Company: VAL ENERGY, INC.
	Well: SAWYER #2-31
	Location: 1650' FNL & 2800' FEL
	Logged: 06-17-2019
	K.B. Elev: 1293.0 Ft