

Tucker
ENERGY SERVICES

PHASED INDUCTION
SHALLOW FOCUS SP LOG

Company VAL ENERGY, INC
Well HAMMER D #V4-8
Field WILSON
County COWLEY
State KANSAS
Country USA
API No. 15-035-24681-0000

File No : TUL-61419
Company : VAL ENERGY, INC
Well : HAMMER D #V4-8
Field : WILSON
County : COWLEY
State : KANSAS
Country : USA
API No : 15-035-24681-0000

Location :
660' FNL & 660' FEL
NE NE

LSD : Sect : 8 Twp : 33S Rge : 6E

Permanent Datum: GL Elevations:
Drilling Measured From: KB KB 1351.00 Ft
Log Measured From: KB DF 1350.00 Ft
Above Permanent Datum: 9.00 Ft GL 1342.00 Ft

Services:
CNT
LDT
MLT
PIT

Date	12-05-2017	
Run Number	1	
Depth--Driller	3446.0	Ft
Depth--Logger	3445.0	Ft
First Reading	3445.0	Ft
Last Reading	304.0	Ft
Casing--Driller	294.0	Ft
Casing--Logger	304.0	Ft
Bit Size	7.875	In
Casing Size	8.625	In
Hole Fluid Type	WBM	
Density	9.3	
Fluid Loss	8.0	
PH/Viscosity	9.0	61.0
Sample Source	MEASURED	
RM@Measured Temp.	2.000	@ 60 F
RMF@Measured Temp	1.600	@ 60 F
RMG@Measured Temp.	2.400	@ 60 F
Source RMF/RMC	CALCULATED/CALCULATED	
RM@BHT	1.140	@ 110 F
Time Circulation Stopped	12-05-2017 08:00	
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	3446.00	8.625	32.00	294.00	0.00

Run Number	1	
Date	12-05-2017	
Date/Time On Bottom	12-05-2017 11:00	
Depth to Fluid	0.0	Ft
Salinity	650.000	
RMF@BHT	0.910	@ 110 F
RMC@BHT	1.370	@ 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

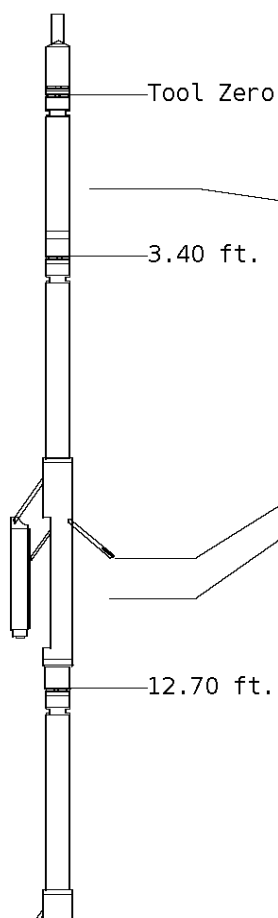
CUSTOMER REQUESTED DETAIL PULLED TO 1800'
 CUSTOMER REQUESTED NO REPEAT

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

OPERATORS:
 B.BAILEY
 B.BROWN

Tool String Schematic

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



Tool: GRT-B **Length:** 3.40 ft. **O.D.** 3.60 in.
 Gamma Ray Controller

Sonde ID :GRT-BA-121

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.15

Tool: CNT-AA **Length:** 9.30 ft. **O.D.** 4.36 in.
 Compensated Neutron A Pad on NDT-A

Sonde ID :NDT-BB-146

Source ID :N-1044

Pad ID :CNP-AA-115

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	43.75
PHIN	6.80	10.20	42.95

Tool: LDT-DA **Length:** 9.30 ft. **O.D.** 4.80 in.
 Litho Density D Pad on NDT-A

Sonde ID :NDT-AF-102

Source ID :63558B

Pad ID :LDP-DA-076

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	34.45
PEL	7.00	19.70	33.45
PES	7.40	20.10	33.05



LDEN 7.20 19.90 33.25
 LCOR 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 HAMMER D V4-8 DEC5_MSTK **Scale:** 1:600 **Format:** DIL-600
Segment: V1.D1.S3 Reprocess of MAIN **Acquired:** 2017-12/05 10:50 3.4.0-13756
Reference: 0 **Processed:** 2017-12/05 11:41 3.4.0-13756

SPONTANEOUS POTENTIAL
mV

DEEP INDUCTION
OHMM
 0.0 500.0
 0.0 50.0

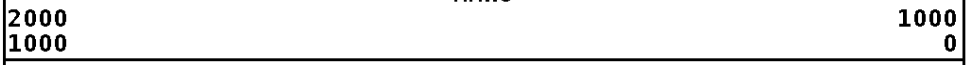
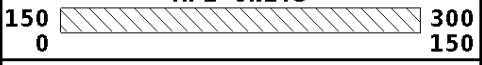
SHALLOW FOCUSED RESISTIVITY
OHMM
 0.0 500.0

→ ←25

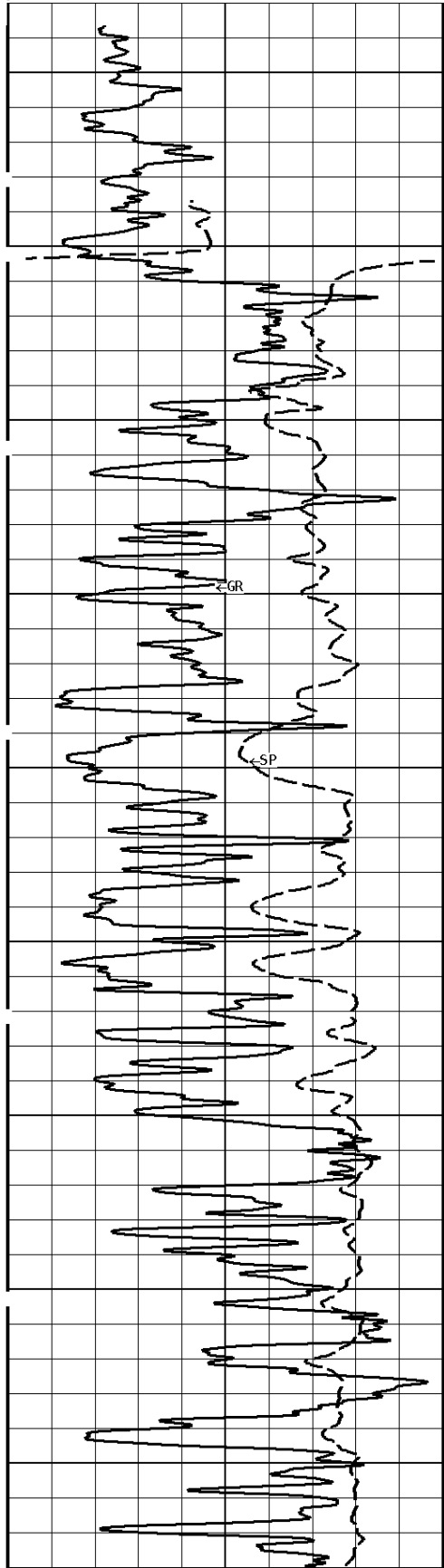
0.0 500.0
0.0 50.0

GAMMA RAY
API UNITS

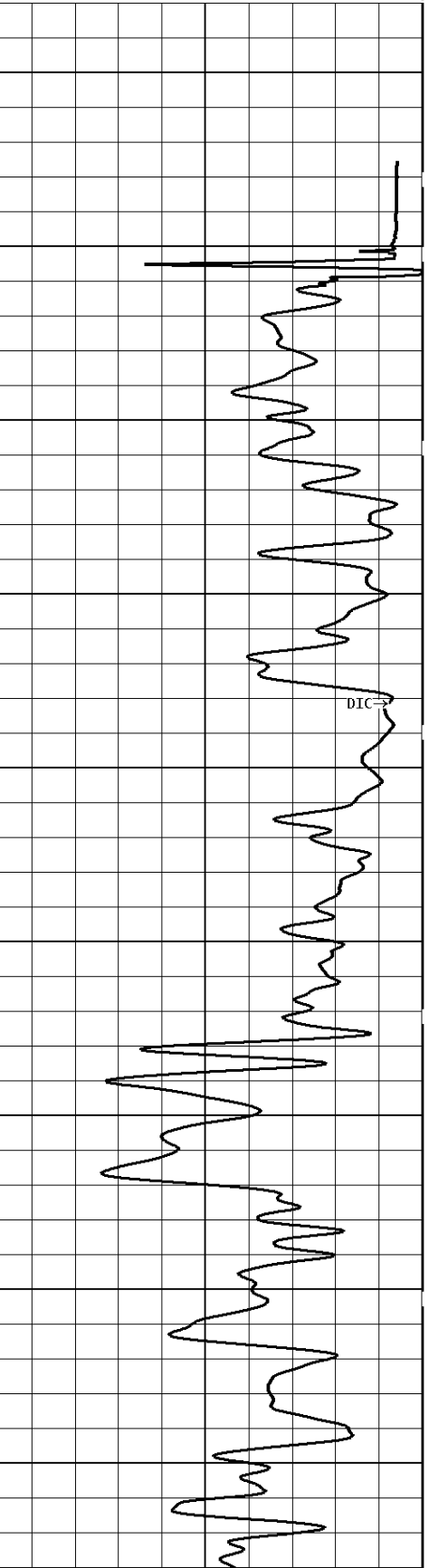
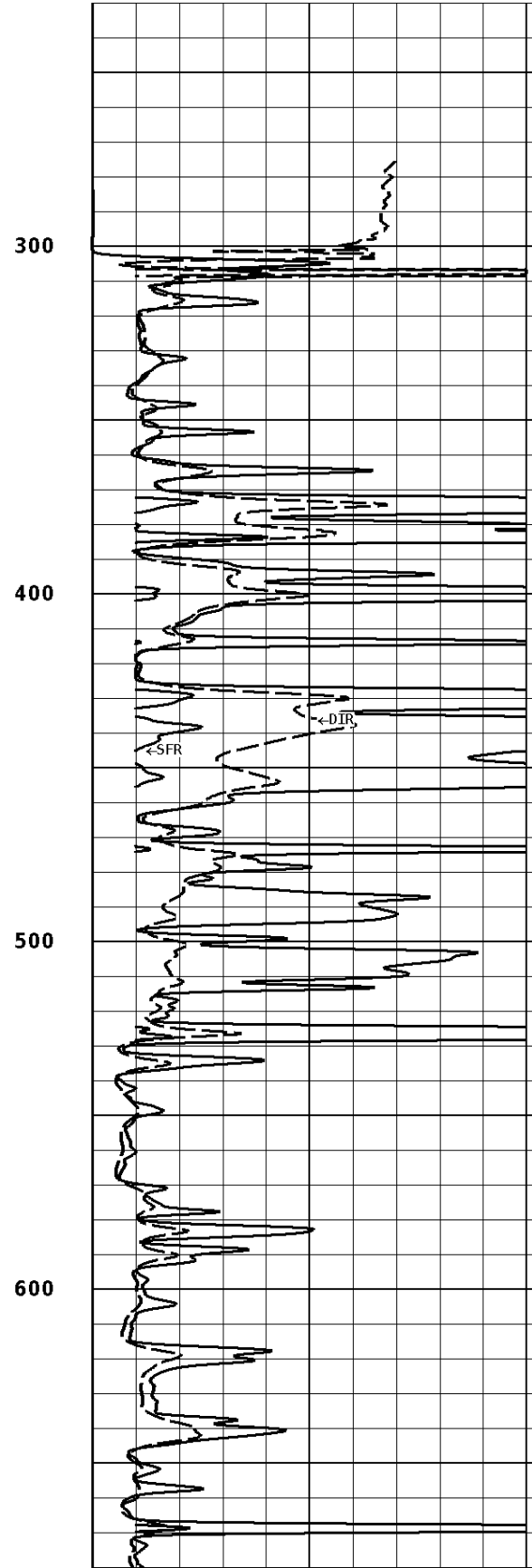
DEEP CONDUCTIVITY
MMHO

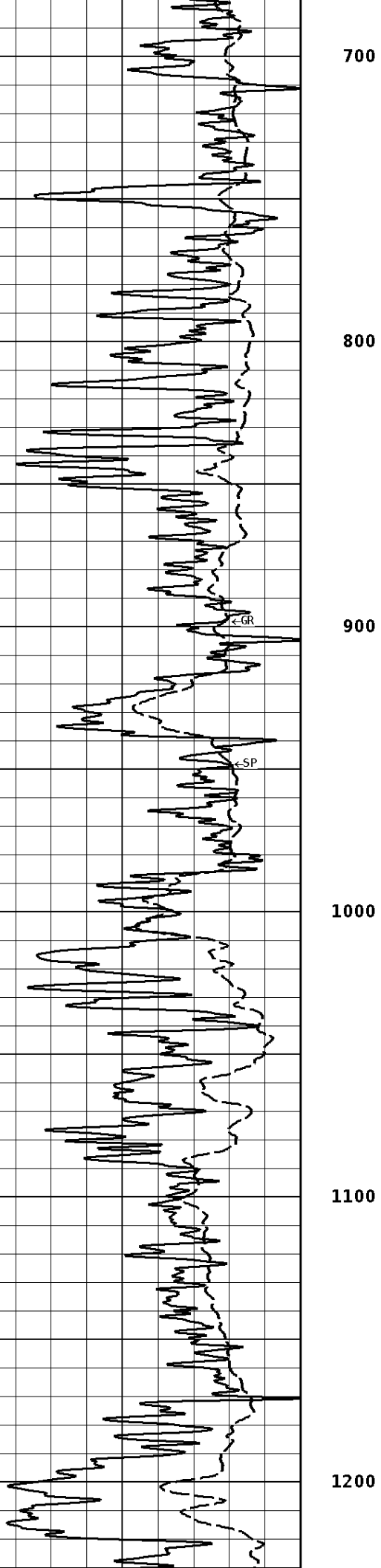


1:600 MAIN SECTION



File #1.1.3





700

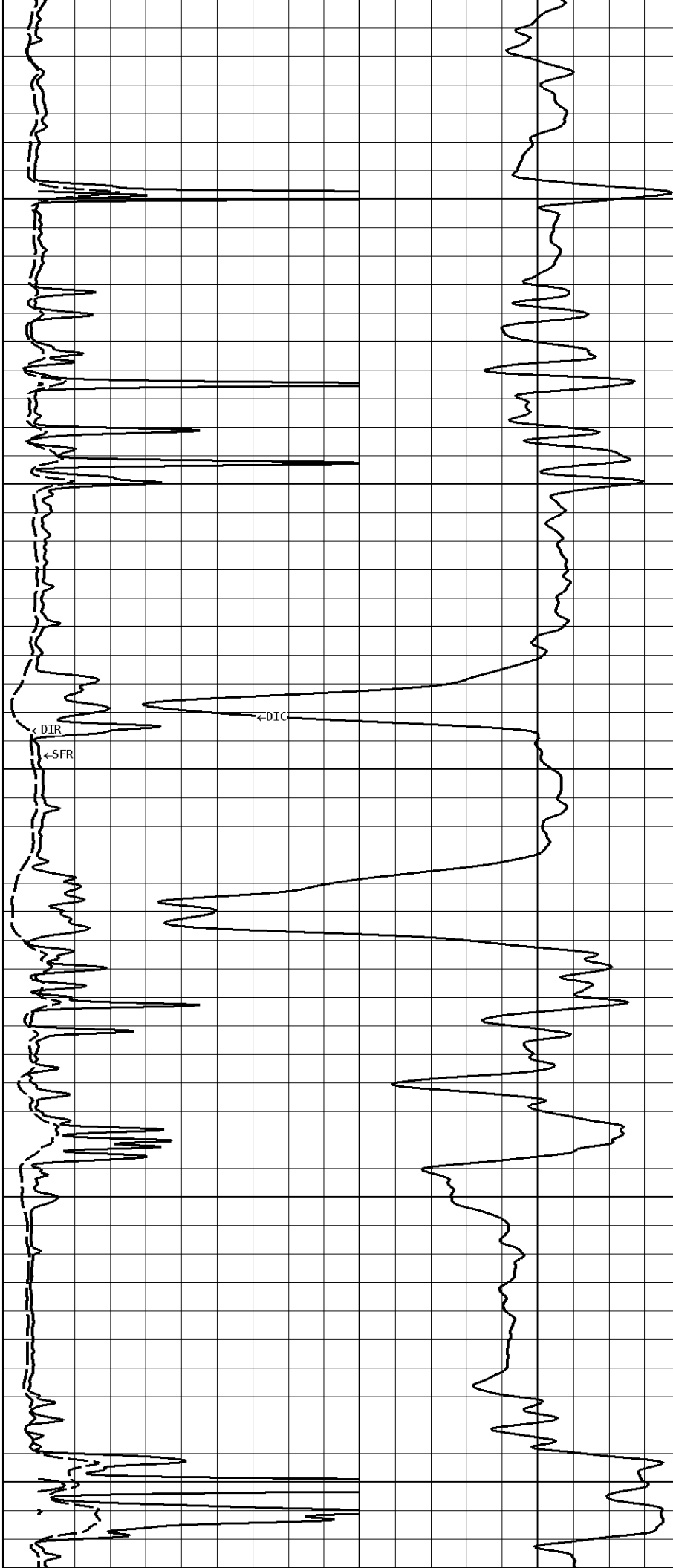
800

900

1000

1100

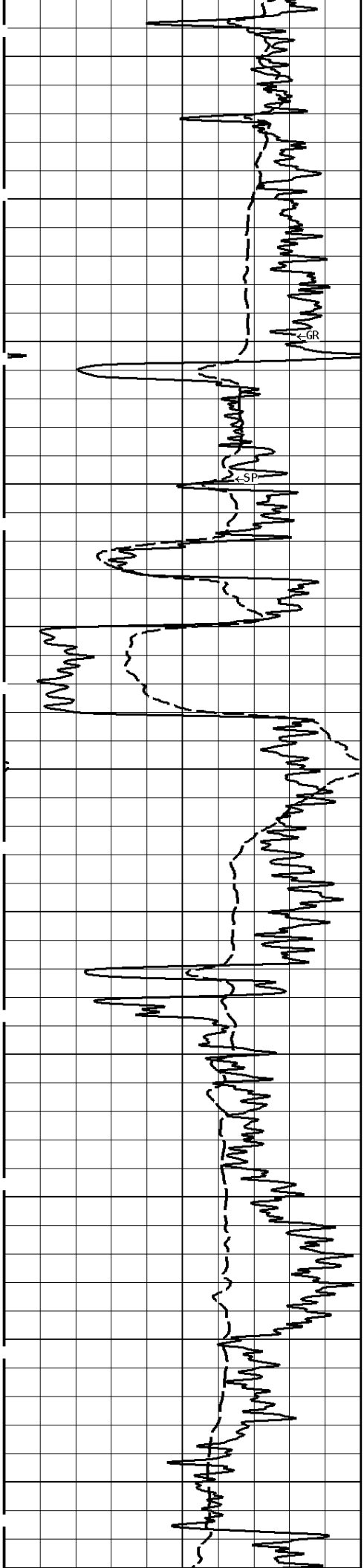
1200



ϵ -DIR

ϵ -SFR

ϵ -DIC



1800

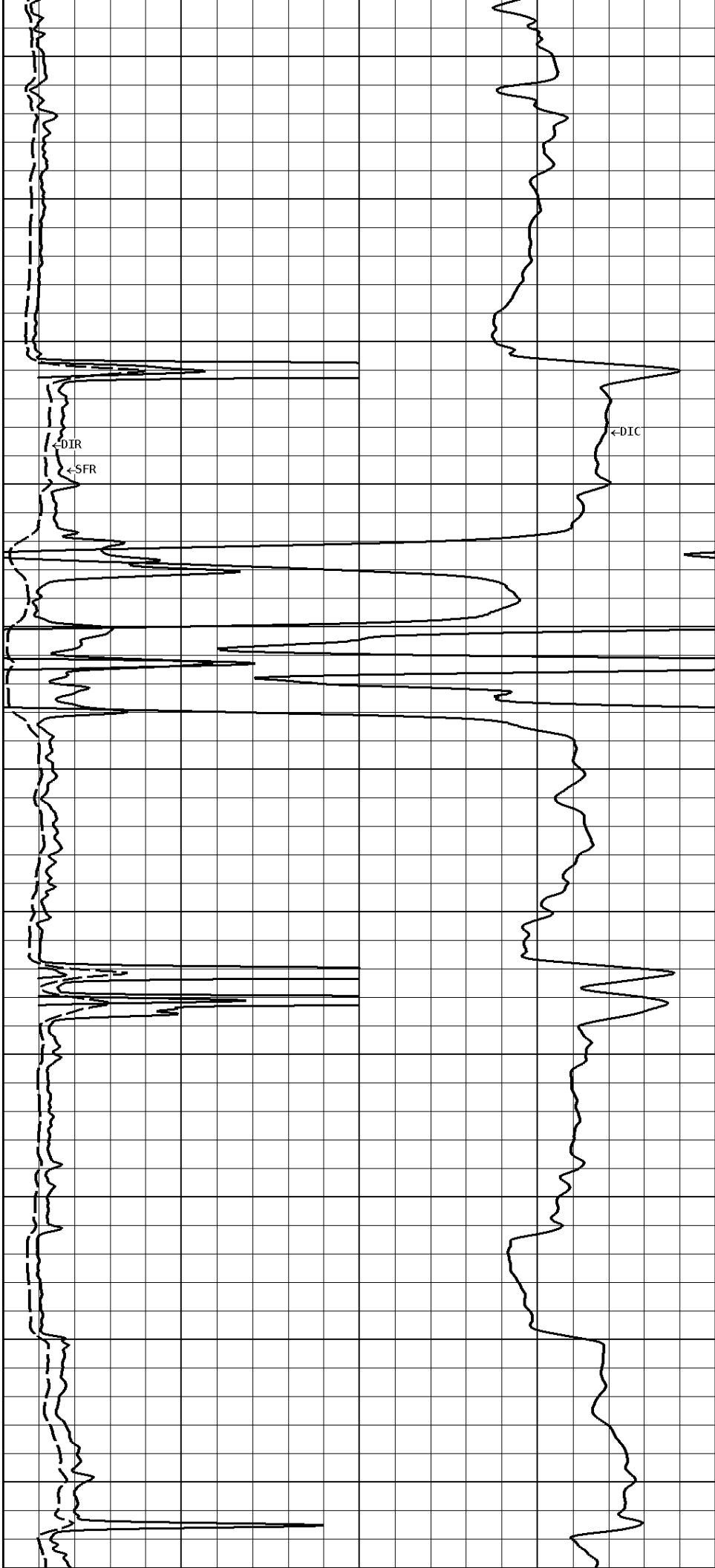
1900

2000

2100

2200

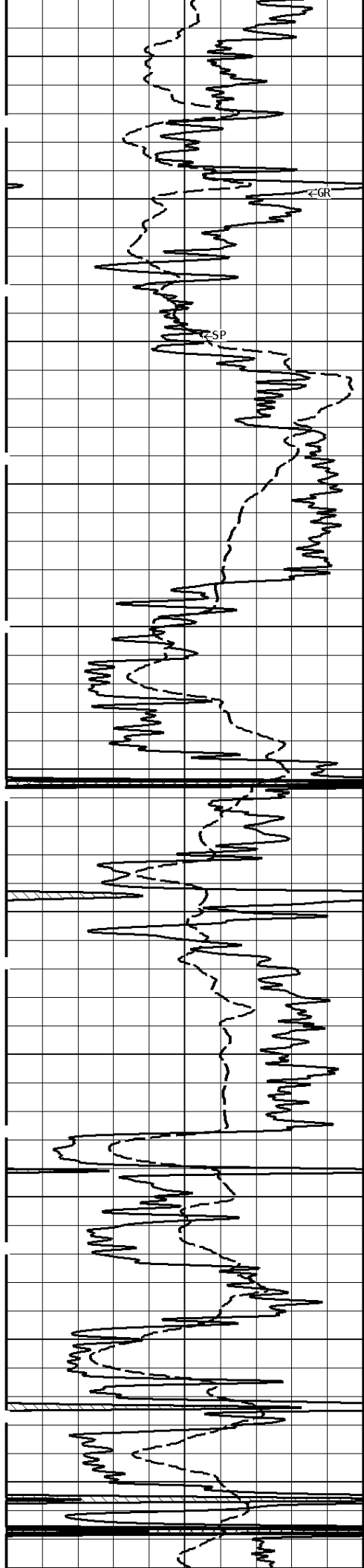
2300



c-DIR

c-SFR

c-DIC



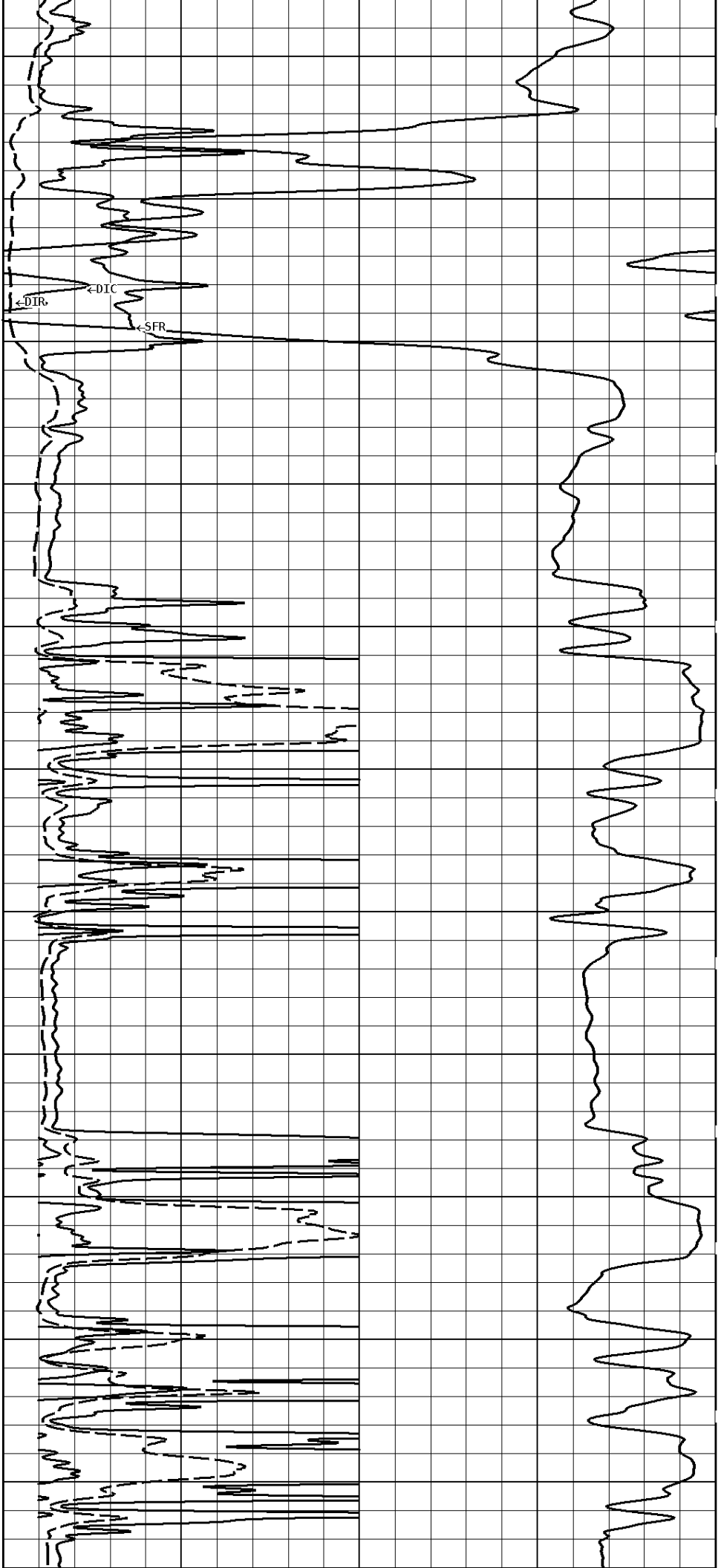
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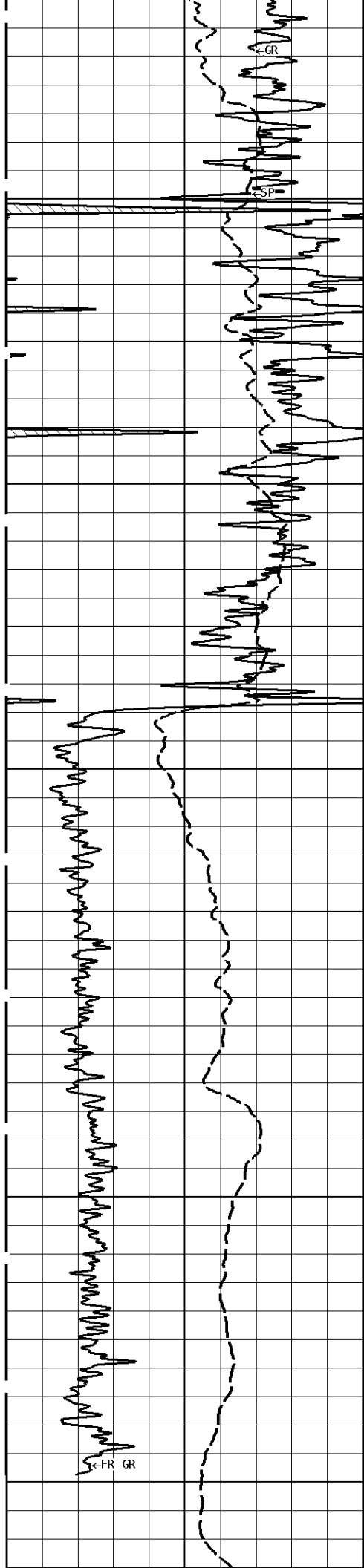
2500

2600

2700

2800





2900

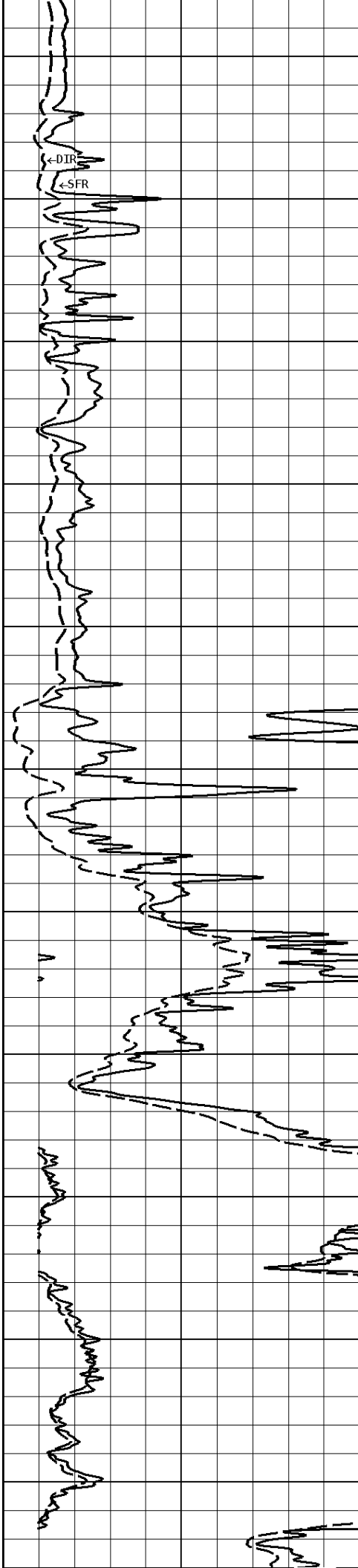
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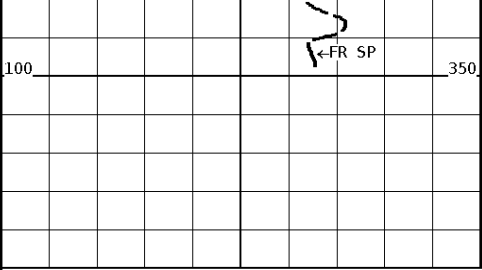
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3200

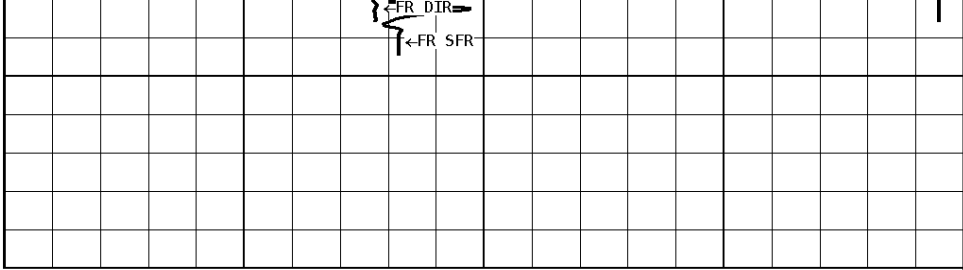
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3400

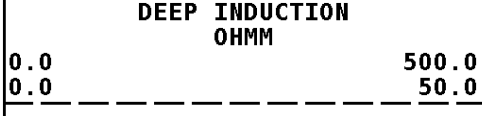
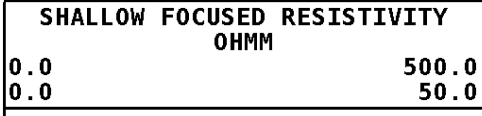
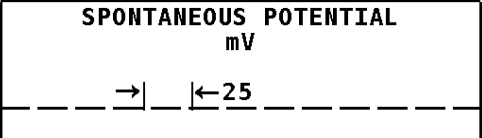
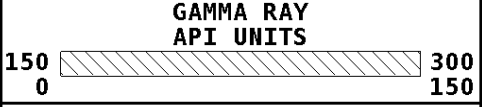




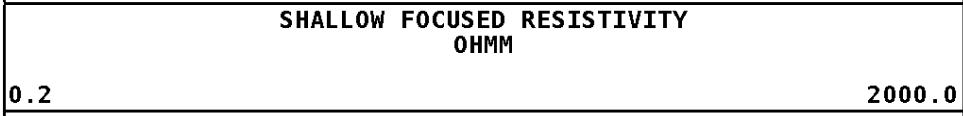
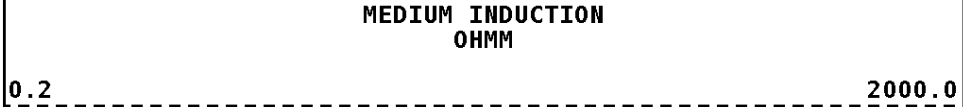
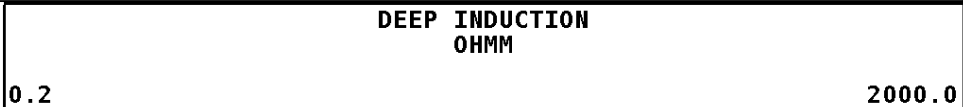
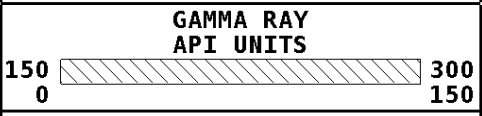
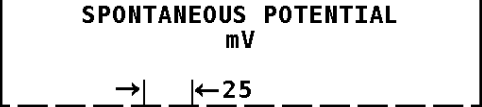
File #1.1.3



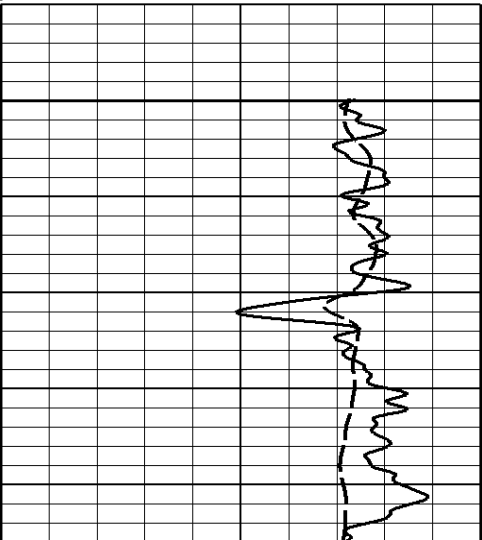
1:600 MAIN SECTION



Well File: VAL ENERGY HAMMER D V4-8 DEC5 MSTK Scale: 1:240 Format: DIL-240
 Segment: V1.D1.S3 Reprocess of MAIN Acquired: 2017-12/05 10:50 3.4.0-13756
 Reference: 0 Processed: 2017-12/05 11:41 3.4.0-13756

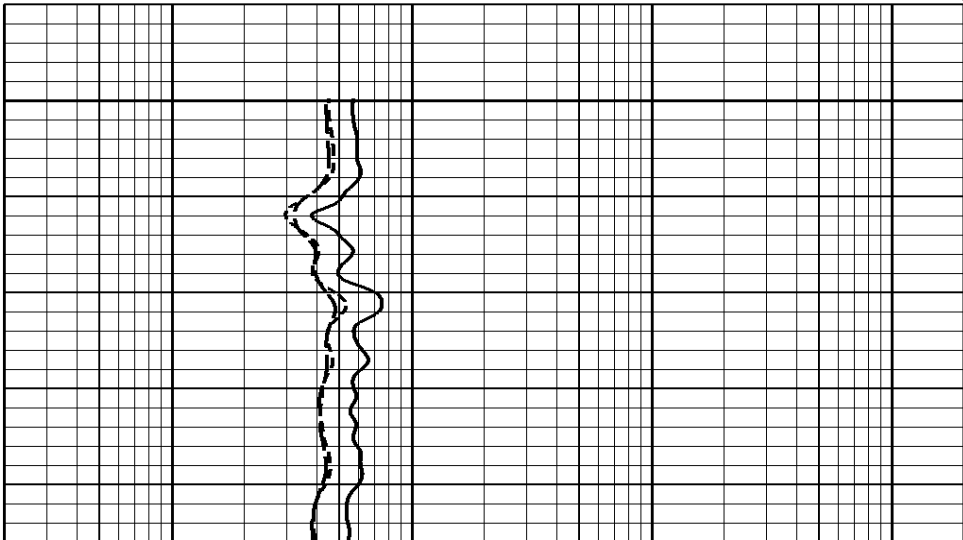


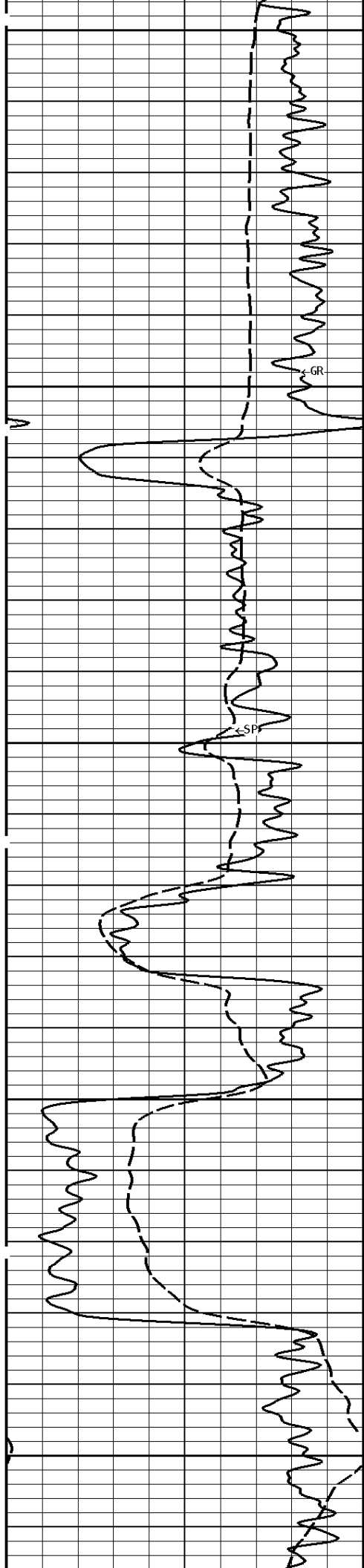
1:240 MAIN SECTION



File #1.1.3

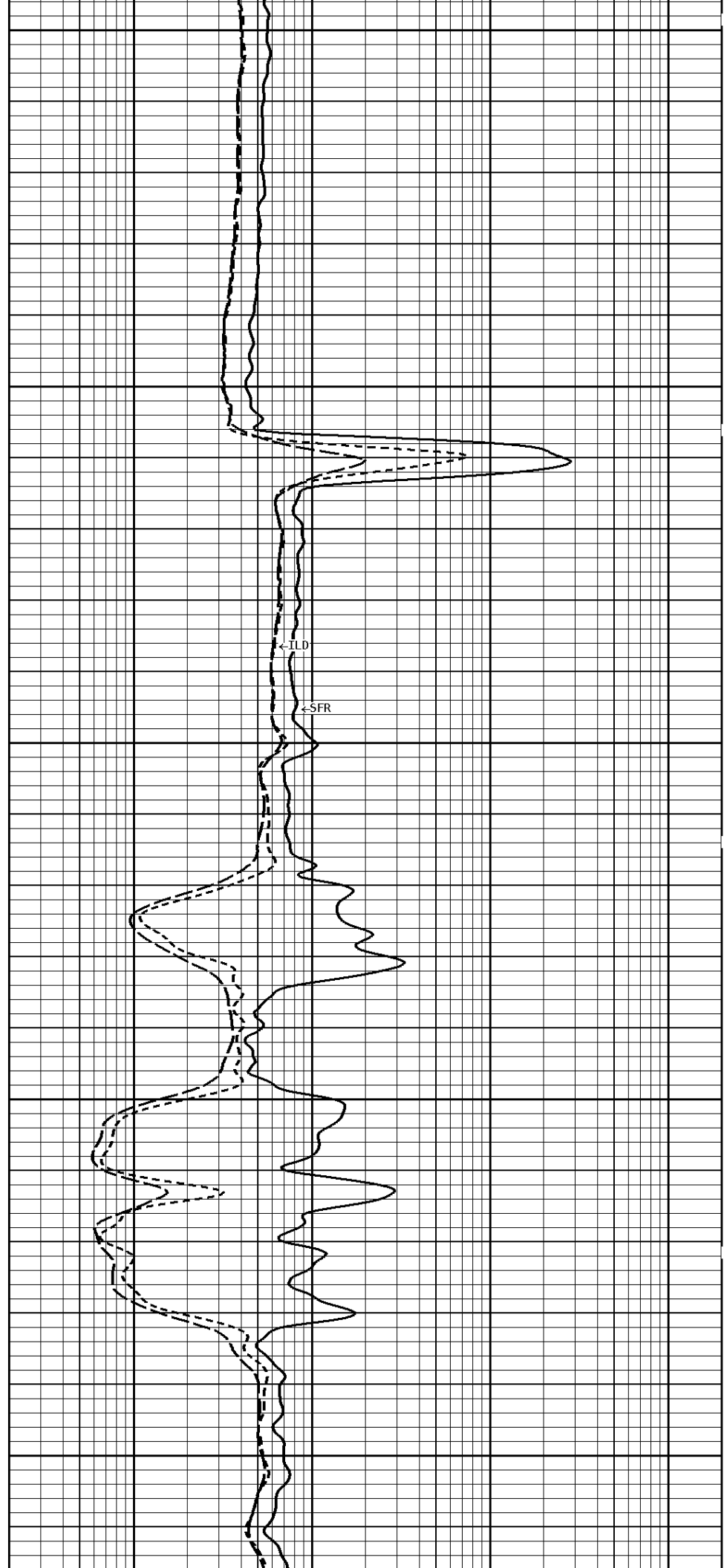
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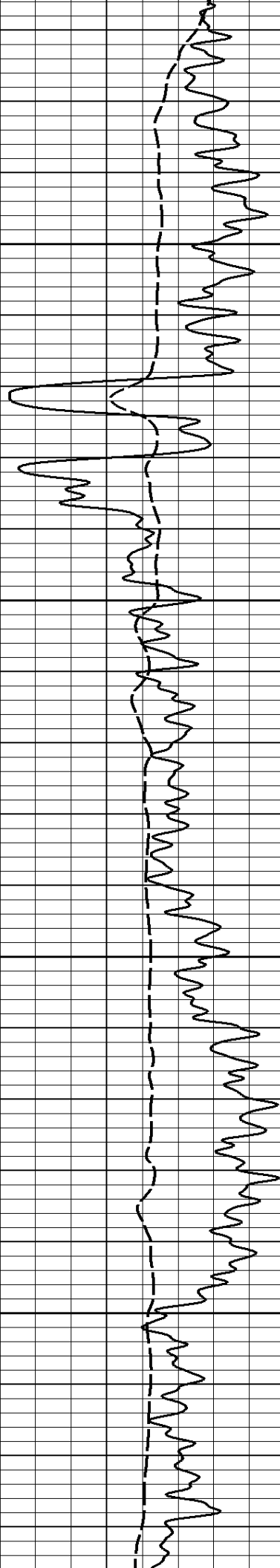




1900

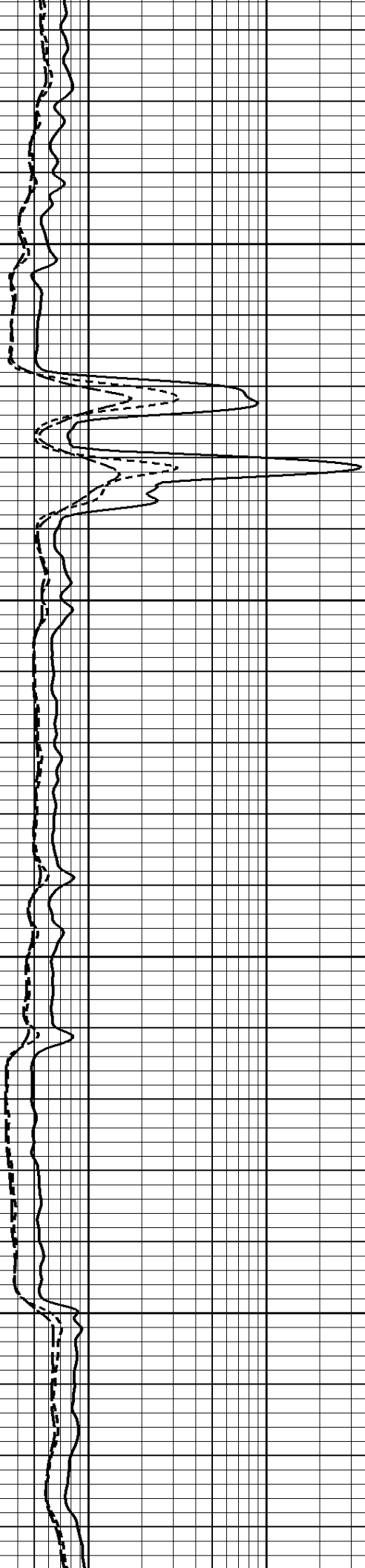
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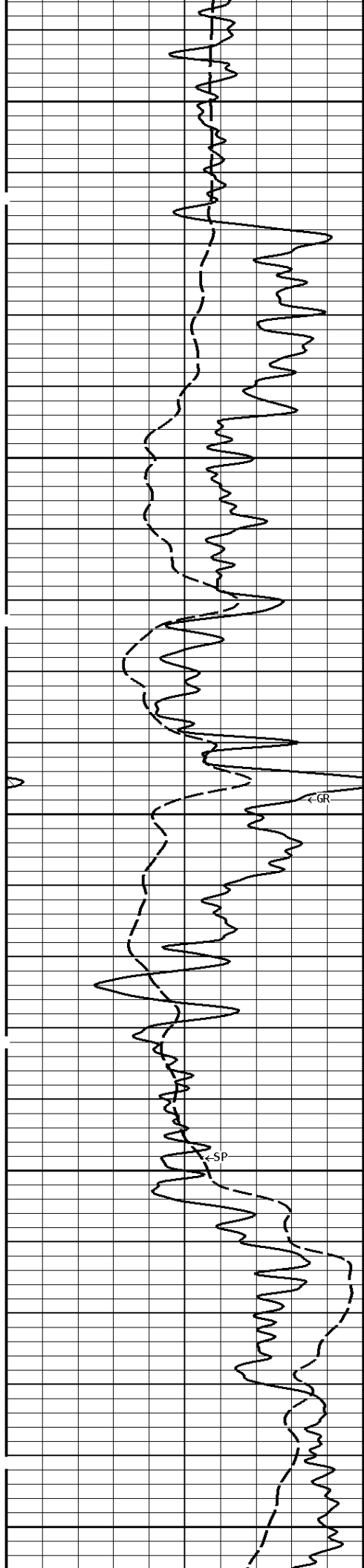




2100

2200

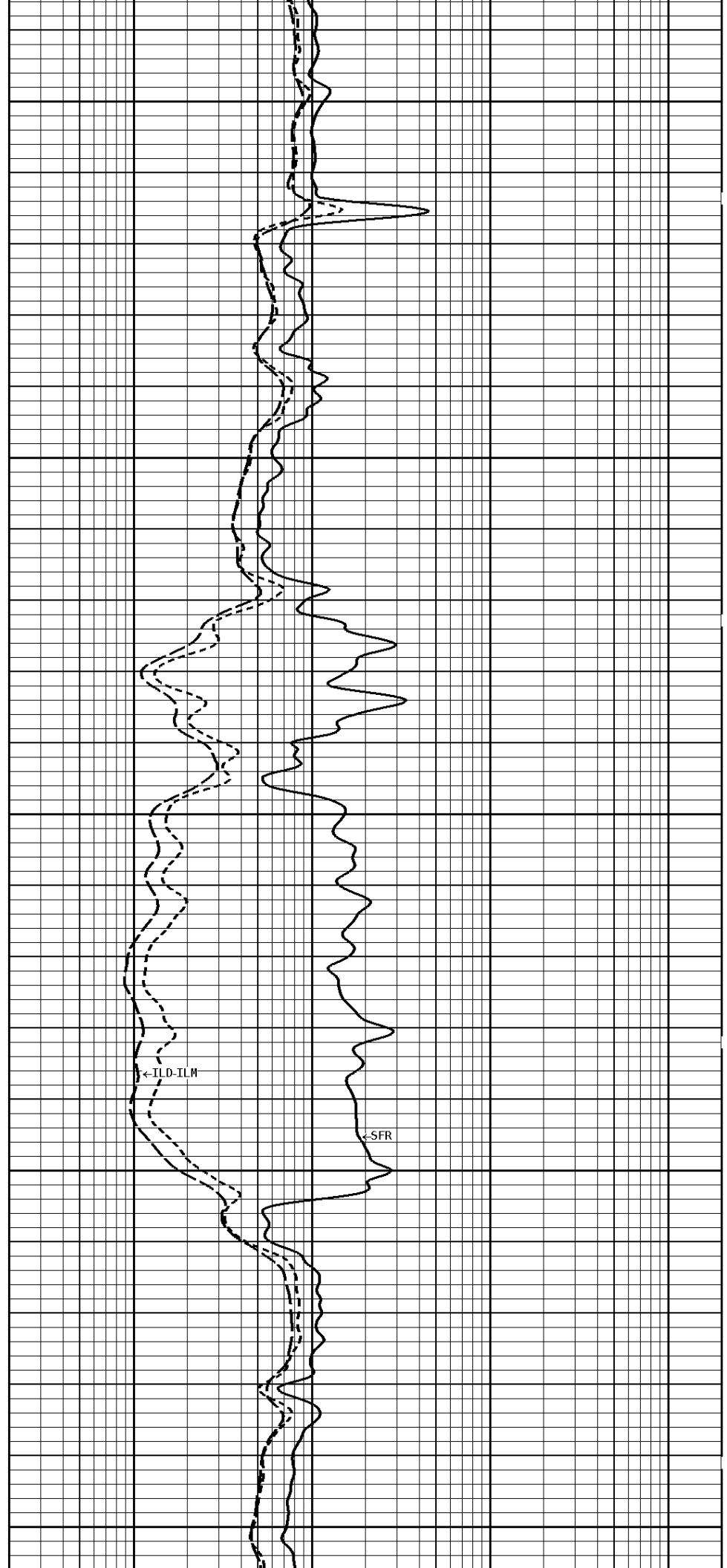




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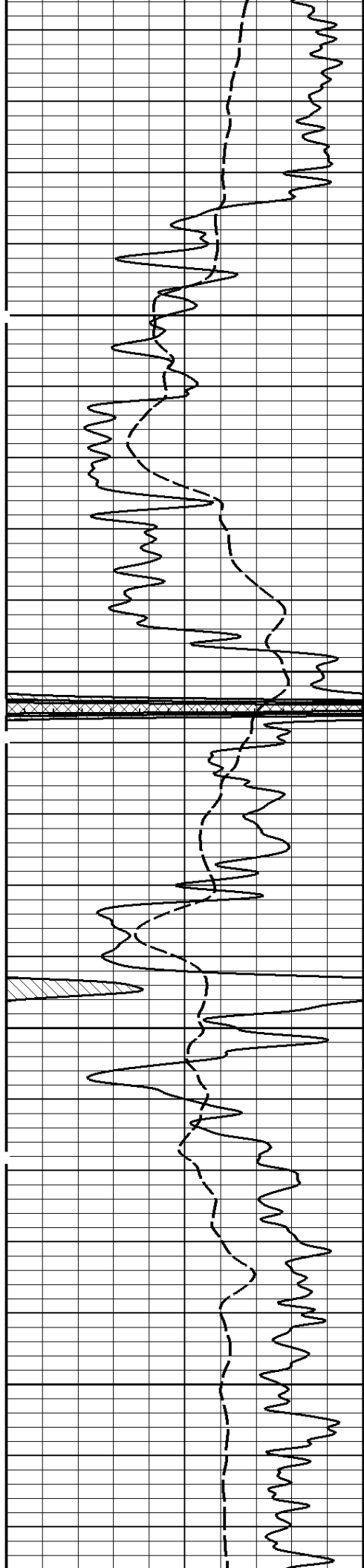
2400

2500



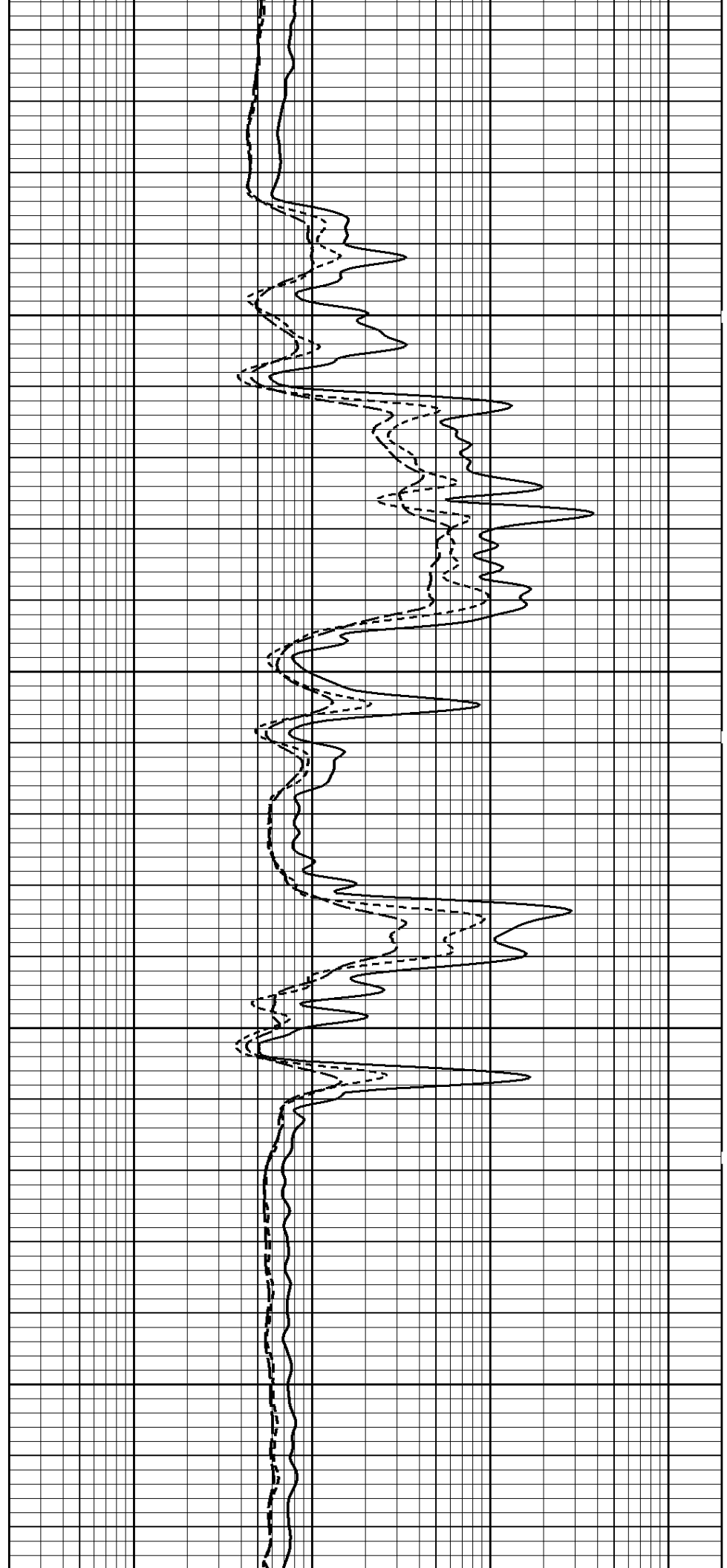
←ILD-ILM

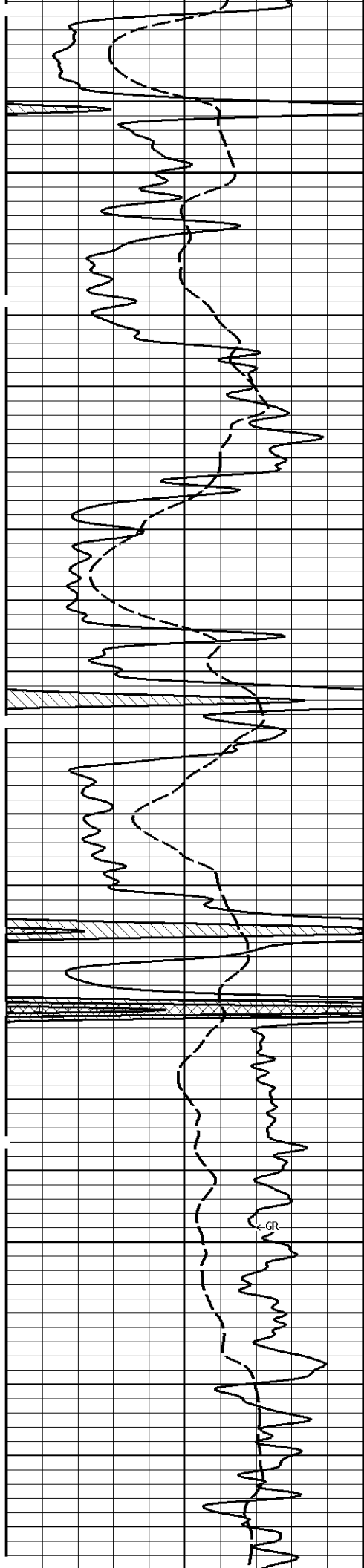
←SFR



2600

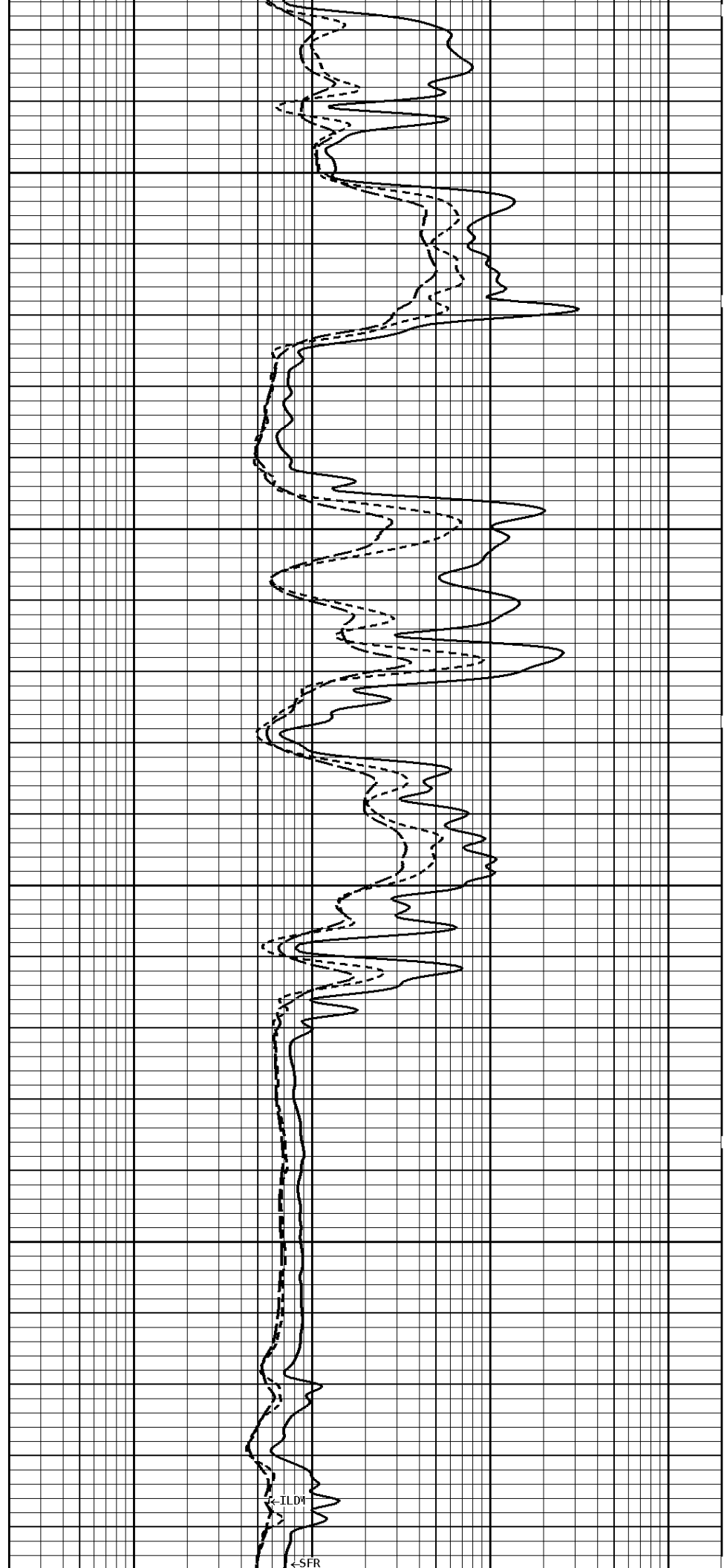
2700

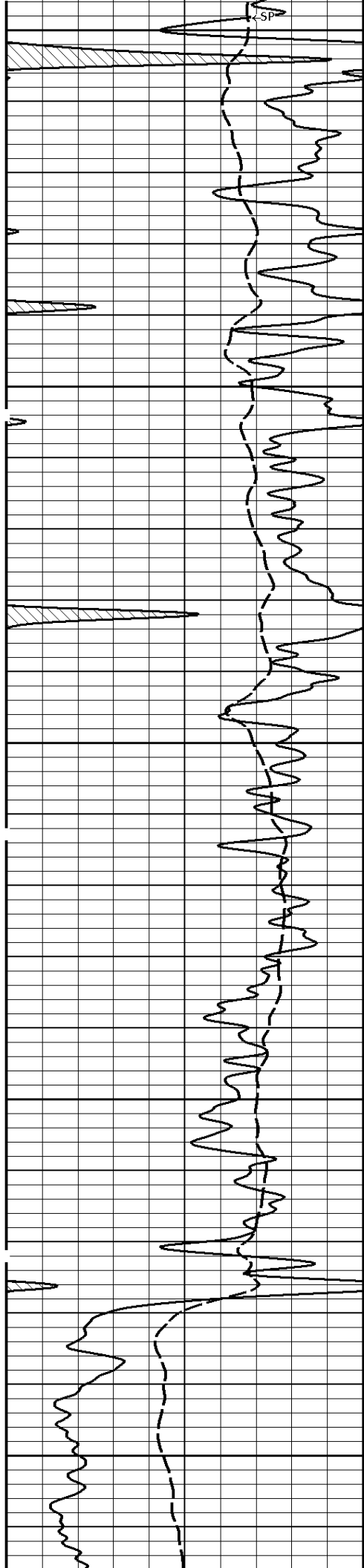




2800

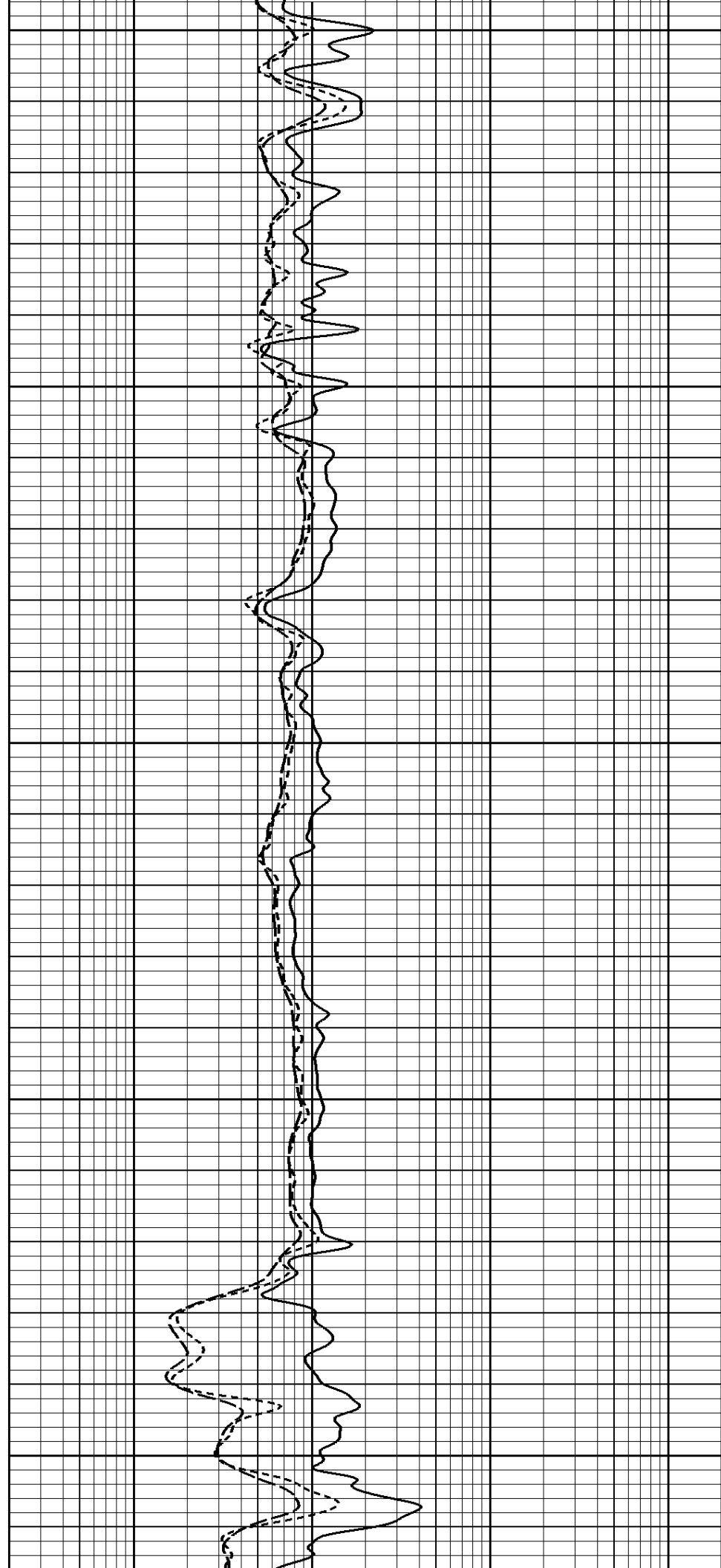
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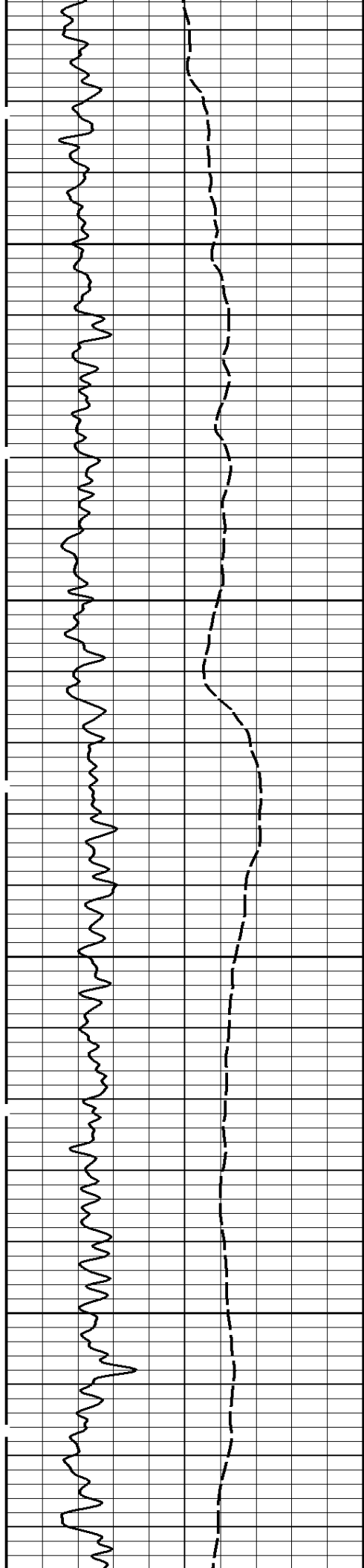




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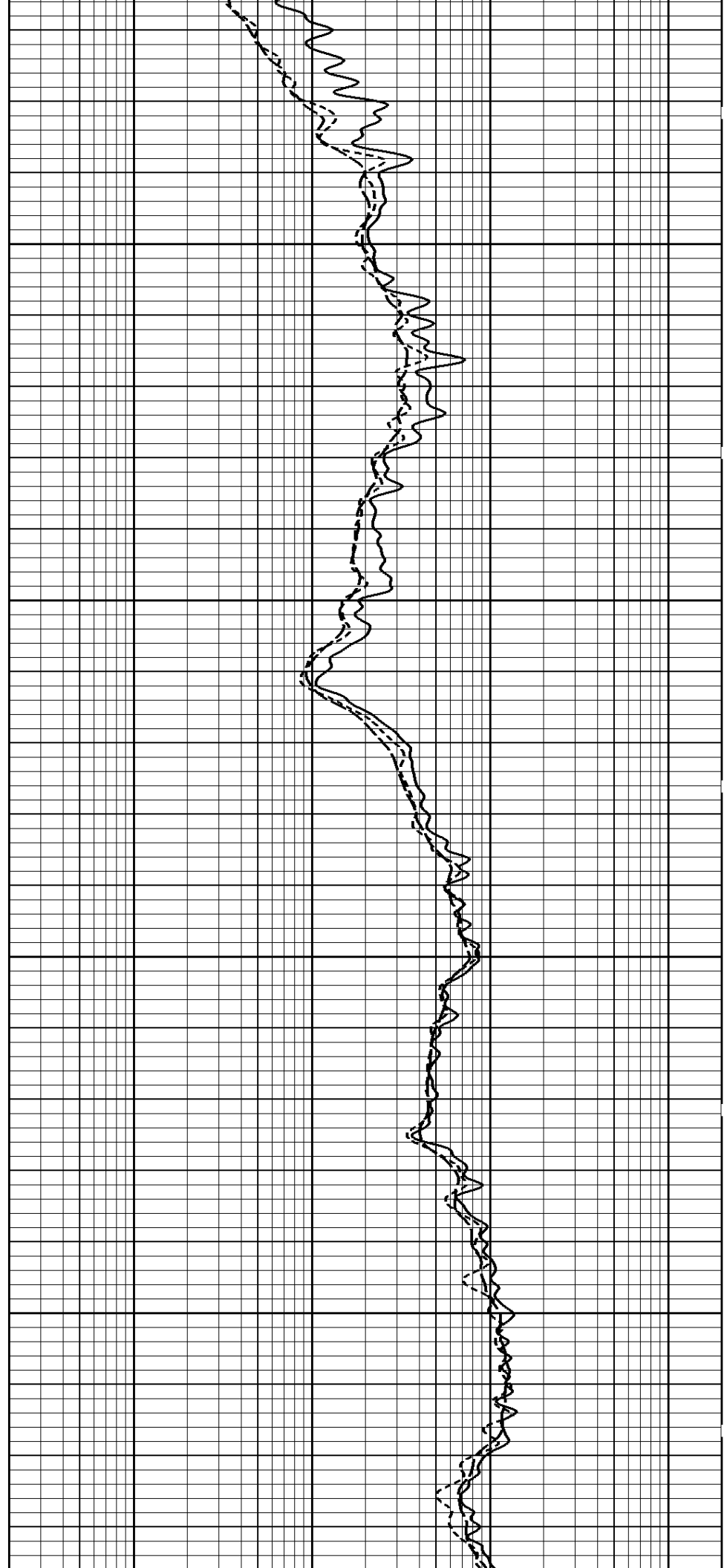
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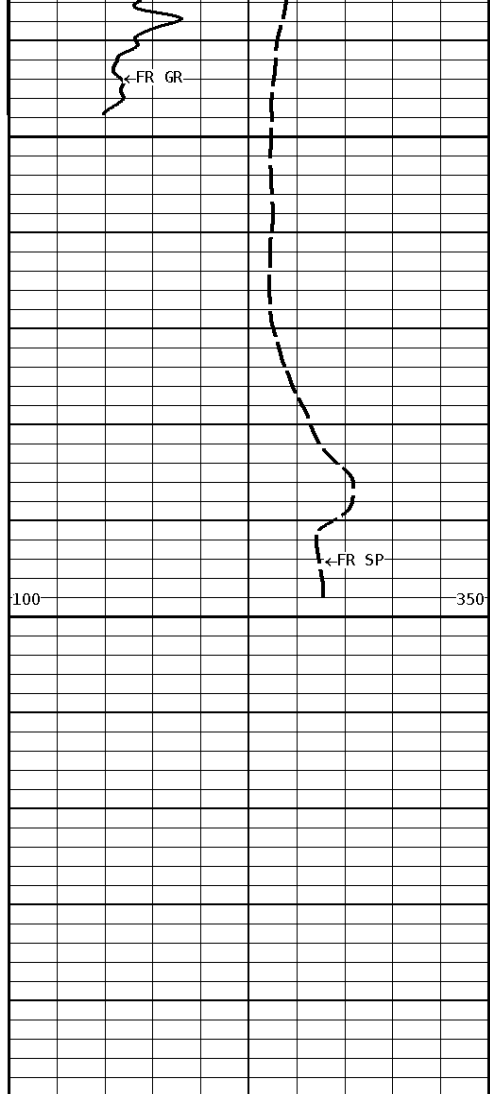




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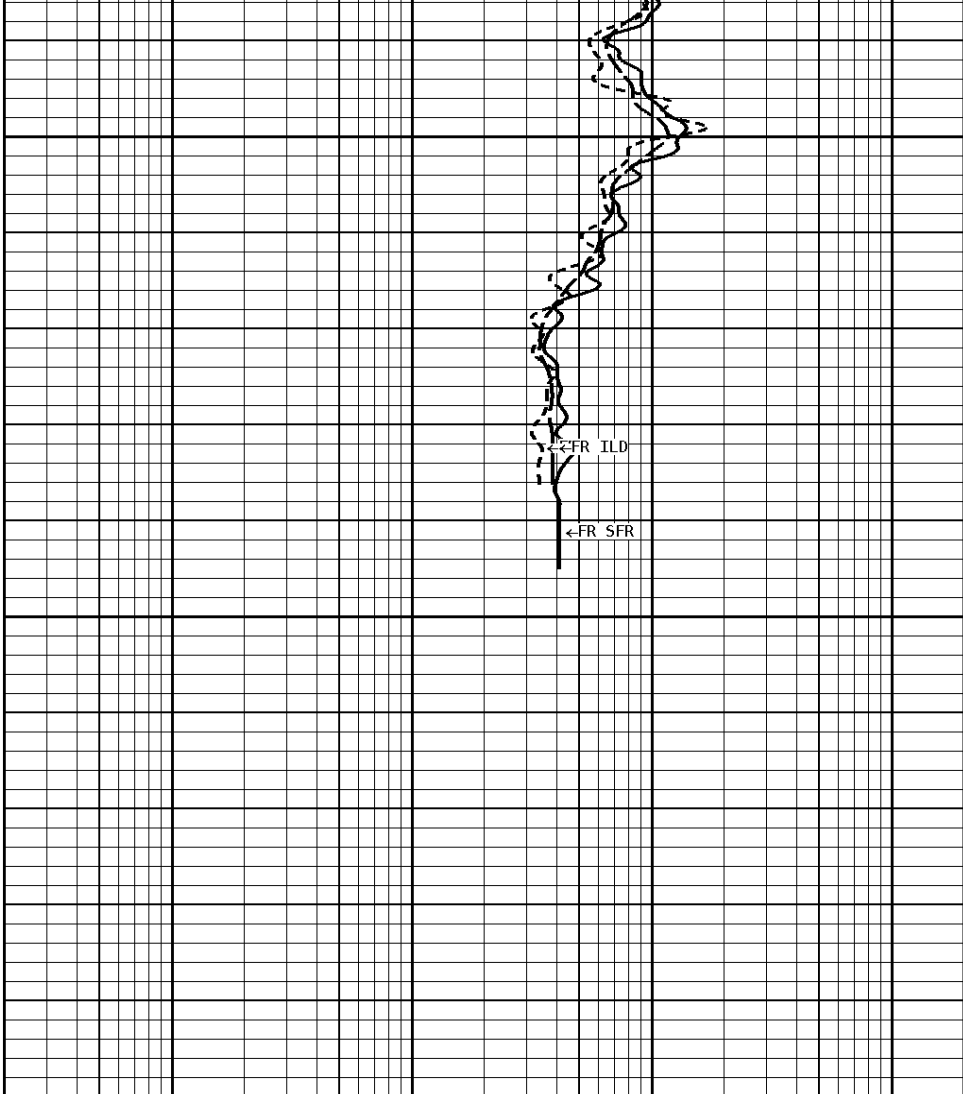
3300



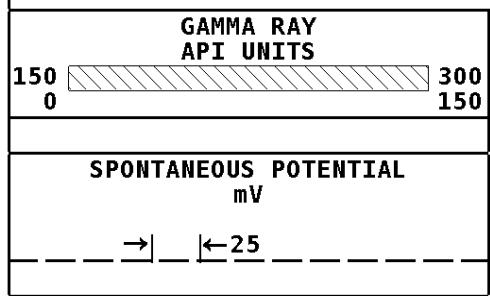


3400

3445



1:240 MAIN SECTION



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	3446.000	ft
Borehole Temperature	110.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
Resistivity Of Mud Temperature	60.00	degF

*** Calibration Summary ***

**Shop Calibration
GRT-B**

Performed : 05-SEP-2017 Time : 10:52
 Sensor Suite : GR-GR5 ID : GRT-BA-121

	Measured	Units	Calibrated	Units
GR	Background 57	Jig 373	CPS	GRAPI

**Shop Calibration
PIT-CA**

Performed : 26-Sep-2017 Time : 08:39
 Sensor Suite : P-IND-T ID : PIT-CA-069

Medium

	Measured		Calibrated		Units
	R	X	R	X	
Air	130192	131152	0.5	0.1	MMHOS
Zero	131070	131069	42.5	-7.8	MMHOS
Reference	248926	248792	5042.5	4992.2	MMHOS
Loop	129292	218503	3672.4	3748.3	MMHOS
Sonde Error			0.4	-9.8	MMHOS
Cond			5042.5	4992.2	MMHOS

Deep

	Measured		Calibrated		Units
	R	X	R	X	
Air	128323	131962	-0.0	-0.2	MMHOS
Zero	131066	131070	56.7	-22.3	MMHOS
Reference	234465	233968	2056.7	1977.7	MMHOS
Loop	127651	222601	1748.7	1774.5	MMHOS
Sonde Error			-1.3	-8.4	MMHOS
Cond			2056.7	1977.7	MMHOS

Temperature

	Measured		Calibrated		Units
	Low	High	Low	High	
	16980.0	56920.0	70.0	350.0	DEGF

Performed : 26-Sep-2017 Time : 08:32
 Sensor Suite : SFL ID : PIT-CA-069

Internal

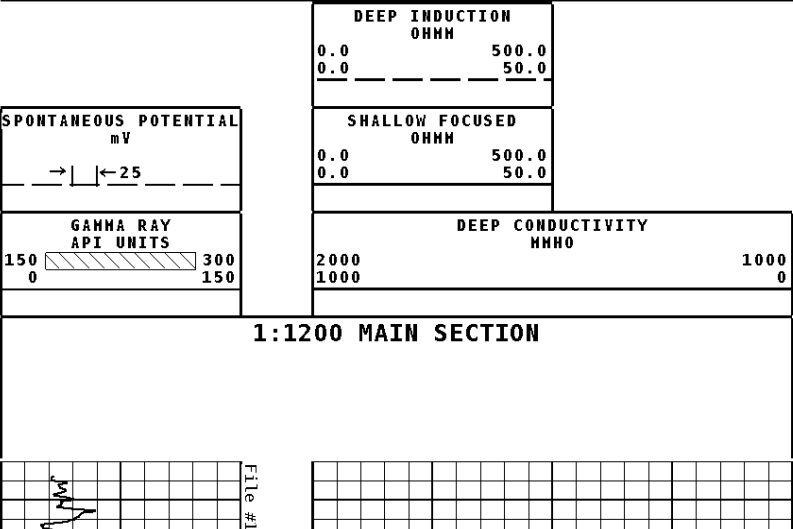
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
Im	32769.3	49532.4	0.0	7028.0	uA
Ib	32764.1	49835.3	0.0	1750.0	mA
MOM1	32782.2	59364.2	0.0	175.0	mV
Equivalent SFL				43.97	OHMM

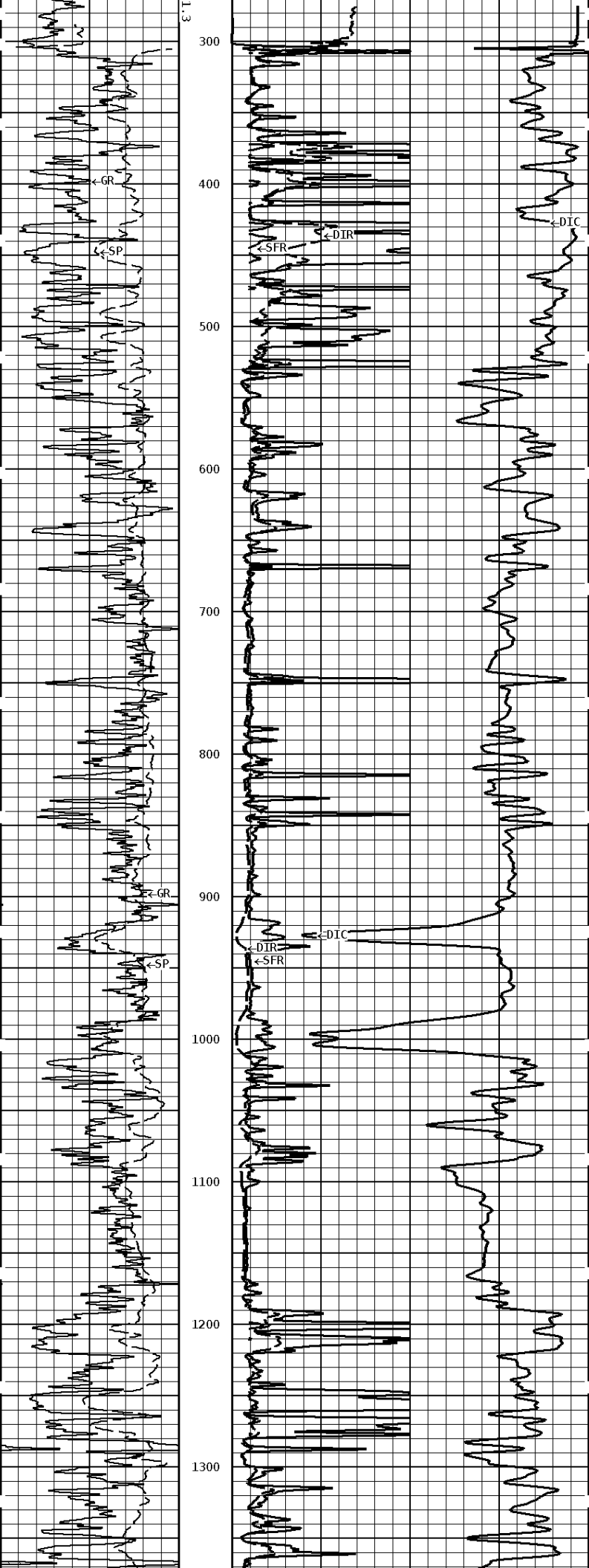
Performed : 26-Sep-2017 Time : 08:28
 Sensor Suite : P-SP ID : PIT-CA-069

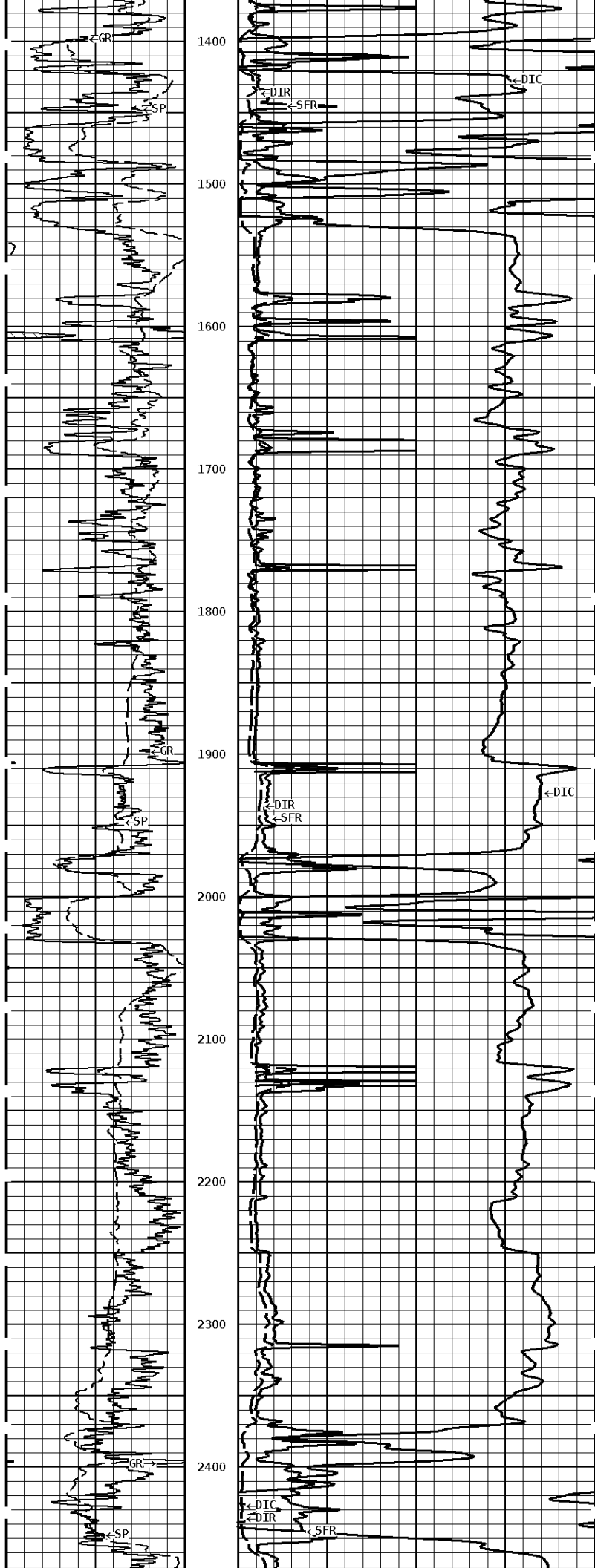
Internal

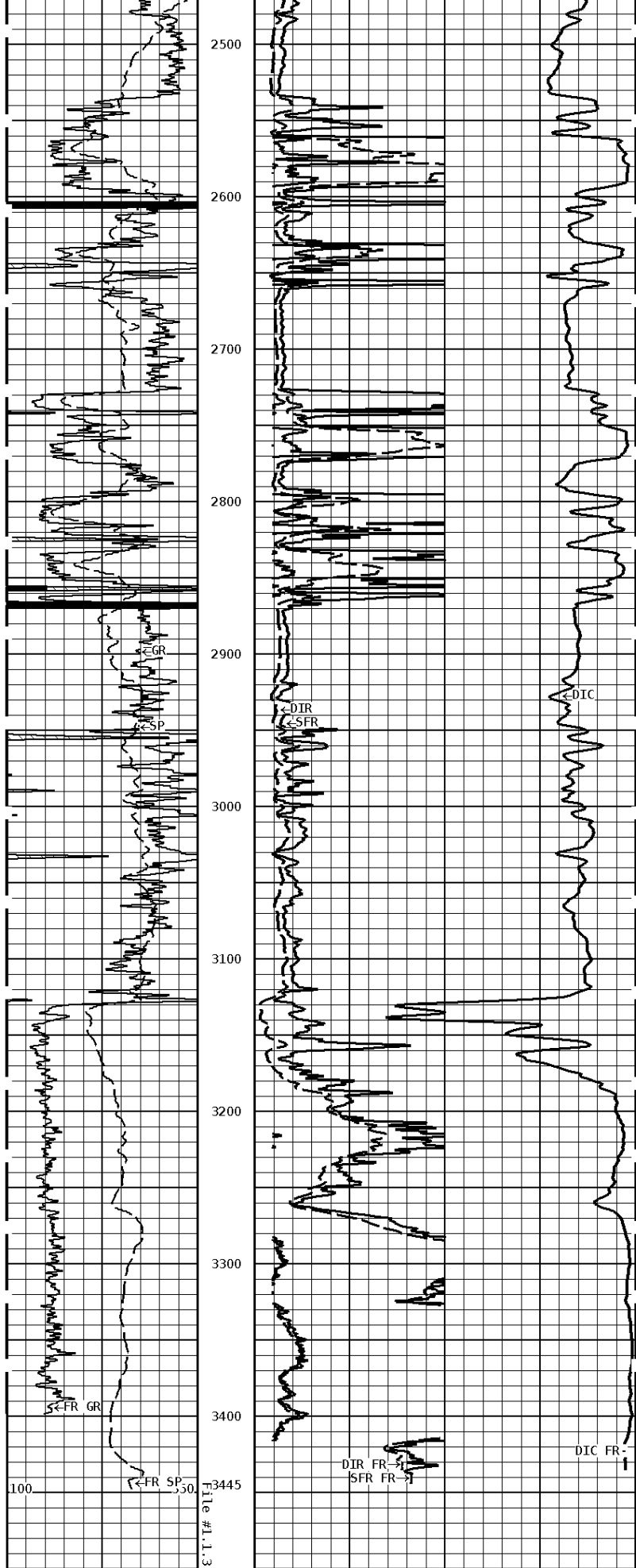
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
	32792.7	58833.9	0.0	1000.0	mV

Well File: VAL ENERGY HAMMER D V4-8 DEC5 MSTK **Scale:** 1:1200 **Format:** DIL1200
Segment: V1.D1.S3 Reprocess of MAIN **Acquired:** 2017-12/05 10:50 3.4.0-13756
Reference: 0 **Processed:** 2017-12/05 11:41 3.4.0-13756









1:1200 MAIN SECTION

File # 1.3

GAMMA RAY API UNITS	
150	300
0	150
SPONTANEOUS POTENTIAL mV	
→ ← 25	

DEEP CONDUCTIVITY MHMO	
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



Company: VAL ENERGY, INC
 Well: HAMMER D #V4-8
 Location: 660' FNL & 660' FEL
 Logged: 12-05-2017
 K.B. Elev: 1351.0 Ft