

# Tucker

**WIRELINER SERVICES      PHASED INDUCTION**

**SHALLOW FOCUS SP LOG**

**Company:** ANDERSON ENERGY, INC  
**Well:** NORTH TRUST #1  
**Field:** BRENNER SOUTH  
**Country:** TREGO  
**State:** KANSAS  
**Country:** USA  
**API No.:** 15-195-22815-0000

**File No.:** TUL-58693  
**Company:** ANDERSON ENERGY, INC  
**Well:** NORTH TRUST #1  
**Field:** BRENNER SOUTH  
**Country:** TREGO  
**State:** KANSAS  
**Country:** USA  
**API No.:** 15-195-22815-0000

**Location:**  
 385' FNL & 330' FWL  
 S/2 NW NW NW

**LSD:**                      **Sect:** 24                      **Twp:** 15S                      **Rge:** 21W

<b>Permanent Datum:</b>	GL	<b>Elevations:</b>		<b>Services:</b>	
<b>Drilling Measured From:</b>	KB	KB 2170.00	Ft	CNT	CST
<b>Log Measured From:</b>	KB	DF 2169.00	Ft	LDT	PIT
<b>Above Permanent Datum:</b>	9.00 Ft	GL 2161.00	Ft	MLT	DIPLOG
<b>Date:</b>	2012-09-17				
<b>Run Number:</b>	1				
<b>Depth--Driller</b>	4270.0	Ft			
<b>Depth--Logger</b>	4265.0	Ft			
<b>First Reading</b>	4265.0	Ft			
<b>Last Reading</b>	294.0	Ft			
<b>Casing--Driller</b>	294.0	Ft			
<b>Casing--Logger</b>	294.0	Ft			
<b>Bit Size</b>	7.875	In			
<b>Casing Size</b>	8.625	In			
<b>Hole Fluid Type</b>	CHEM-GEL				
<b>Density</b>	9.2 LBS/GAL				
<b>Fluid Loss</b>	8.0 CC				
<b>PH/Viscosity</b>	9.5	MEASURED	52.0 SEC		
<b>Sample Source</b>	MEASURED				
<b>RM@Measured Temp.</b>	2.000	@ 75 F			
<b>RMF@Measured Temp</b>	1.600	@ 75 F			
<b>RMG@Measured Temp.</b>	2.400	@ 75 F			
<b>Source RMF/RMG</b>	CALCULATED/CALCULATED				
<b>RM@BHT</b>	1.300	@ 119 F			
<b>Time Circulation Stopped</b>	2012-09-17 01:40				
<b>Max Recorded Temp.</b>	119	F			
<b>Equipment/Base</b>	TRK 127	TULSA			
<b>Recorded By</b>	SHELDON TYLER				
<b>Witnessed By</b>	R. FISHER				

The customer is hereby warned that by providing the log data herein, Tucker Technologies, Inc. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. Tucker Technologies, Inc. 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 Tucker Technologies, Inc. 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 Tucker Technologies, Inc. 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)
7.875	4270.00	8.625	32.00	294.00

<b>Run Number</b>	1	
<b>Date</b>	2012-09-17	
<b>Date/Time On Bottom</b>	2012-09-17 03:40	
<b>Depth to Fluid</b>	0.0	Ft
<b>Salinity</b>	0.000	PPM
<b>RMF@BHT</b>	1.040	@ 119 F
<b>RMC@BHT</b>	1.560	@ 119 F

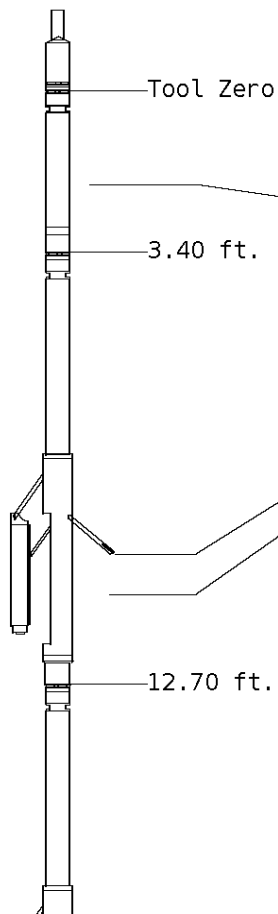
ALL PRESENTATIONS AS PER CUSTOMER REQUEST  
 GRT, CNT, LDT, MLT, CST AND PIT RUN IN COMBINATION.  
 CALIPERS ORIENTED ON X-Y AXIS.  
 2.71 G/CC USED TO CALCULATED POROSITY.  
 ANNULAR HOLE VOLUME CALCULATED UISING 5.500" PRODUCTION CASING.

GRT: GRP.  
 CNT: PHIN, CLCNIN  
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.  
 MLT: NOR\_R, INV\_R, MSCLPIN.  
 CST: PORS, DDCDTF, TT1PF, TT3PF, ITT.  
 PIT: ILD, ILM, SPU, SFLAEC

OPERATORS:  
 J.T  
 A.DJAHO  
 B.SMITH

### Tool String Schematic

**Total Tool Length** - 66.95 ft.  
**Maximum Outside diameter** - 6.00 in.  
**Net Weight in Air** - 1171.00 lbs.



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

**Sonde ID** :GRT-BC-43

Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	64.95

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

**Sonde ID** :NDT-BB-134

**Source ID** :N-1044

**Pad ID** :CNP-AE-42

Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLCN	6.00	9.40	57.55
PHIN	6.80	10.20	56.75

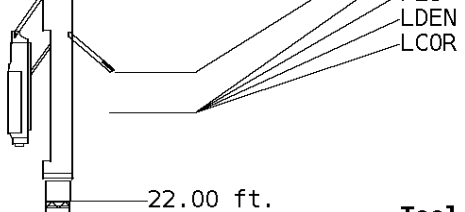
**Tool:** LDT-DA      **Length:** 9.30 ft.    **O.D.** 4.80 in.  
 Litho Density D Pad on NDT-A

**Sonde ID** :PDT-GA-466

**Source ID** :CSV-587

**Pad ID** :LDP-DA-02

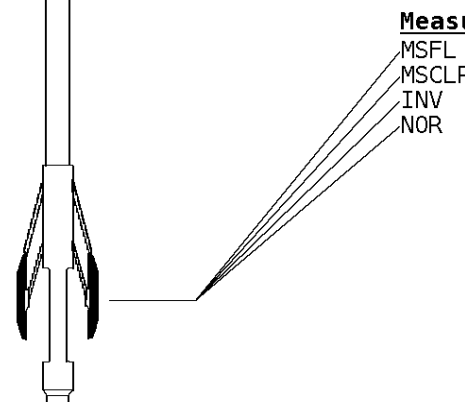
Measure Point	Tool Offset	Stack Offset	Bottom Offset
CLLD	6.00	18.70	48.25
PEL	7.00	19.70	47.25
PES	7.40	20.10	46.85



7.20 19.90 47.05  
 7.20 19.90 47.05

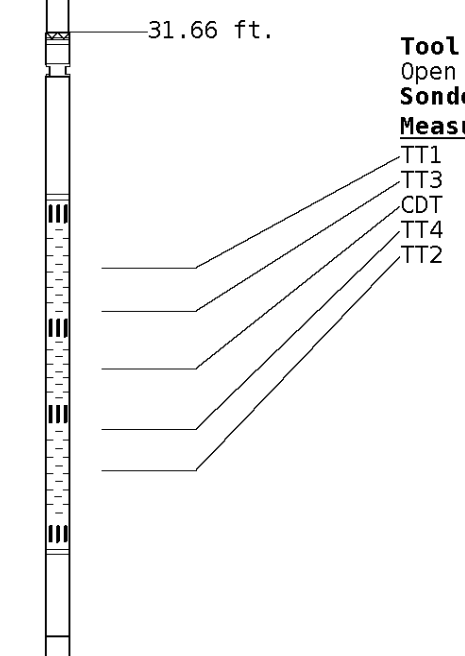
**Tool:** MST-DA      **Length:** 9.66 ft.   **O.D.** 6.00 in.  
 Micro Spherically Focused (IC)  
**Sonde ID** :MLT-DA-21

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	37.35
MSCLP	7.60	29.60	37.35
INV	7.60	29.60	37.35
NOR	7.60	29.60	37.35



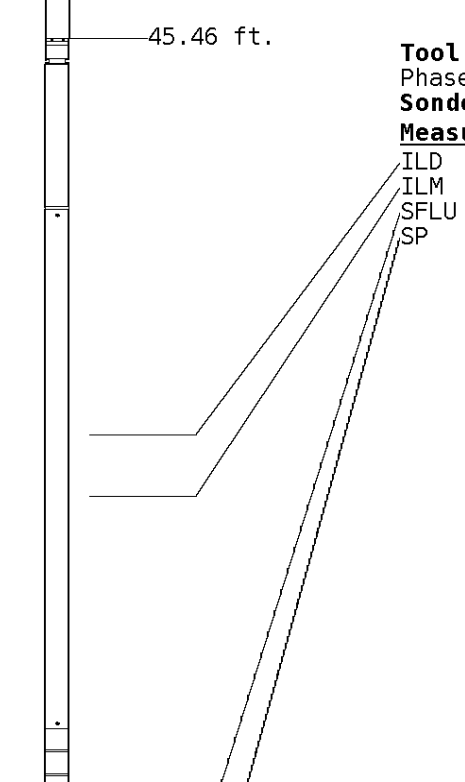
**Tool:** CST-AD      **Length:** 13.80 ft.   **O.D.** 3.60 in.  
 Open Hole Sonic  
**Sonde ID** :CST-AB-38

Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	36.46	30.49
TT3	5.80	37.46	29.49
CDT	7.30	38.96	27.99
TT4	8.80	40.46	26.49
TT2	9.80	41.46	25.49



**Tool:** PIT-CA      **Length:** 21.49 ft.   **O.D.** 3.62 in.  
 Phased Dual Induction w/ RM & D  
**Sonde ID** :PIT-AC-13

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	54.38	12.56
ILM	10.10	55.56	11.39
SFLU	17.49	62.95	4.00
SP	20.60	66.06	0.88



LWT 66.95 ft.

Well File: ANDERSON NORTHTRUST 1 SEP17 QUINT DIPMETER

Scale: 1:600

Segment: V1.D1.S5 Reprocess of MAIN

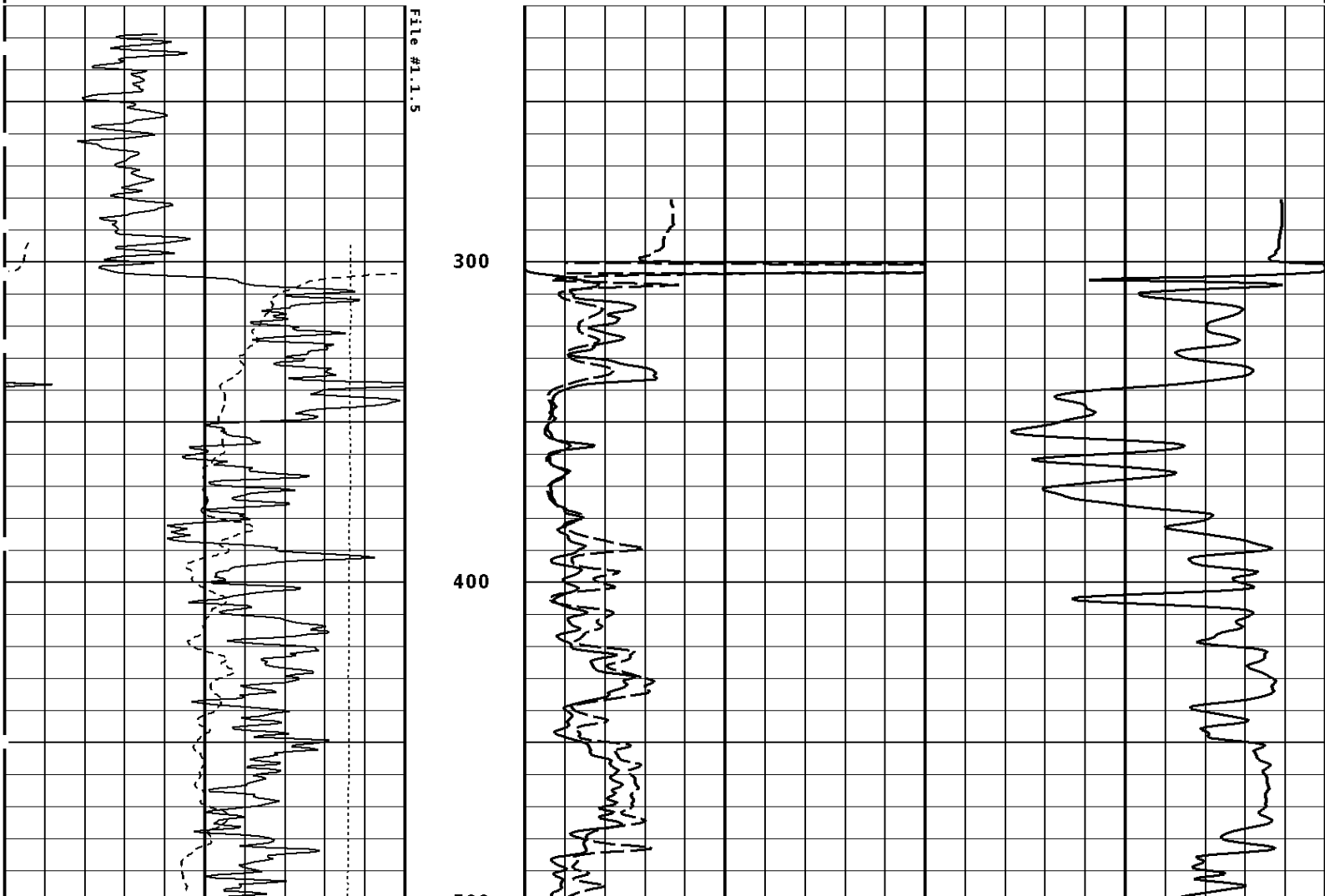
Acquired: 2012-09/17 04:53 3.2.0-11172

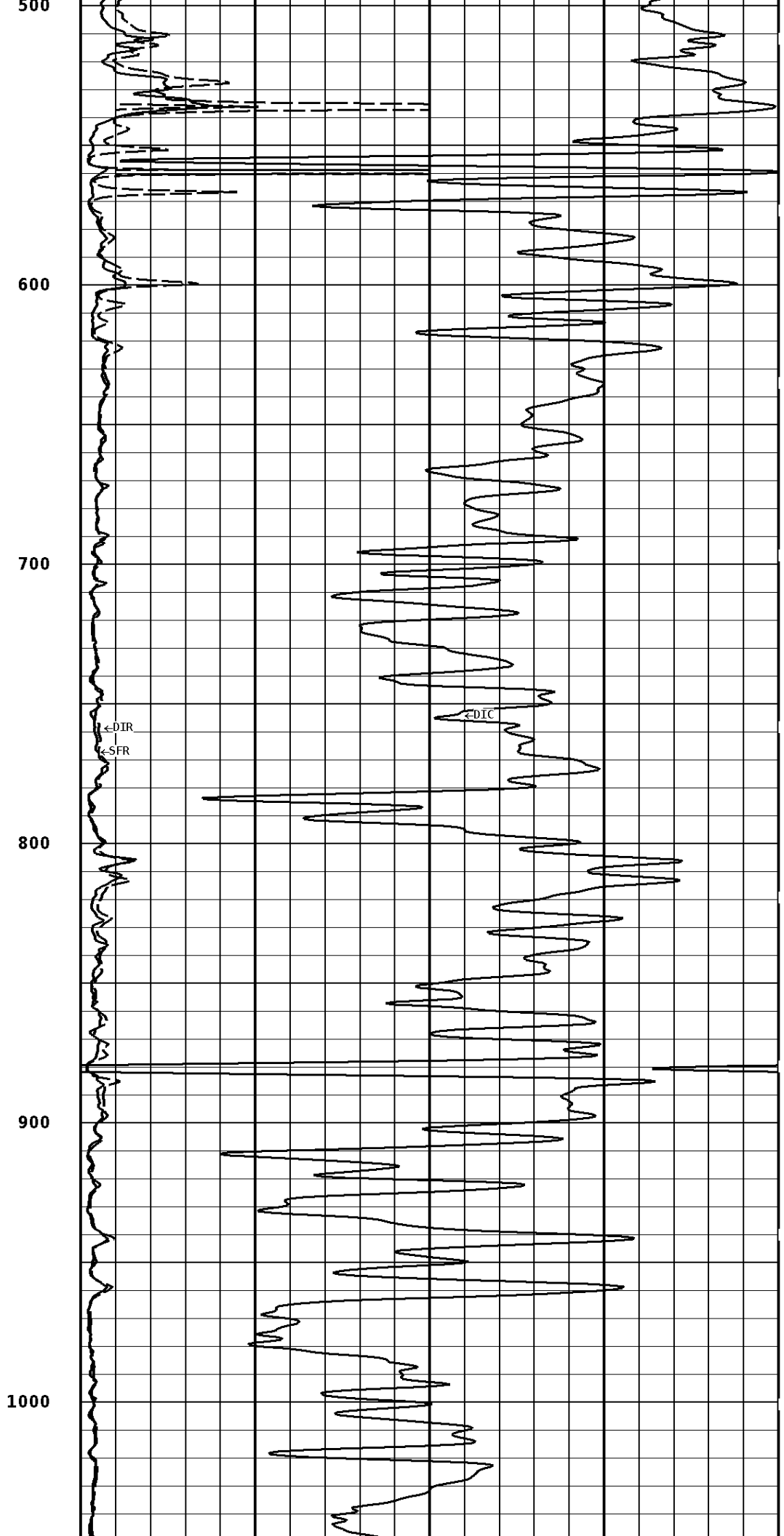
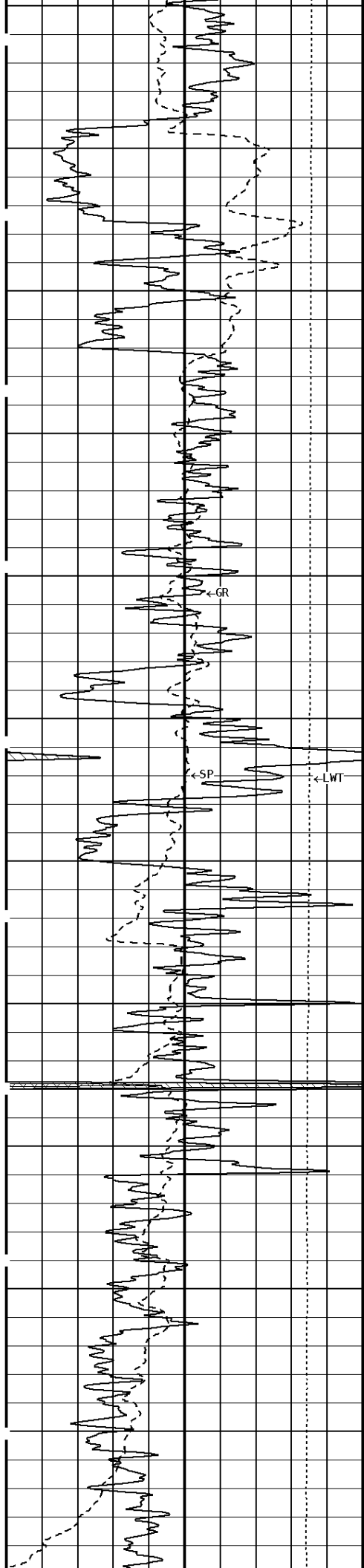
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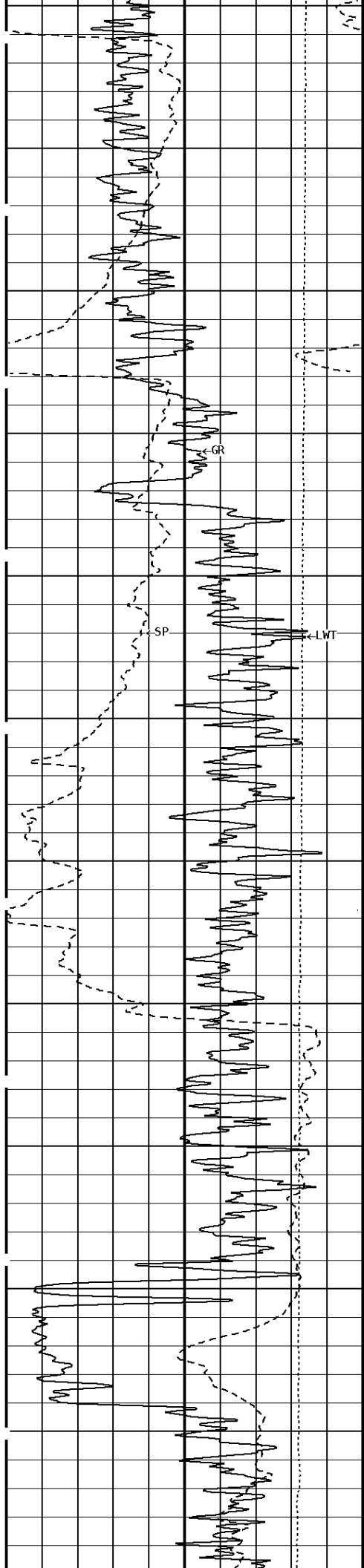
Processed: 2012-09/17 06:15 3.2.0-11172

<b>TENSION</b> LBS	<b>SHALLOW FOCUSED RESISTIVITY</b> OHMM
10000 0	0.0 500.0 0.0 50.0
<b>SPONTANEOUS POTENTIAL</b> mV	<b>DEEP INDUCTION</b> OHMM
→ ← 20	0.0 500.0 0.0 50.0
<b>GAMMA RAY</b> API UNITS	<b>DEEP CONDUCTIVITY</b> MMHO
150 300 0 150	2000 1000 1000 0

**1:600 SECTION**  
2 INCH







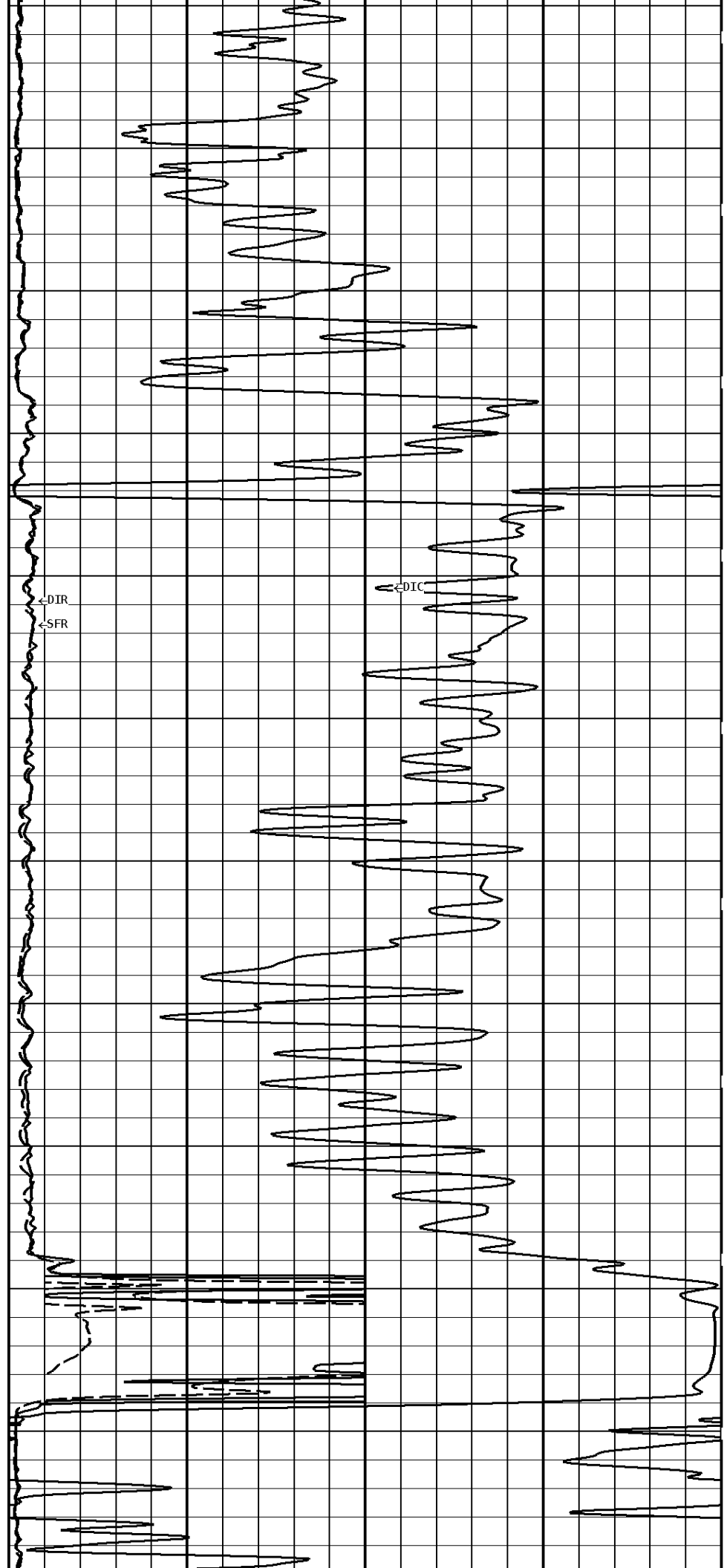
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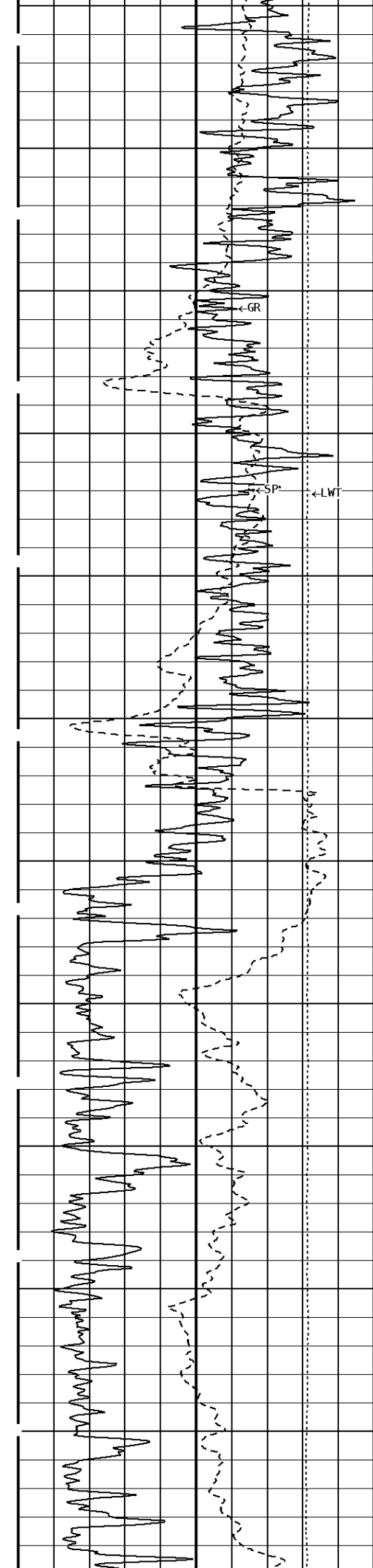
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1300

1400

1500





1600

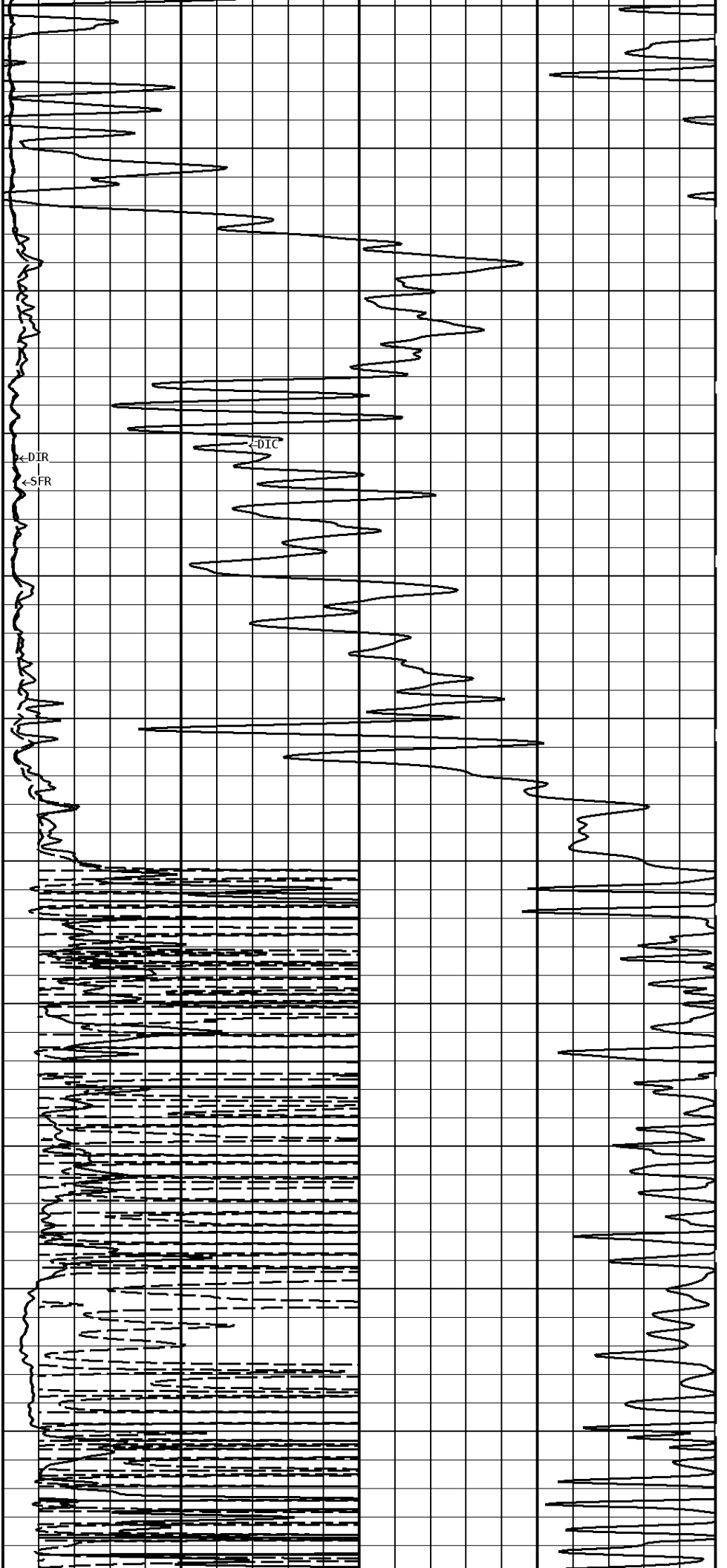
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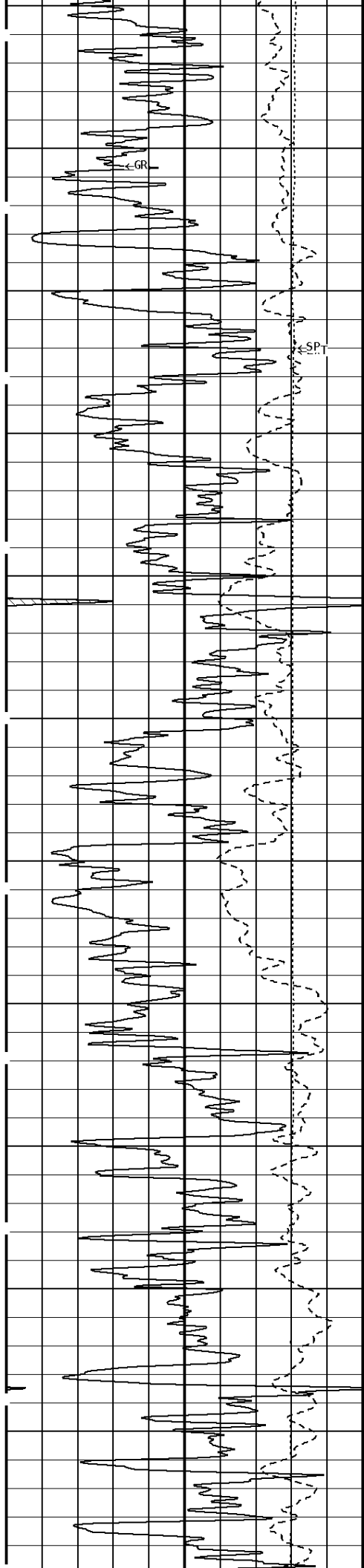
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1900

2000

2100





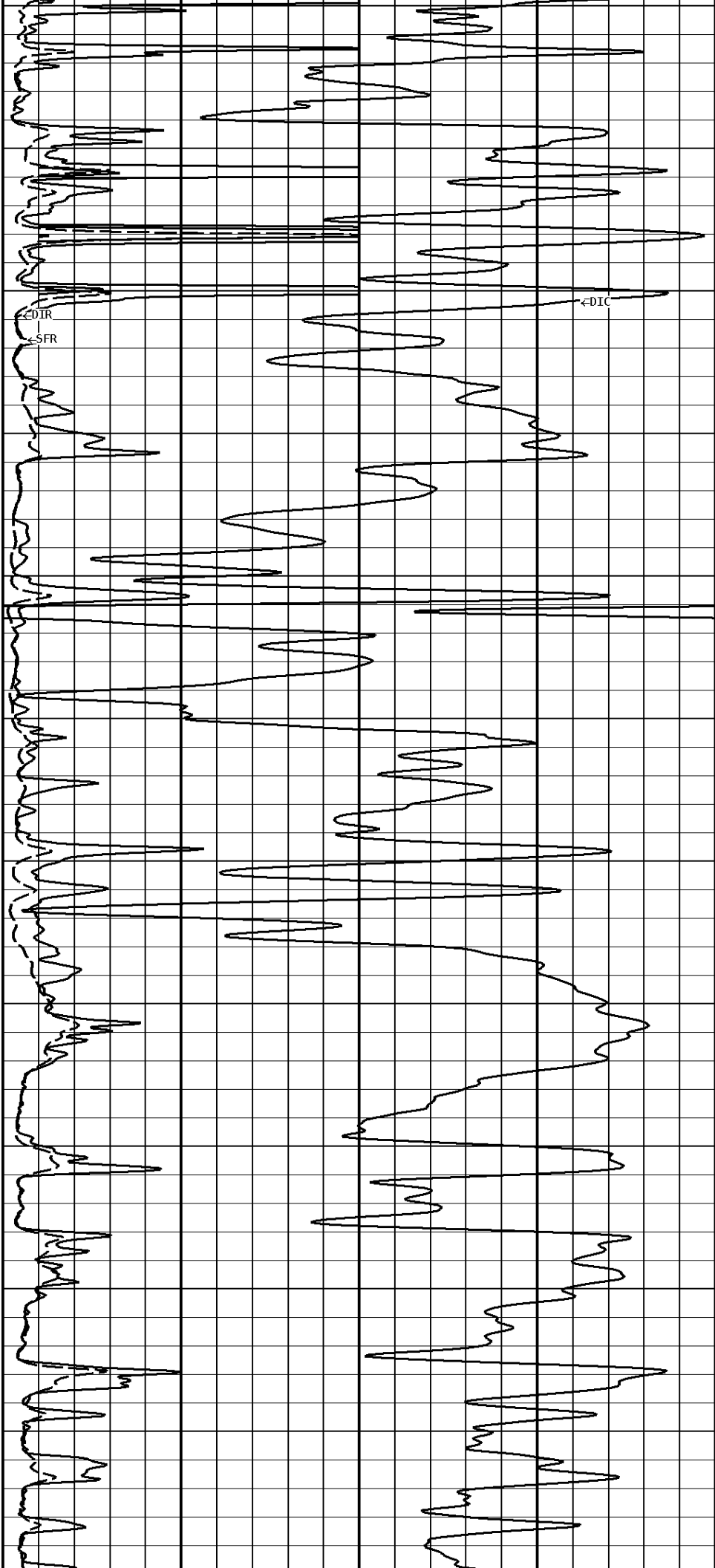
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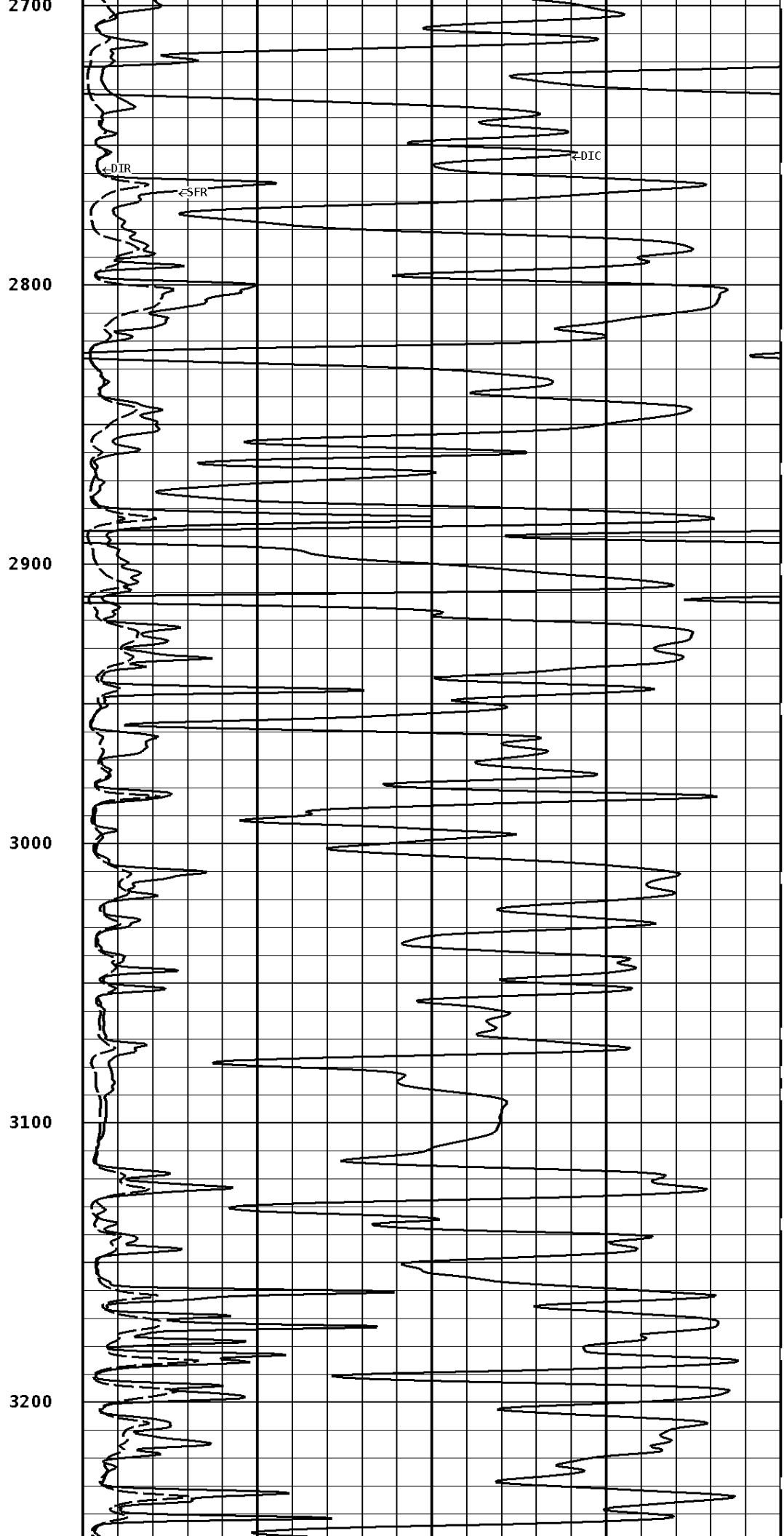
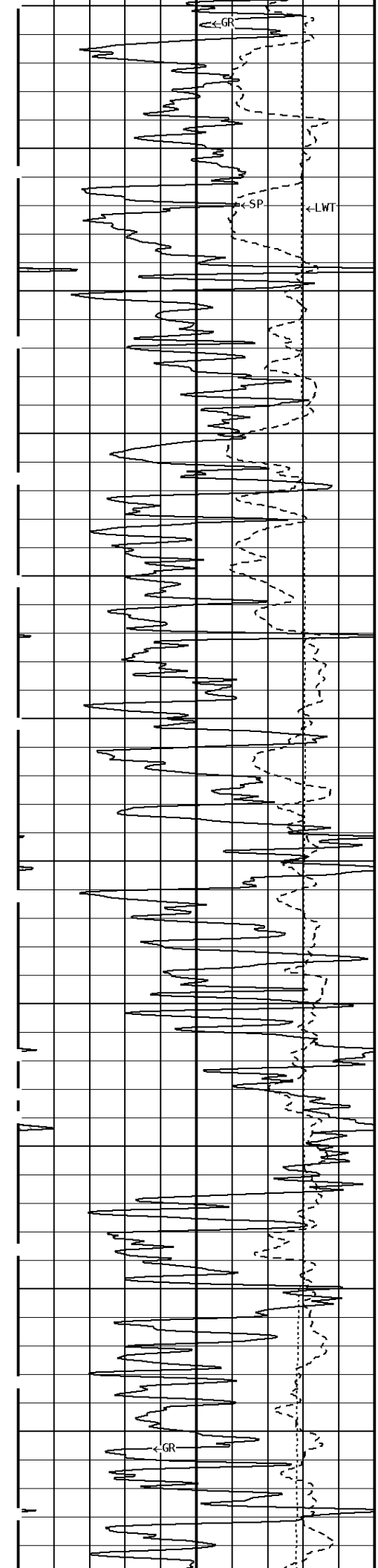
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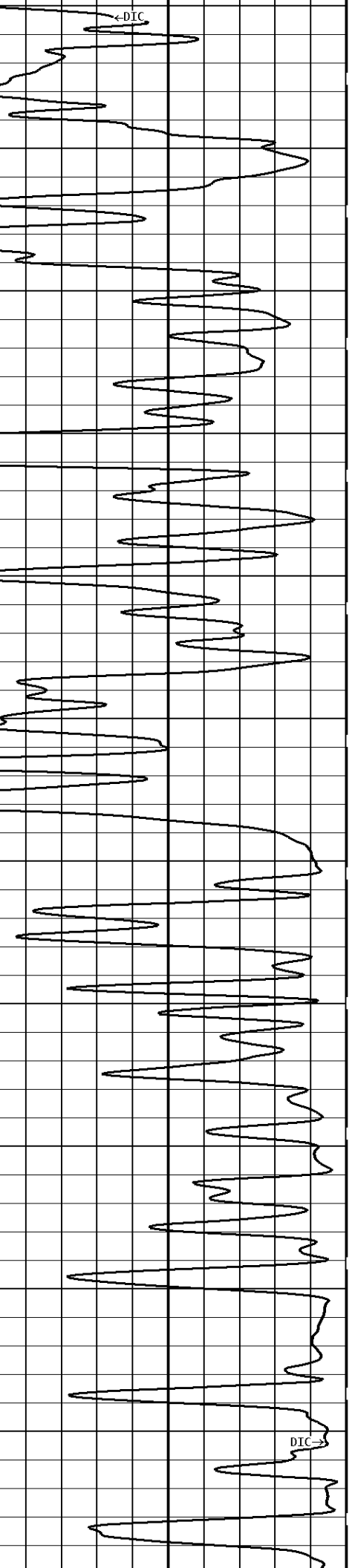
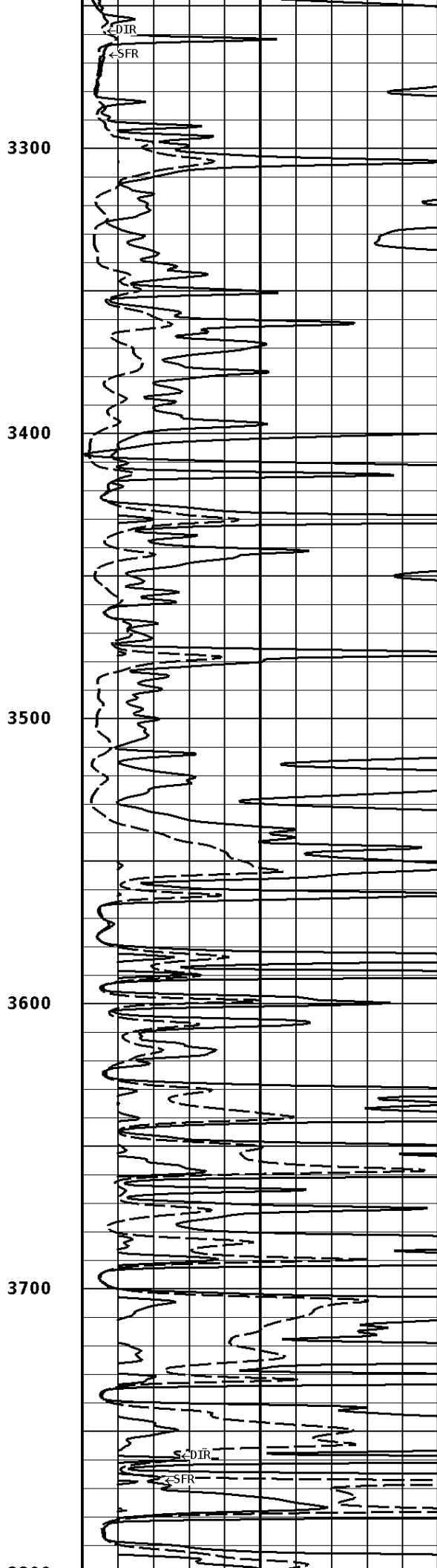
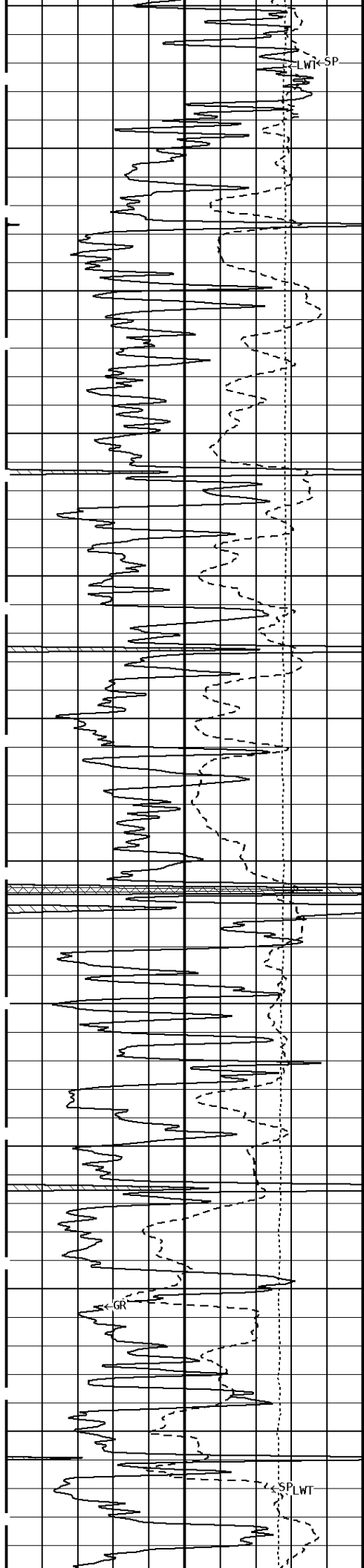
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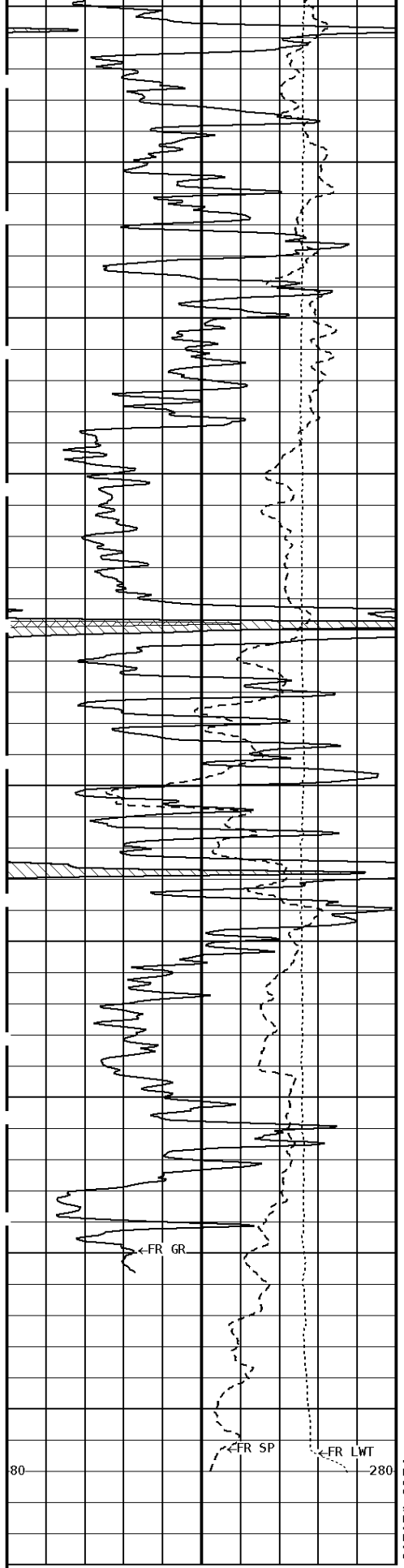
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2600

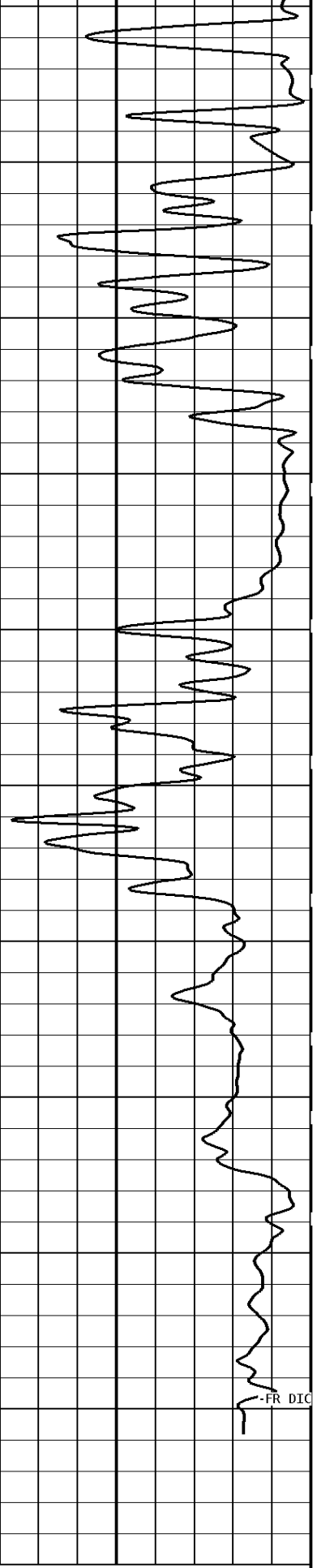
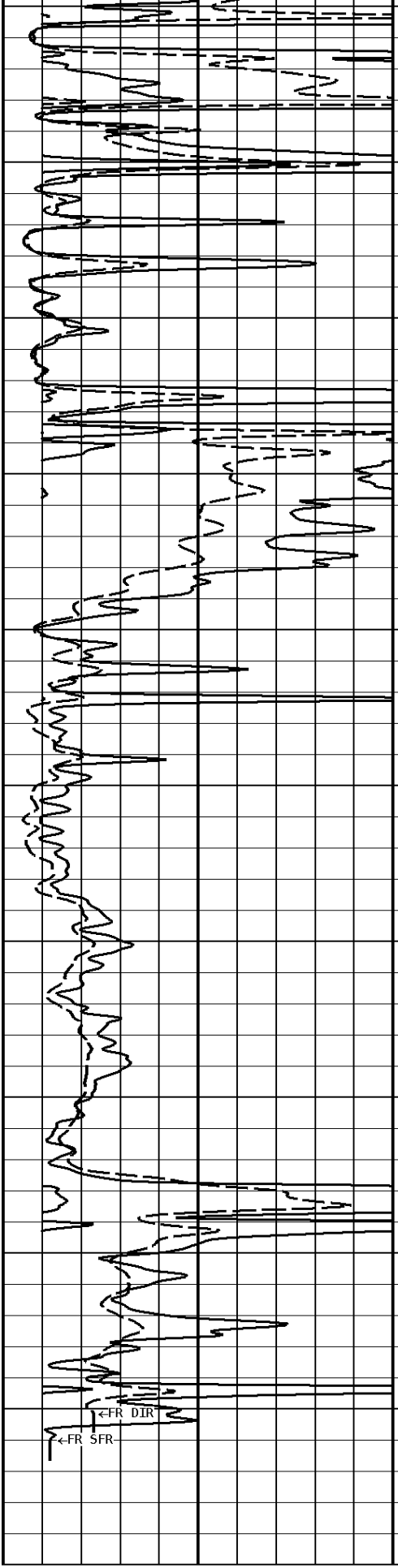








3800  
3900  
4000  
4100  
4200  
4265



FR DIC

**1:600 SECTION**  
2 INCH

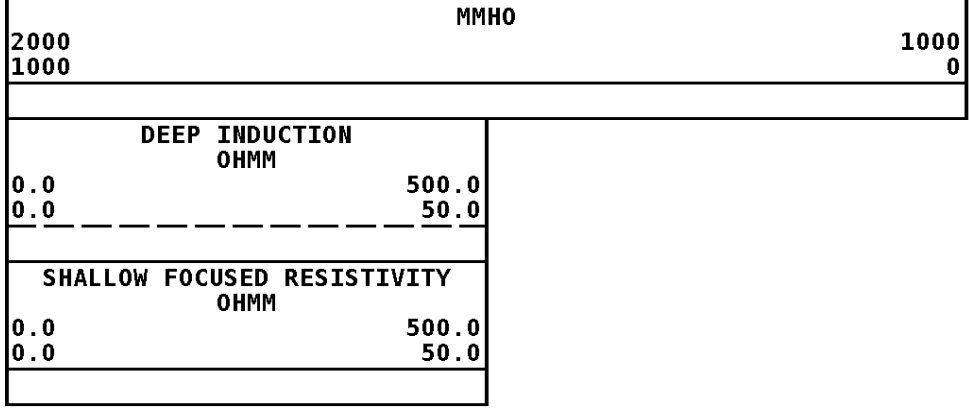
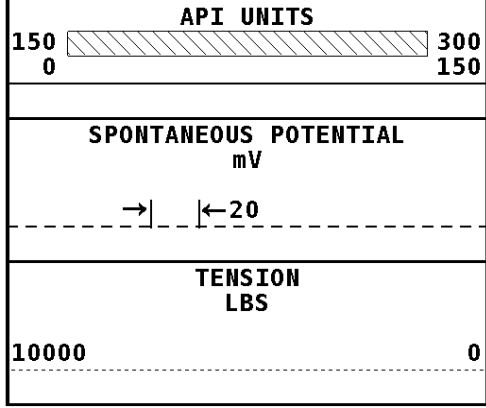
GAMMA RAY

DEEP CONDUCTIVITY

80

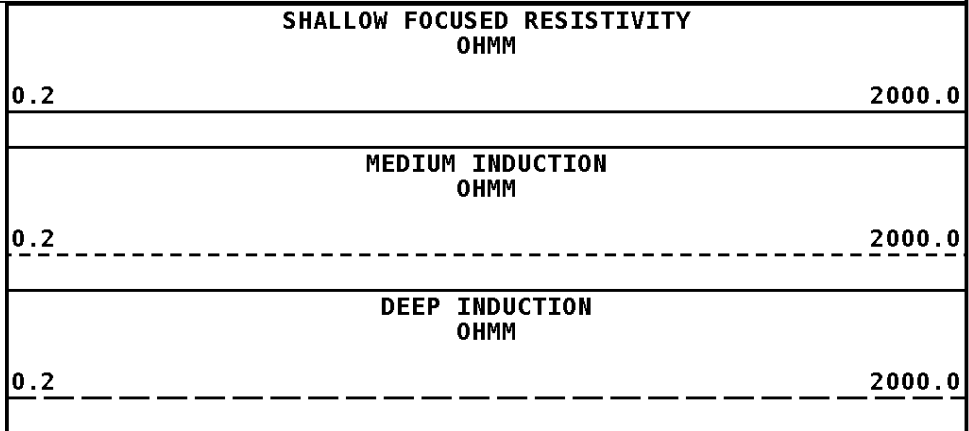
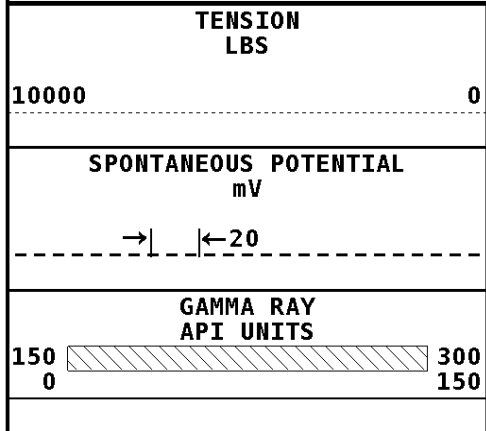
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File #1.1.5

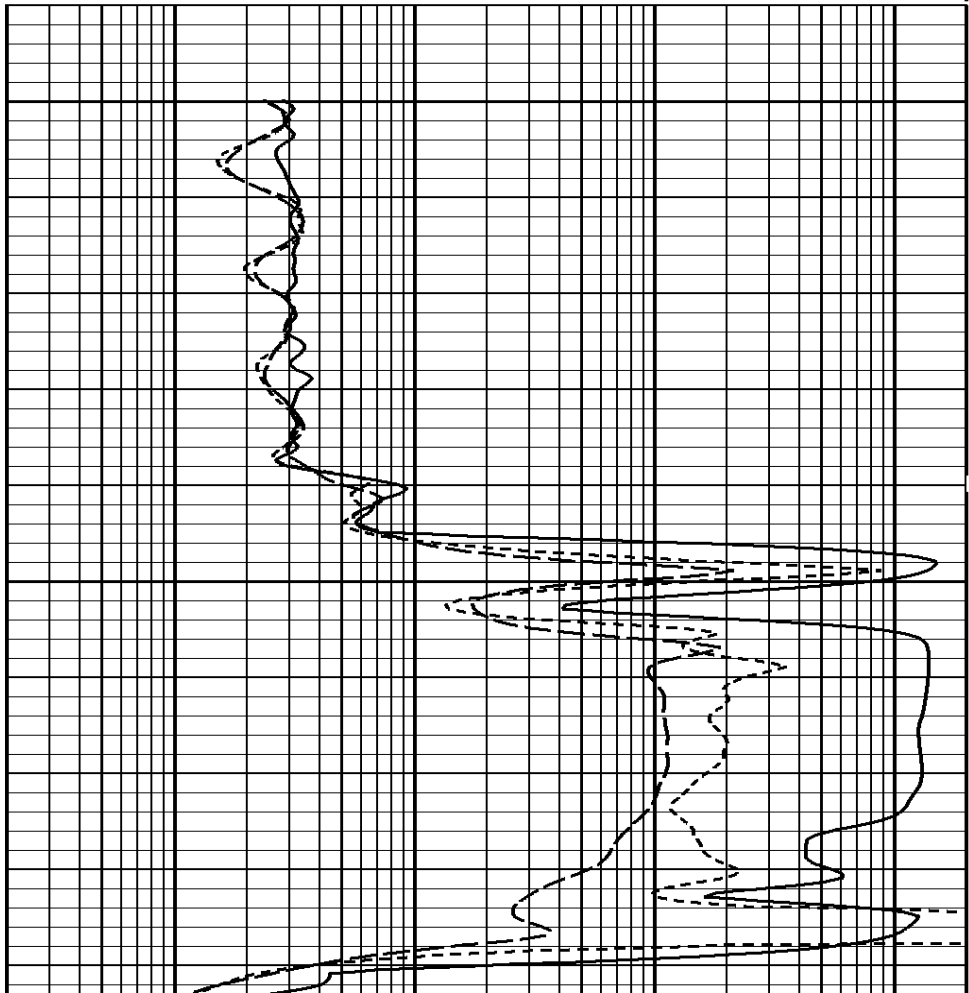
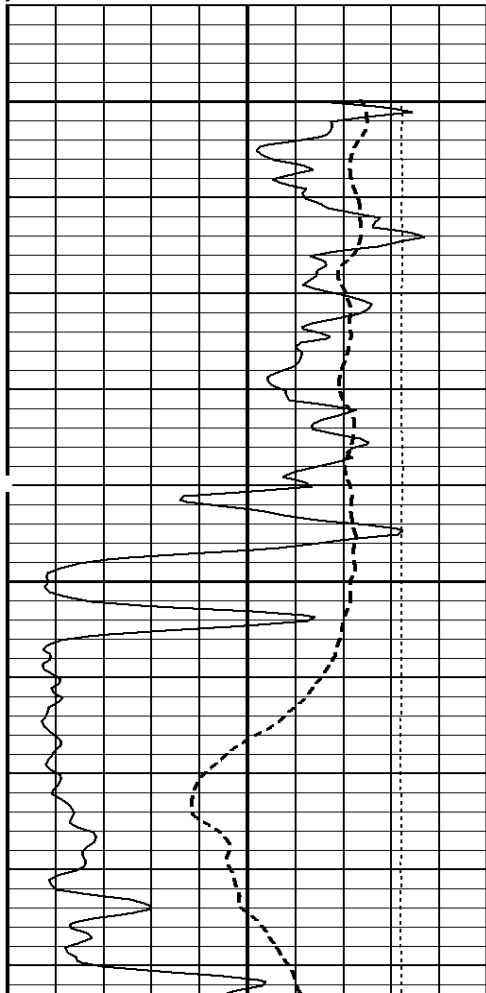


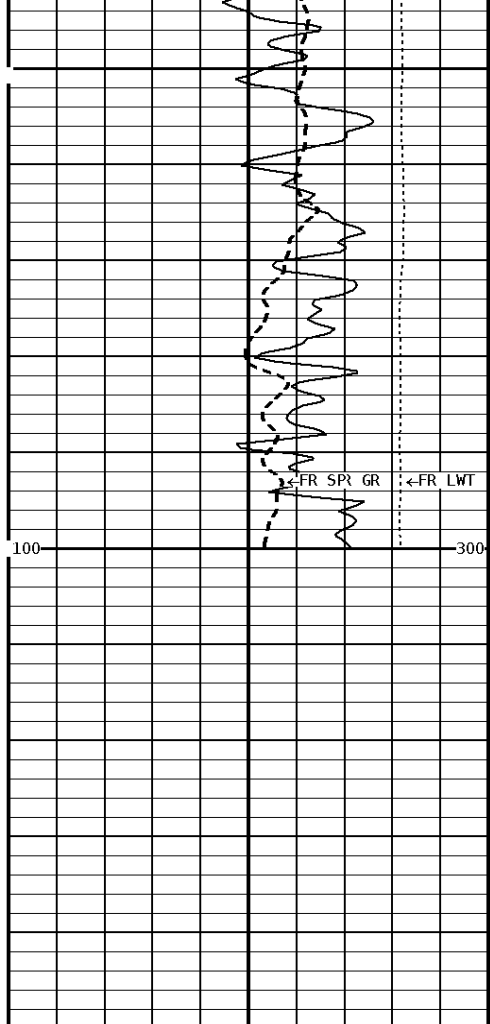
**Well File:** ANDERSON NORTHTRUST 1 SEP17 QUINT DIPMETER  
**Segment:** V1.D1.S8 C DIL SECTION  
**Reference:** 0

**Scale:** 1:240  
**Acquired:** Not Available  
**Processed:** Not Available



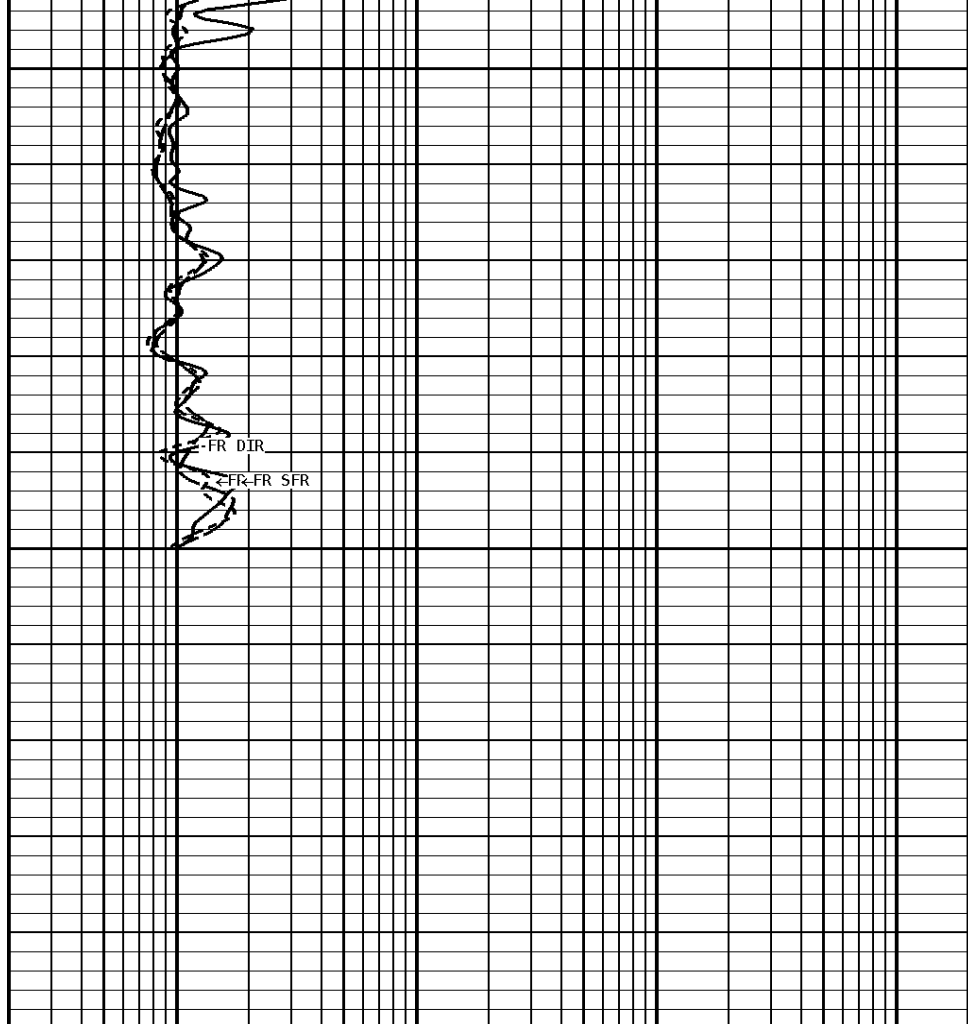
**1:240 MAIN SECTION**



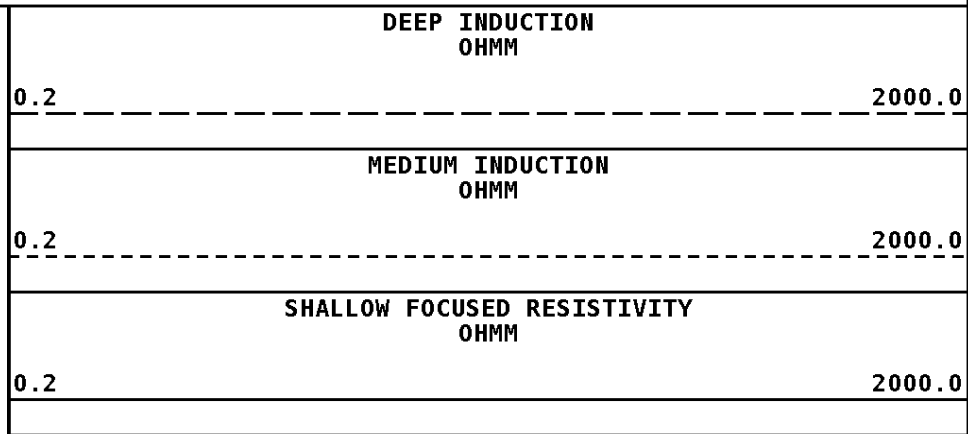
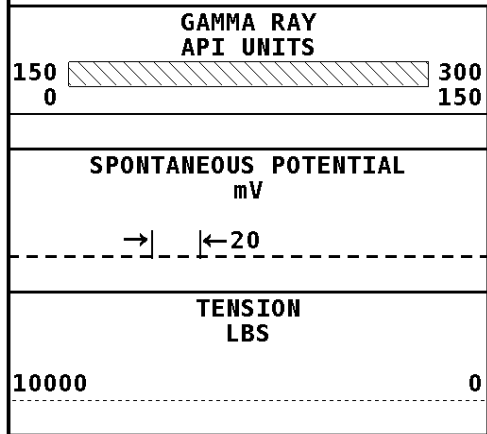


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File #1.1.8



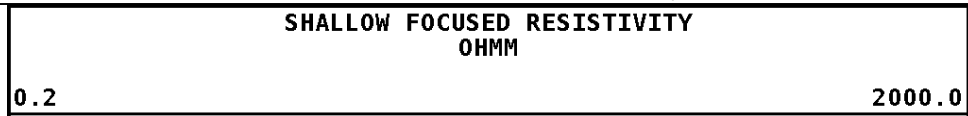
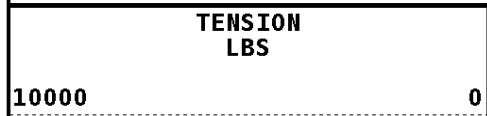
**1:240 MAIN SECTION**



**\* Borehole Zone Factors \***

<b>Zone 1 99999.0 to 0.0 Feet</b>	
Drill Bit Size _____	7.875 in
Resistivity Of Mud _____	2.000 ohm/m
Resistivity Of Mud Temperature _____	80.00 degF

<b>Well File:</b> ANDERSON_NORTHTRUST_1_SEP17_QUINT_DIPMETER	<b>Scale:</b> 1:240
<b>Segment:</b> V1.D1.S5 Reprocess of MAIN	<b>Acquired:</b> 2012-09/17 04:53 3.2.0-11172
<b>Reference:</b> 0	<b>Processed:</b> 2012-09/17 06:15 3.2.0-11172



SPONTANEOUS POTENTIAL  
mV

→ | ← 20

GAMMA RAY  
API UNITS

150 0 300 150

MEDIUM INDUCTION  
OHMM

0.2

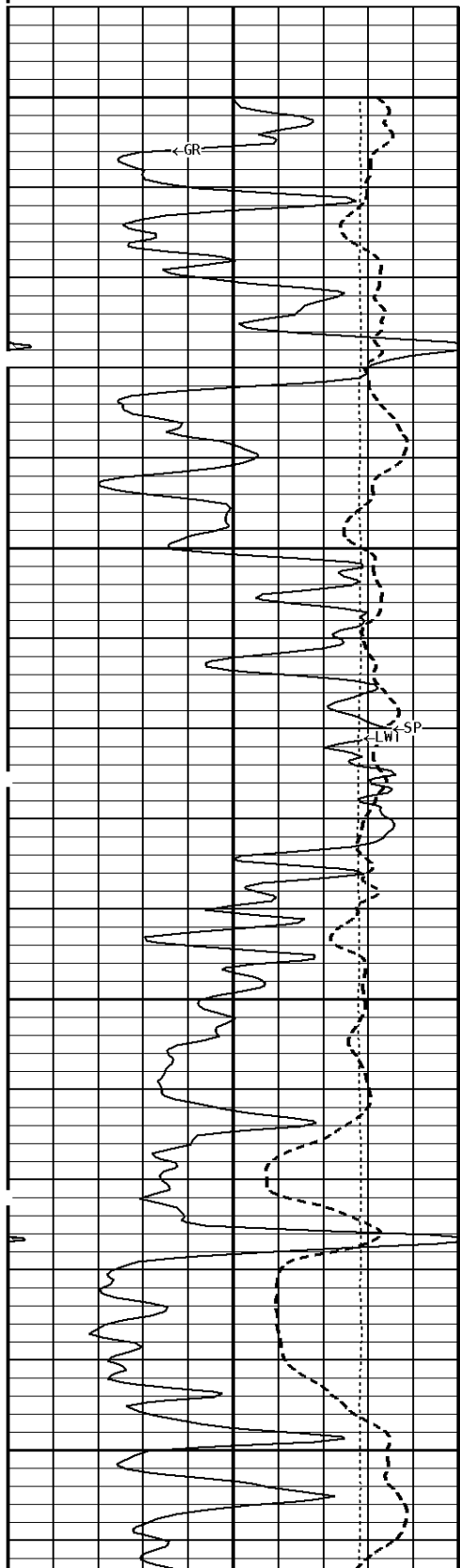
2000.0

DEEP INDUCTION  
OHMM

0.2

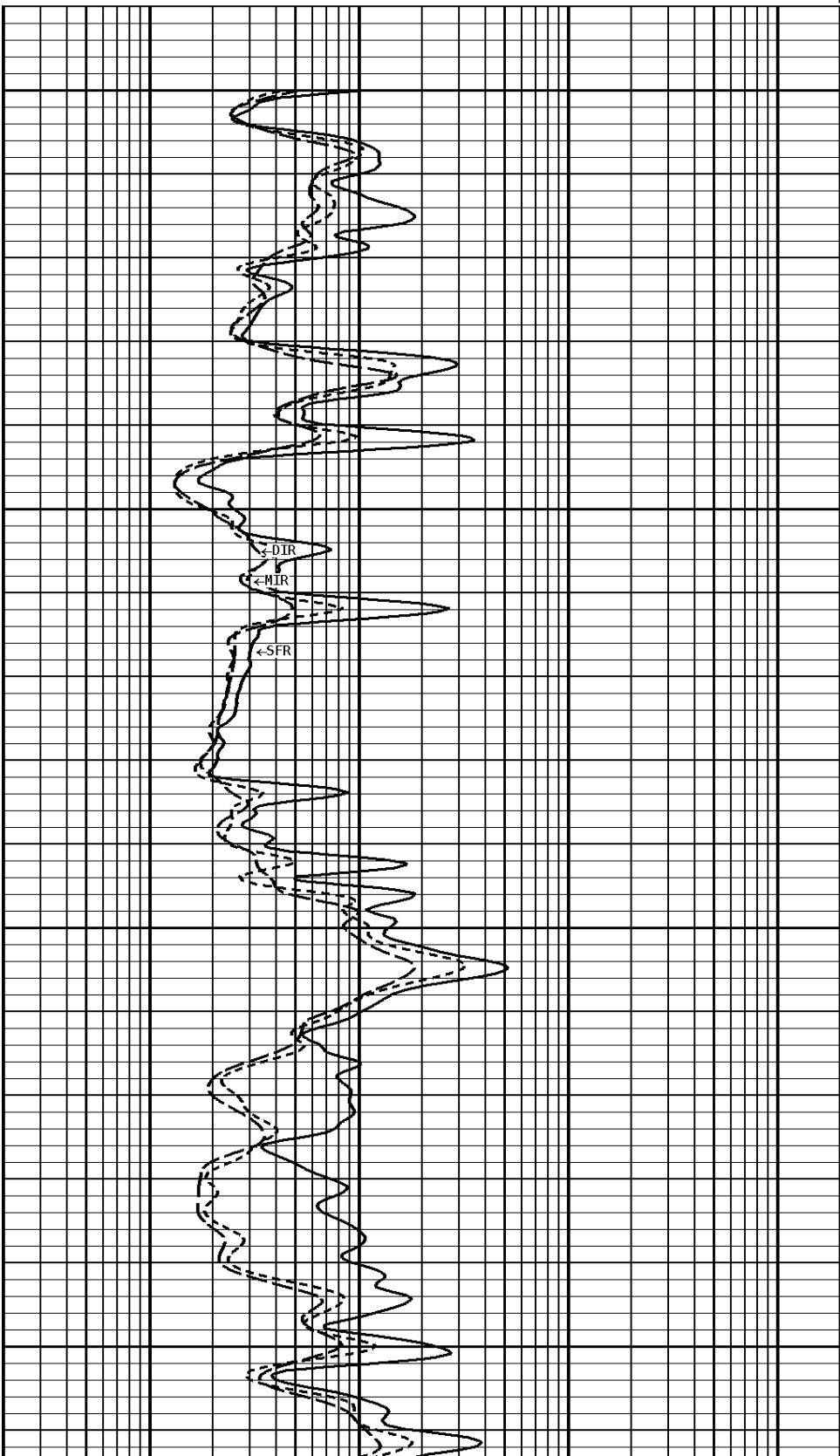
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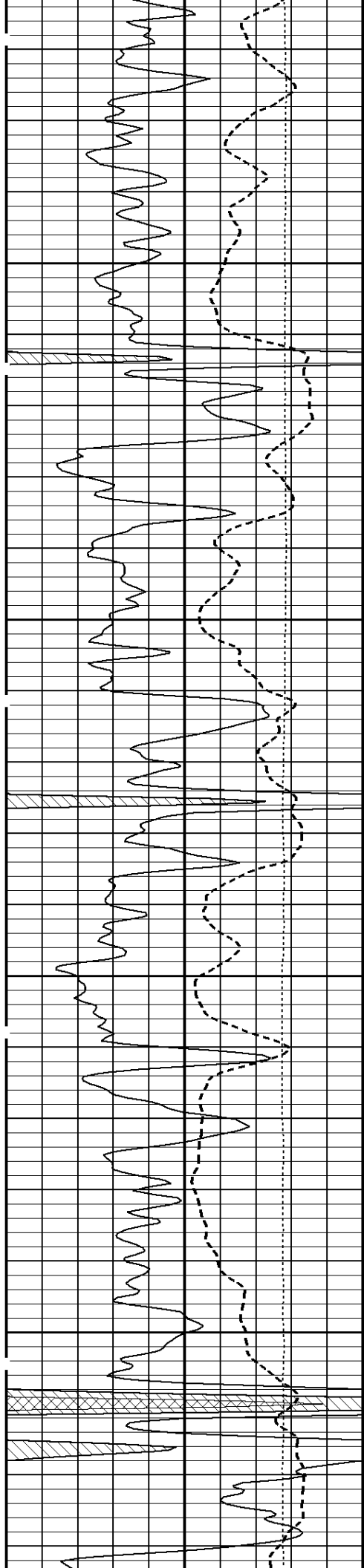
### 1:240 MAIN SECTION



3200

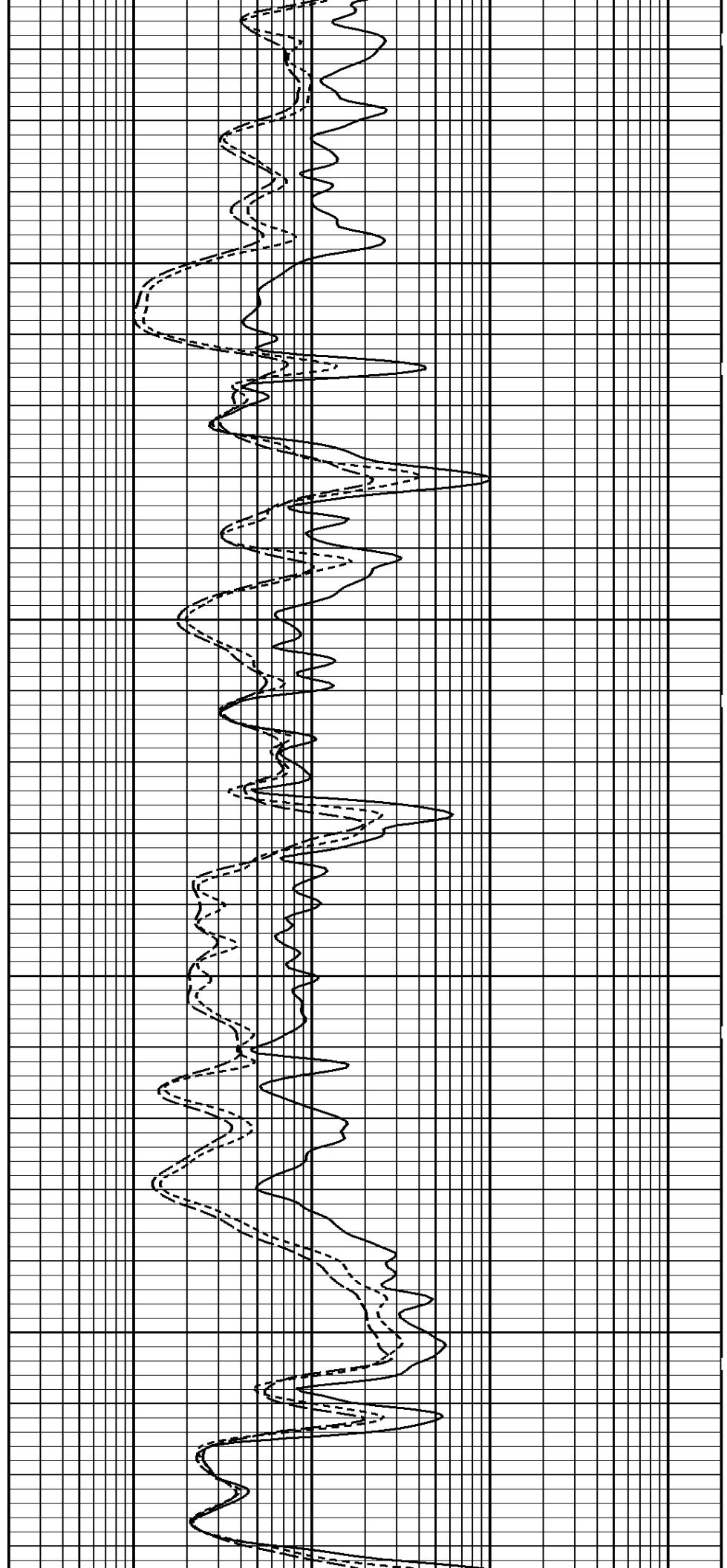
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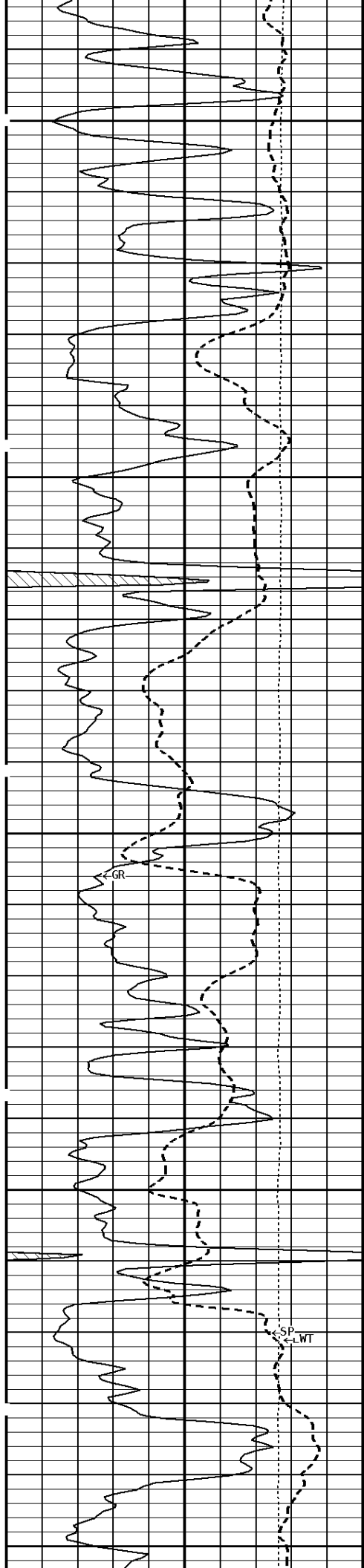




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3500

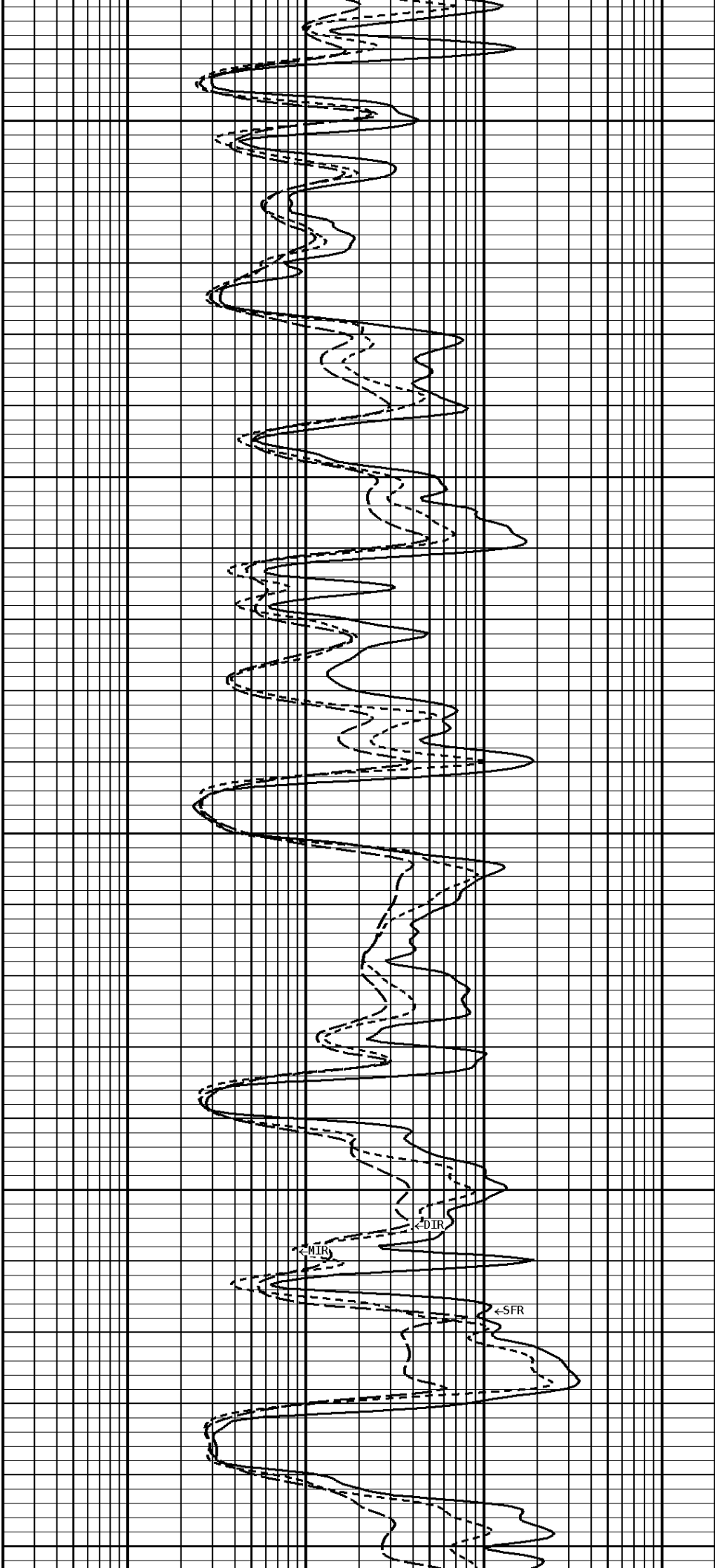




3600

3700

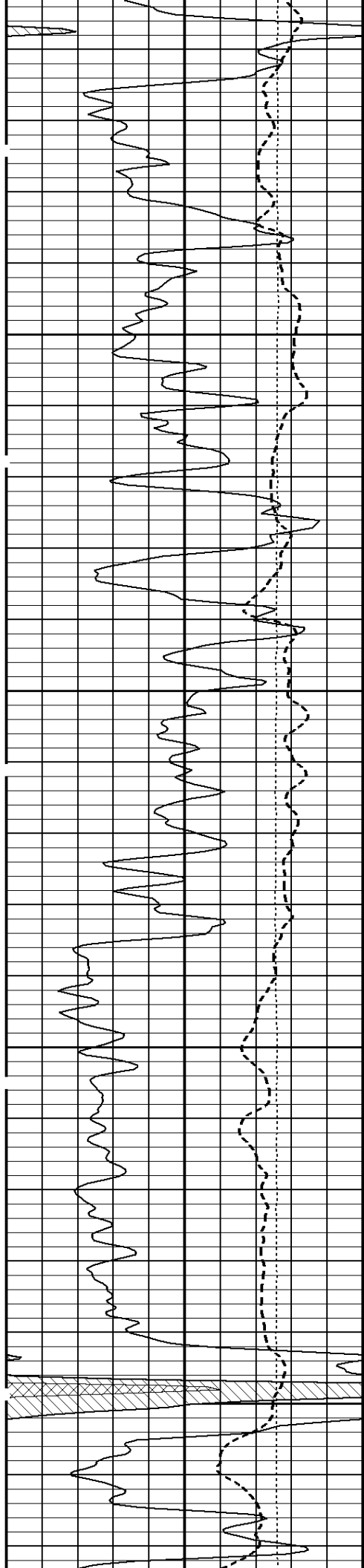
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←MTR

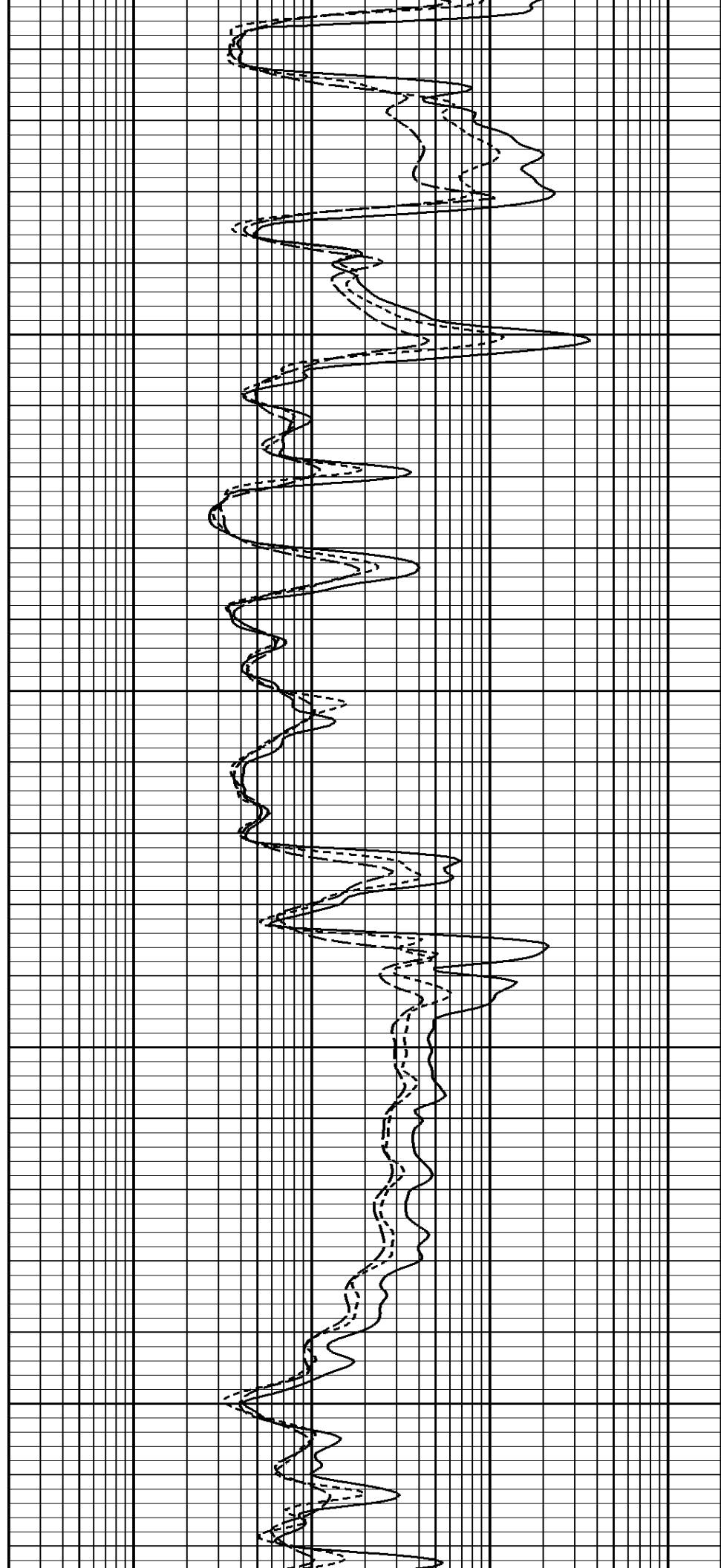
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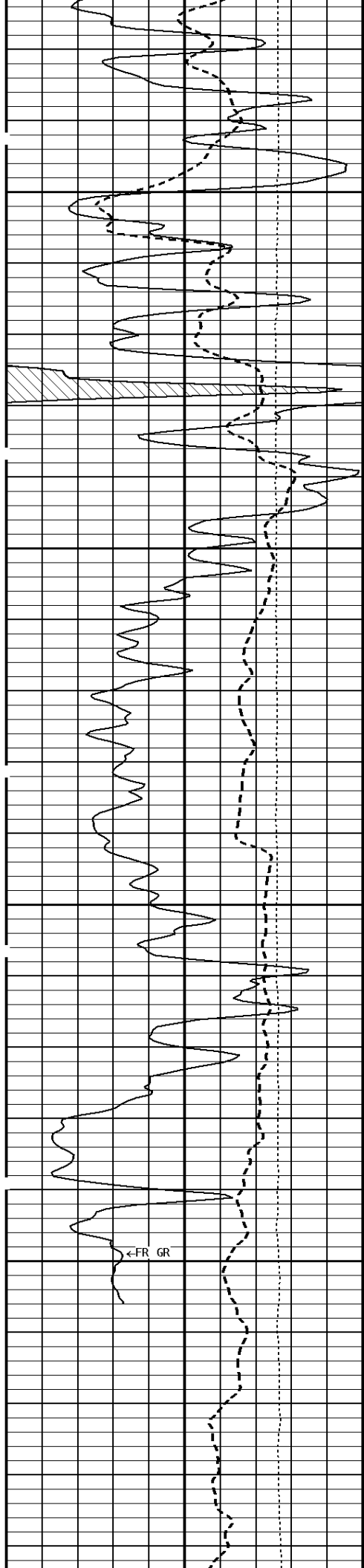
←SFR



3900

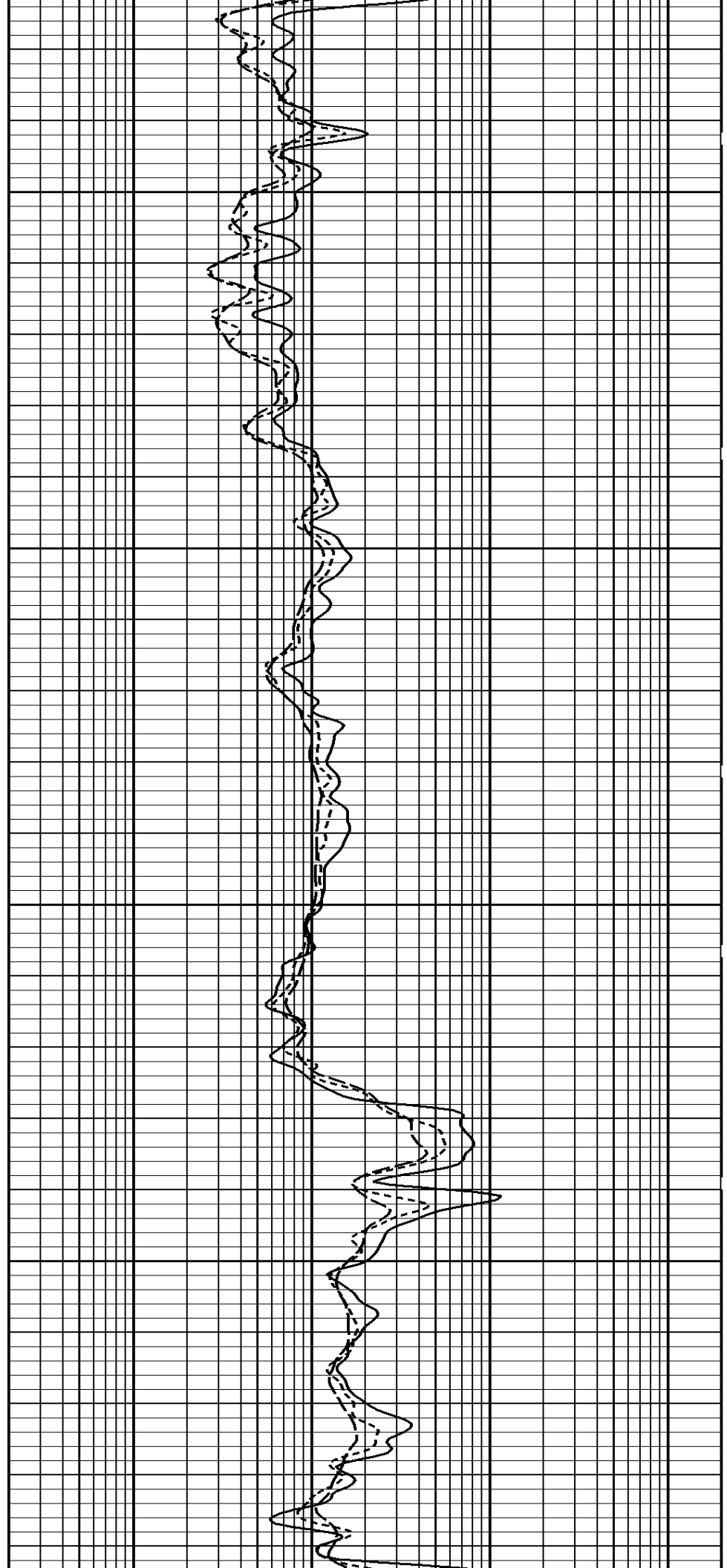
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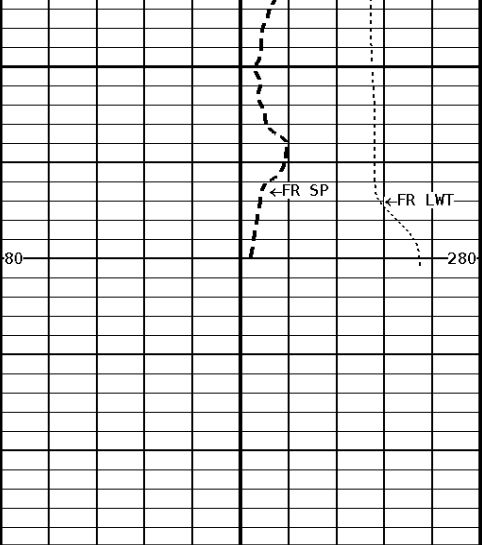




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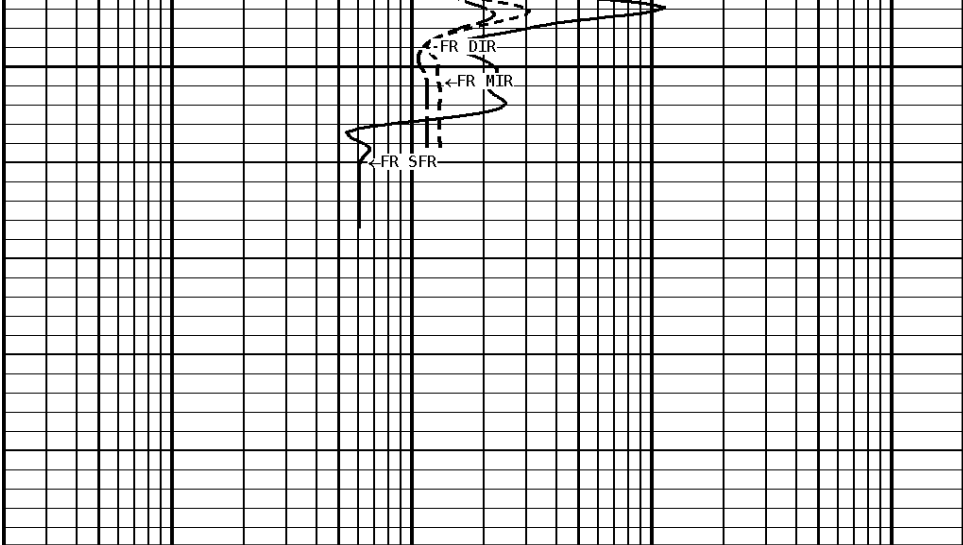
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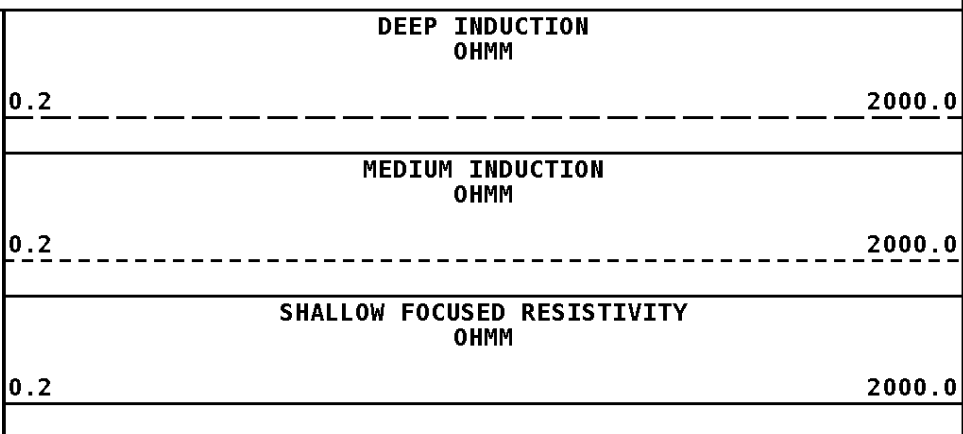
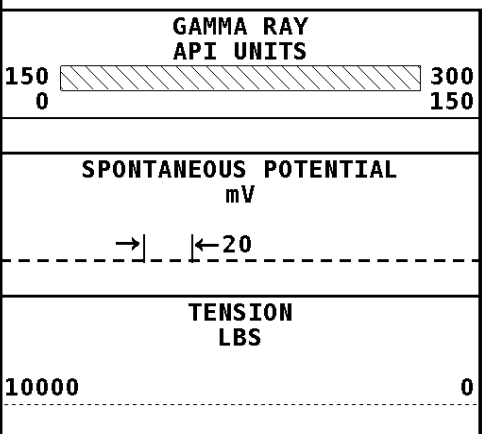


4265

File #1.1.5



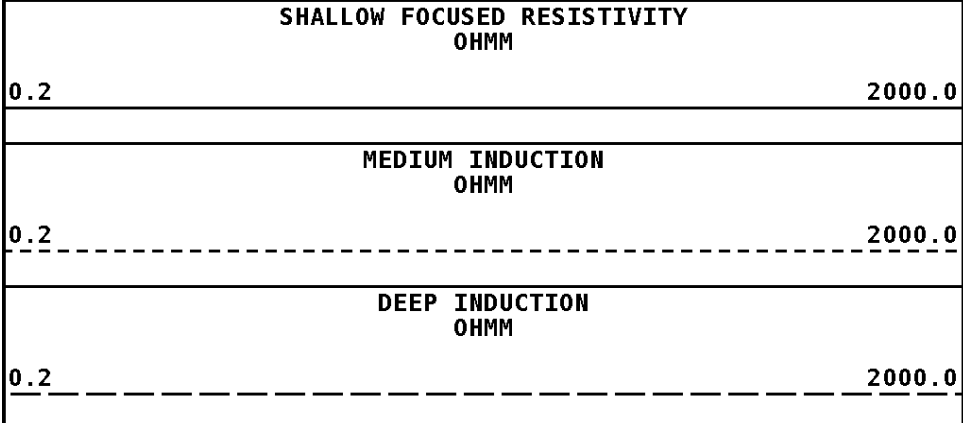
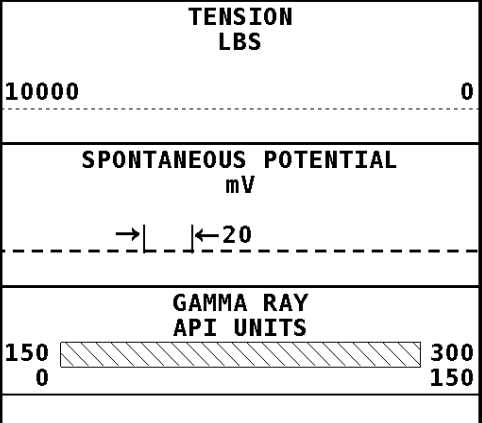
**1:240 MAIN SECTION**



**\* Borehole Zone Factors \***

<b>Zone 1 99999.0 to 0.0 Feet</b>	
Drill Bit Size _____	7.875 in
Resistivity Of Mud _____	2.000 ohm/m
Resistivity Of Mud Temperature _____	80.00 degF

Well File: ANDERSON NORTHTRUST\_1\_SEP17\_QUINT\_DIPMETER      Scale: 1:240  
 Segment: V1.D1.S7 Reprocess of REPEAT      Acquired: 2012-09/17 06:27 3.2.0-11172  
 Reference: 0      Processed: 2012-09/17 06:38 3.2.0-11172



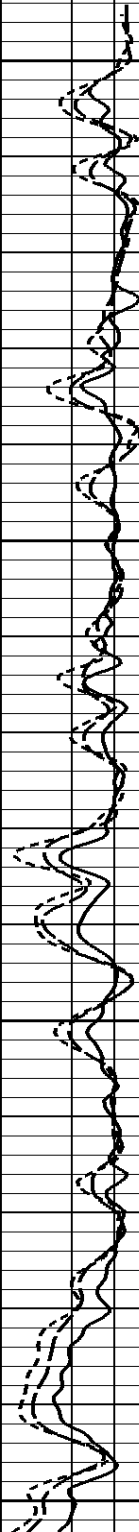
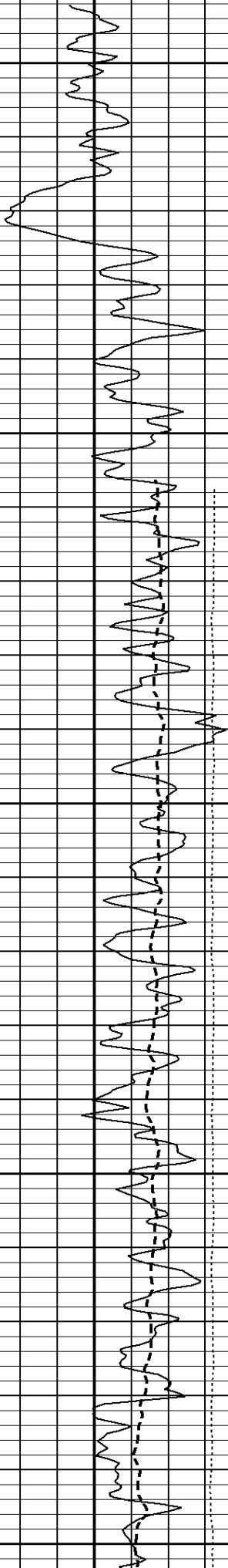
**1:240 REPEAT SECTION**

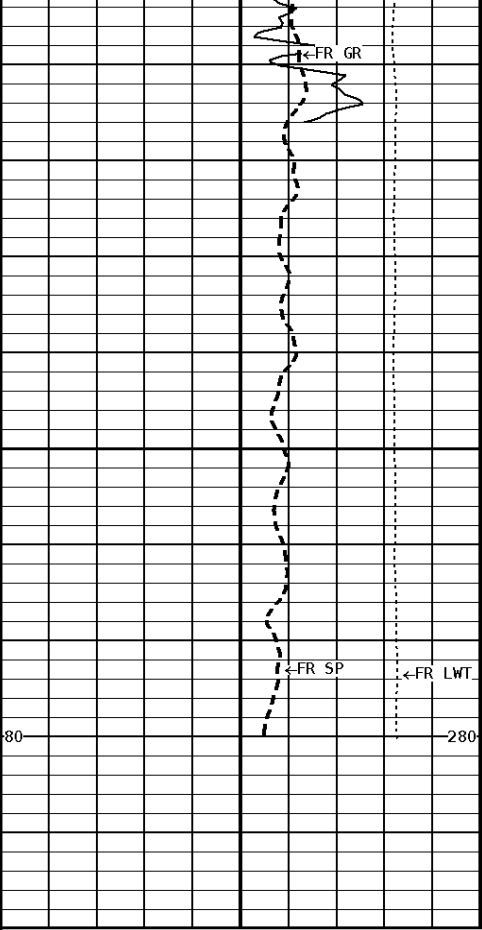
e #1.1.7

1200

1300

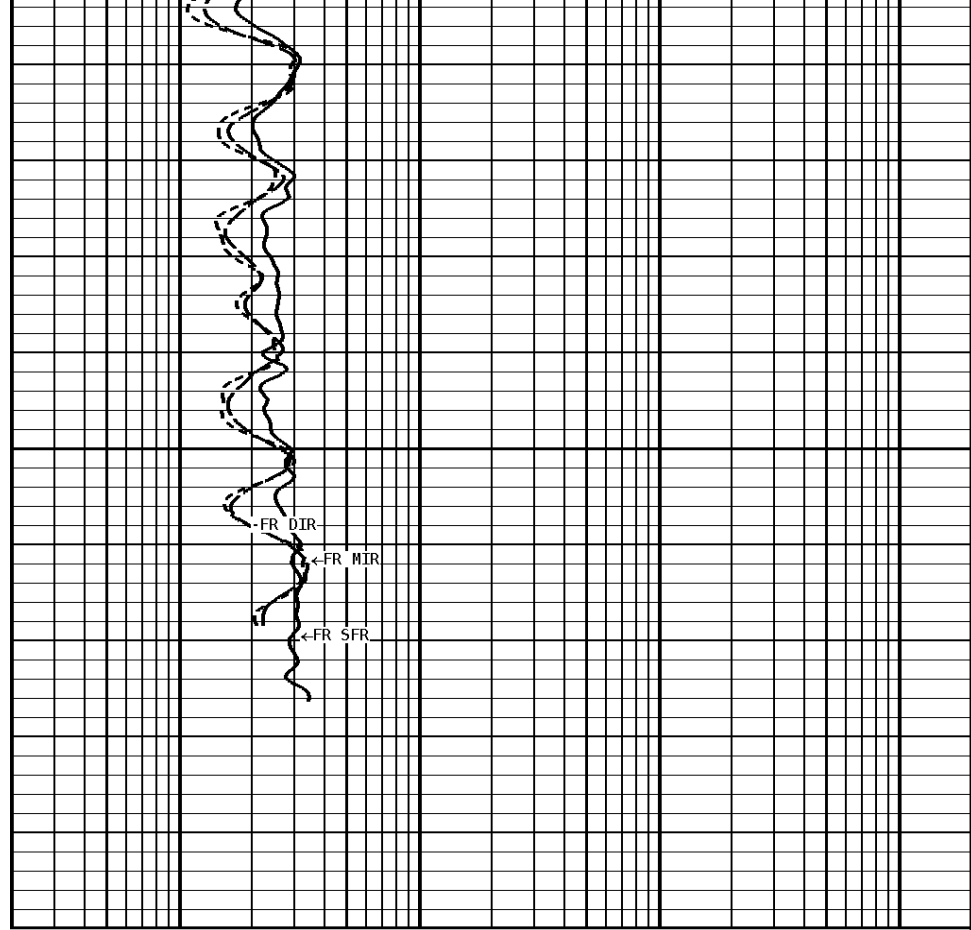
1400





1474

File #1.1.7



**1:240 REPEAT SECTION**

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

<b>DEEP INDUCTION OHMM</b>	
0.2	2000.0
<b>MEDIUM INDUCTION OHMM</b>	
0.2	2000.0
<b>SHALLOW FOCUSED RESISTIVITY OHMM</b>	
0.2	2000.0

**\* Borehole Zone Factors \***

<b>Zone 1</b>	<b>99999.0</b>	<b>to</b>	<b>0.0</b>	<b>Feet</b>
Drill Bit Size			7.875	in
Resistivity Of Mud			2.000	ohm/m
Resistivity Of Mud Temperature			80.00	degF

**\* Calibration Summary \***

<b>Shop Calibration GRT-B</b>				
Performed : 12-Jul-2012		Time : 09:53		
Sensor Suite : GR-GR5		ID : GRT-BC-43		
	Measured	Units	Calibrated	Units
GR	Background 46	Jig 309	Jig 175	GR-API

**Shop Calibration**

**PIT-CA**

Performed : 08-Aug-2012      Time : 16:42  
 Sensor Suite : P-IND-T      ID : PIT-AC-13

		Measured		Calibrated		Units
		R	X	R	X	
Medium						
Air		136364	125026	0.6	1.8	MMHOS
Zero		131065	131067	-37.0	59.1	MMHOS
Reference		251007	249348	4963.0	5059.1	MMHOS
Loop		157313	168781	2723.5	978.2	MMHOS
Sonde Error				-12.9	-382.0	MMHOS
Cond				4963.0	5059.1	MMHOS
		Measured		Calibrated		
		R	X	R	X	Units
Deep						
Air		133111	127352	0.3	0.9	MMHOS
Zero		131083	131069	24.8	12.6	MMHOS
Reference		236576	235896	2024.8	2012.6	MMHOS
Loop		154678	172699	1274.4	457.1	MMHOS
Sonde Error				4.6	-122.4	MMHOS
Cond				2024.8	2012.6	MMHOS
		Measured		Calibrated		
		Low	High	Low	High	Units
Temperature						
		16980.0	56920.0	70.0	350.0	DEGF

Performed : 08-Aug-2012      Time : 16:27  
 Sensor Suite : SFL      ID : PIT-AC-13

		Measured		Calibrated		Units
		Zero	Reference	Zero	Reference	
Internal						
Im		32768.7	49243.8	0.0	7028.0	uA
Ib		32771.9	49324.2	0.0	1750.0	mA
MOM1		32775.5	60269.6	0.0	175.0	mV
Equivalent SFL					43.97	OHMM

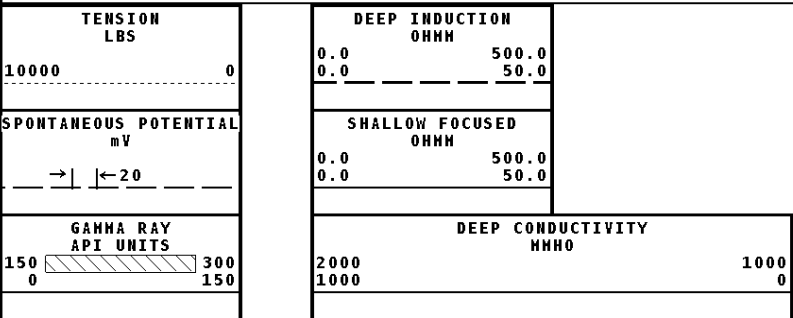
Performed : 08-AUG-2012      Time : 16:43  
 Sensor Suite : P-SP      ID : PIT-AC-13

		Measured		Calibrated		Units
		Zero	Reference	Zero	Reference	
Internal						
		32769.2	58922.1	0.0	1000.0	mV

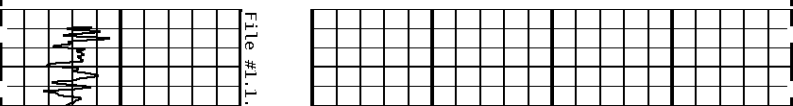
Performed : 08-AUG-2012      Time : 16:44  
 Sensor Suite : P-RMUD      ID : PIT-AC-13

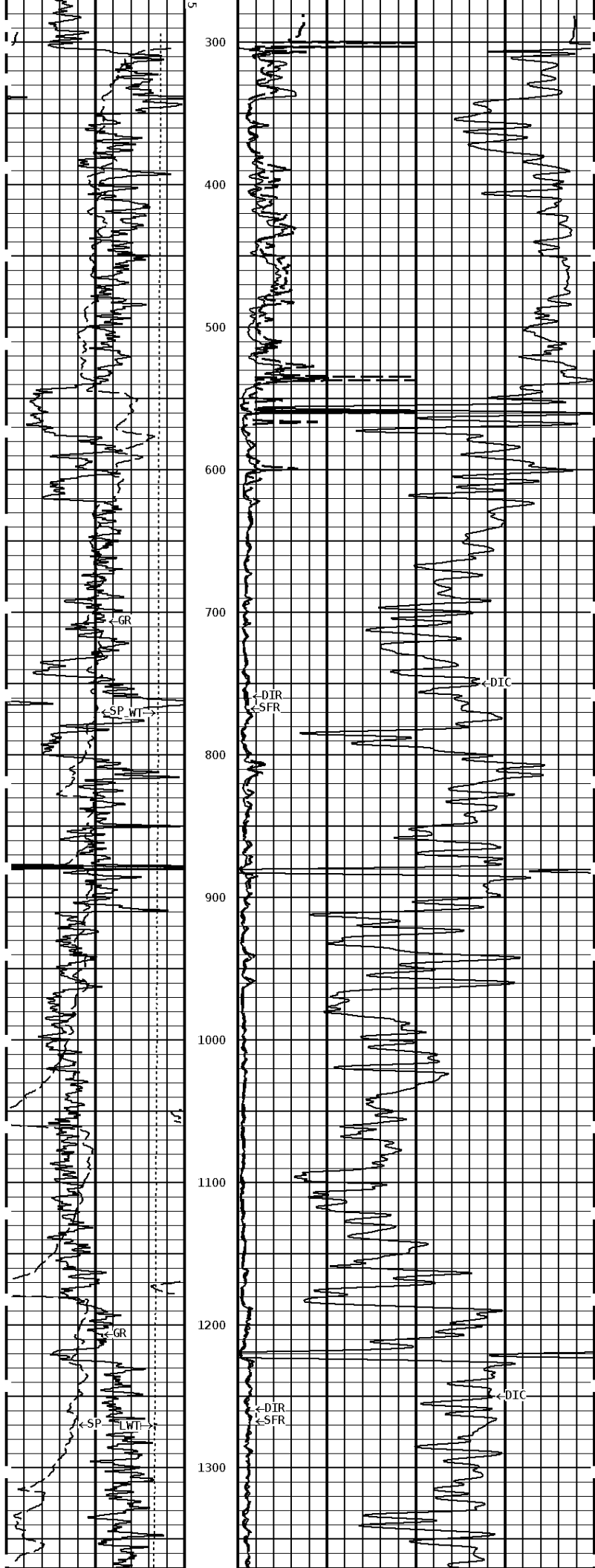
		Measured		Calibrated		Units
		Zero	Reference	Zero	Reference	
Internal						
Rmi		0.0	34825.0	0.0	290.6	mA
Rmv		0.0	34825.0	0.0	290.6	mV
Equivalent Rm					0.0871	OHMM

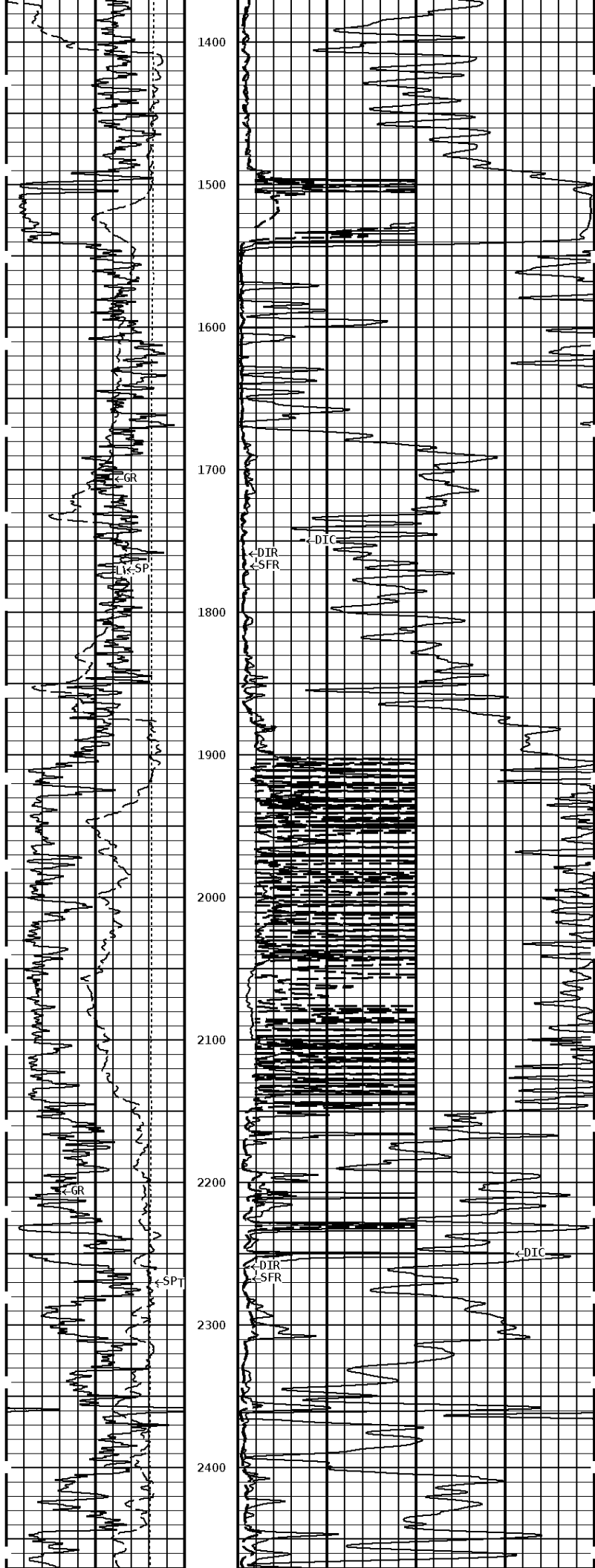
**Well File:** ANDERSON NORTHTRUST 1 SEP17 QUINT DIPMETER      **Scale:** 1:1200  
**Segment:** V1.D1.S5 Reprocess of MAIN      **Acquired:** 2012-09/17 04:53 3.2.0-11172  
**Reference:** 0      **Processed:** 2012-09/17 06:15 3.2.0-11172

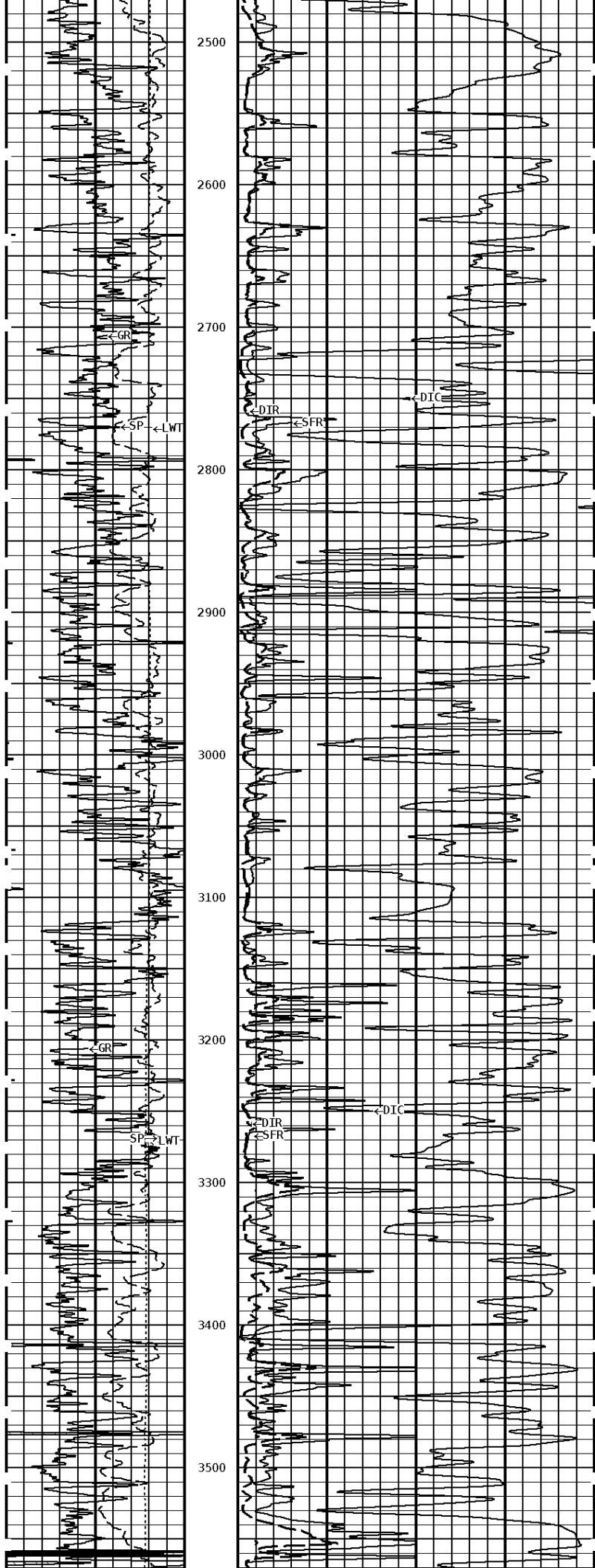


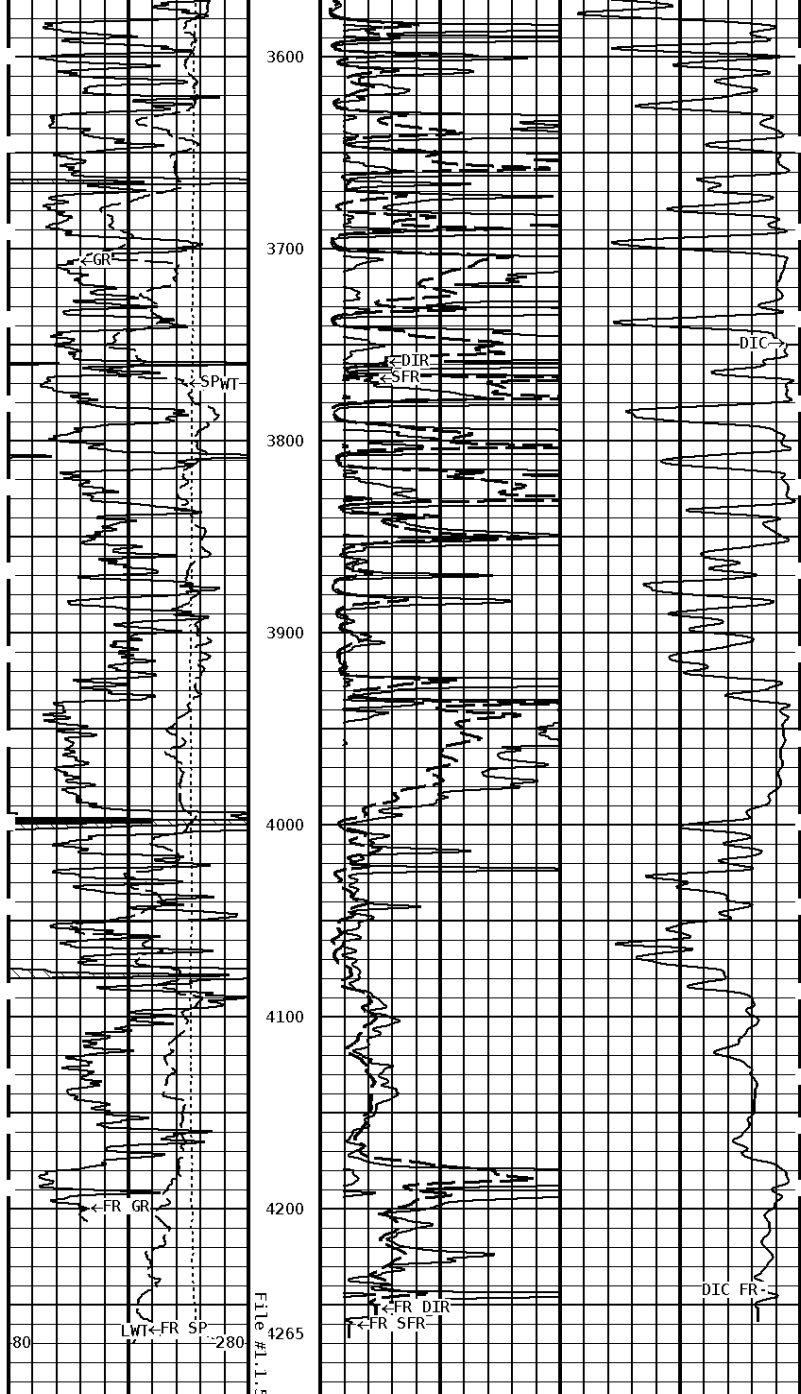
**1:1200 MAIN SECTION**











**1:1200 MAIN SECTION**

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

<b>DEEP CONDUCTIVITY MHMO</b>	
2000 1000	1000 0
<b>SHALLOW FOCUSED OHMM</b>	
0.0 0.0	500.0 50.0
<b>DEEP INDUCTION OHMM</b>	
0.0 0.0	500.0 50.0