

Tucker
ENERGY SERVICES

COMPOSITE LOG

Company PICKRELL DRILLING CO. INC. Well YOUNG RR #1 Field BROADWAY County KINGMAN State KANSAS Country USA API No. 15-095-22297		File No : TUL-60673 Company : PICKRELL DRILLING CO. INC. Well : YOUNG RR #1 Field : BROADWAY County : KINGMAN State : KANSAS Country : USA API No : 15-095-22297	
Location : 660' FSL & 330' FEL E2 SE SE		LSD :	
Permanent Datum: Drilling Measured From: GL KB Elevations: KB 1443.00 Ft Log Measured From: KB KB DF 1442.00 Ft Above Permanent Datum: 10.00 Ft GL 1433.00 Ft		Sect : 34 Twp : 27S Rge : 5W	
Date 09-03-2015			
Run Number	1		
Depth--Driller	3910.0 Ft		
Depth--Logger	3910.0 Ft		
First Reading	3909.0 Ft		
Last Reading	211.0 Ft		
Casing--Driller	211.0 Ft		
Casing--Logger	211.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	WBM		
Density	9.4		
Fluid Loss	9.0		
PH/Viscosity	10.0 49.0		
Sample Source	MEASURED		
RMF@Measured Temp.	0.800 @ 70 F		
RMF@Measured Temp	0.700 @ 70 F		
RMF@Measured Temp.	0.900 @ 70 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.600 @ 114 F		
Time Circulation Stopped			
Max Recorded Temp.	116 F		
Equipment/Base	T-126 TULSA		
Recorded By	S.K. DAVIS		
Witnessed By	A. YOUNG		

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	3910.00	8.625	20.00	211.00	0.00

Run Number	1	
Date	09-03-2015	
Date/Time On Bottom	09-03-2015 6:00 am	
Depth to Fluid	0.0 Ft	
Salinity	5000.000	
RMF@BHT	0.400 @ 114 F	
RMC@BHT	0.600 @ 114 F	

Run Number 1

Comments

ALL PRESENTATION PER CUSTOMER REQUEST
 GRT,CNT,LDT,PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 DETAIL IS PRESENTED FROM TD TO 2400'
 ANHYDRITE / SALT SECTION FROM 950' TO 450'

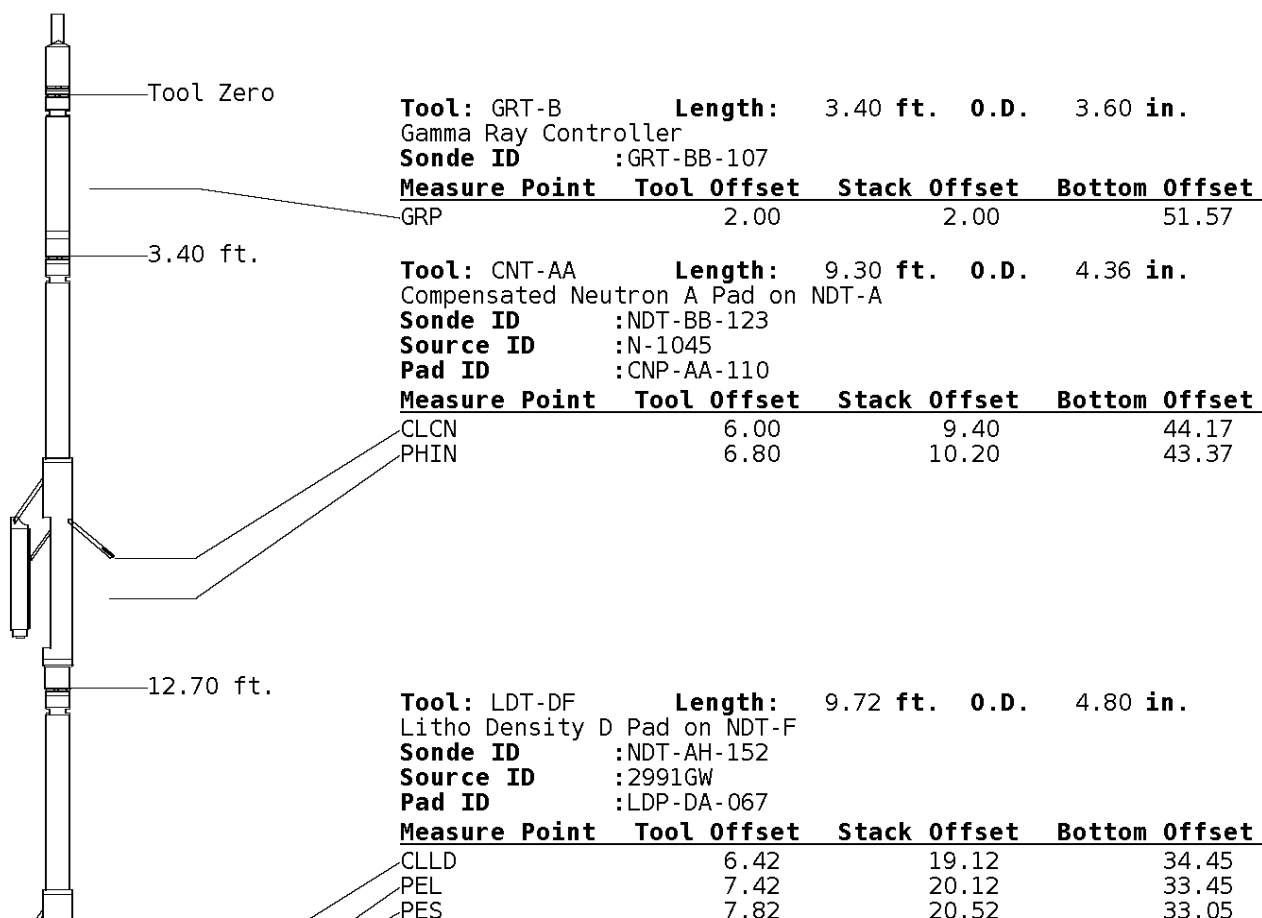
GRT; GRP,
 CNT; PHIN, CLCNIN
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
 MLT; NOR.RF, INV.RF, MSCLPIN.
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

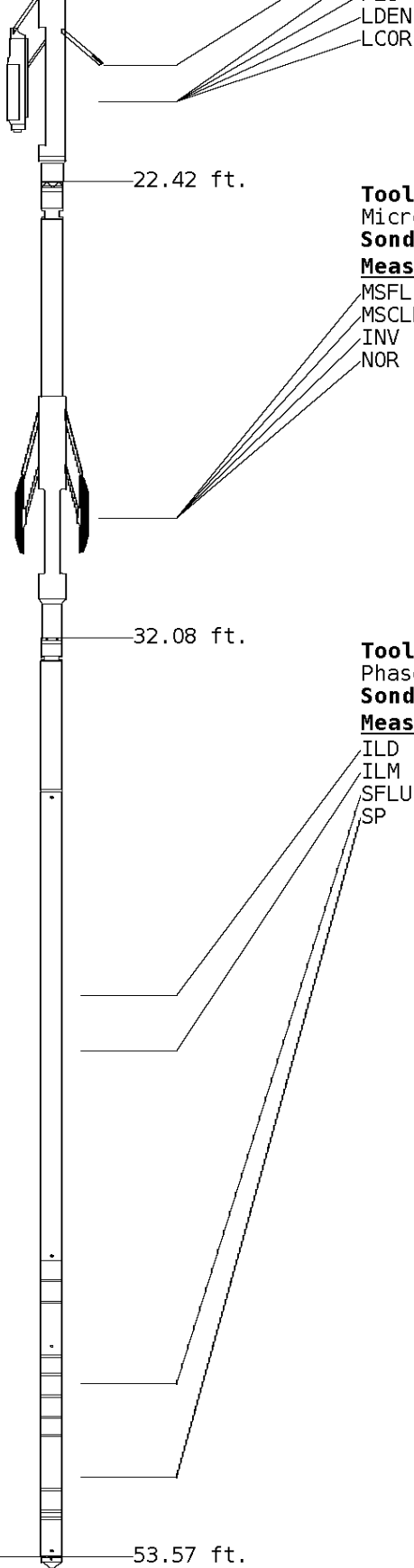
OPERATORS;

C. GONZALES
 J. KLINE

Tool String Schematic

Total Tool Length - 53.57 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-057

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-077

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88

Well File: pic-you-rr-1-mstk-sep-3

Scale: 1:240 **Format:** COMSAT

Segment: V1.D1.S8 AS-7 MAIN

Acquired: 2015-09/03 06:16 3.4.0-13525

Reference: 0

Processed: 2015-09/04 13:21 3.4.0-13534

**CALIPER MICRO
INCHES (IN)**

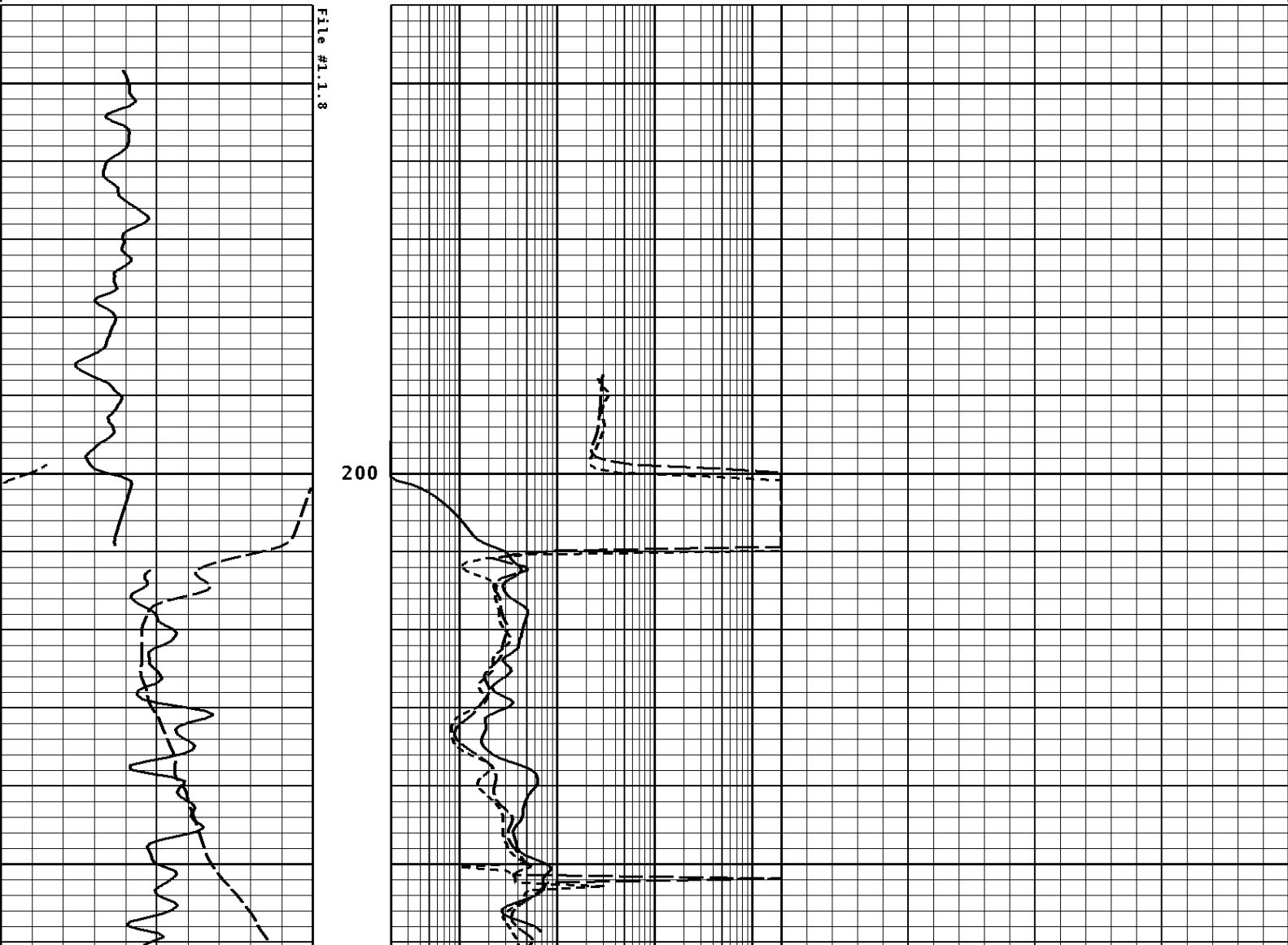
16 26
6 16

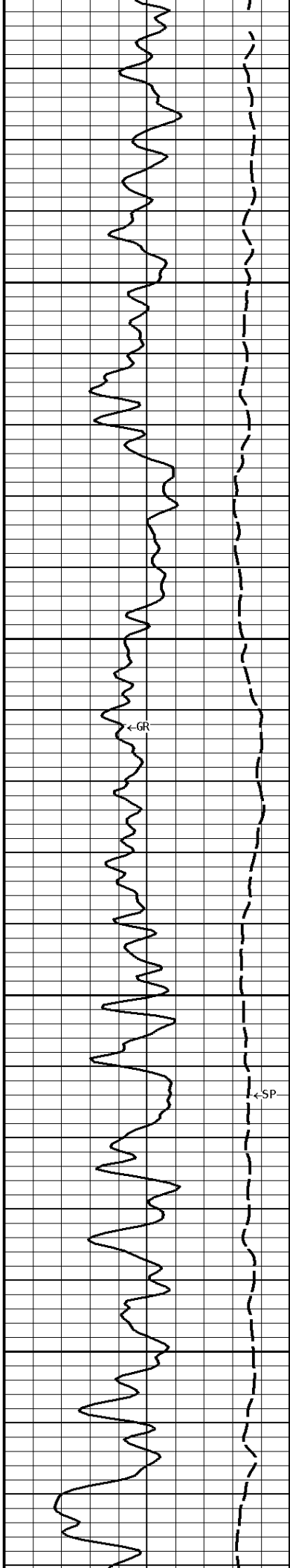
**BIT SIZE
INCHES (IN)**

**NORHAL
OHMM**

6	16			0	40
NEUTRON (Y) CALIPER INCHES (IN)				INVERSE OHMM	
16	26			0	40
6	16				
DENSITY (X) CALIPER INCHES (IN)				DENSITY CORRECTION G/CC	
16	26			-0.75	0.25
6	16				
TENSION LBS		Volume Quartz	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNS/ELECTRON	
10000	0		0.2 2000.0 0	20	
SPONTANEOUS POTENTIAL mV		Volume Calcite	DEEP INDUCTION OHMM	DENSITY POROSITY (2.71g/cc) PERCENT	
→ ← 25			0.2 2000.0 0	70 30 -10 30 -10 -50	
GAMMA RAY API UNITS		Volume Dolo/Shale	MEDIUM INDUCTION OHMM	NEUTRON POROSITY (LIMESTONE) PERCENT	
150 0	300 150		0.2 2000.0 30	-10	

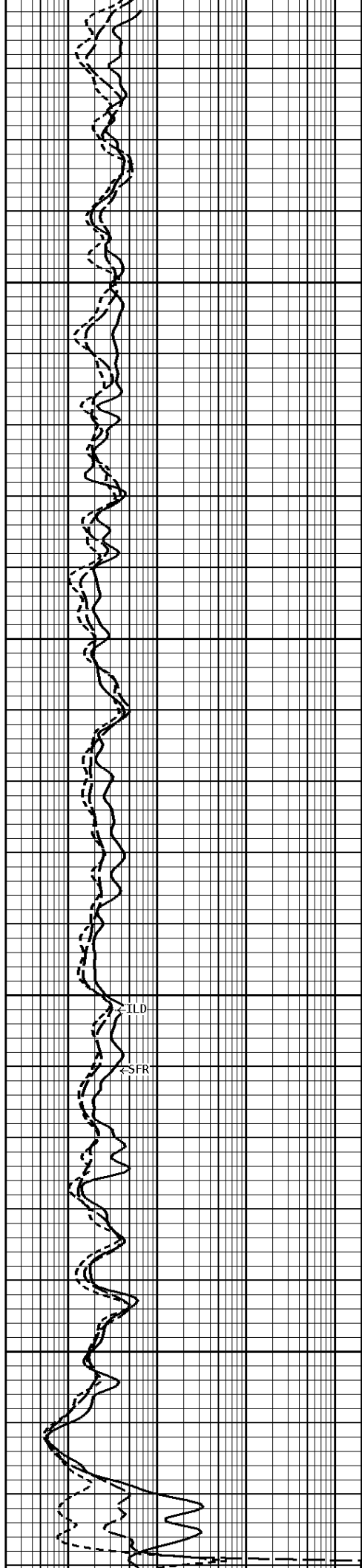
1:240 MAIN SECTION





300

400

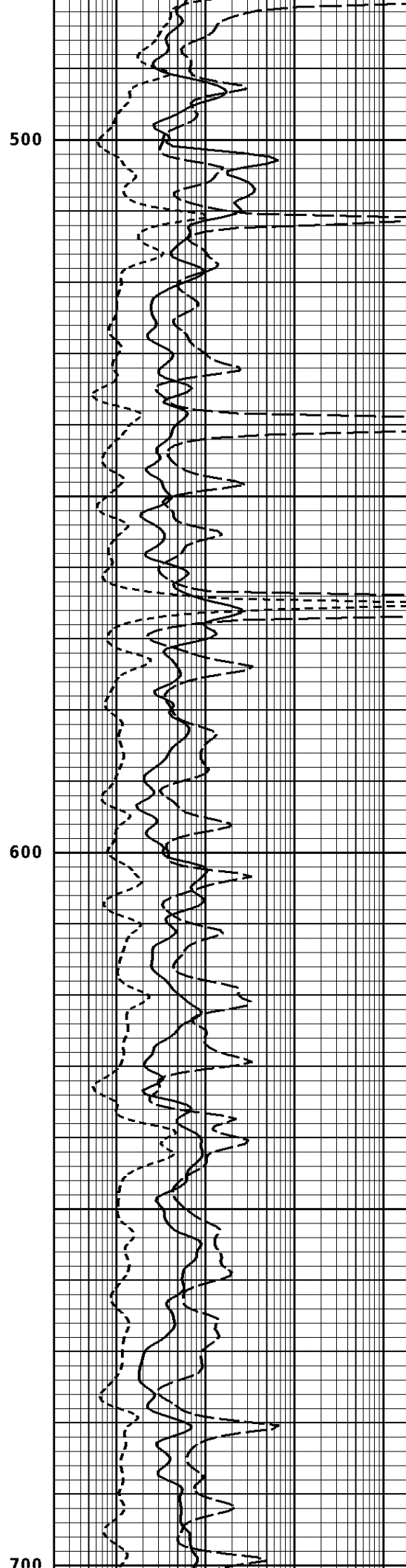
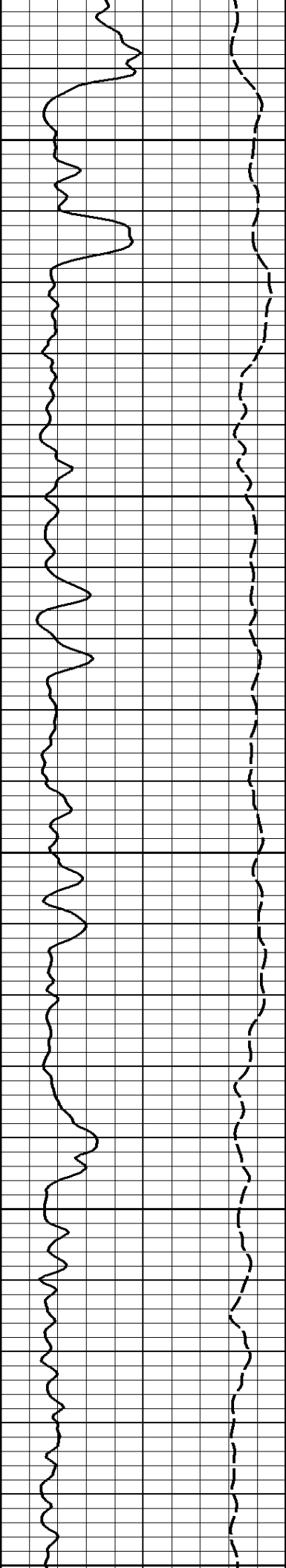


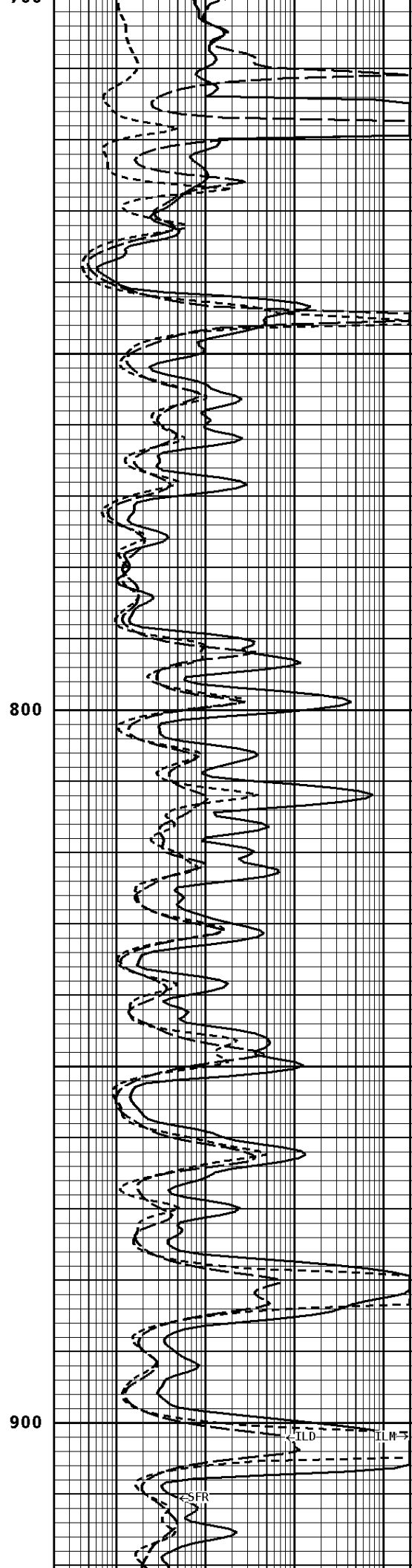
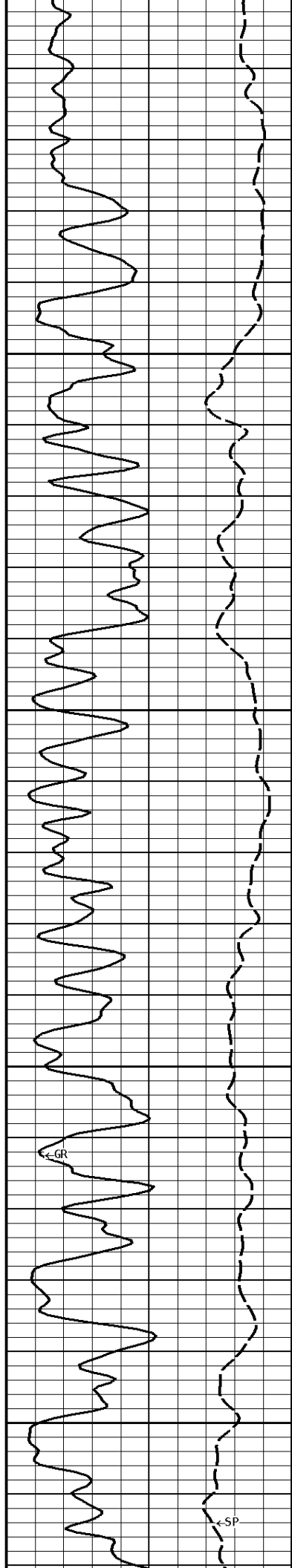
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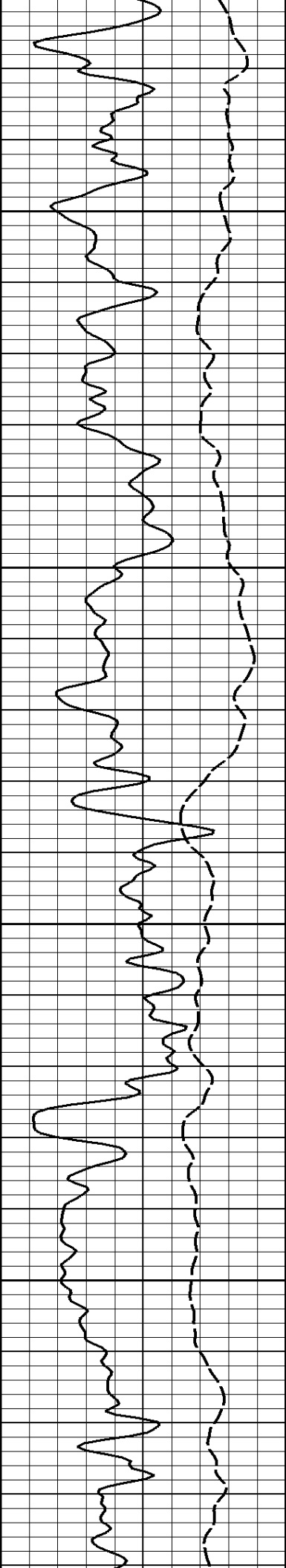
←SP

←LD

←SFR

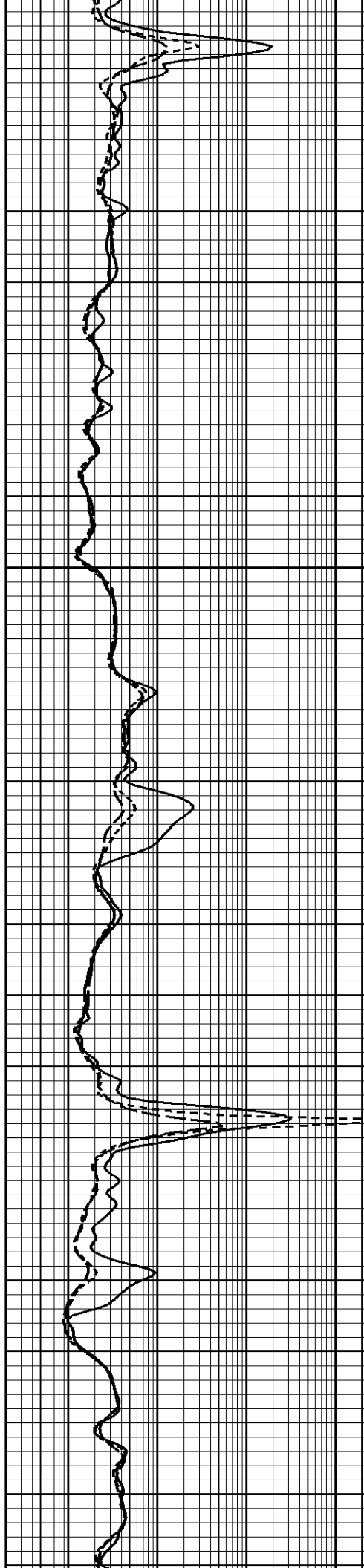


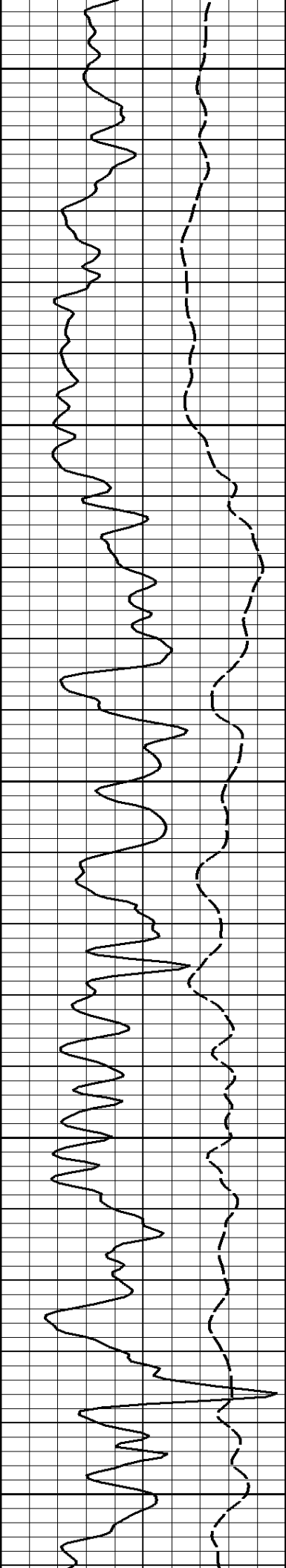




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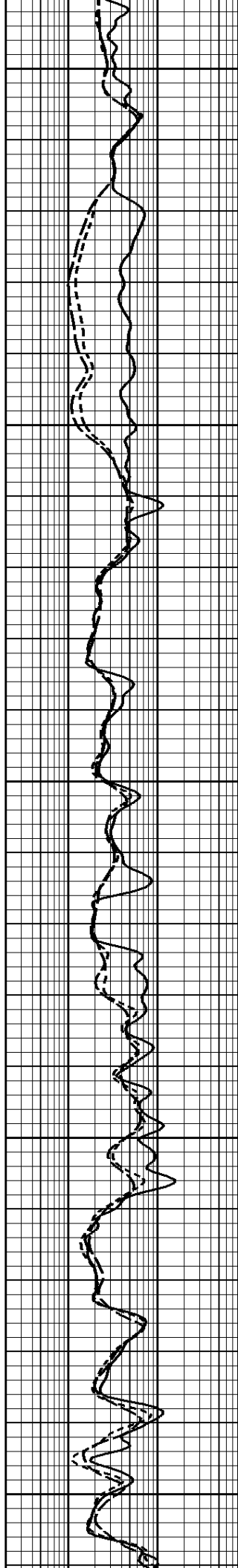
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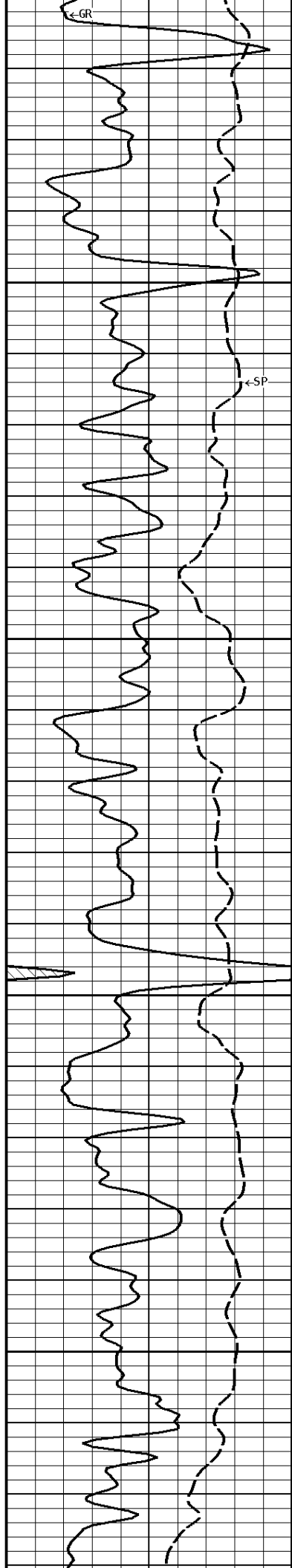




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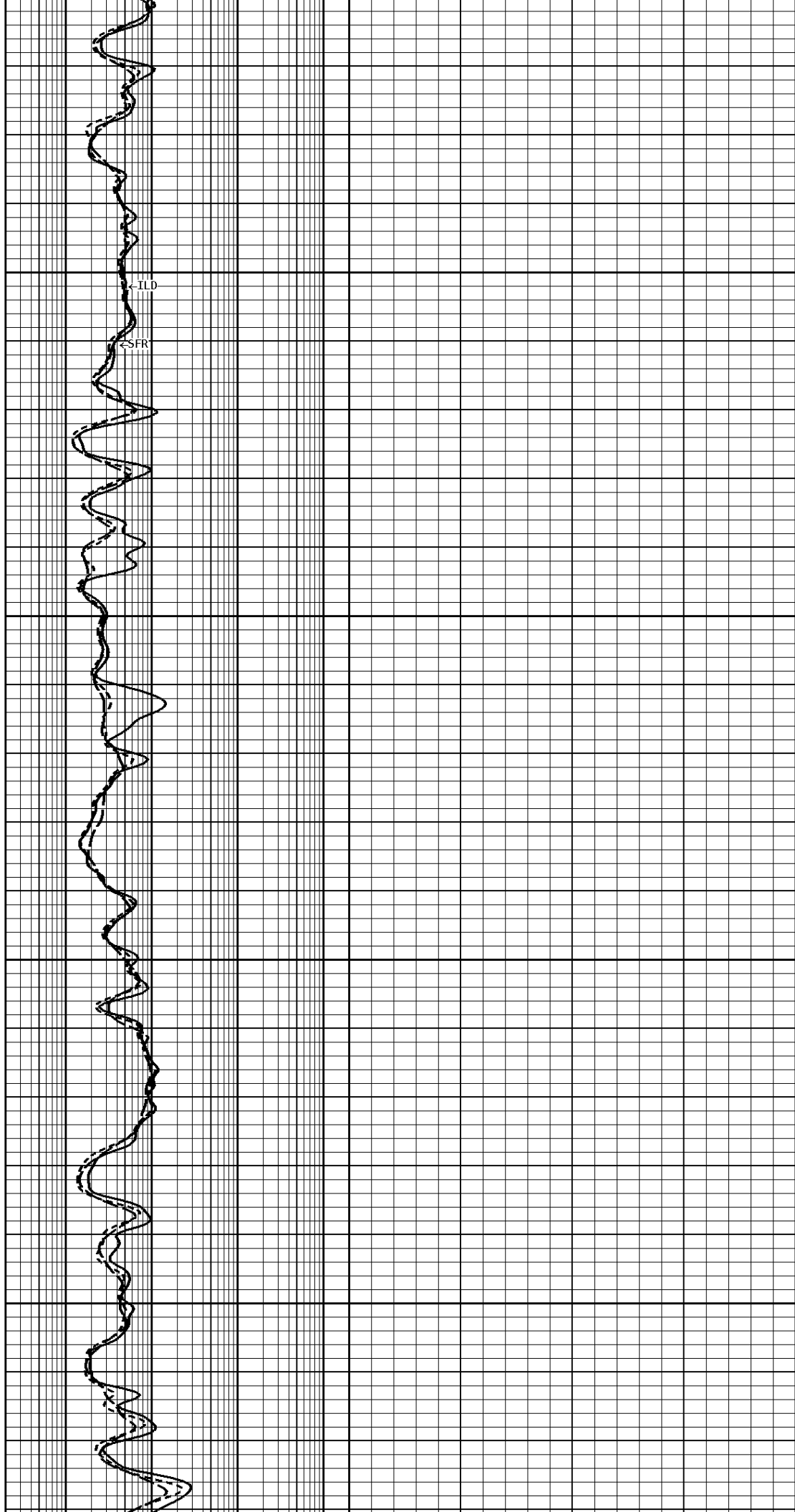
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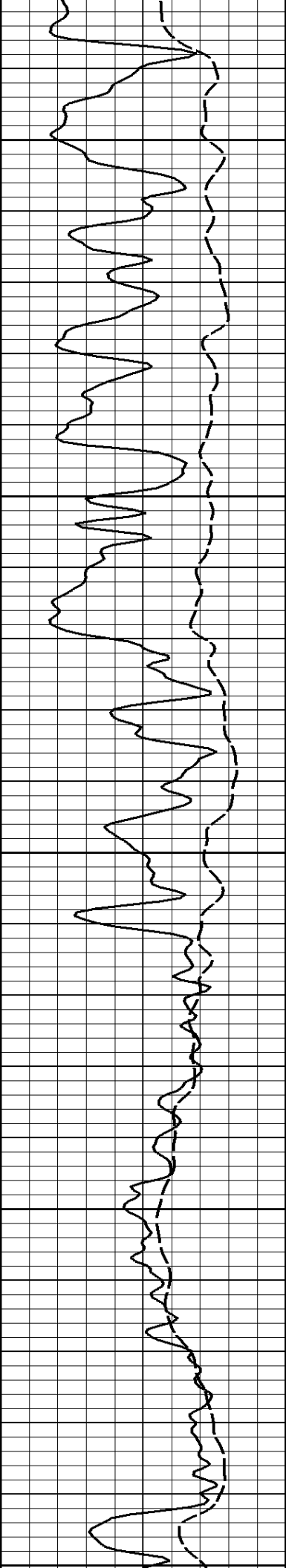




1400

1500

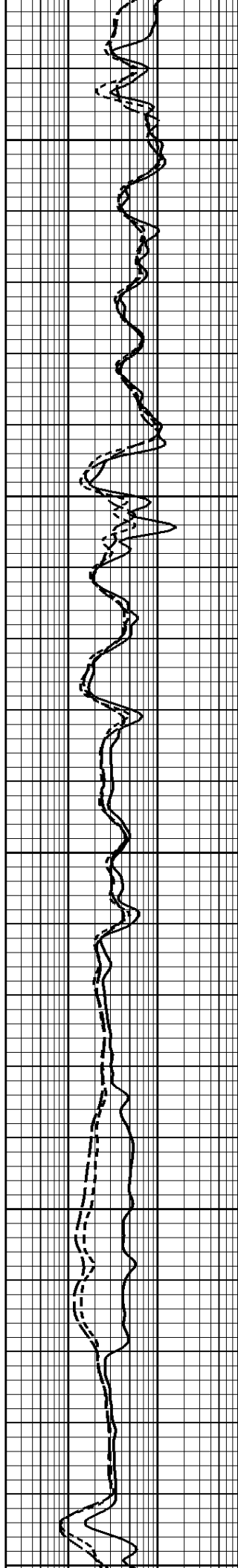


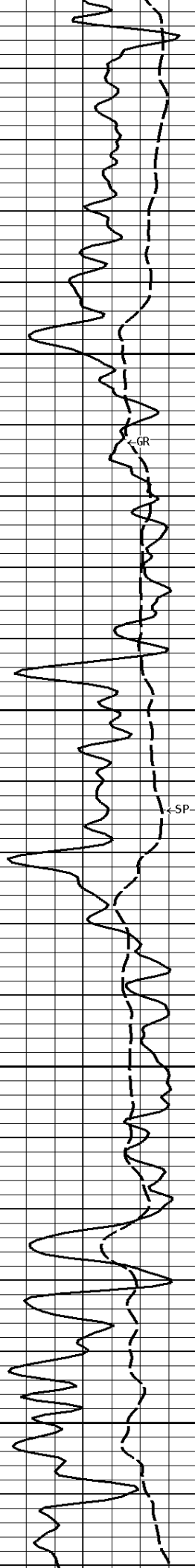


1600

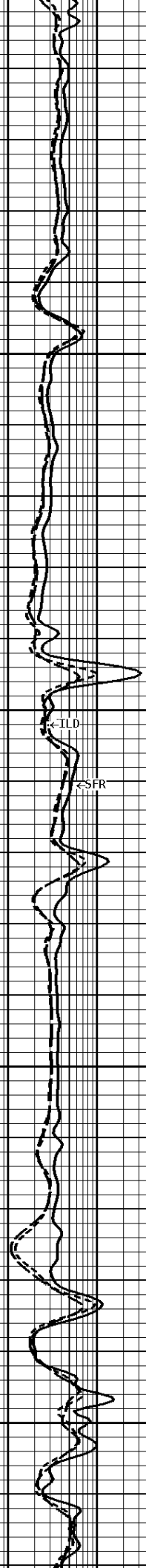
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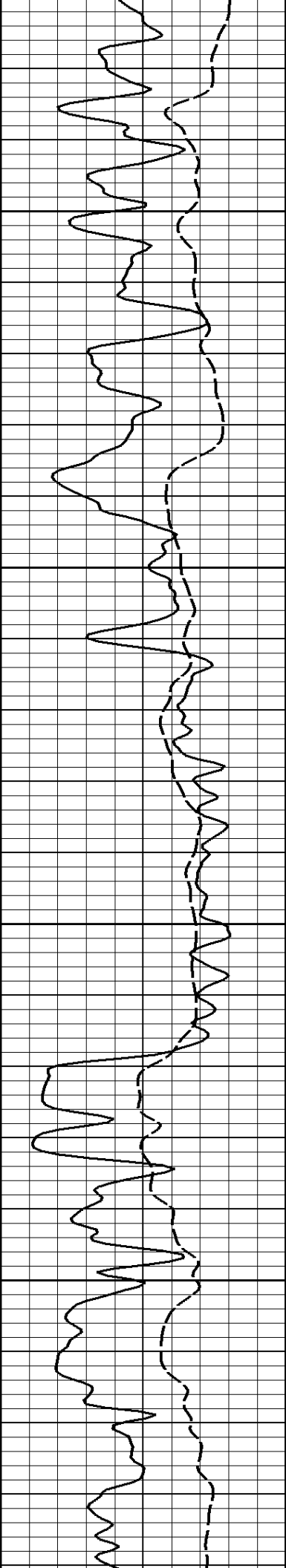
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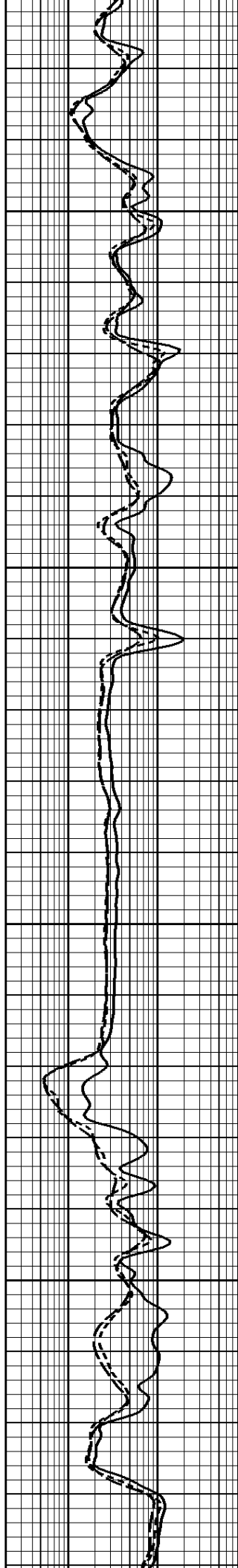


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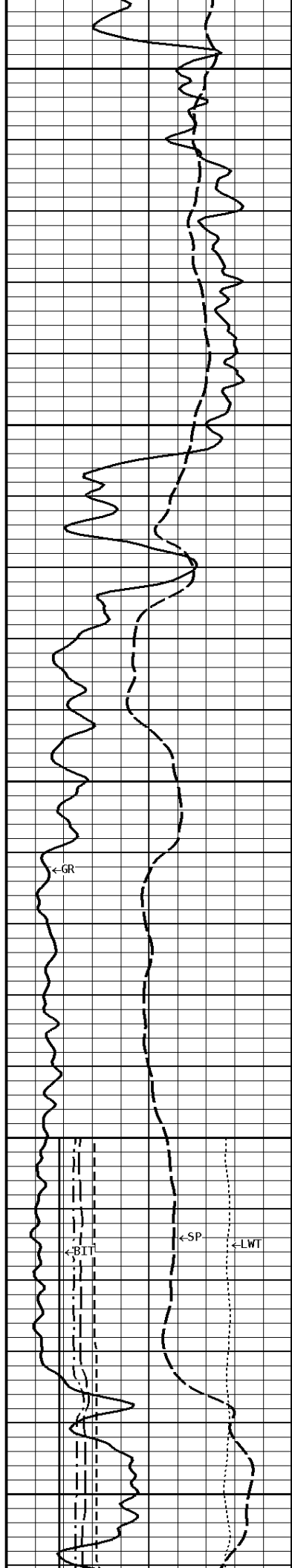




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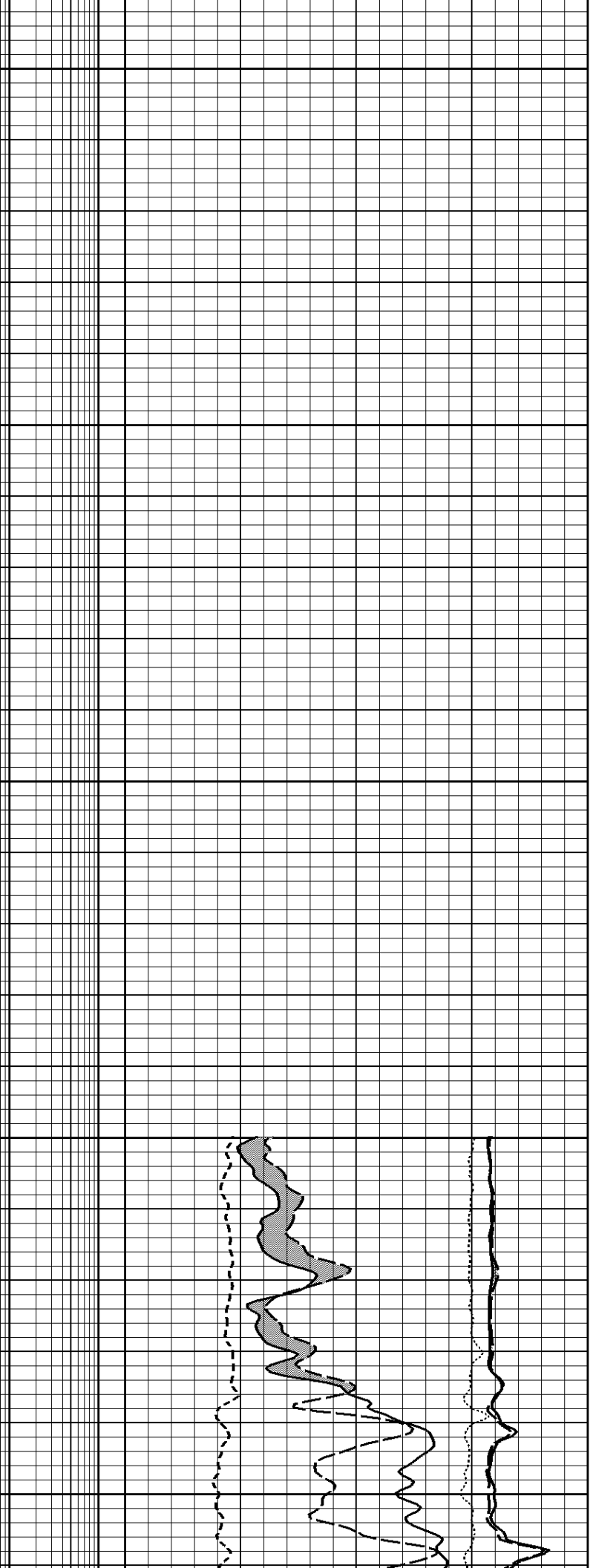
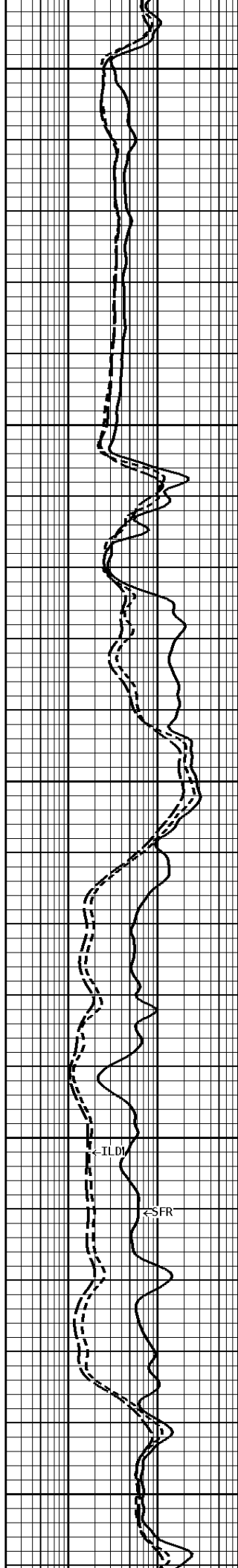


2200



2300

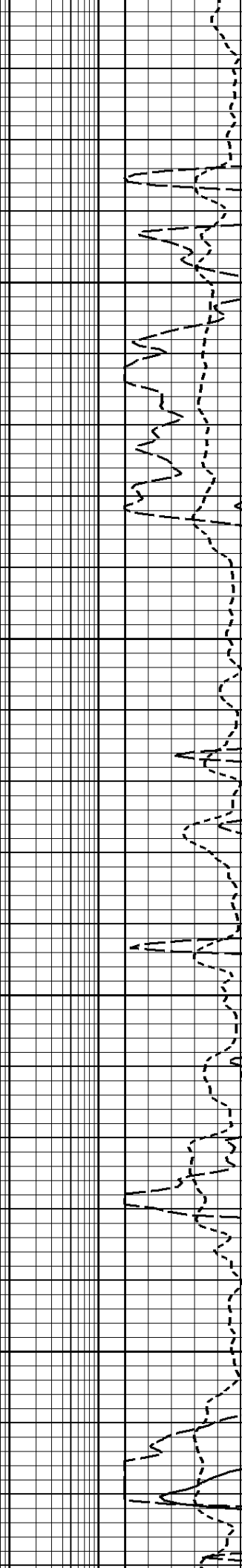
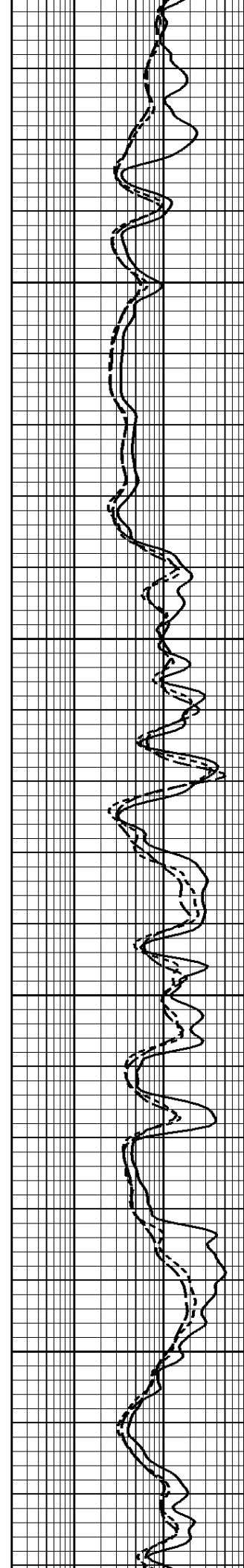
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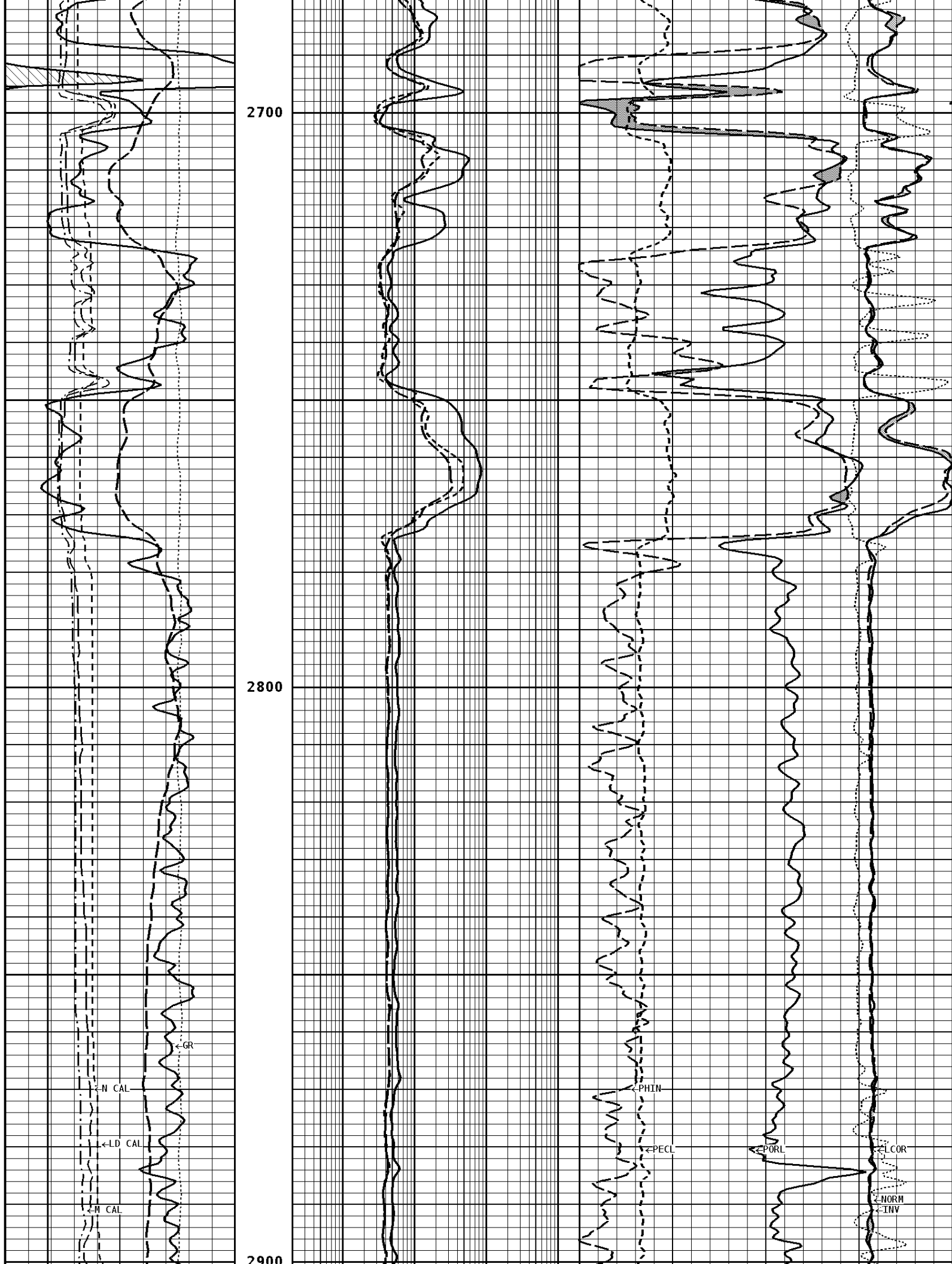




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2600

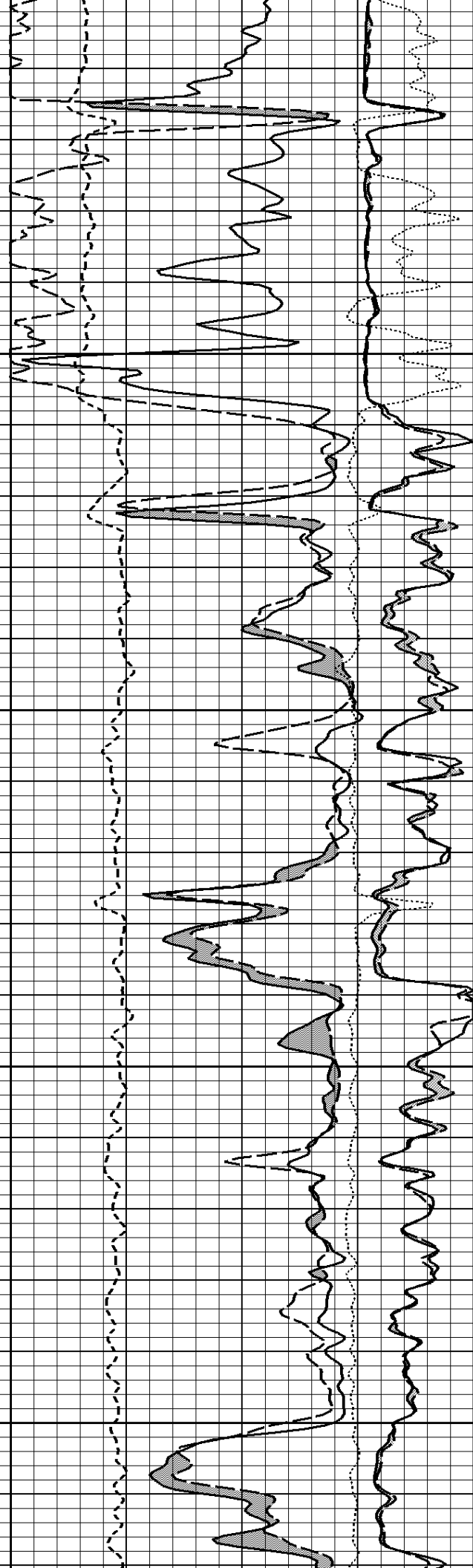
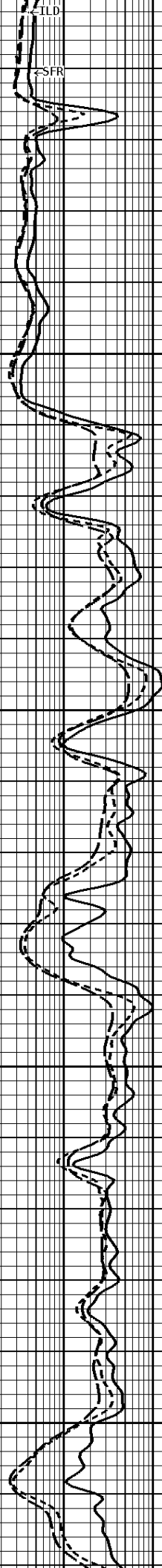


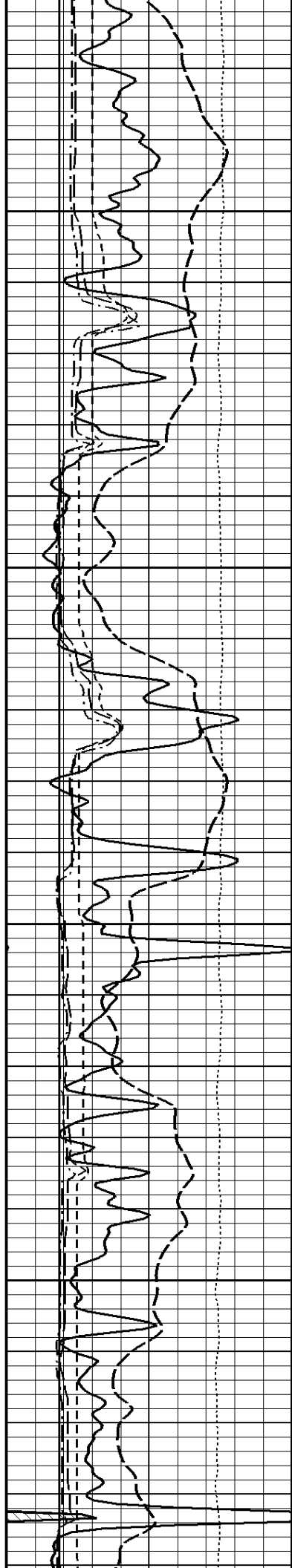




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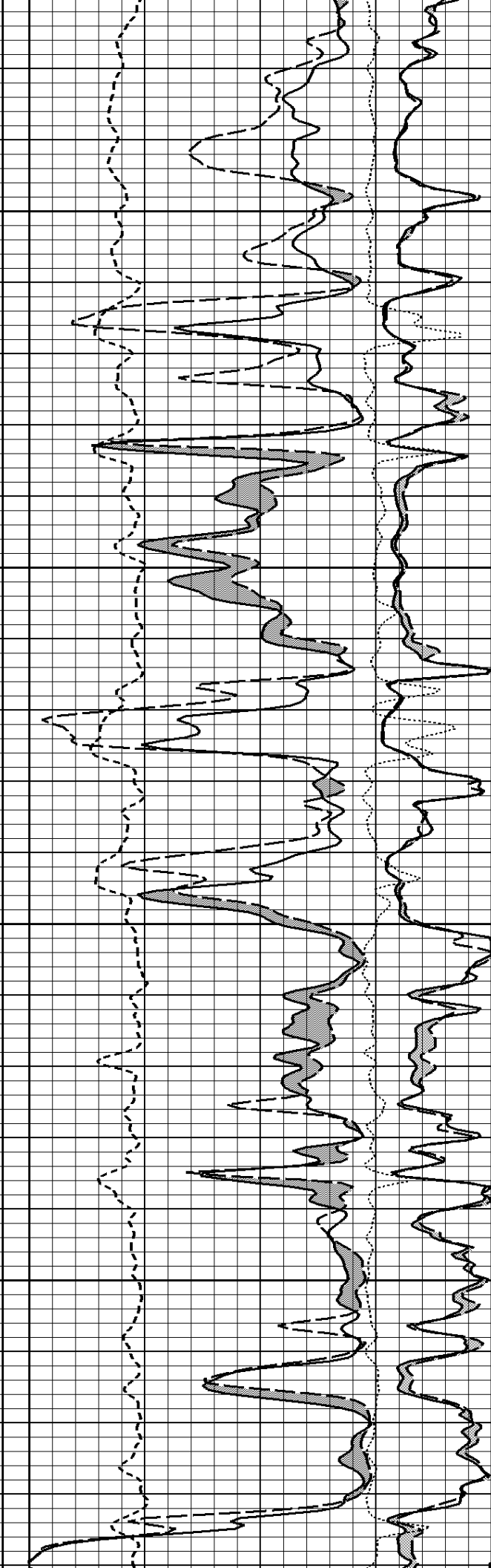
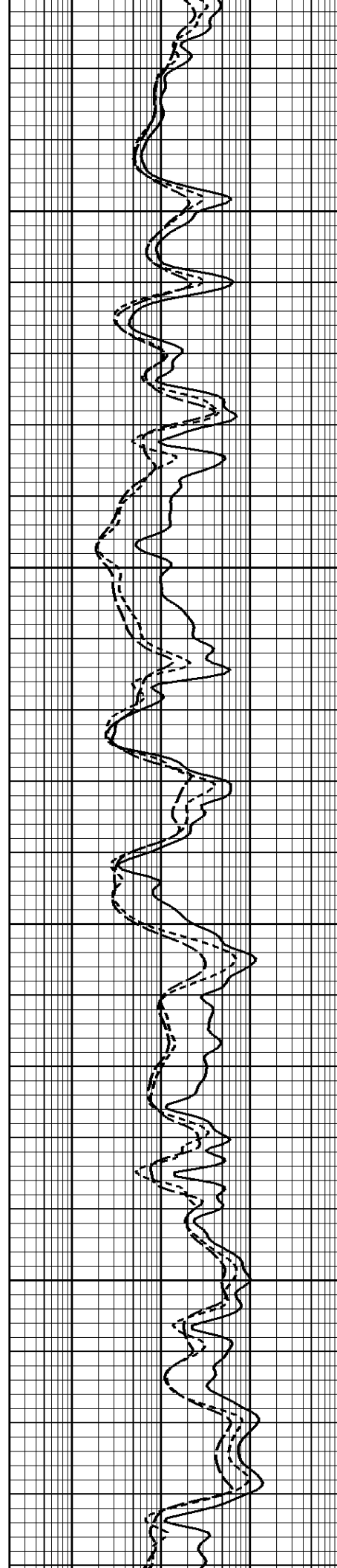
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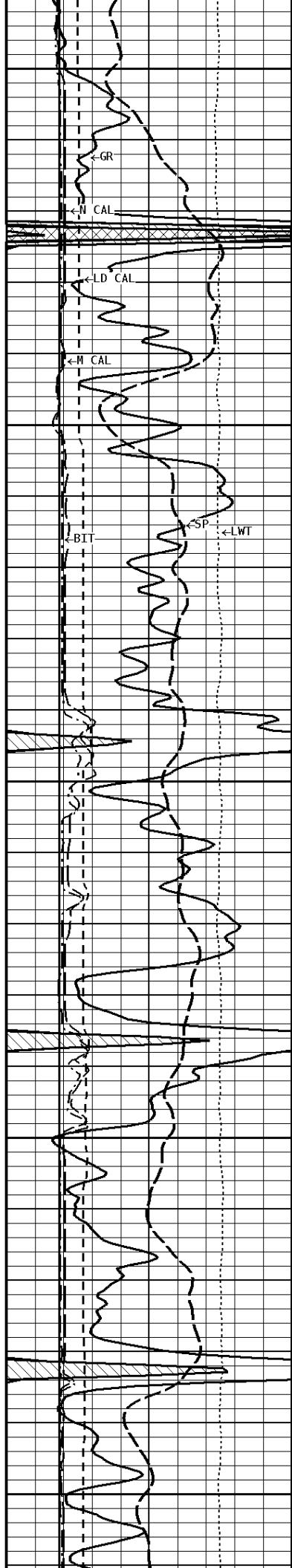




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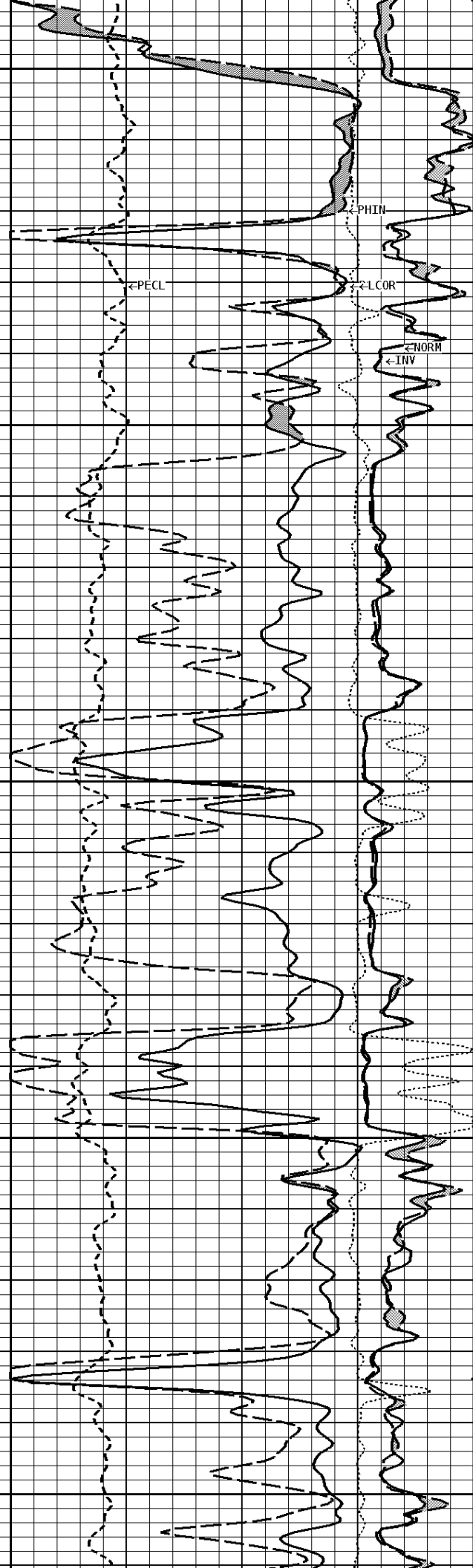
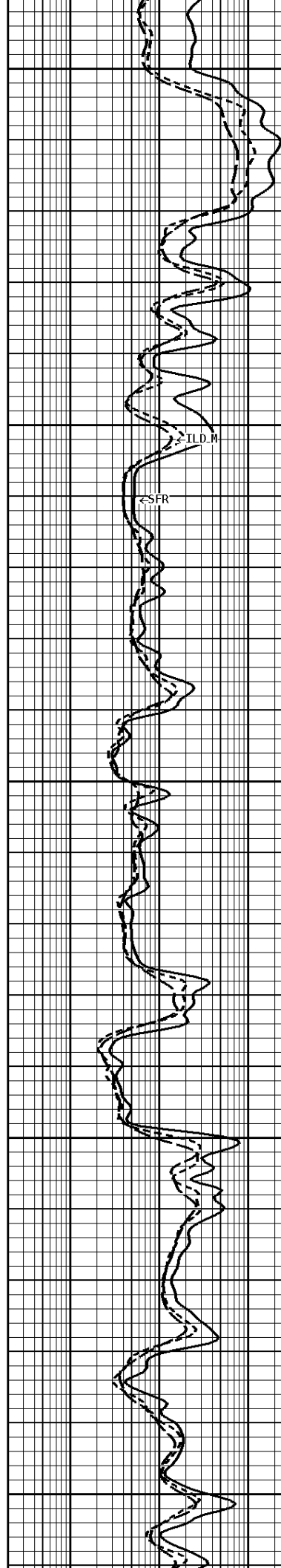
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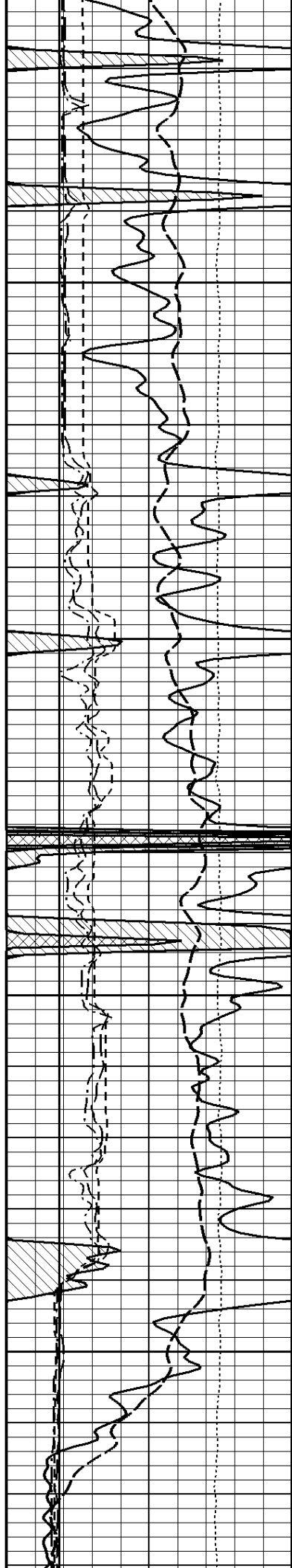




3400

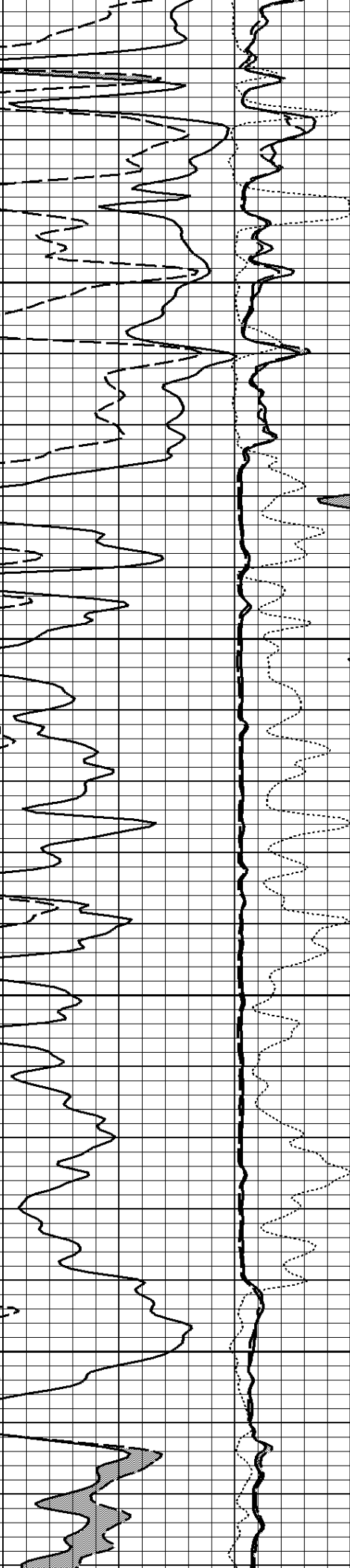
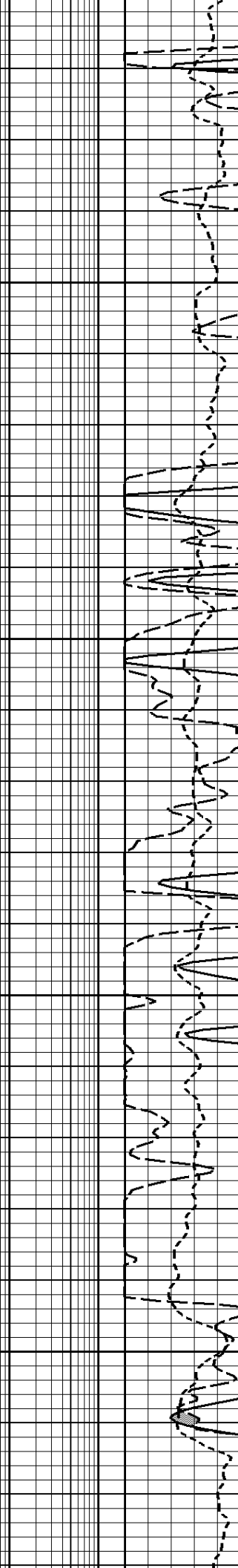
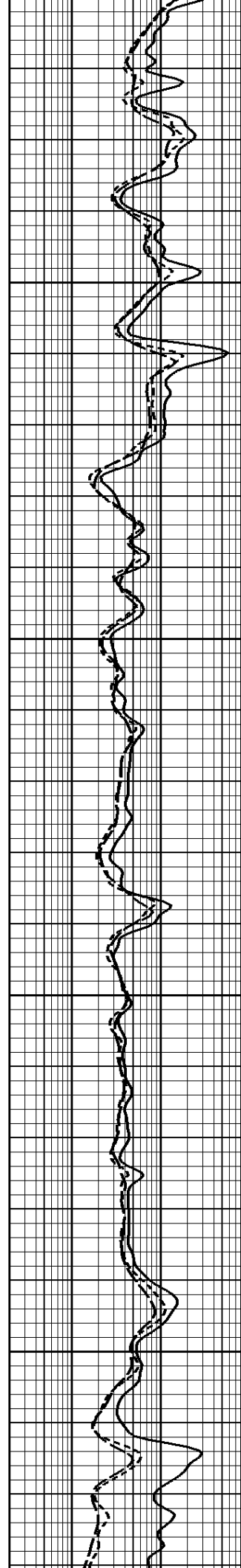
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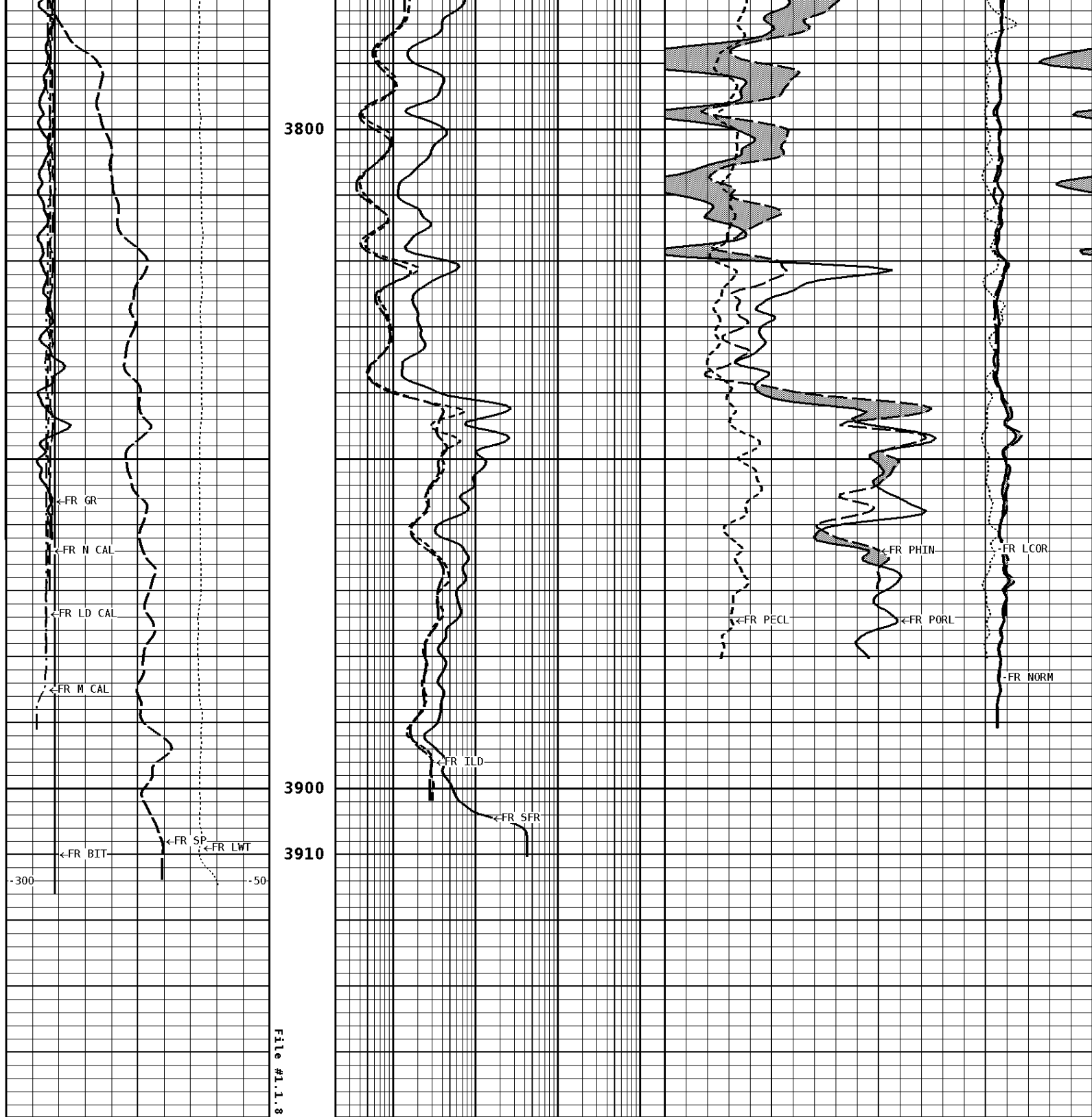




3600

3700





1:240 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150	Volume Dolo/Shale	MEDIUM INDUCTION OHMM 0.2 2000.0 30	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10
SPONTANEOUS POTENTIAL mV → ← 25	Volume Calcite	DEEP INDUCTION OHMM 0.2 2000.0 30	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 -50
TENSION LPS	Volume	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNS/ELECTRON

LBS		Quartz		OHMM		BARNs/ELECTRON	
10000	0		0.2	2000.0	0		20
DENSITY (X) CALIPER INCHES (IN)		DENSITY CORRECTION G/CC					
16	26					-0.75	0.25
6	16						
NEUTRON (Y) CALIPER INCHES (IN)						INVERSE OHMM	
16	26					0	40
6	16						
BIT SIZE INCHES (IN)						NORMAL OHMM	
6	16					0	40
CALIPER MICRO INCHES (IN)							
16	26						
6	16						

*** Borehole Zone Factors ***

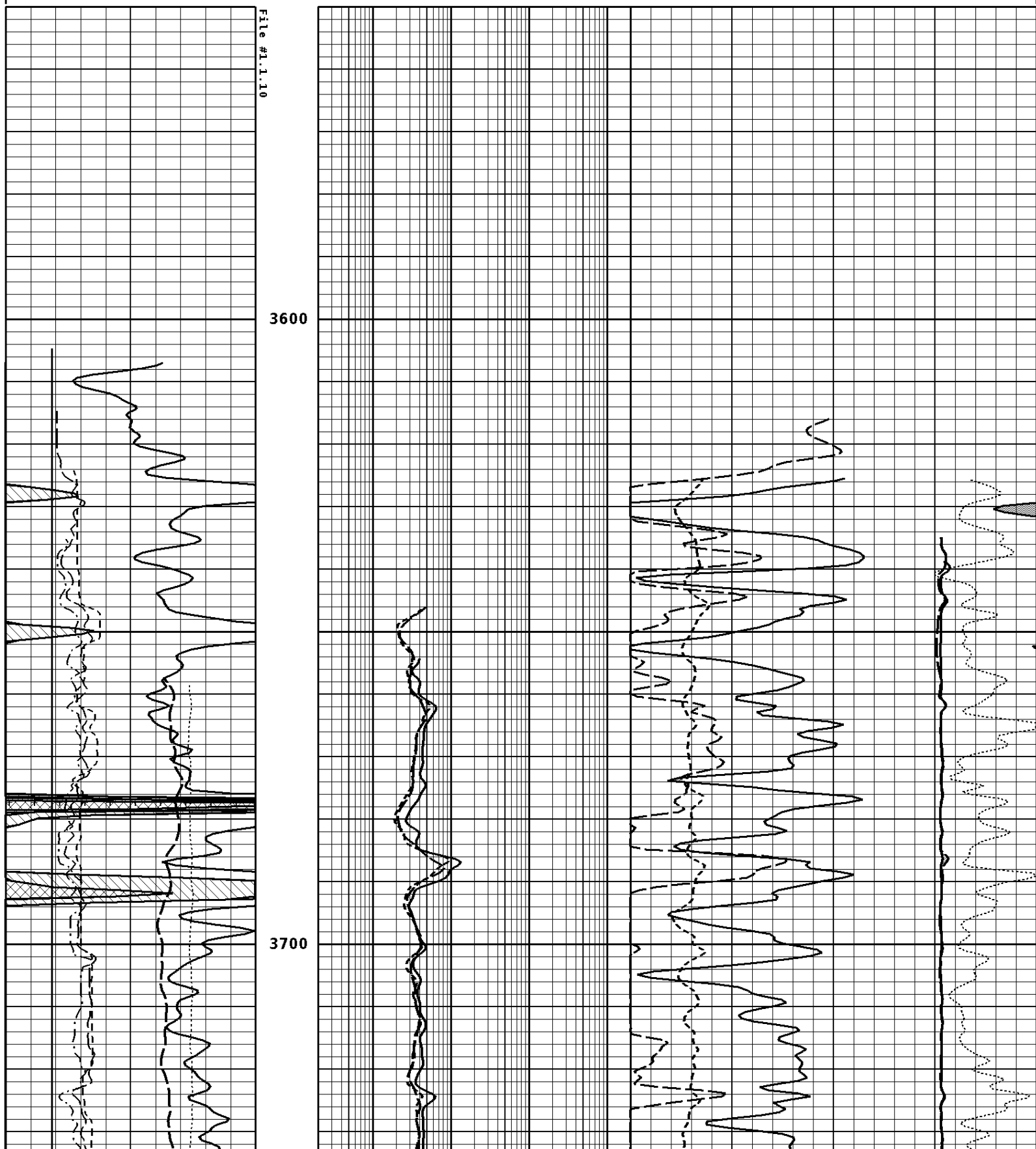
Zone 1 99999.0 to 0.0 Feet		
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Thickness	0.250	in
Casing Correction (PHI N)	Disable	
Hole Substance	Fluid	
BHT Depth	3910.000	ft
Borehole Temperature	116.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.800	ohm/m
MSTNG Normal Correction	-0.50	ohm/m
MSTNG Inverse Correction	1.25	ohm/m

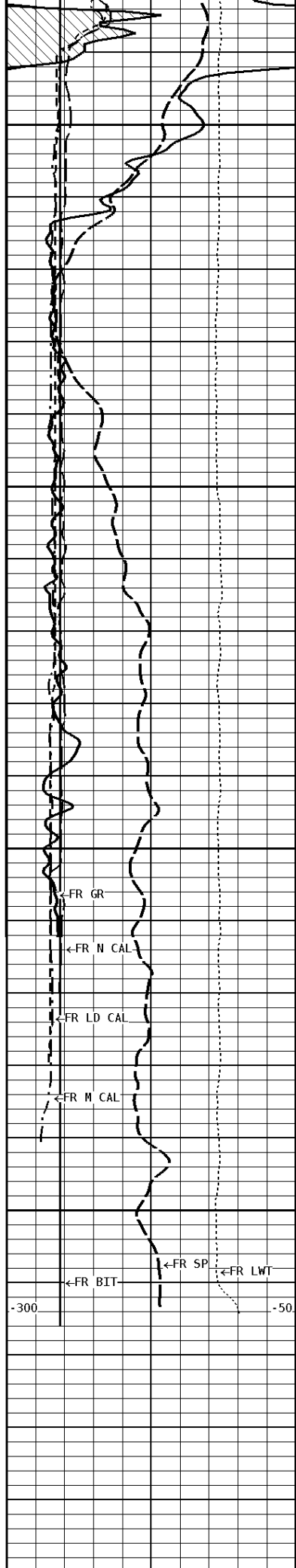
Well File: pic-you-rr-1-mstk-sep-3	Scale: 1:240	Format: COMSAT
Segment: V1.D1.S10 AS-7 REPEAT	Acquired: 2015-09/03 05:55 3.4.0-13525	
Reference: 0	Processed: 2015-09/04 13:21 3.4.0-13534	

CALIPER MICRO INCHES (IN)							
16	26						
6	16						
BIT SIZE INCHES (IN)						NORMAL OHMM	
6	16					0	40
NEUTRON (Y) CALIPER INCHES (IN)						INVERSE OHMM	
16	26					0	40
6	16						
DENSITY (X) CALIPER INCHES (IN)						DENSITY CORRECTION G/CC	
16	26					-0.75	0.25
6	16						
TENSION LBS		Volume Quartz	SHALLOW FOCUSED RESISTIVITY OHMM		PE CROSS-SECTION BARNs/ELECTRON		
10000	0		0.2	2000.0	0	20	
SPONTANEOUS POTENTIAL mV		Volume Calcite	DEEP INDUCTION OHMM		DENSITY POROSITY (2.71g/cc) PERCENT		
			0.2	2000.0	70	30	
					30	10	

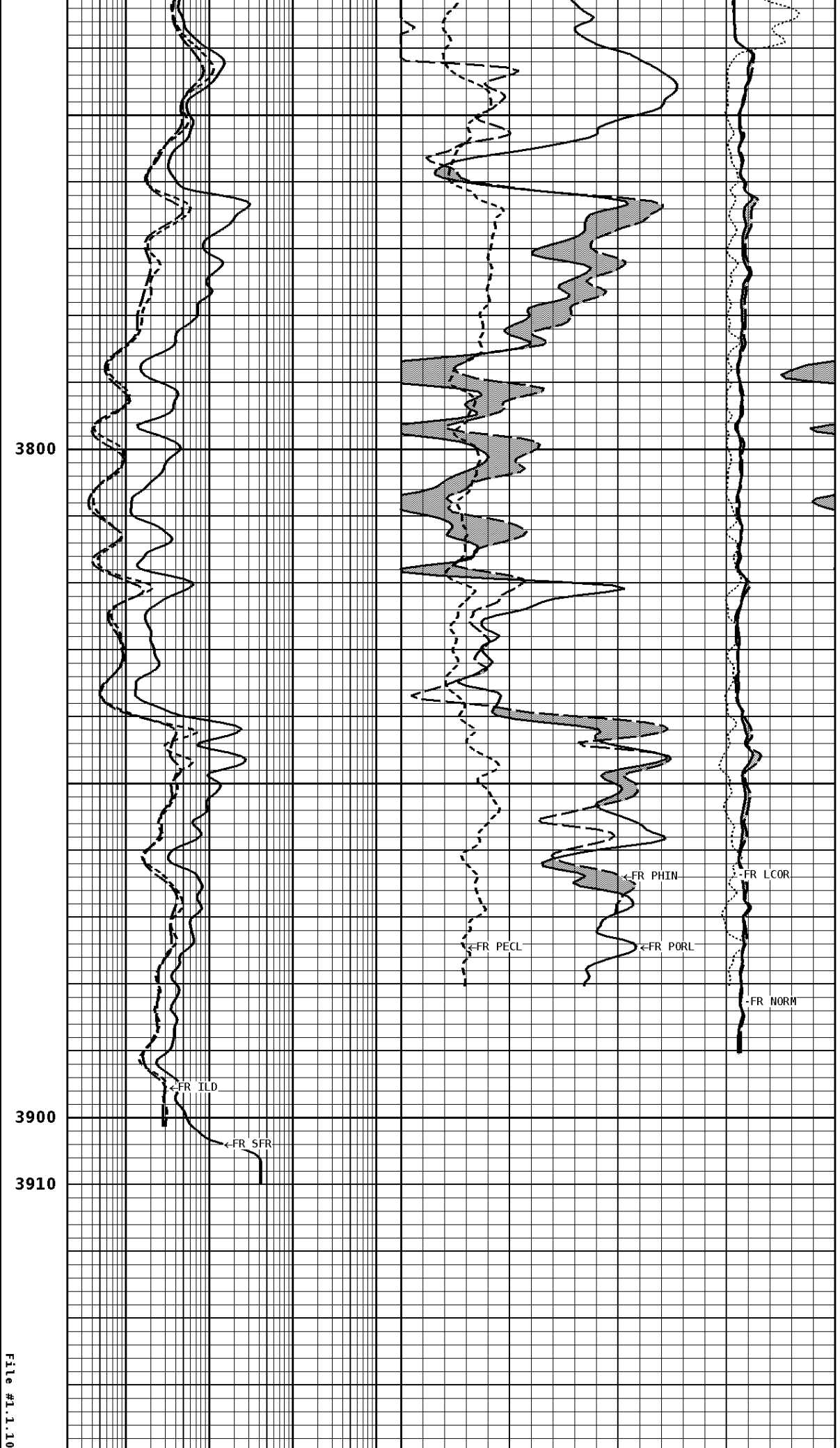
GAMMA RAY API UNITS		MEDIUM INDUCTION OHMM		NEUTRON POROSITY (LIMESTONE) PERCENT	
150	300	0.2	2000.0	30	-10
0	150				-50

1:240 REPEAT SECTION



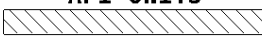


File #1.1.10



1-240 REPEAT SECTION

11240 REPEAT SECTION

GAMMA RAY API UNITS 150  300 0 150	Volume Dolo/Shale	MEDIUM INDUCTION OHMM		NEUTRON POROSITY (LIMESTONE) PERCENT	
		0.2	2000.0	30	-10
SPONTANEOUS POTENTIAL mV → ← 25	Volume Calcite	DEEP INDUCTION OHMM		DENSITY POROSITY (2.71g/cc) PERCENT	
		0.2	2000.0	70 30	30 -10
TENSION LBS 10000 0	Volume Quartz	SHALLOW FOCUSED RESISTIVITY OHMM		PE CROSS-SECTION BARNS/ELECTRON	
		0.2	2000.0	0	20
DENSITY (X) CALIPER INCHES (IN) 16 26 6 16		DENSITY CORRECTION G/CC -0.75 0.25			
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16		INVERSE OHMM 0 40			
BIT SIZE INCHES (IN) 6 16		NORMAL OHMM 0 40			
CALIPER MICRO INCHES (IN) 16 26 6 16					

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet			
Matrix Density		2.71	g/cc
Fluid Density		1.00	g/cc
Formation Matrix	Limestone		
Drill Bit Size		7.875	in
Casing Diameter		5.500	in
Casing Thickness		0.250	in
Casing Correction (PHI N)	Disable		
Hole Substance	Fluid		
BHT Depth		3910.000	ft
Borehole Temperature		116.0	degF
Temperature Gradient		1.00	DFHF
Resistivity Of Mud		0.800	ohm/m
MSTNG Normal Correction		-0.50	ohm/m
MSTNG Inverse Correction		1.25	ohm/m

* Calibration Summary *

Shop Calibration GRT-B					
Performed : 24-Aug-2015			Time : 10:01		
Sensor Suite : GR-GR5			ID : GRT-BB-107		
	Measured	Units	Calibrated	Units	
	Background Jig		Jig		
GR	61 370	CPS	175	GRAPI	
Shop Calibration CNT-AA					
Performed : 04-AUG-2015			Time : 10:39		
Sensor Suite : CALI-BCN			ID : NDT-BB-123		
	Jig - Measured		Jig - Calibrated	Units	

CL # 1	Jig Measured Ring#1 Ring#2 9.6 14.5	Jig Calibrated Ring#1 Ring#2 6.0 12.0	Units IN.
Performed : 04-Aug-2015 Time : 10:49 Sensor Suite : BHC NEUT ID : CNP-AA-110 Source ID : N-1045			
N/F	Tank Measured 3.7281	Calibrated 3.6893	Verification Jig 3.6942
Porosity	21.1	20.5	20.6
			%
Shop Calibration LDT-DF Performed : 05-AUG-2015 Time : 09:36 Sensor Suite : CALI-LTH ID : NDT-AH-152			
CL # 1	Jig - Measured Ring#1 Ring#2 8.6 12.3	Jig - Calibrated Ring#1 Ring#2 6.0 12.0	Units IN.
Performed : 05-Aug-2015 Time : 09:59 Sensor Suite : BHCPELNG ID : LDP-DA-067 Source ID : 2991GW			
Short Space			
LSW1	BKGD 61	Al 1077	Mg 1738
LSW2	65	1207	1927
LSW3	235	2754	4440
LSW4	289	2495	3642
LSW5	41	69	74
LSW6	60	66	66
LSW7	46	49	51
LSW8	10	13	14
QS	0.137	0.145	0.133
PES			2.778
SSDN		2.600	1.680
			G/CC
Long Space			
LLW1	BKGD 88	Al 1251	Mg 5179
LLW2	97	2063	8131
LLW3	364	3723	14245
LLW4	469	1769	5659
LLW5	51	61	108
LLW6	158	153	146
LLW7	99	95	92
LLW8	3	5	15
QL	0.229	0.232	0.225
PEL			2.697
LSDN		2.600	1.680
			G/CC
Shop Calibration MST-DA Performed : 04-AUG-2015 Time : 10:32 Sensor Suite : CALI-MSN ID : MST-DA-057			
CL # 1	Jig - Measured Ring#1 Ring#2 7.3 11.5	Jig - Calibrated Ring#1 Ring#2 6.0 12.0	Units IN.
Performed : 04-AUG-2015 Time : 13:07 Sensor Suite : MSTDA-NI ID : MST-DA-057			
Internal			
INV-V	Zero Measured 292.9 30430.6	Units	Calibrated Zero Reference 0.00 1636.00
NOR-V	165.6 30359.9		0.00 1636.00
IN-C	164.0 30678.0		0.00 15.46
INV-R			34.23 OHMM
NOR-R			58.31 OHMM
Shop Calibration PIT-CA Performed : 01-Sep-2015 Time : 10:52 Sensor Suite : P-IND-T ID : PIT-CA-077			
Medium			
Air	Measured R X 130255 130731	Calibrated R X -2.9 -3.6	Units MMHOS

Zero	131075	131068	26.5	4.6	MMHOS
Reference	257436	259660	5026.5	5004.6	MMHOS
Loop	127852	223481	3508.4	3697.9	MMHOS
Sonde Error			-7.7	-3.0	MMHOS
Cond			5026.5	5004.6	MMHOS
Deep					
	Measured		Calibrated		
	R	X	R	X	Units
Air	130066	130185	0.2	-0.8	MMHOS
Zero	131063	131079	17.2	9.3	MMHOS
Reference	236755	238868	2017.2	2009.3	MMHOS
Loop	127770	222393	1667.7	1753.5	MMHOS
Sonde Error			-9.2	-4.7	MMHOS
Cond			2017.2	2009.3	MMHOS
Temperature					
	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 01-Sep-2015 Time : 10:42 Sensor Suite : SFL ID : PIT-CA-077					
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32797.0	48922.0	0.0	7028.0	uA
Ib	32771.0	49369.2	0.0	1750.0	mA
MOM1	32800.3	57385.8	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 01-Sep-2015 Time : 10:39 Sensor Suite : P-SP ID : PIT-CA-077					
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32767.0	58954.1	0.0	1000.0	mV



Tucker
ENERGY SERVICES

Company: PICKRELL DRILLING CO. INC.

Well: YOUNG RR #1

Location: 660' FSL & 330' FEL

Logged: 09-03-2015

K.B. Elev: 1443.0 Ft