Tucker ENERGY SERVICES

PHASED INDUCTION SHALLOW FOCUS SP LOG

Company	CHIEFTON OIL CO., INC.
Well	AHS CATTLE CO. #4
Field	STRANATHAN
County	BARBER
State	KANSAS
Country	USA
API No.	15-007-24146-0000

File No : TUL-59455
Company : CHIEFTON OIL CO., INC.
Well : AHS CATTLE CO. #4
Field : STRANATHAN
County : BARBER
State : KANSAS
Country : USA
API No : 15-007-24146-0000

Location :
1805' FNL & 2305' FEL
SE NW SW NE

LSD : **Sect :** 12 **Twp :** 35S **Rge :** 12W

Permanent Datum:	GL	**Elevations:**		**Services:**	
Drilling Measured From:	KB	**KB** 1368.00	Ft	GRT	XYT
Log Measured From:	KB	**DF** 1367.00	Ft	CNT	MLT
Above Permanent Datum:	12.00 Ft	**GL** 1356.00	Ft	LDT	PIT

Date	05-02-2014					
Run Number	1					
Depth--Driller	5610.0	Ft				
Depth--Logger	5605.0	Ft				
First Reading	5604.0	Ft				
Last Reading	981.0	Ft				
Casing--Driller	978.0	Ft				
Casing--Logger	981.0	Ft				
Bit Size	7.875	In				
Casing Size	8.625	In				
Hole Fluid Type	GEL/CHEMICAL					
Density	9.4	LBS/GAL				
Fluid Loss	0.0	CC				
PH/Viscosity	10.0	52.0 SEC/QT				
Sample Source	MEASURED					
RM@Measured Temp.	1.100	@ 66 F				
RMF@Measured Temp	0.970	@ 66 F				
RMC@Measured Temp.	1.330	@ 66 F				
Source RMF/RMC	CALCULATED	CALCULATED				
RM@BHT	0.056	@ 135 F				
Time Circulation Stopped	05-02-2014 5:30 pm					
Max Recorded Temp.	135	F				
Equipment/Base	TRUCK 127	TULSA, OK				
Recorded By	R. KING/ A. BRYANT					
Witnessed By	D. BARKER					

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

Size (In)	Bottom (Ft)
7.875	5610.00

Casing Strings

Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
8.625	24.00	978.00	0.00

Run Number	1		
Date	05-02-2014		
Date/Time On Bottom	05-02-2014 9:30 pm		
Depth to Fluid	0.0	Ft	
Salinity	3000.000	PPM	
RMF@BHT	0.500	@ 135 F	
RMC@BHT	0.680	@ 135 F	

Run Number 1

Comments

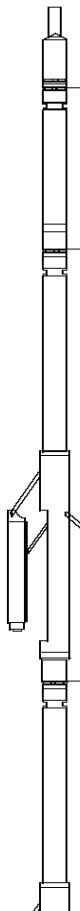
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.71 G/CC USED TO CALCULATE POROSITY
ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING
PHIN IS CALIPER CORRECTED
CLIENT REQUESTED DETAIL PULLED TO 3700'.

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, EIRMDS, VEIRDDS

OPERATORS:
A.DJAHO

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-BB-117

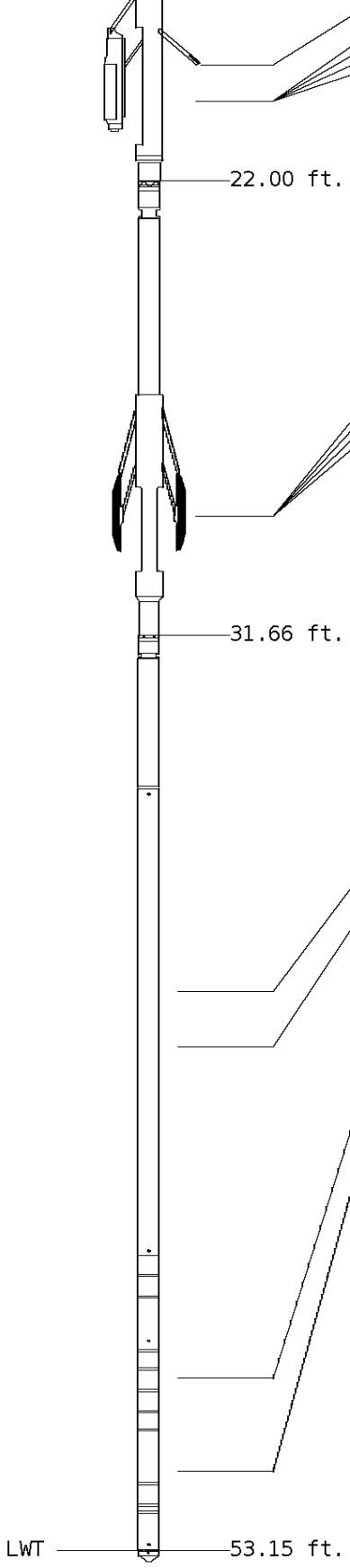
Measure Point	Tool Offset	Stack Offset	Bottom Offset
GRP	2.00	2.00	51.15

Tool: CNT-AA **Length:** 9.30 **ft.** **O.D.** 4.36 **in.**
Compensated Neutron A Pad on NDT-A
Sonde ID :NDT-AC-027
Source ID :N-1044
Pad ID :CNP-AE-42

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-AH-148
Source ID :CSV-587
Pad ID :LDP-DA-02

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-25

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-062

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: CHIEFTON_AHS_CATTLE_4_MAY2-MSTK **Scale:** 1:600 **Format:** DIL-600
Segment: V1.D1.S6 Repro-MAIN-FINAL **Acquired:** 2014-05/02 21:30 3.5.0-12850
Reference: 0 **Processed:** 2014-05/02 23:39 3.5.0-12850

TENSION LBS	DEEP INDUCTION OHMM
10000 — 0	0.0 — 500.0 0.0 — 50.0
SPONTANEOUS POTENTIAL mV	**SHALLOW FOCUSED RESISTIVITY OHMM**
	0.0 — 500.0

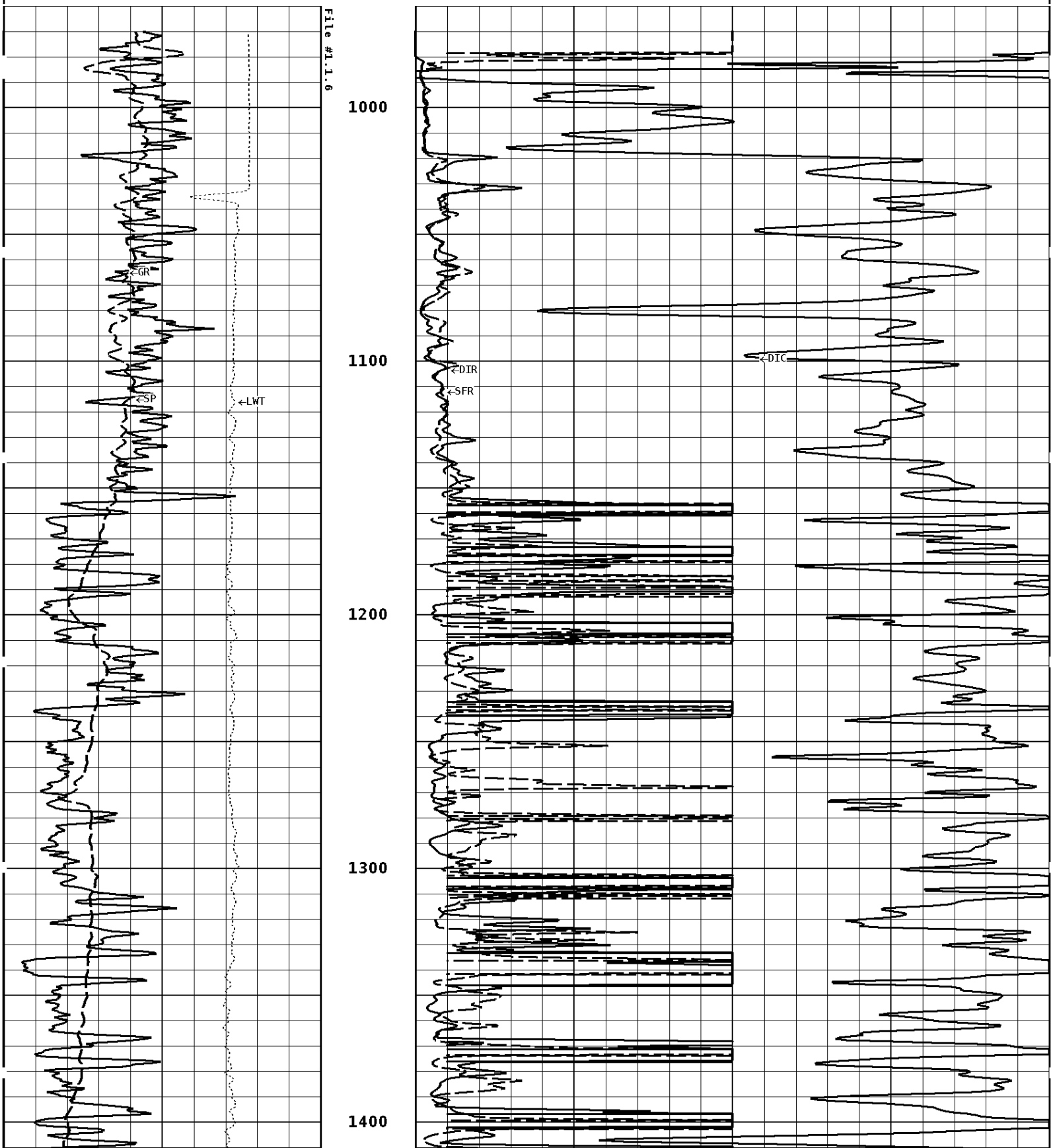
→| |←25

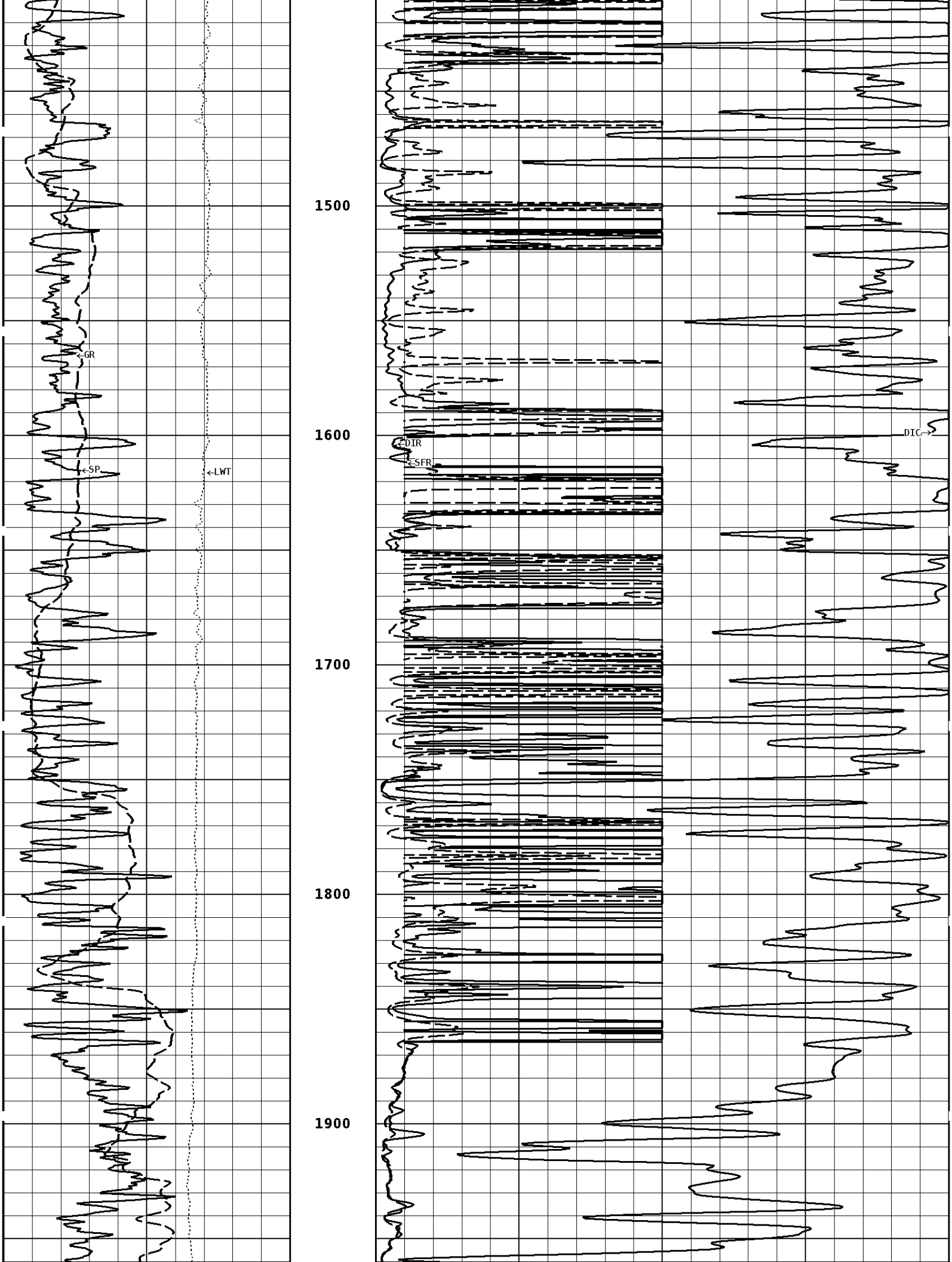
0.0 500.0
0.0 50.0

GAMMA RAY
API UNITS
150 300
0 150

DEEP CONDUCTIVITY
MMHO
2000 1000
1000 0

1:600 MAIN SECTION

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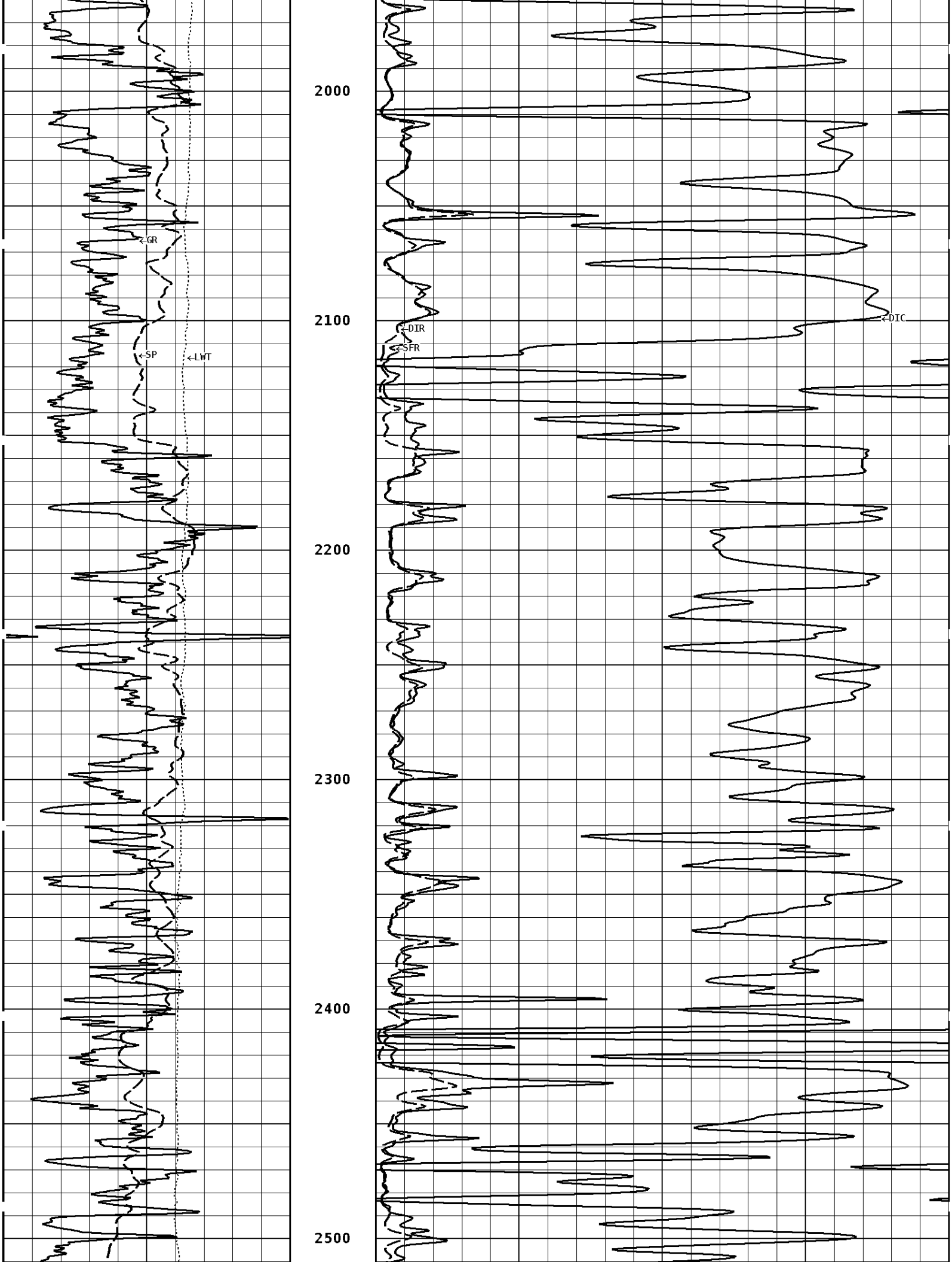
1700
1800
1900
GR
SP
LWT
DIR
SFR
DIC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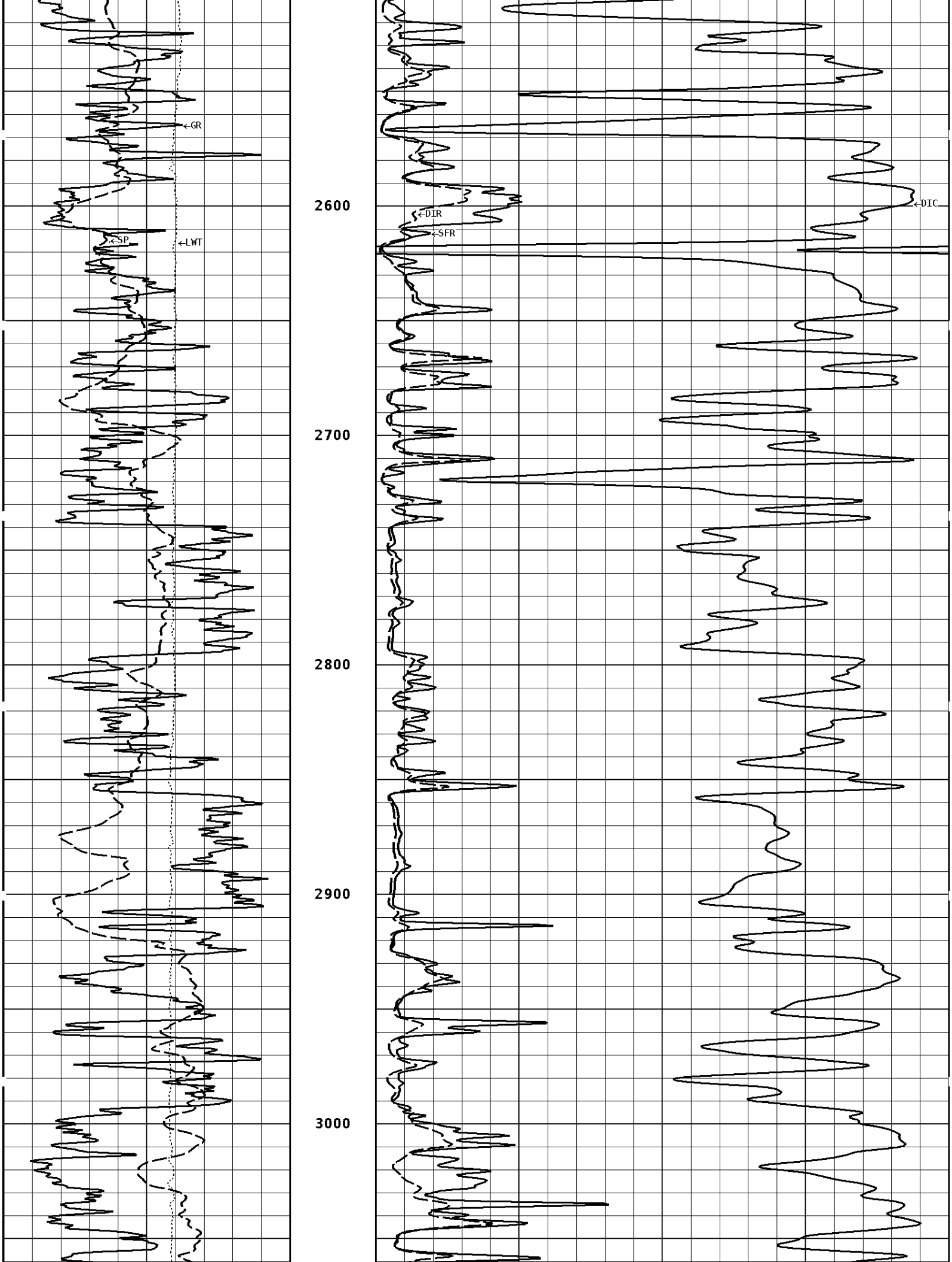
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SP
LWT
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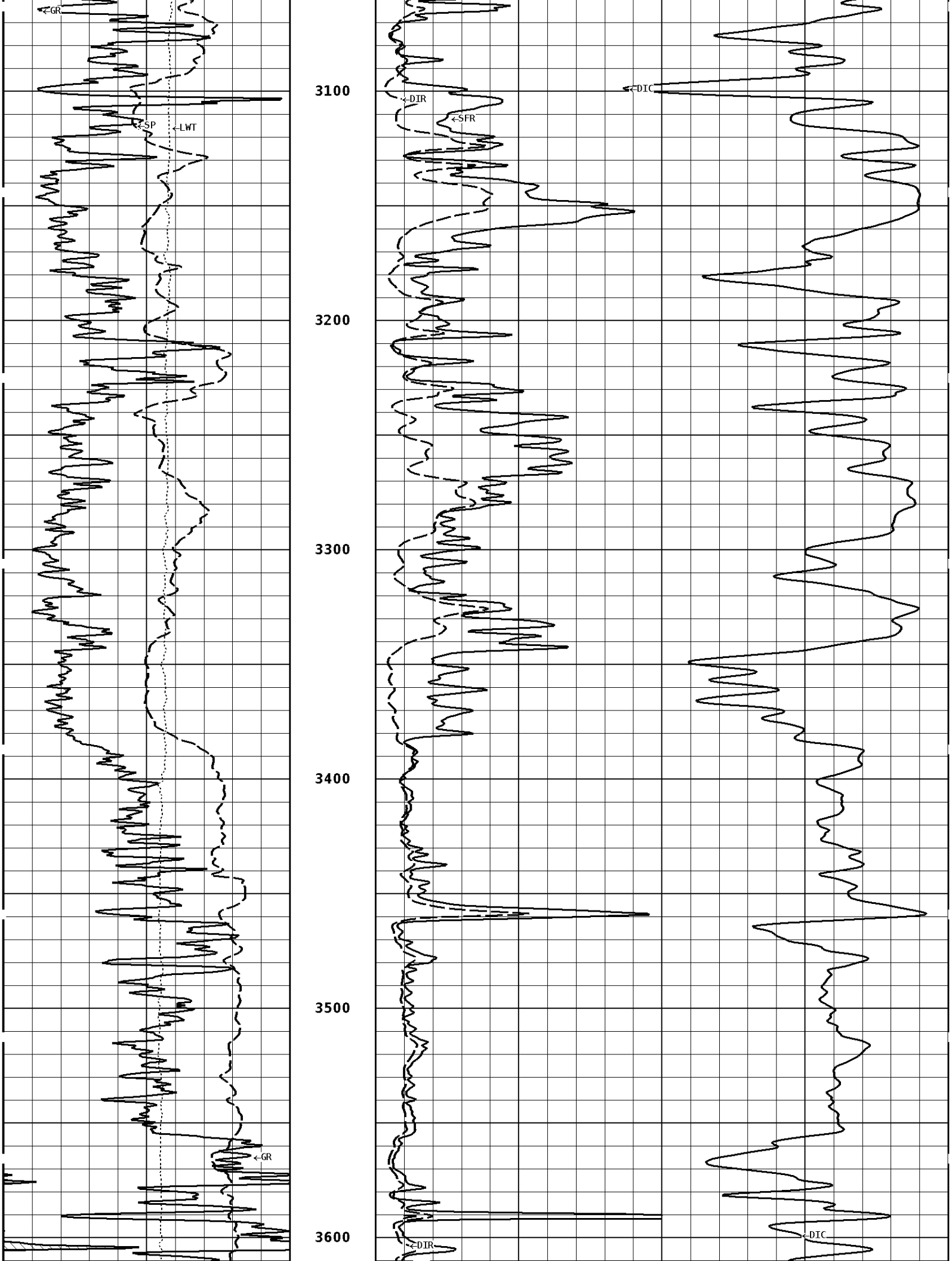
SFR
DIC
2600
2700
2800
2900
3000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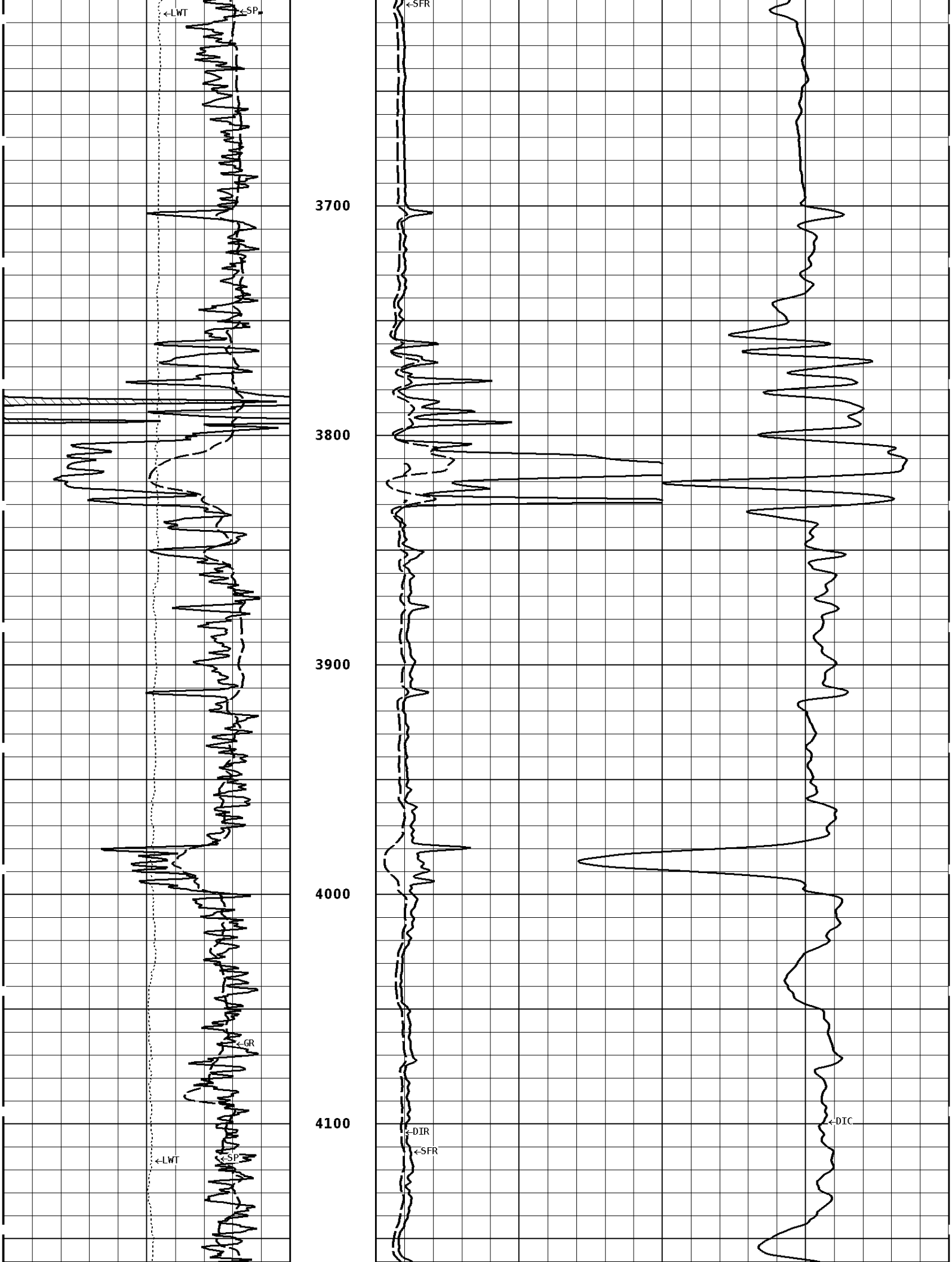
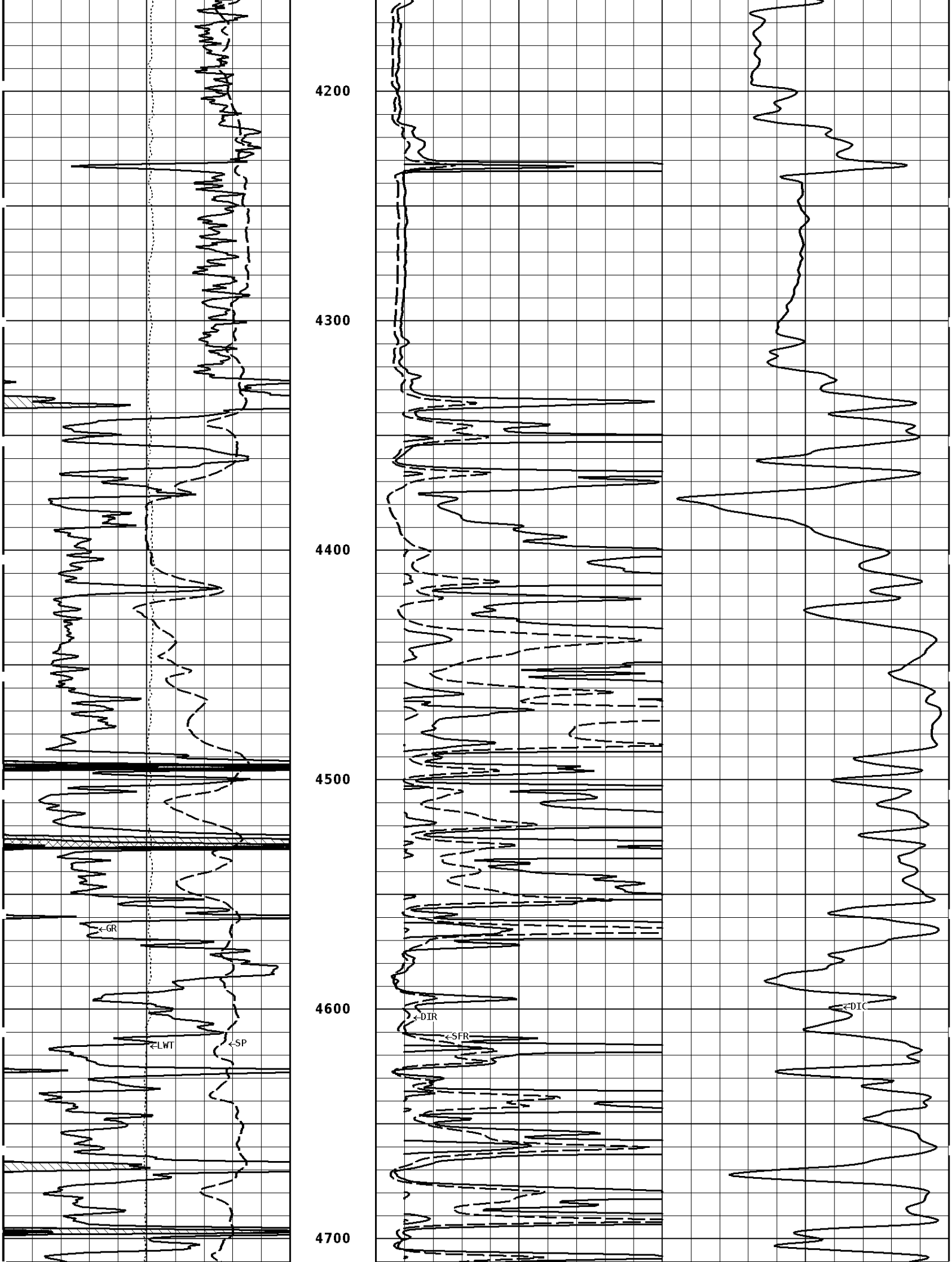
SP
LWT
GR
3100
3200
3300
3400
3500
3600
DIR
SFR
DIR
DIC
DIC


LWT
SP
SFR
3700
3800
3900
4000
GR
4100
DIR
SFR
DIC
LWT
SP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4600
4700
GR
LWT
SP
DIR
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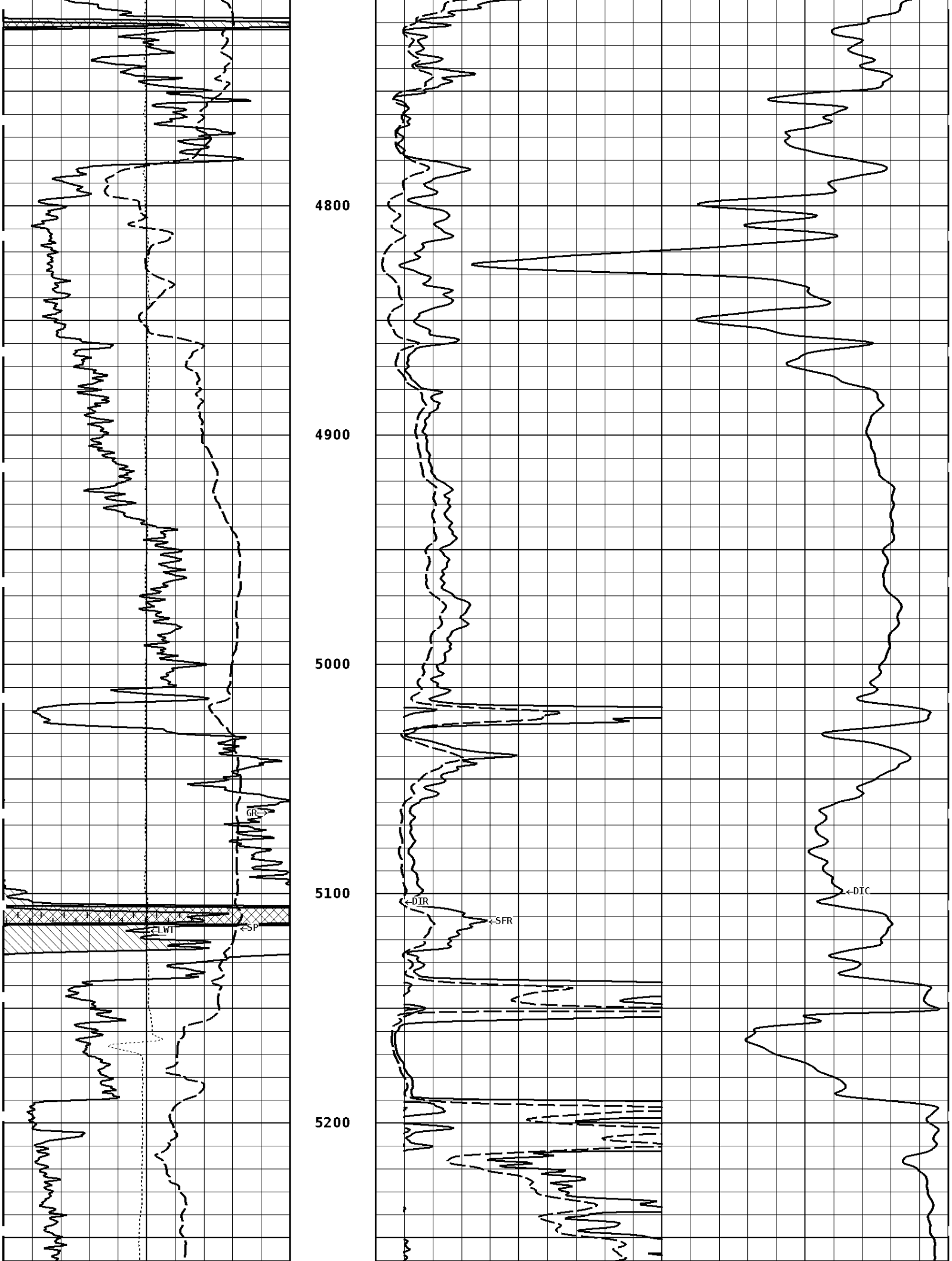
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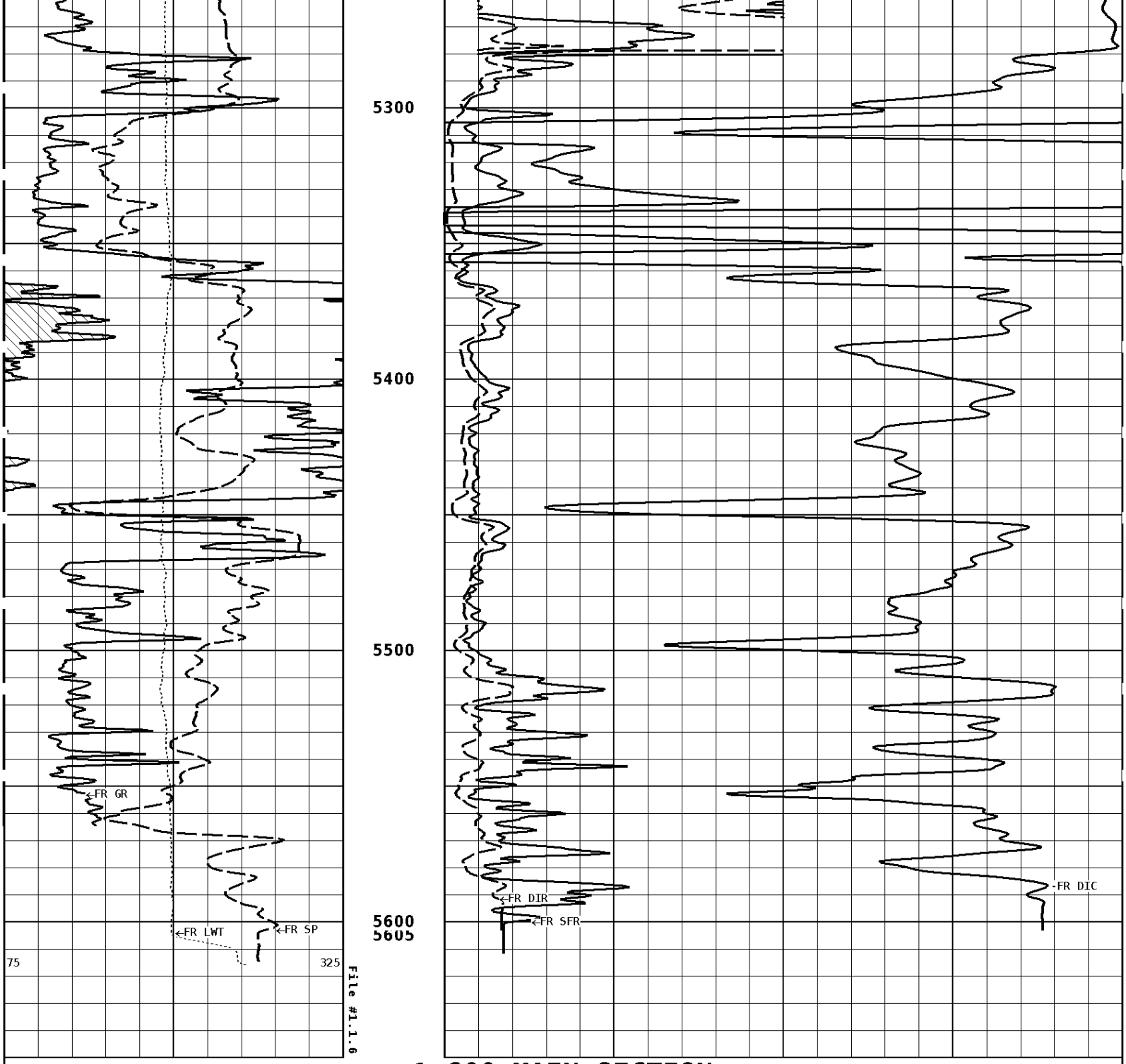
5000
5100
5200
GR
LWT
SP
DIR
SFR
DIC



1:600 MAIN SECTION

GAMMA RAY
API UNITS

150 — 300
0 — 150

DEEP CONDUCTIVITY
MMHO

2000 — 1000
1000 — 0

SPONTANEOUS POTENTIAL
mV

→ | ←25

SHALLOW FOCUSED RESISTIVITY
OHMM

0.0 — 500.0
0.0 — 50.0

TENSION
LBS

10000 — 0

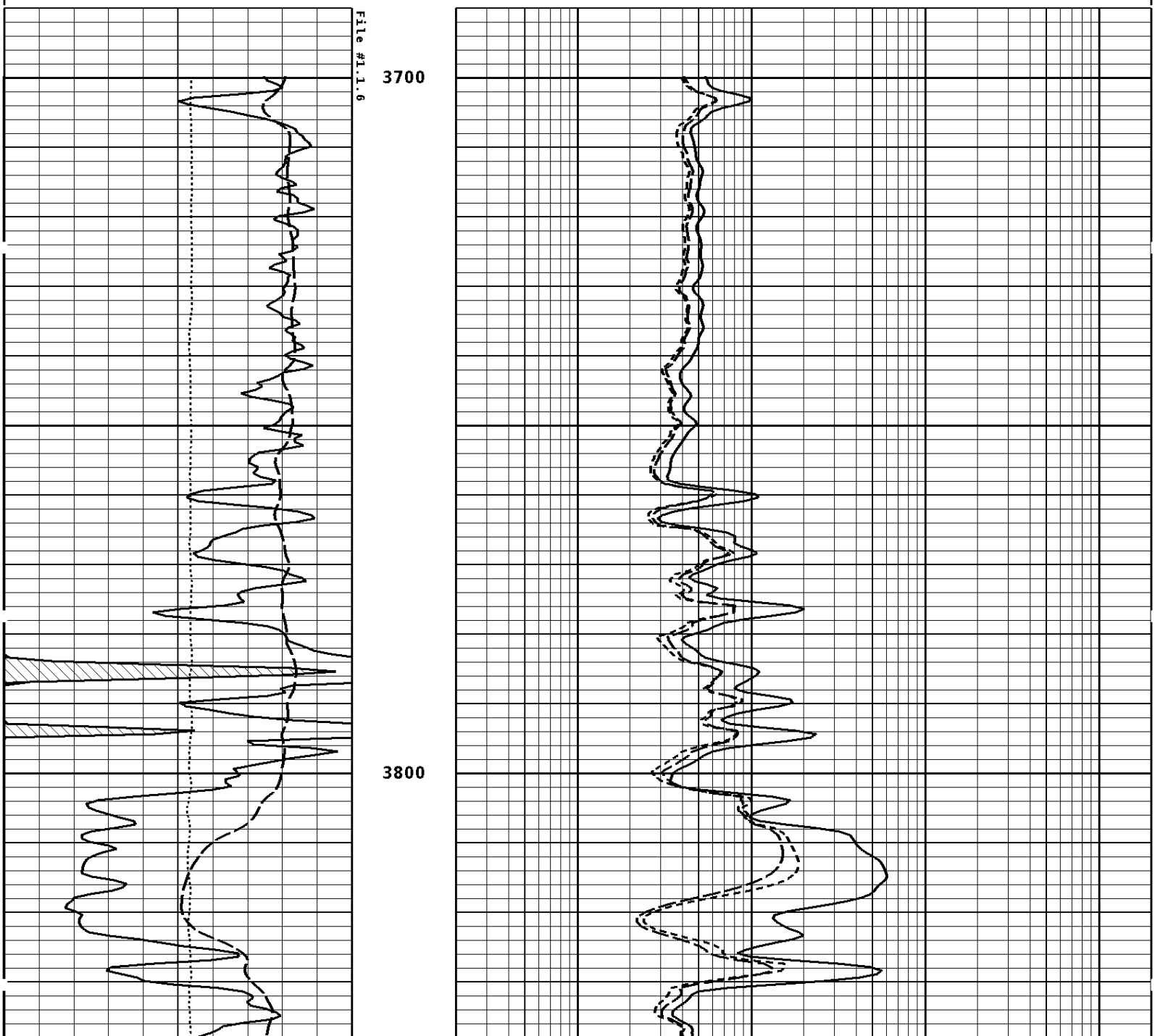
DEEP INDUCTION
OHMM

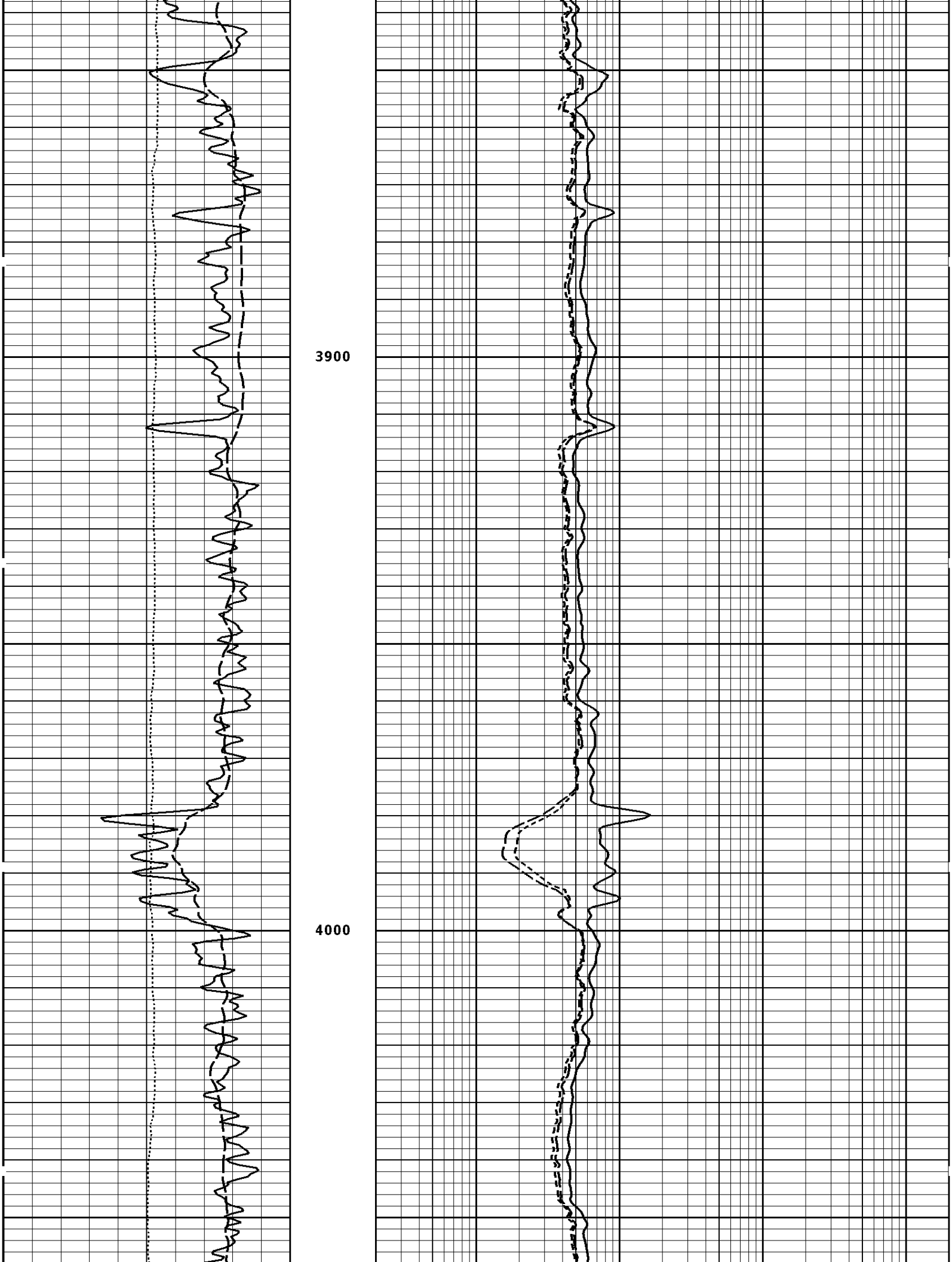
0.0 — 500.0
0.0 — 50.0

Well File: CHIEFTON_AHS_CATTLE_4_MAY2-MSTK **Scale:** 1:240 **Format:** DIL-240
Segment: V1.D1.S6 Repro-MAIN-FINAL **Acquired:** 2014-05/02 21:30 3.5.0-12850
Reference: 0 **Processed:** 2014-05/02 23:39 3.5.0-12850

SPONTANEOUS POTENTIAL mV → | |← 25	**DEEP INDUCTION** OHMM 0.2 — 2000.0
TENSION LBS 10000 — 0	**MEDIUM INDUCTION** OHMM 0.2 — 2000.0
GAMMA RAY API UNITS 150 — 300 / 0 — 150	**SHALLOW FOCUSED RESISTIVITY** OHMM 0.2 — 2000.0

1:240 MAIN SECTION

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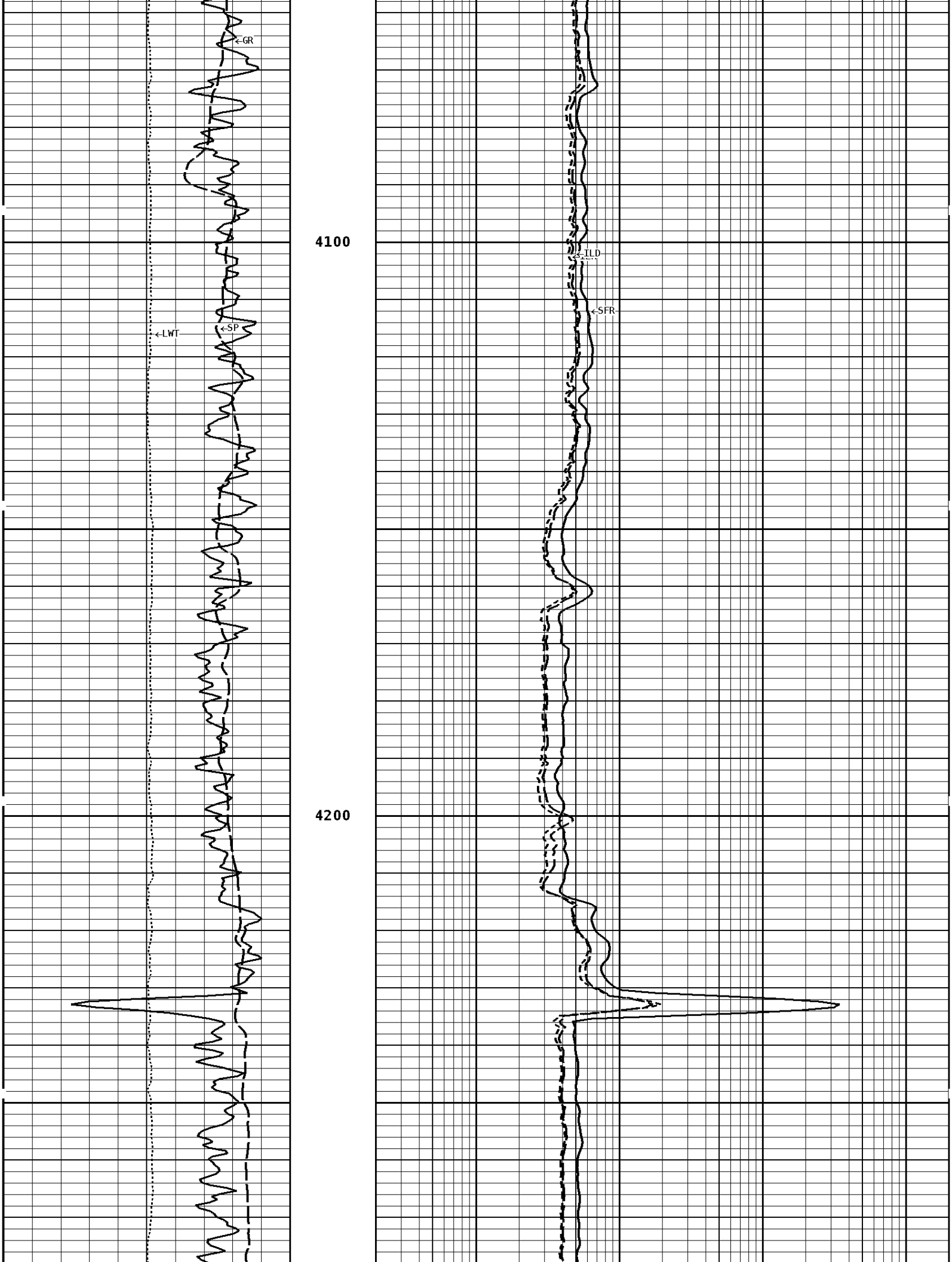
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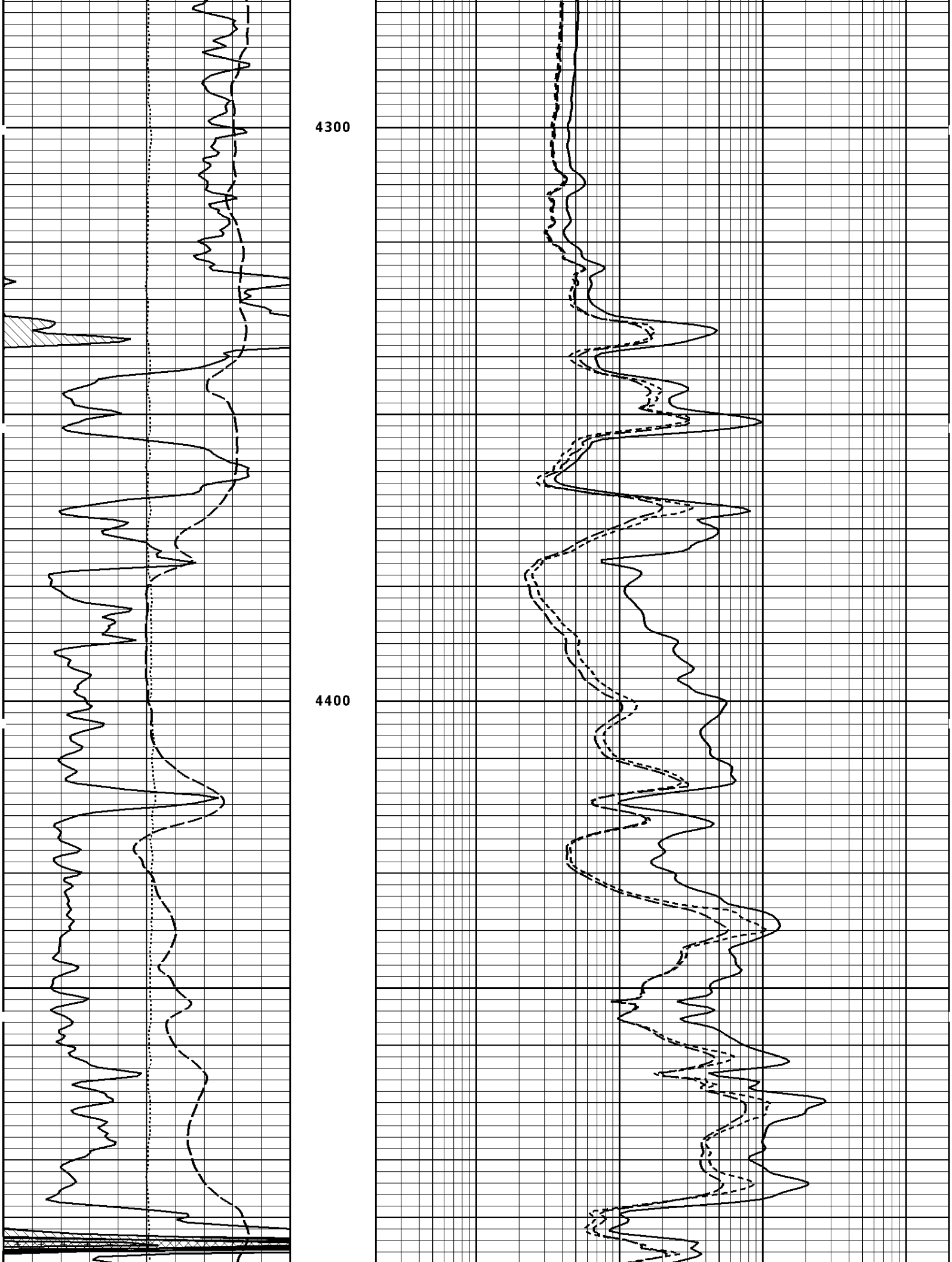
ILD
SFR
LWT
SP
4200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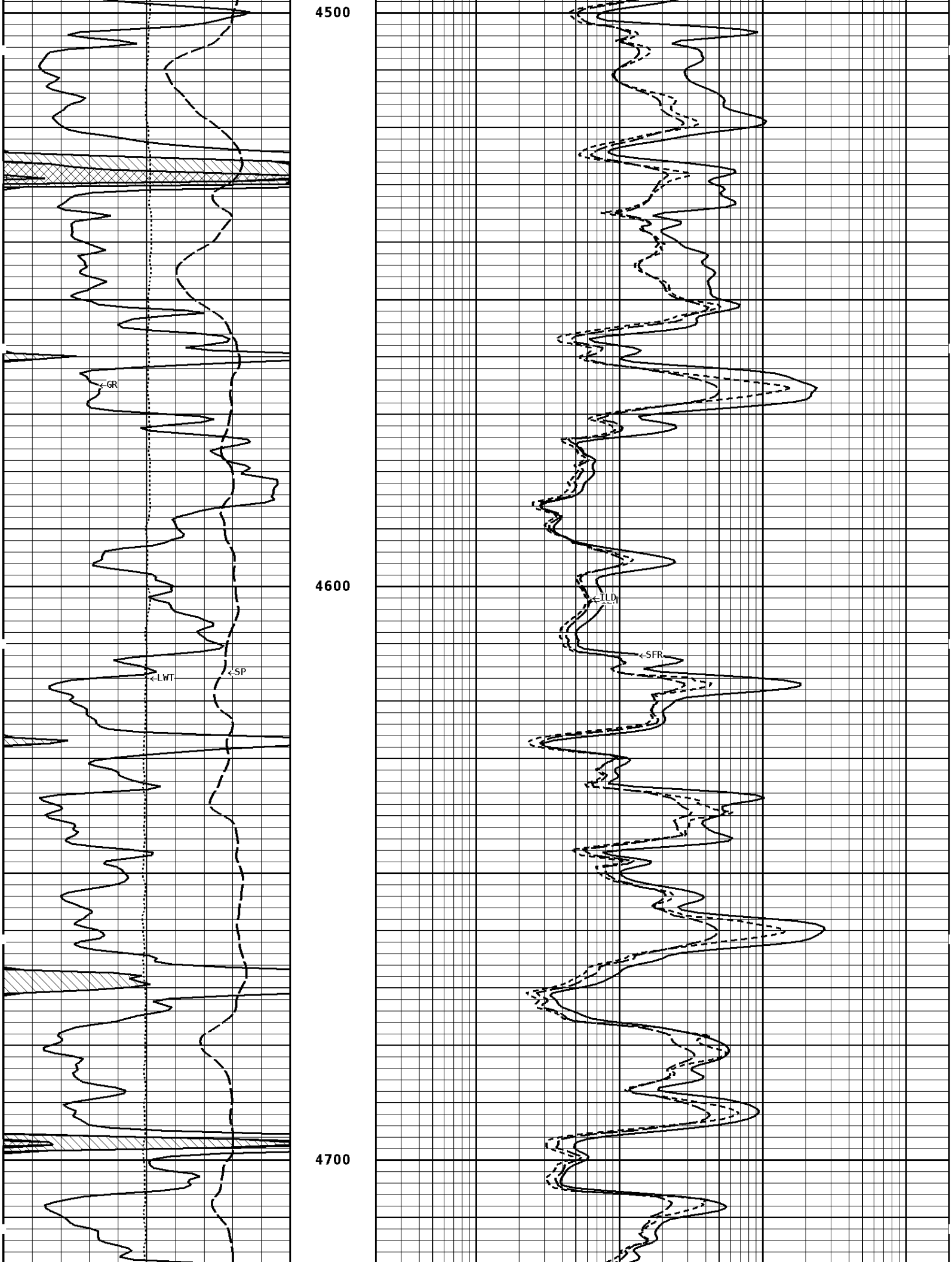
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LWT
SP
ILD
SFR
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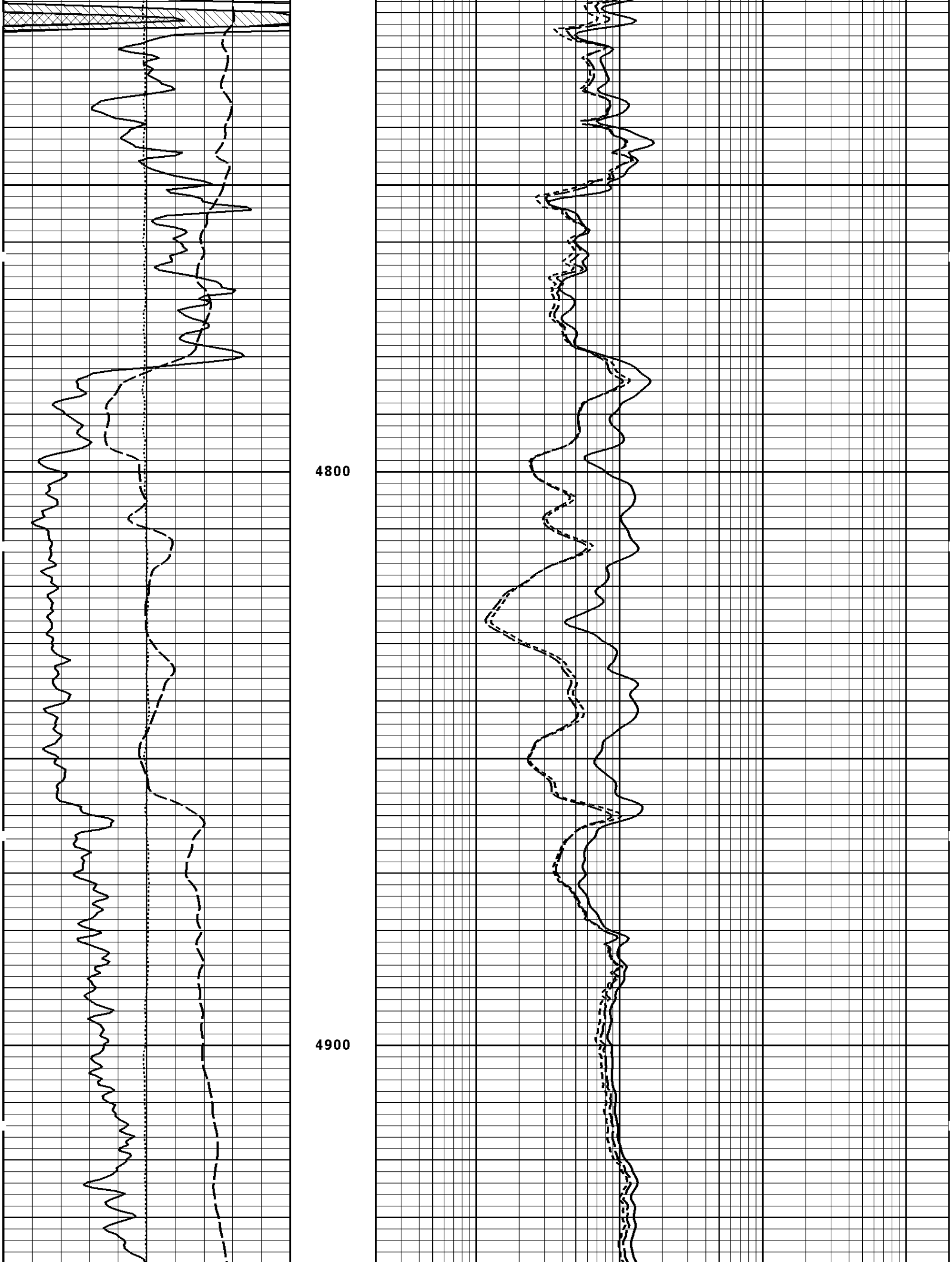
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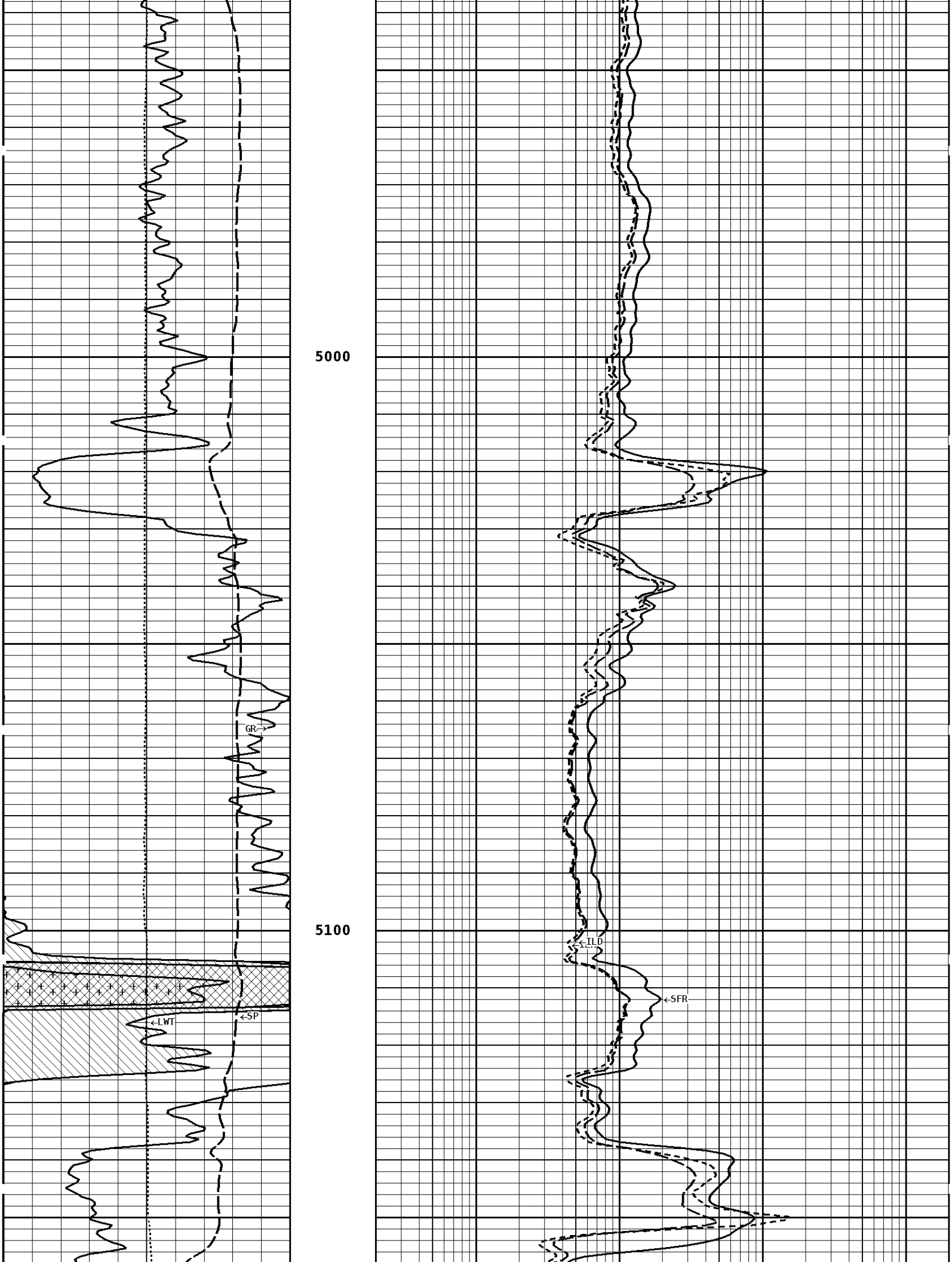
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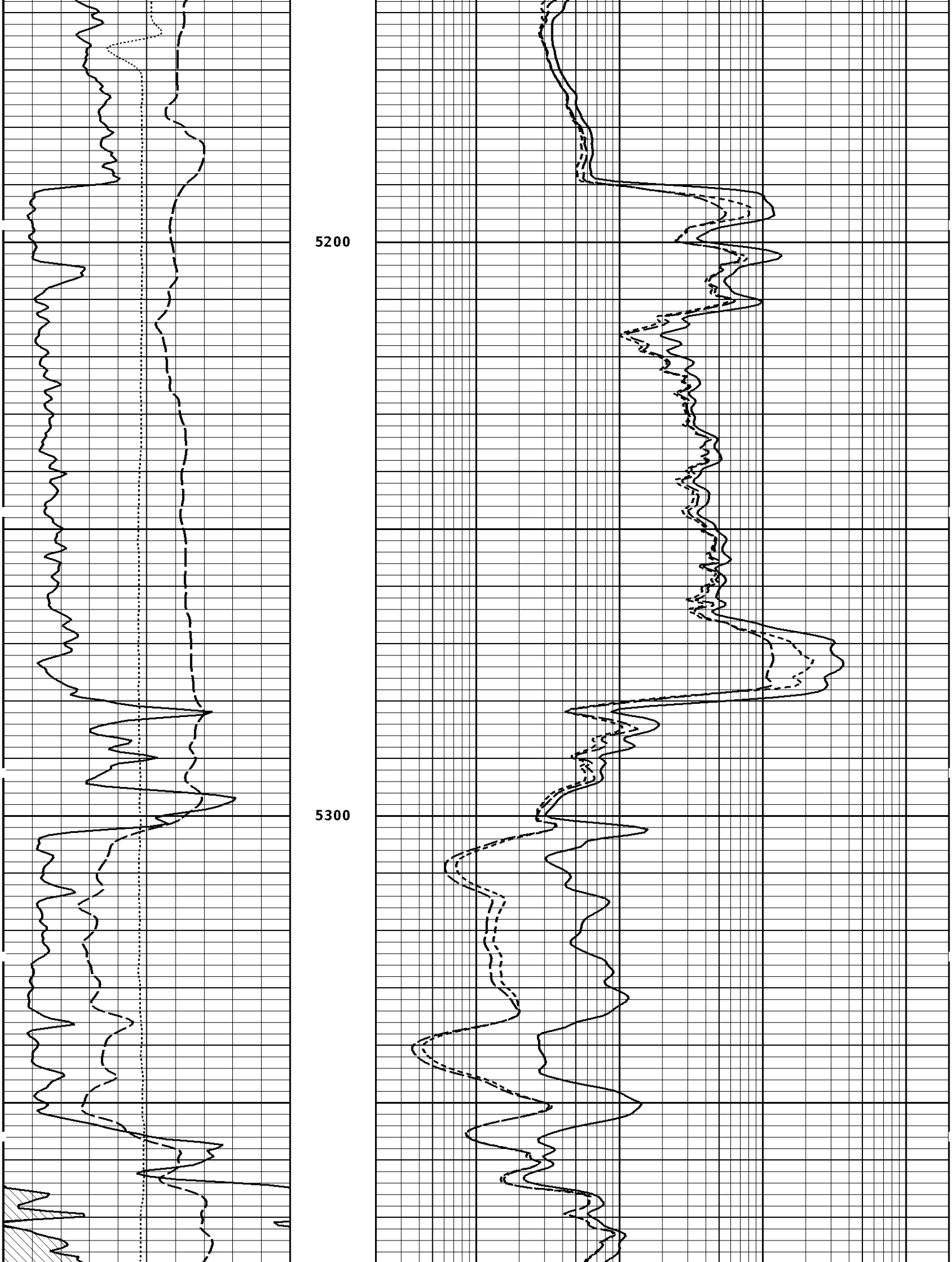
5100
GR
LWT
SP
ILD
SFR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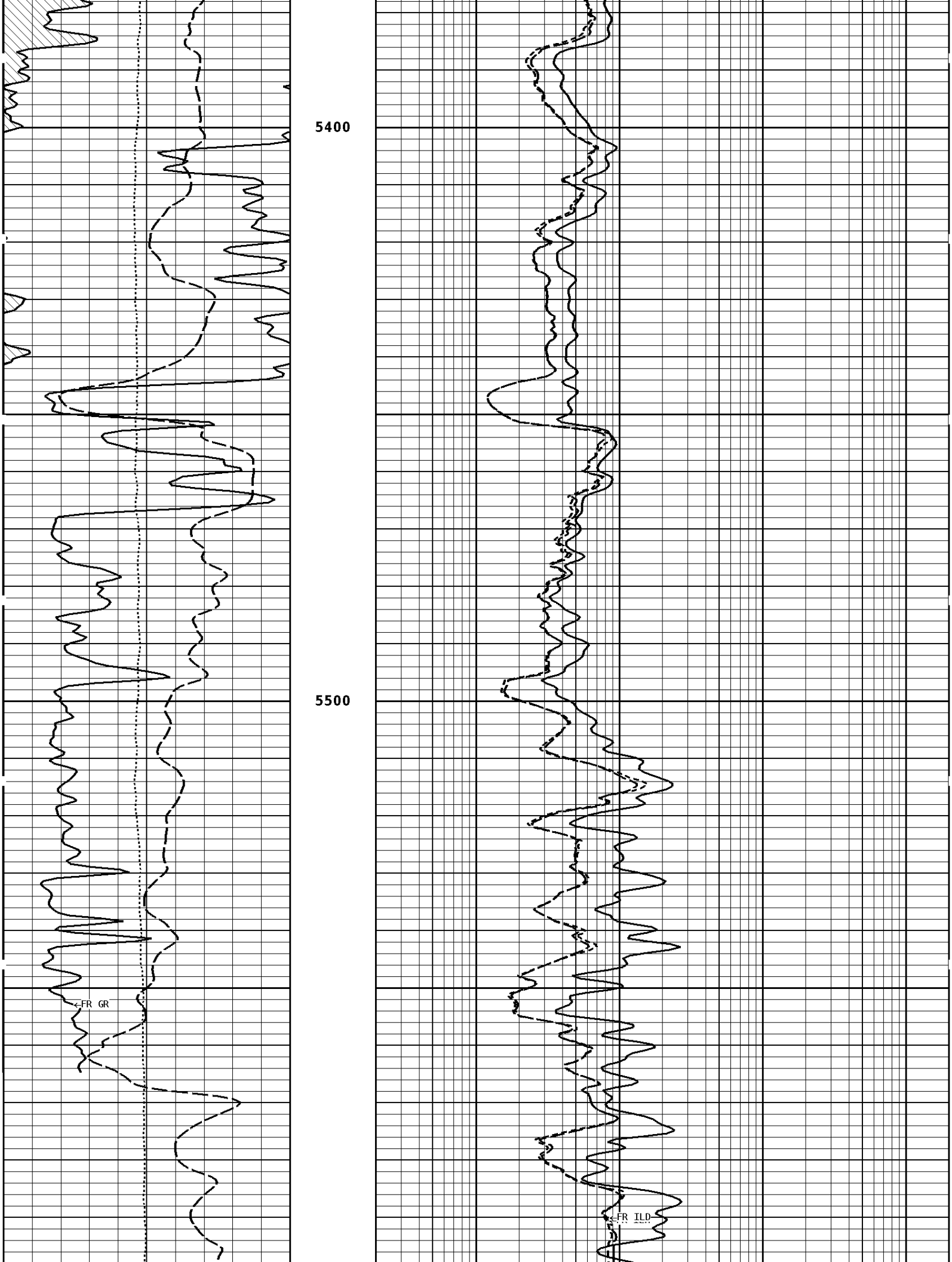
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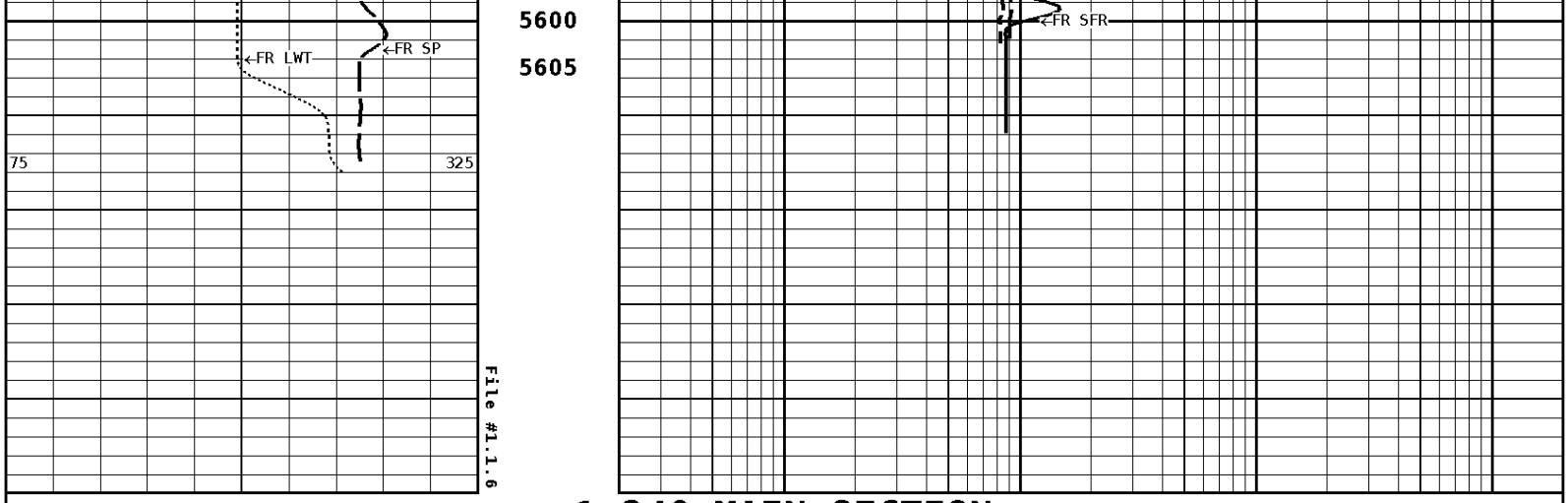
←FR GR
←FR ILD



1:240 MAIN SECTION

GAMMA RAY API UNITS	SHALLOW FOCUSED RESISTIVITY OHMM
150 300 / 0 150	0.2 2000.0
TENSION LBS	**MEDIUM INDUCTION OHMM**
10000 0	0.2 2000.0
SPONTANEOUS POTENTIAL mV	**DEEP INDUCTION OHMM**
→| |←25	0.2 2000.0

*** Borehole Zone Factors ***

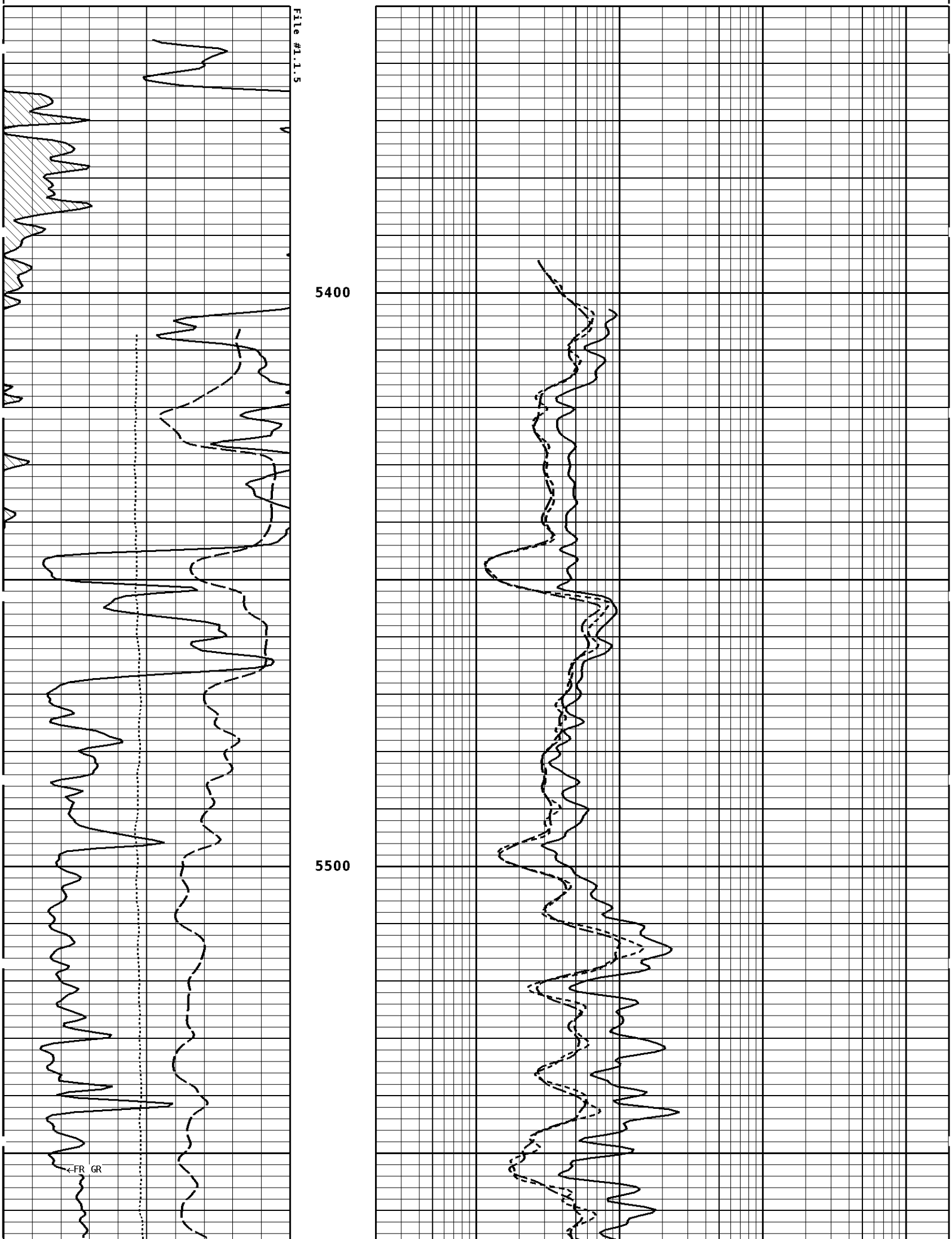
Zone 1 99999.0 to 0.0 Feet

Drill Bit Size	7.875	in
Casing Diameter	5.500	in
BHT Depth	5605.000	ft
Borehole Temperature	135.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	1.100	ohm/m
Standoff	1.5	
Resistivity Of Mud Temperature	66.00	degF

Well File: CHIEFTON_AHS_CATTLE_4_MAY2-MSTK **Scale:** 1:240 **Format:** DIL-240
Segment: V1.D1.S5 Repro-RPT-FINAL **Acquired:** 2014-05/02 21:16 3.5.0-12850
Reference: 0 **Processed:** 2014-05/02 23:39 3.5.0-12850

SPONTANEOUS POTENTIAL mV	DEEP INDUCTION OHMM
→| |←25	0.2 2000.0
TENSION LBS	**MEDIUM INDUCTION OHMM**
10000 0	0.2 2000.0
GAMMA RAY API UNITS	**SHALLOW FOCUSED RESISTIVITY OHMM**
150 300 / 0 150	0.2 2000.0

1:240 REPEAT SECTION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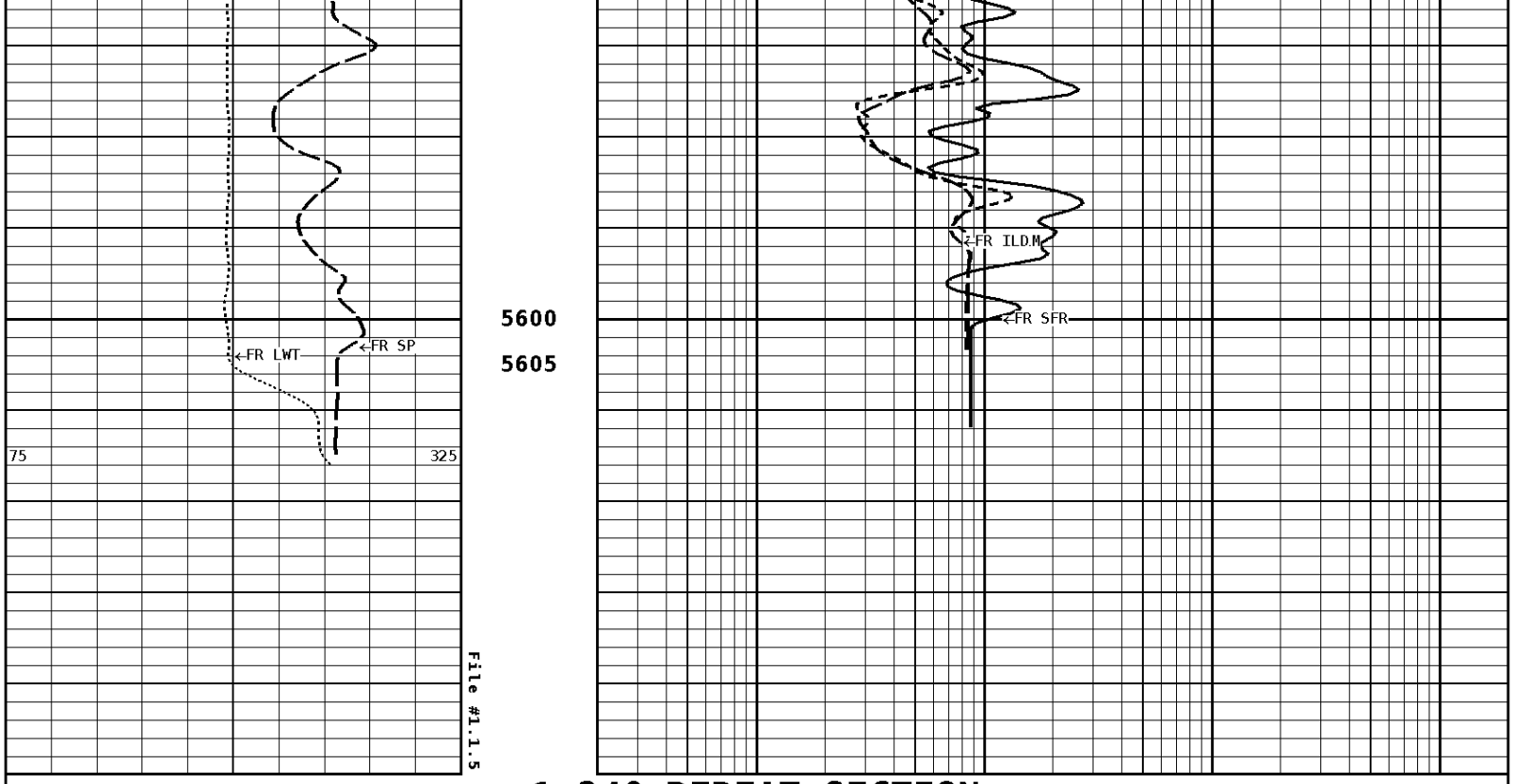
←FR GR



1:240 REPEAT SECTION

GAMMA RAY API UNITS	SHALLOW FOCUSED RESISTIVITY OHMM
150 300 / 0 150	0.2 2000.0
TENSION LBS	**MEDIUM INDUCTION OHMM**
10000 0	0.2 2000.0
SPONTANEOUS POTENTIAL mV	**DEEP INDUCTION OHMM**
→| |←25	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	5605.000	ft
Borehole Temperature	135.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	1.100	ohm/m
Standoff	1.5	
Resistivity Of Mud Temperature	66.00	degF

* Calibration Summary *

Shop Calibration
GRT-B

Performed : 29-APR-2014 Time : 09:39
Sensor Suite : GR-GR5 ID : GRT-BB-117

	Measured Background	Jig	Units	Calibrated Jig	Units
GR	43	344	CPS	175	GRAPI

Shop Calibration

PIT-CA

Performed : 15-APR-2014 Time : 14:04
Sensor Suite : P-IND-T ID : PIT-CA-062

Medium

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

Performed : 15-Apr-2014 Time : 13:51
Sensor Suite : SFL ID : PIT-CA-062

Internal

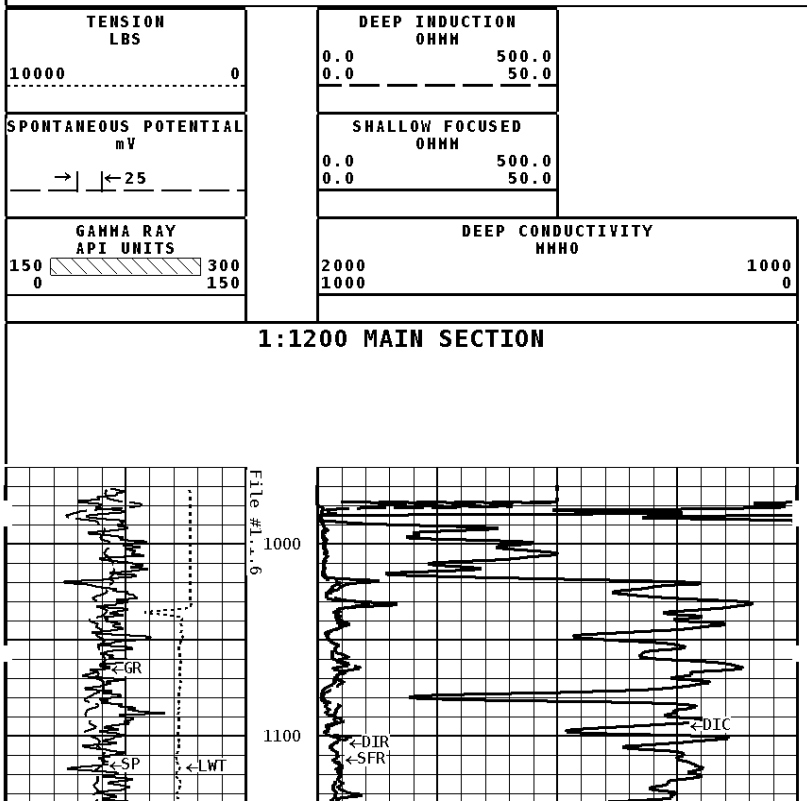
	Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
Im	32763.3	48949.7	0.0	7028.0	uA
Ib	32767.3	48756.3	0.0	1750.0	mA
MOM1	32726.5	57507.3	0.0	175.0	mV
Equivalent SFL				43.97	OHMM

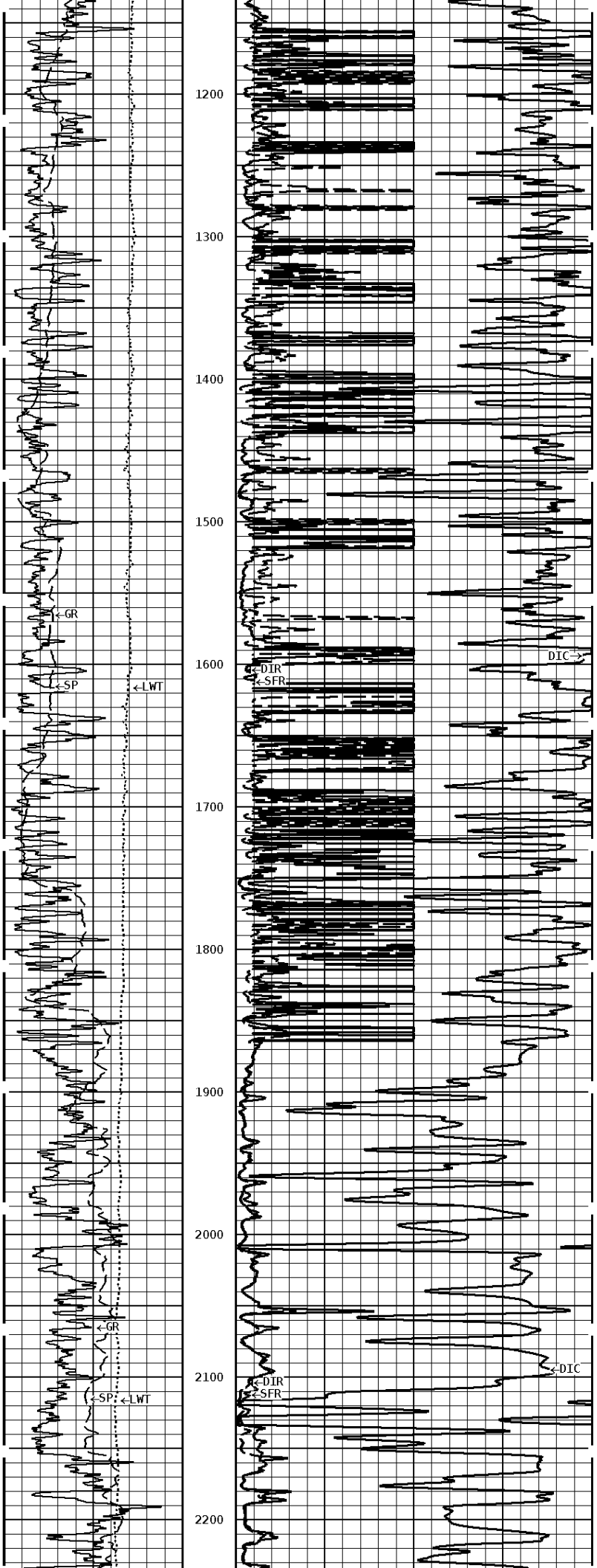
Performed : 15-Apr-2014 Time : 13:49
Sensor Suite : P-SP ID : PIT-CA-062

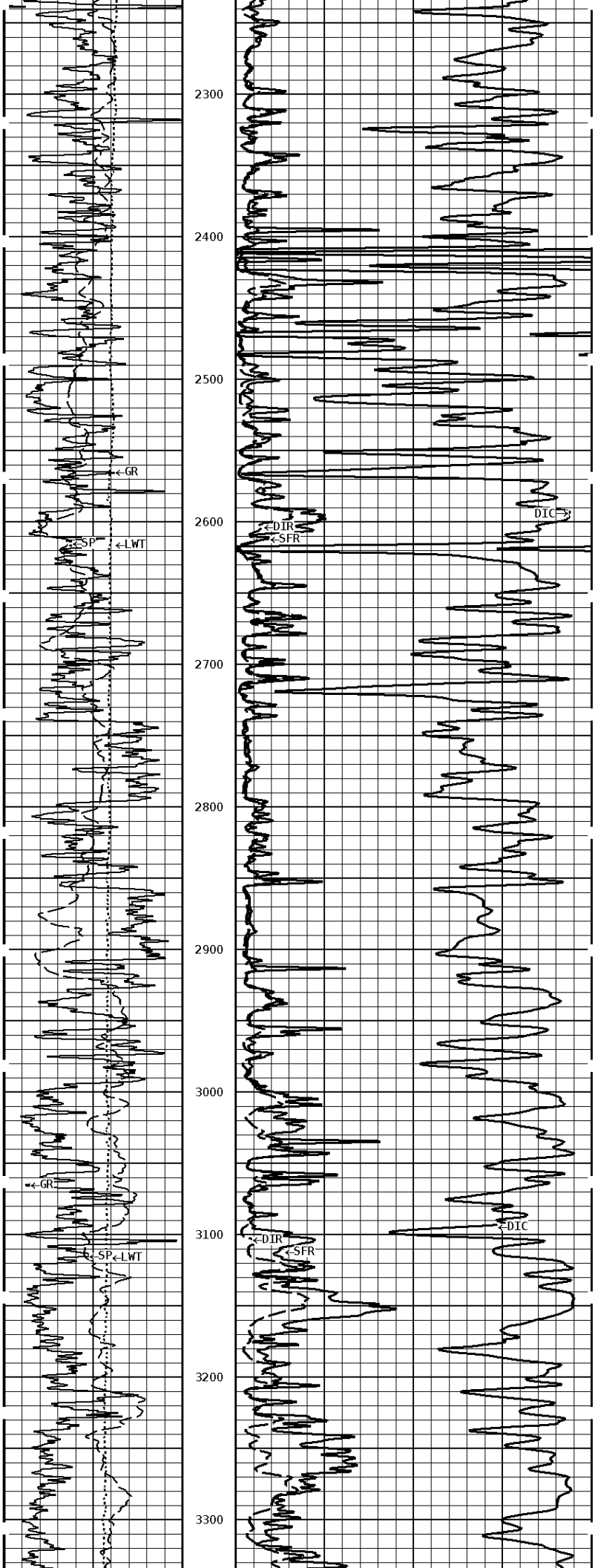
Internal

Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
32765.9	58980.4	0.0	1000.0	mV

Well File: CHIEFTON_AHS_CATTLE_4_MAY2-MSTK **Scale:** 1:1200 **Format:** DIL1200
Segment: V1.D1.S6 Repro-MAIN-FINAL **Acquired:** 2014-05/02 21:30 3.5.0-12850
Reference: 0 **Processed:** 2014-05/02 23:39 3.5.0-12850




1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
GR
SP
LWT
DIR
SFR
DIC
GR
SP
LWT
DIR
SFR
DIC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DIC
GR
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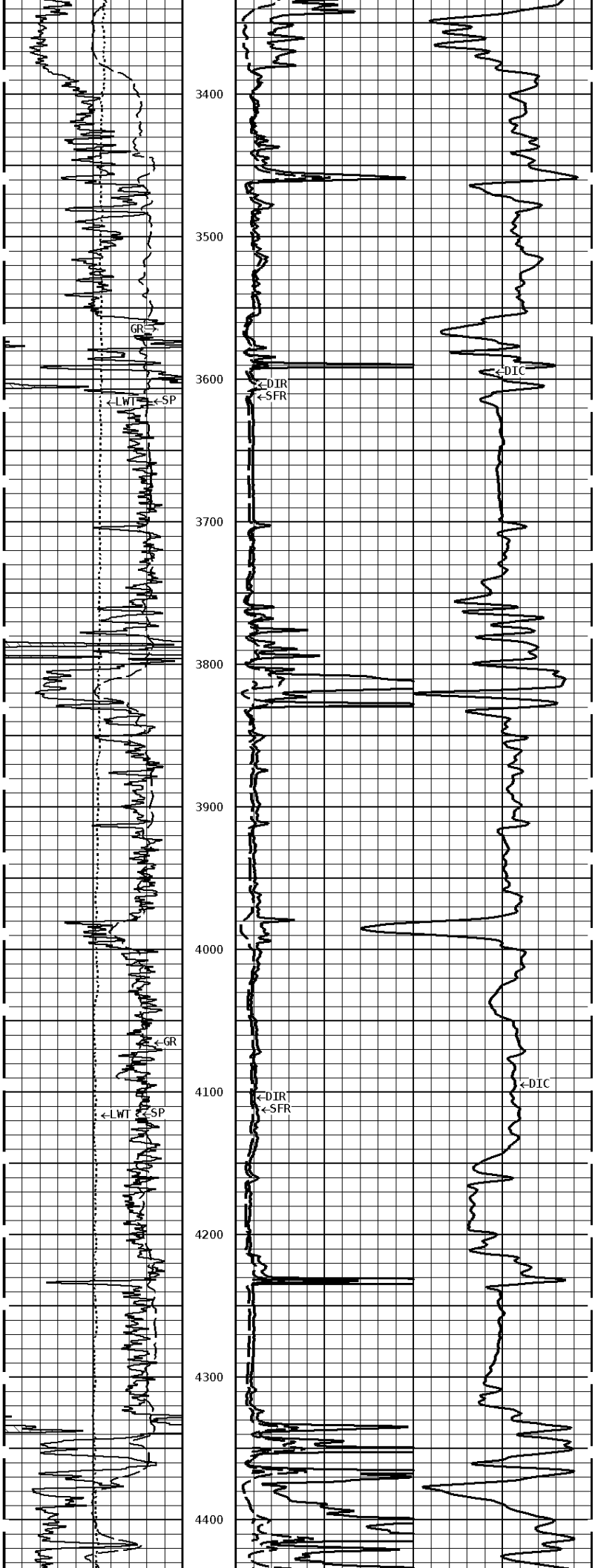
SFR
DIC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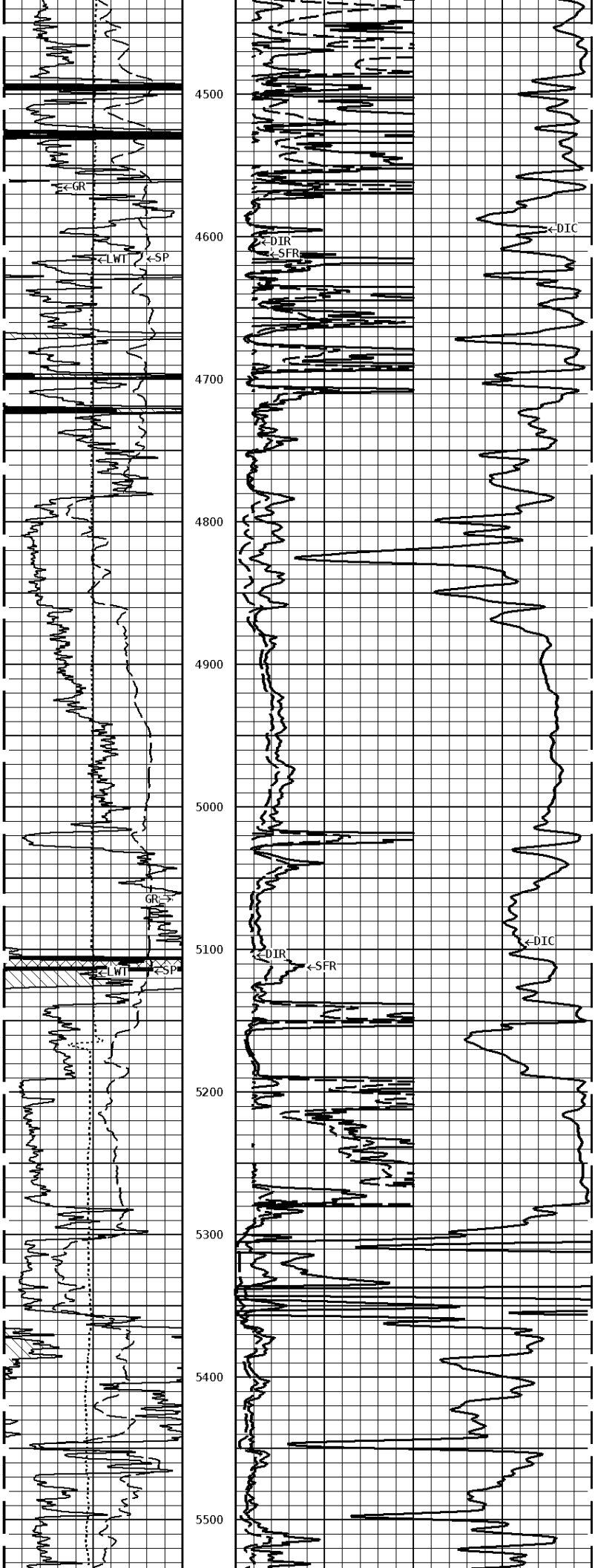
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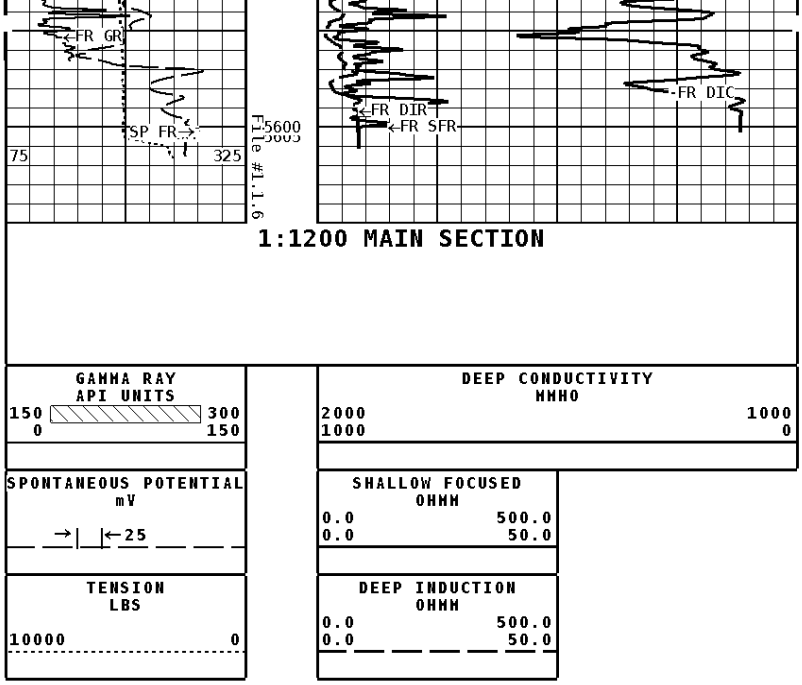

Tucker ENERGY SERVICES

Company: CHIEFTON OIL CO., INC.

Well: AHS CATTLE CO. #4

Location: 1805' FNL & 2305' FEL

Logged: 05-02-2014

K.B. Elev: 1368.0 Ft