Company	CMX, INC.
Well	BARTENDER #4
Field	SRANATHAN
County	BARBER
State	KANSAS

RECON

DUAL INDUCTION
LATEROLOG - SP
GAMMA RAY

	SEC	TWP	RGE	
	18	35S	11W	

Location. 430' FSL & 450' FWL — SW SW SW
SURF. SAME — APH#. 15-007-24271-00-00

OTHER SERVICES:
LDT — CNL
XY CALIPER — MEL

Permanent Datum . Ground Level — Elev 1362
Log Measured From . Kelly Bushing
Drilling Measured From Kelly Bushing

ELEVATIONS K.B. 1375
G.L. 1362
D.F. 1374

Date		13-MAR-2015					
Run No.		ONE					
TD Driller		5115	ft.			ft.	
TD RECON		5115	ft.			ft.	
Bot Logged Interval		5114	ft.			ft.	
Top Logged Interval		3700	ft.			ft.	
Casing Depth Driller		8 5/8	in.	@ 1025		in.	@
Casing Depth RECON		8 5/8	in.	@ 1026		in.	@
Bit Size		7 7/8	in.			in.	
Drilling Fluid Type		CARBONOX					
Density	Viscosity	9.05 ppg		110 sec/qt			
Fluid Loss	PH	5.0 ml/30min		9.6 strip			
Source Of Sample		Flowline					
RM @ Measured Temp		2.273	Ohmm	@ 75		Ohmm	@
RMF @ Measured Temp		1.705	Ohmm	@ 75		Ohmm	@
RMC @ Measured Temp		2.841	Ohmm	@ 75		Ohmm	@
RM @ MRT		1.539	Ohmm	@ 114		Ohmm	@
Max Recorded Temp		114	DegF			DegF	
Time Drilling Stopped		12-MAR-2015		11:15			
Time Circulation Stopped		13-MAR-2015		00:45			
Time Logger On Bottom		13-MAR-2015		04:27			
Unit Num	Location	S408		OKLAHOMA CITY, OK			
Recorded By		H. GARCIA					
Witnessed By		MRS. L. KASTEN					

All interpretations are based on inferences from electrical or other readings, and therefore, RECON cannot and will not guarantee the accuracy of any interpretations of log data. RECON shall not be liable for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from interpretations made by any of our officers, agents or employees, except in the case of provable Gross Neglegence or willfull damage. Interpretations are also subject to the terms and conditions of our Price Schedule and General Service Agreement.

RIG INFORMATION

Drill Contr/Rig# DUKE DRLG. #7

GENERAL REMARKS SECTION

FIRST RUN IN THE HOLE
CNL AND LDT LOGGED IN A LIMESTONE MATRIX
TOP MARK - 1066.5, BOTTOM MARK - 5071.3
CNL/LDT LOGGED MATRIX: 2.71 g/cc.

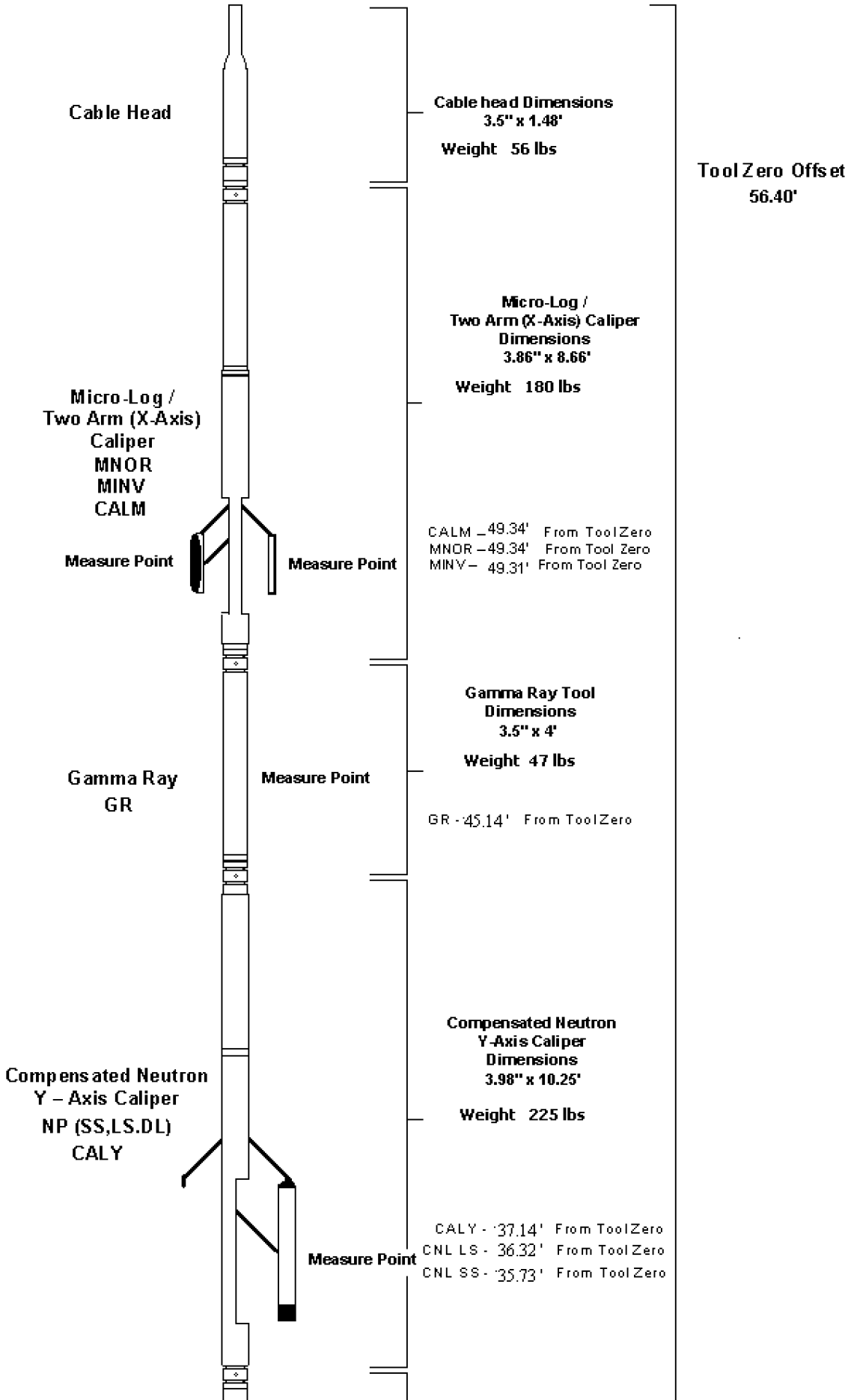
CHLORIDES: 3000 mg/l
LCM: 16 lbm/bbl

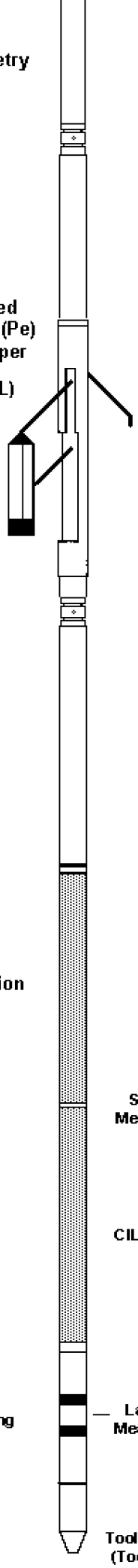
AHV CALCULATED ON 5.5" PROD. CASING

CREW: M. CALLENTINE, B. THOMAS

THANK YOU FOR USING RECON PETROTECHNOLOGIES LTD.

DUAL INDUCTION – SP / GAMMA RAY / COMPENSATED LITHO-DENSITY / X-CALIPER COMPENSATED NEUTRON / Y-CALIPER MICRO - LOG / M-CALIPER




Digital Telemetry
Compensated
Litho-Density (Pe)
X – Axis Caliper
DP(SS,LS.DL)
RHOB
DRHO
PE
CALX
Measure Point
Dual Induction
SP
ILD
ILM
LL3
S.P. / CILD
Measure Point
CILM Measure
Point
Tool First Reading
Point
Laterolog 3
Measure Point
Tool Zero Point
(Tool Bottom)
Digital Telemetry Section
Dimensions
3.5" x 3.15'
Weight 52 lbs
Compensated Litho-Density
X-Axis Caliper
Dimensions
3.98" x 9.35'
Weight 210 lbs
CALX - 23.20' From Tool Zero
LDT w1 -
LDT w2 -
LDT w3 -
LDT w4 -
- 22.93' From Tool Zero
LDT SS - 22.44' From Tool Zero
Dual Induction Tool
Dimensions
3.62" x 21'
Weight 290 lbs
SP - 10.96' From Tool Zero
ILD - 10.96' From Tool Zero
ILM - 7.22' From Tool Zero
LL3 - 1.67' From Tool Zero
All Measurements are
taken from Tool Zero
Tool String
Length Total
57.89 '
Total Tool Weight
1068 lbs

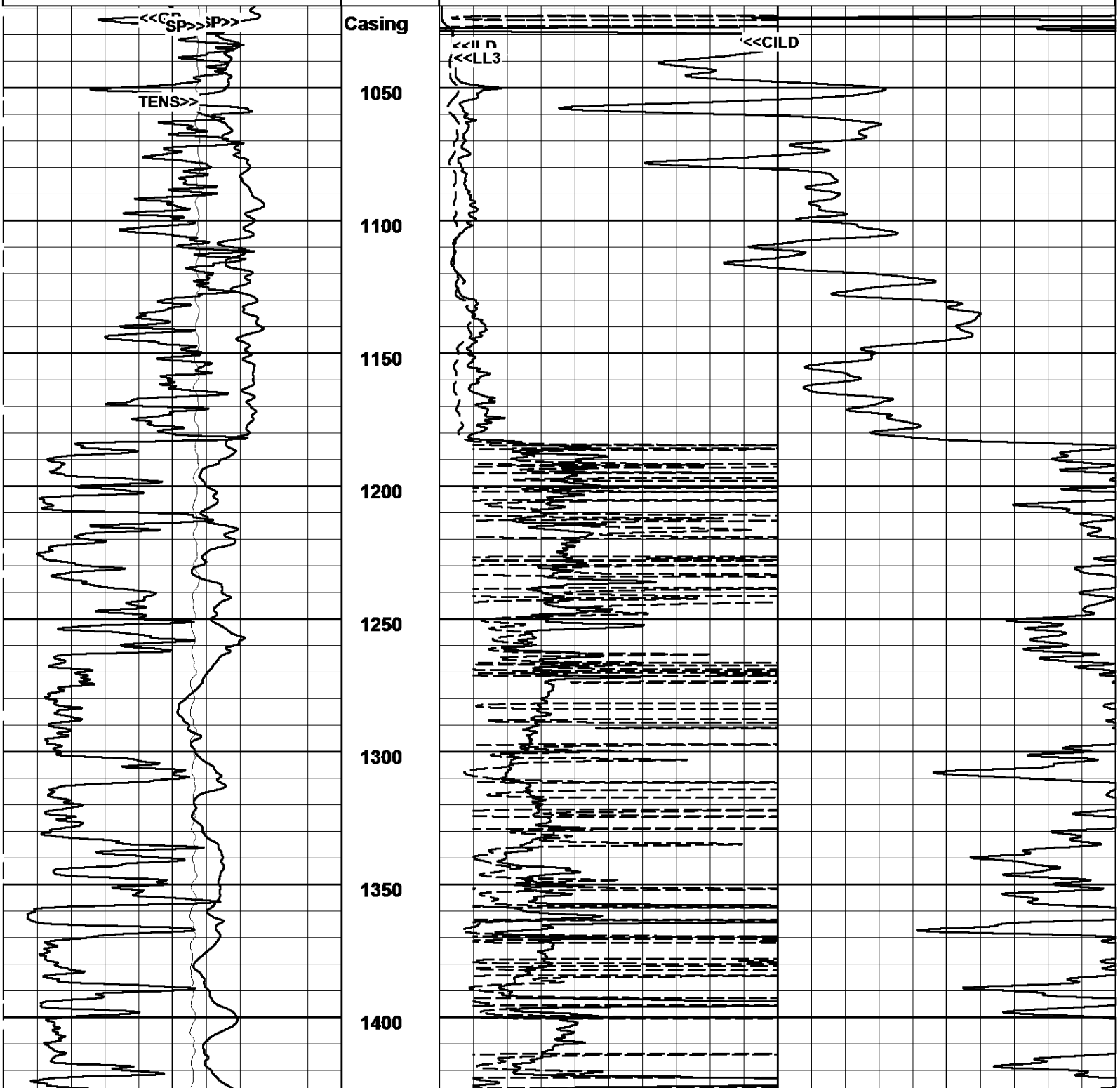
03/13/2015
06:18:09 => End Time

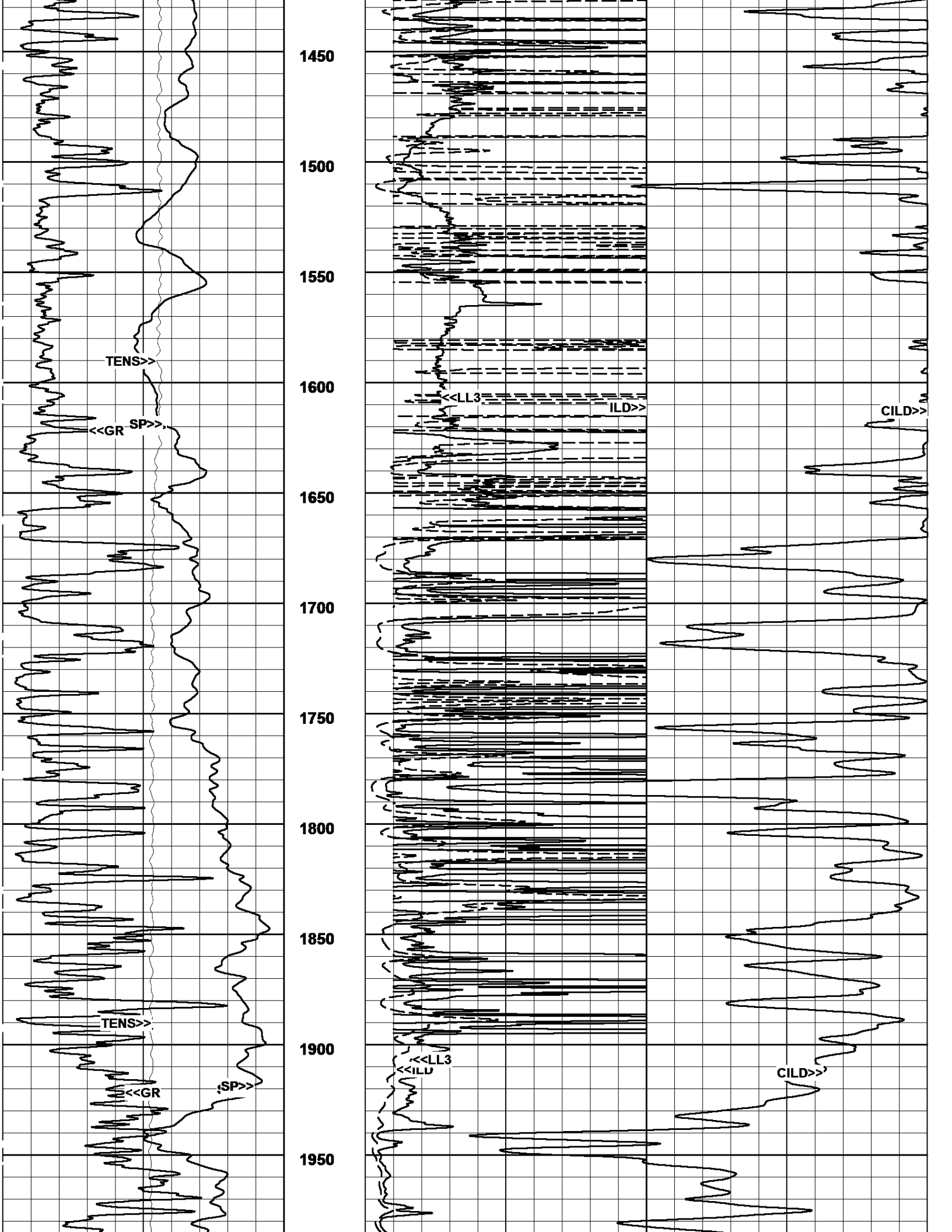
MAIN PASS (2"/100Ft)

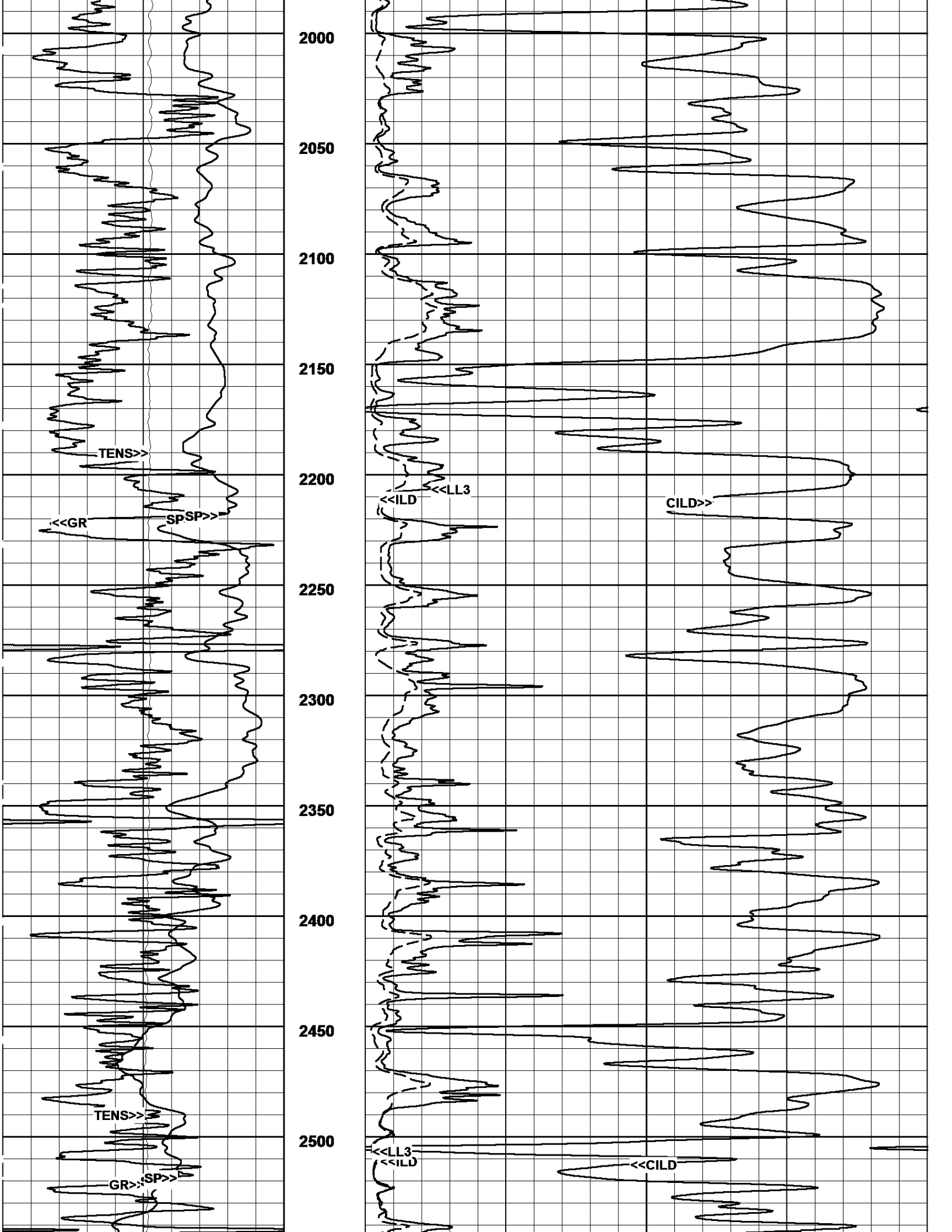
Log UP - (VER 11.19)
End Depth=> 1019.75 Feet

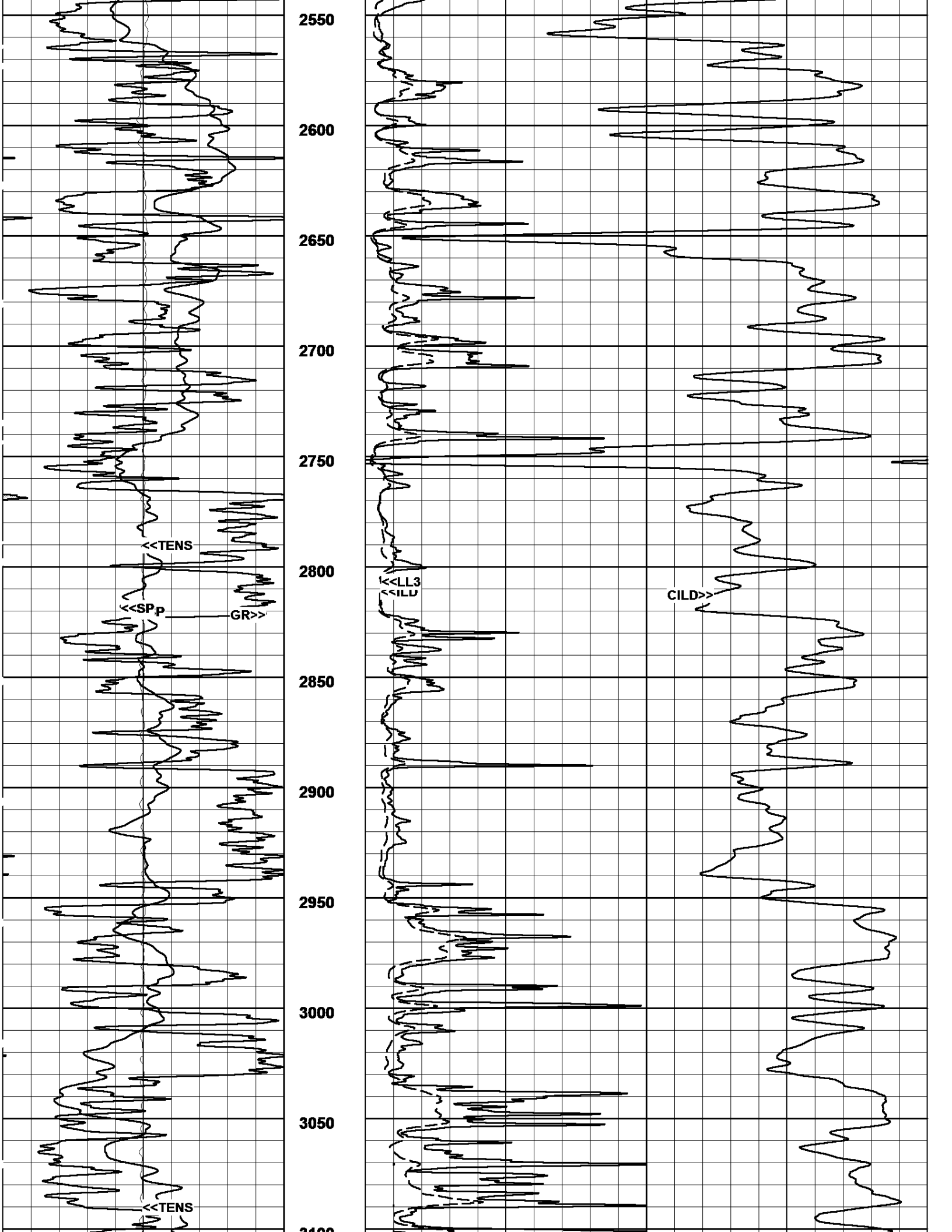
Tension (TENS)		
5000.	Lbs	0.
Spontaneous Potential (SP)		
-160.	mV	40.
Gamma Ray (GR)		
0.	API	150.

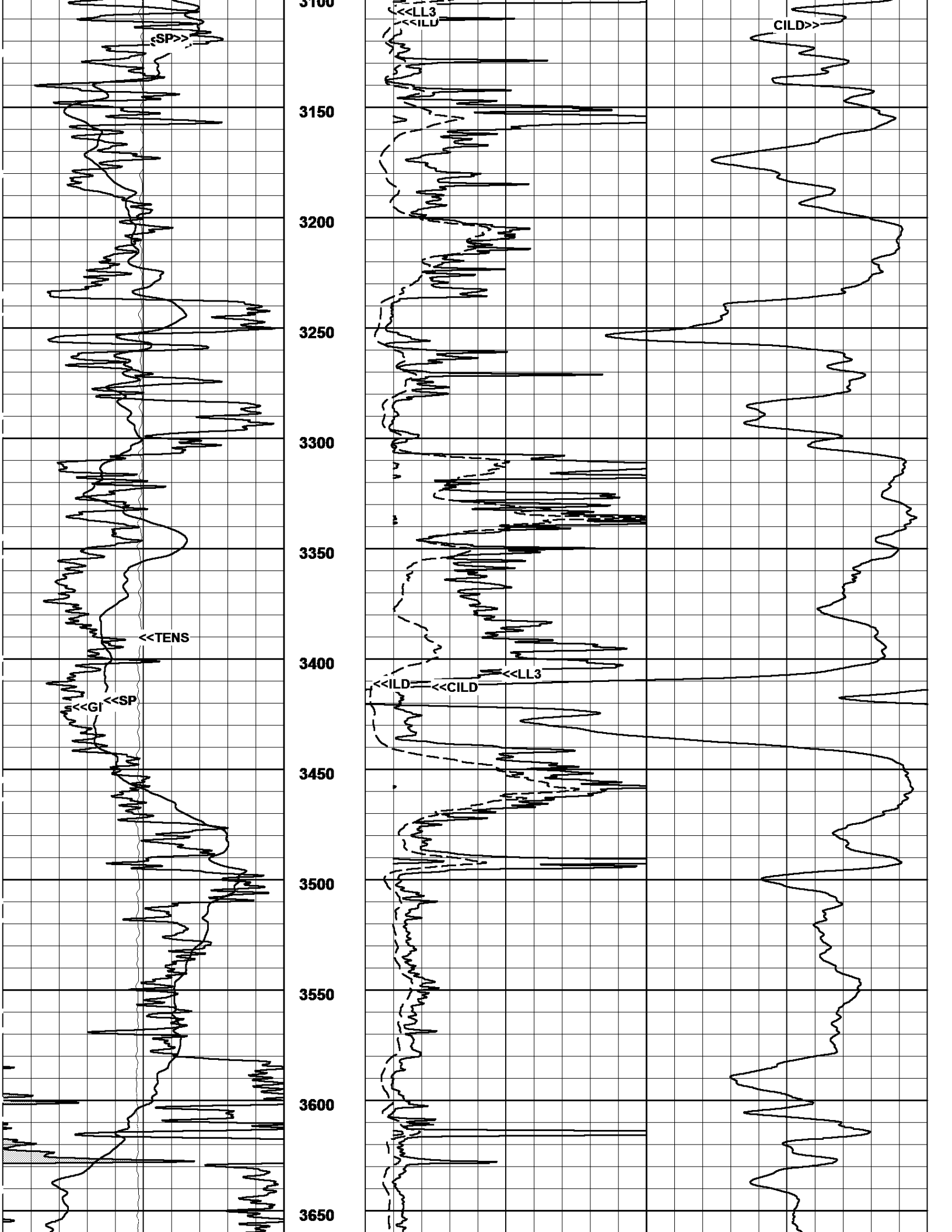
Laterolog (LL3)		
0.	ohmm	50.
Deep Induction (ILD)		
0.	ohmm	50.
Deep Induction (CILD)		
1000.	mmhos	0.

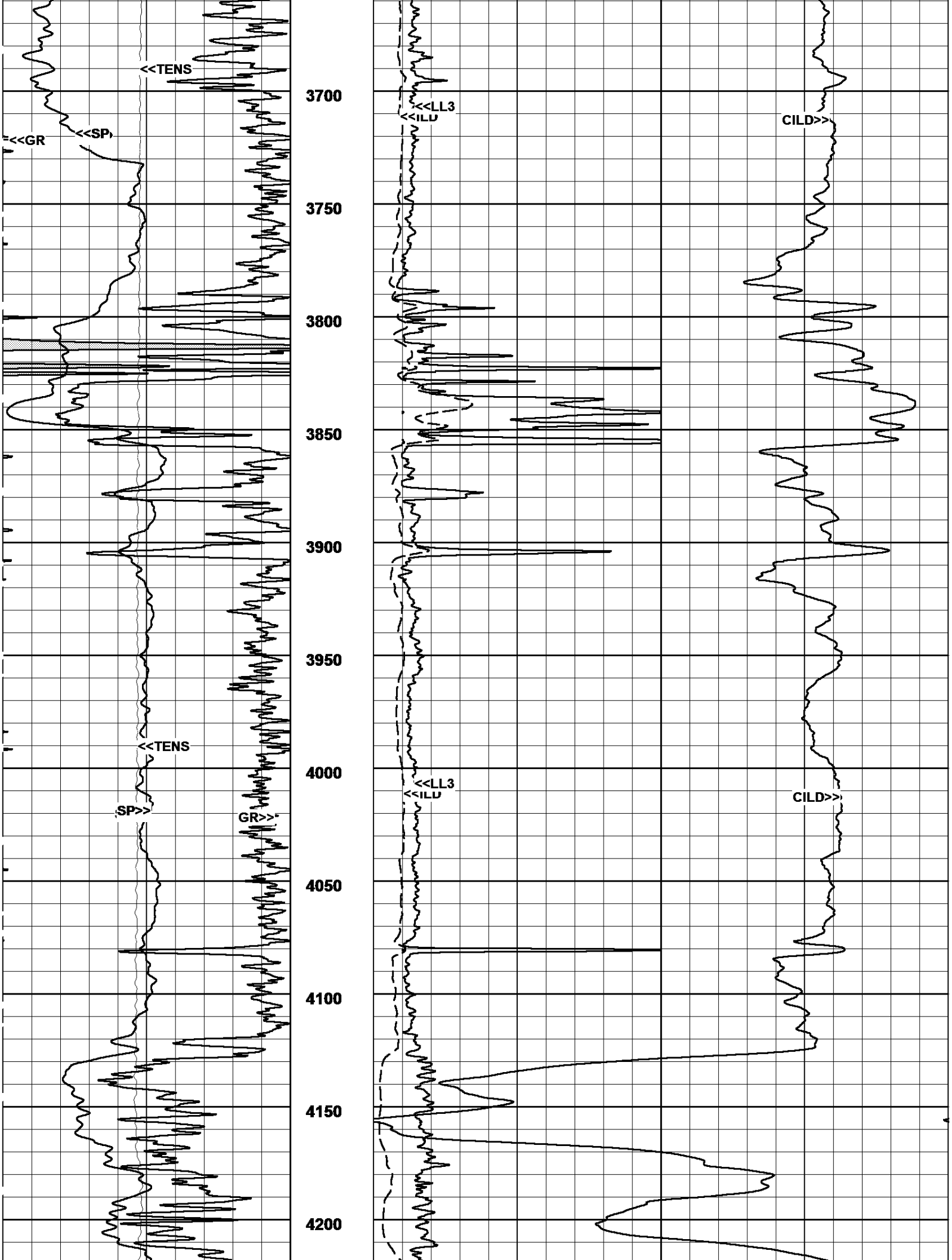


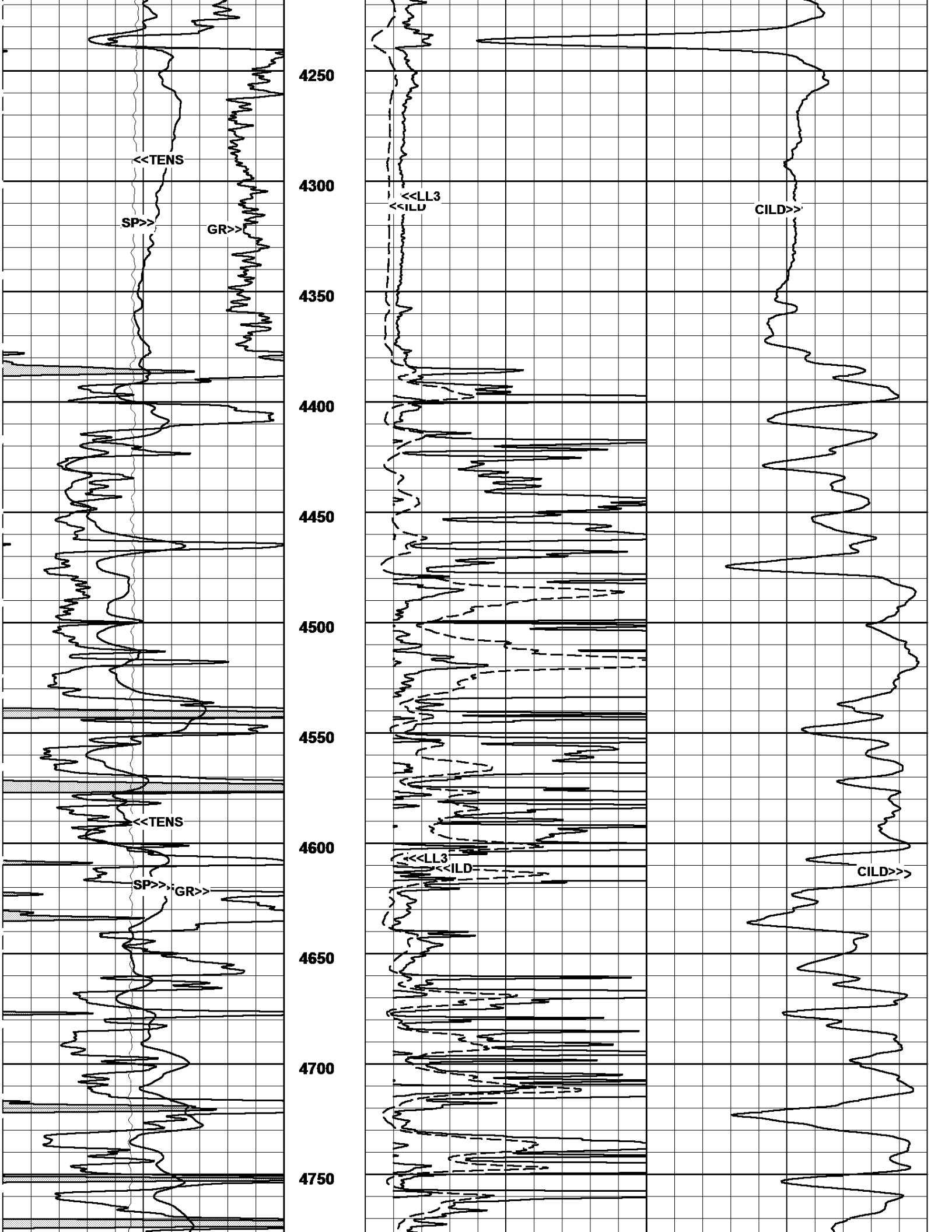

1450
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
TENS>>
<<GR
SP>>
<<LL3
ILD>>
CILD>>
TENS>>
<<GR
SP>>
<<LL3
<<ILD
CILD>>

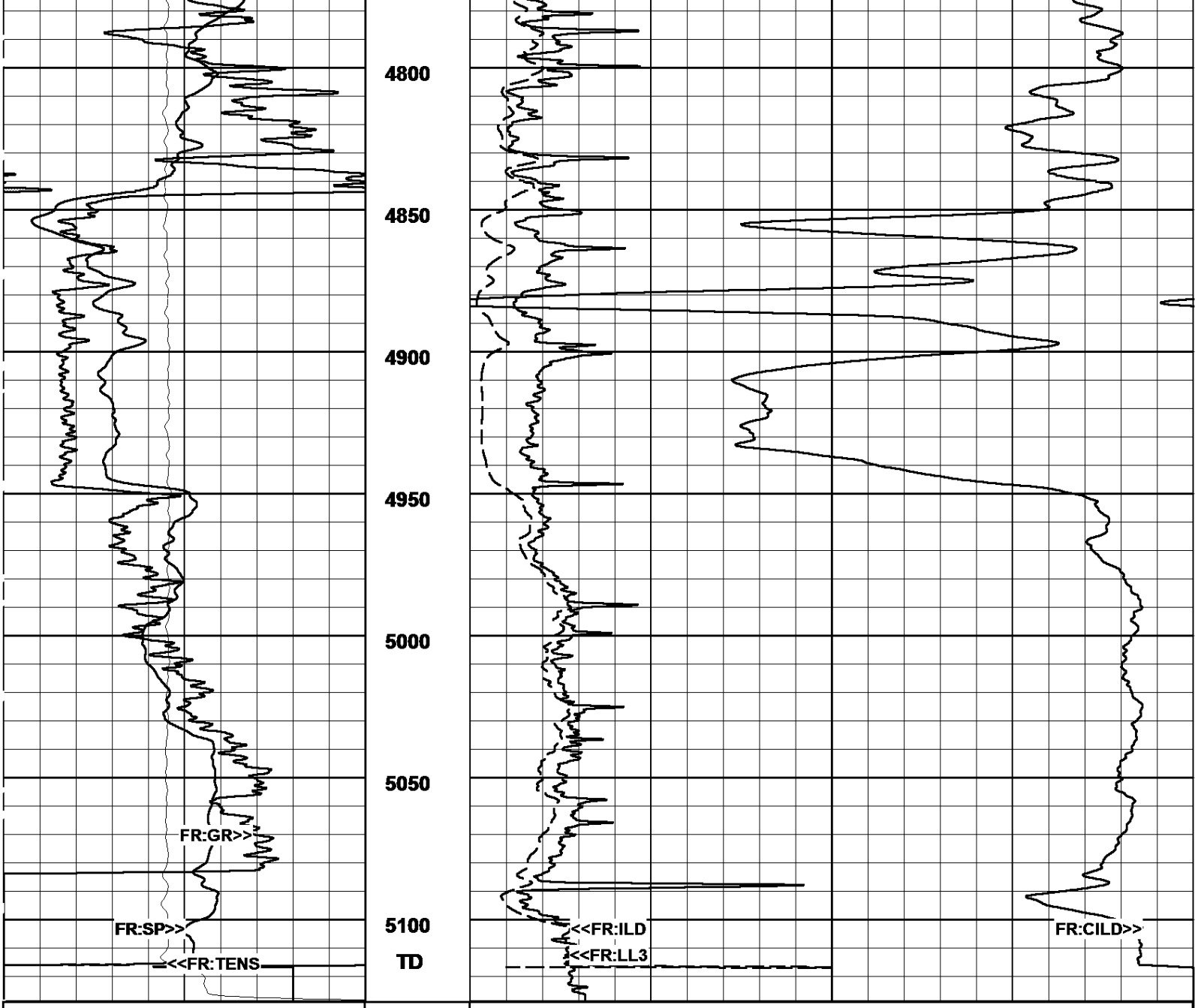

2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500
TENS>>
<<GR
SP
SP>>
TENS>>
GR>>
SP>>
<<ILD
<<LL3
CILD>>
<<LL3
<<ILD
<<CILD


2550
2600
2650
2700
2750
2800
2850
2900
2950
3000
3050
<<TENS
<<SP
GR>>
<<TENS
<<LL3
CILD>>


3100
<<LL3
<<ILD
CILD>>
SP>>
3150
3200
3250
3300
3350
<<TENS
3400
<<LL3
<<ILD
<<CILD
<<GI
<<SP
3450
3500
3550
3600
3650


<<TENS
<<GR
<<SP
3700
<<LL3
<<ILD
CILD>>
3750
3800
3850
3900
3950
<<TENS
4000
<<LL3
<<ILD
CILD>>
SP>>
GR>>
4050
4100
4150
4200


4250
4300
4350
4400
4450
4500
4550
4600
4650
4700
4750
<<TENS
SP>>
GR>>
<<TENS
SP>>
GR>>
<<LL3
<<ILD
<<LL3
<<ILD
CILD>>
CILD>>>



Gamma Ray (GR)		Deep Induction (CILD)
0. API 150.		1000. mmhos 0.
Spontaneous Potential (SP)		Deep Induction (ILD)
-160. mV 40.		0. ohmm 50.
Tension (TENS)		Laterolog (LL3)
5000. Lbs 0.		0. ohmm 50.

03/13/2015
04:50:14 => Start Time

MAIN PASS (2"/100Ft)

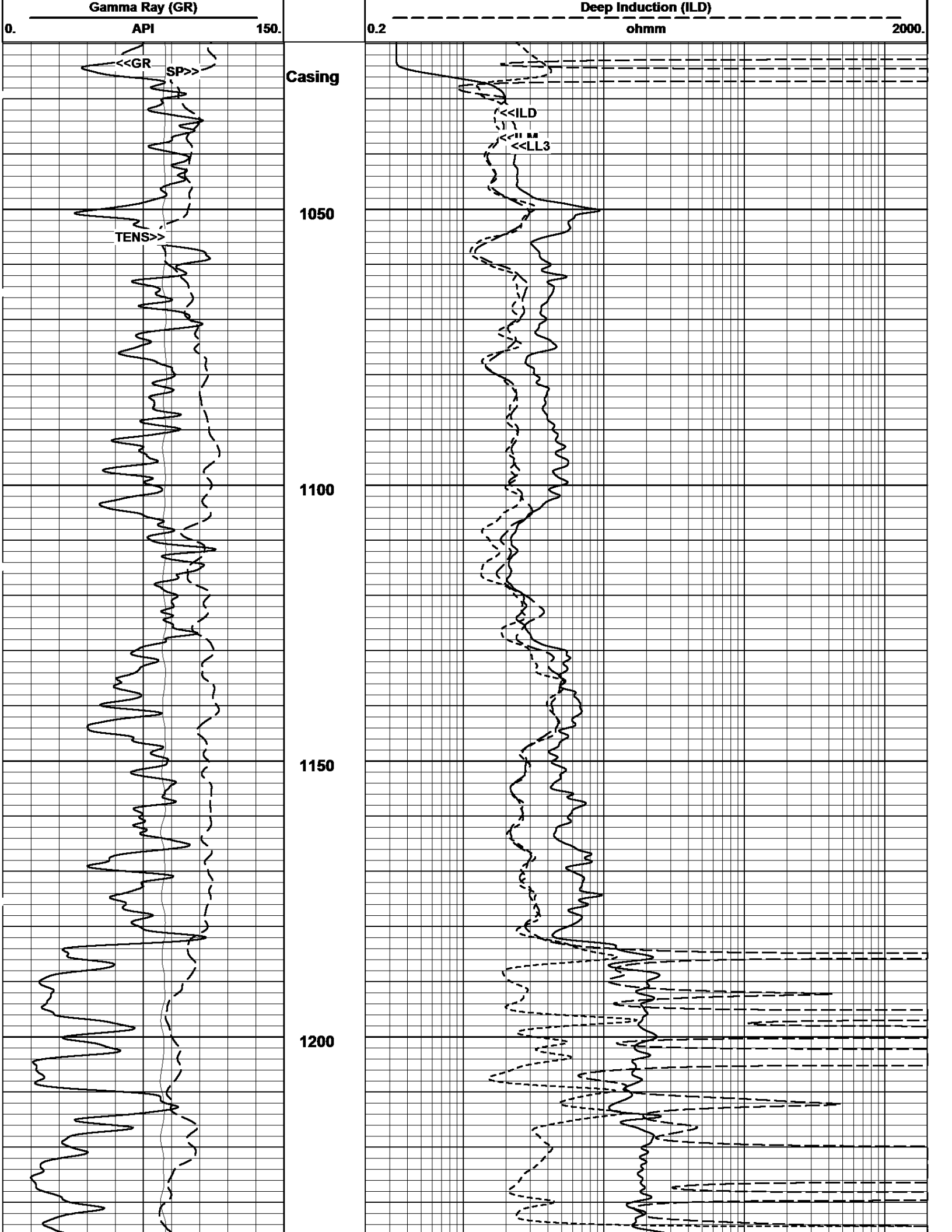
Log UP - (VER 11.19)
Start Depth=> 5128.50 Feet

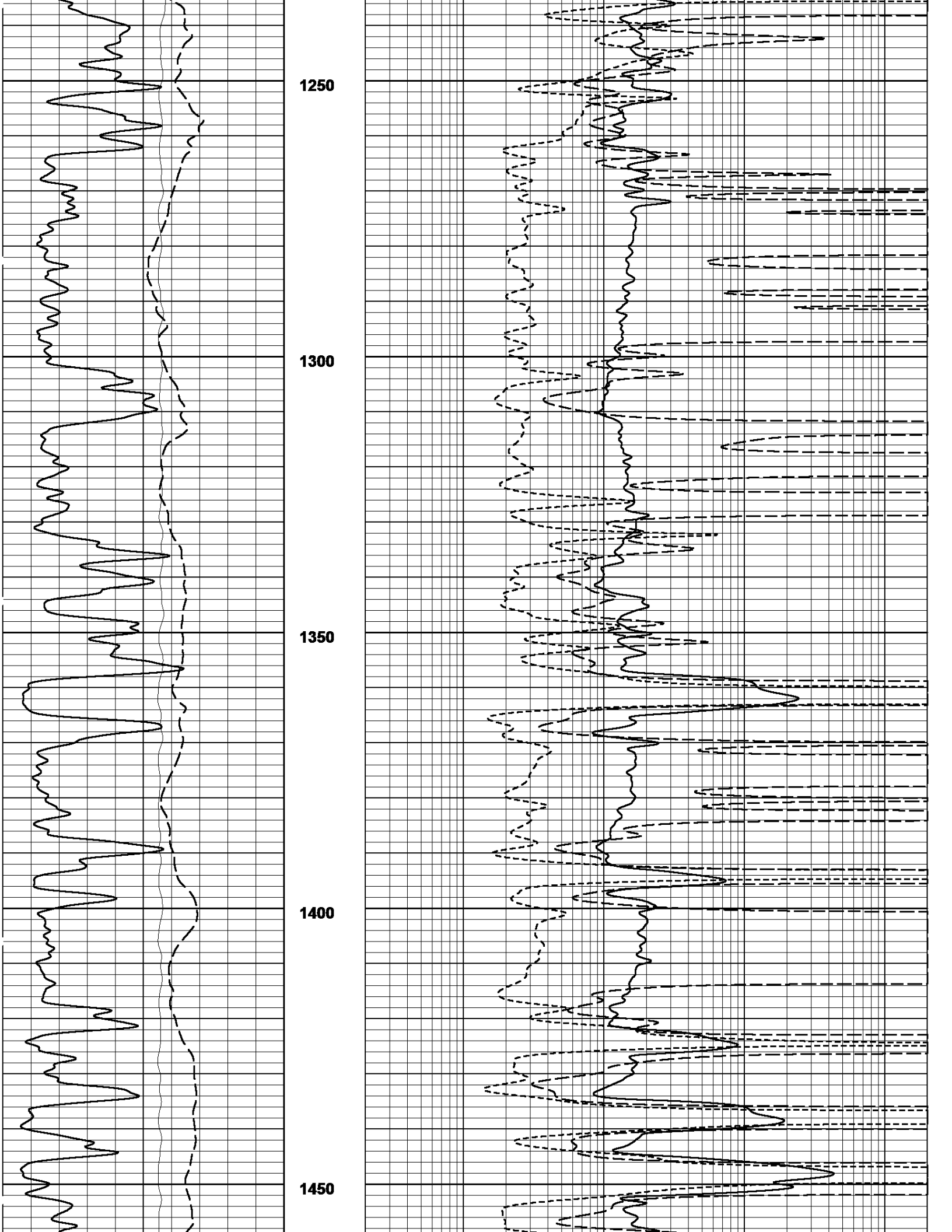
03/13/2015
06:18:09 => End Time

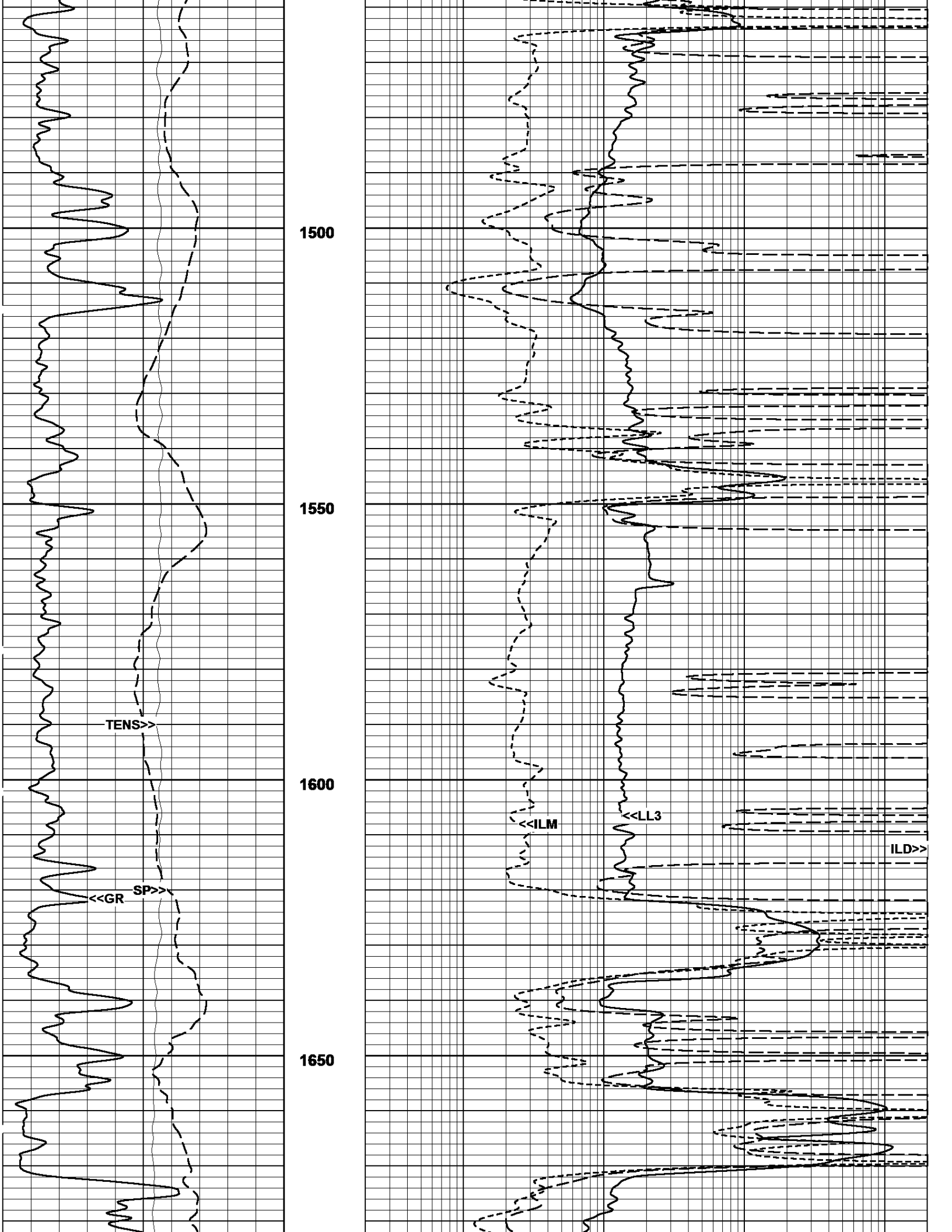
MAIN PASS (5"/100Ft)

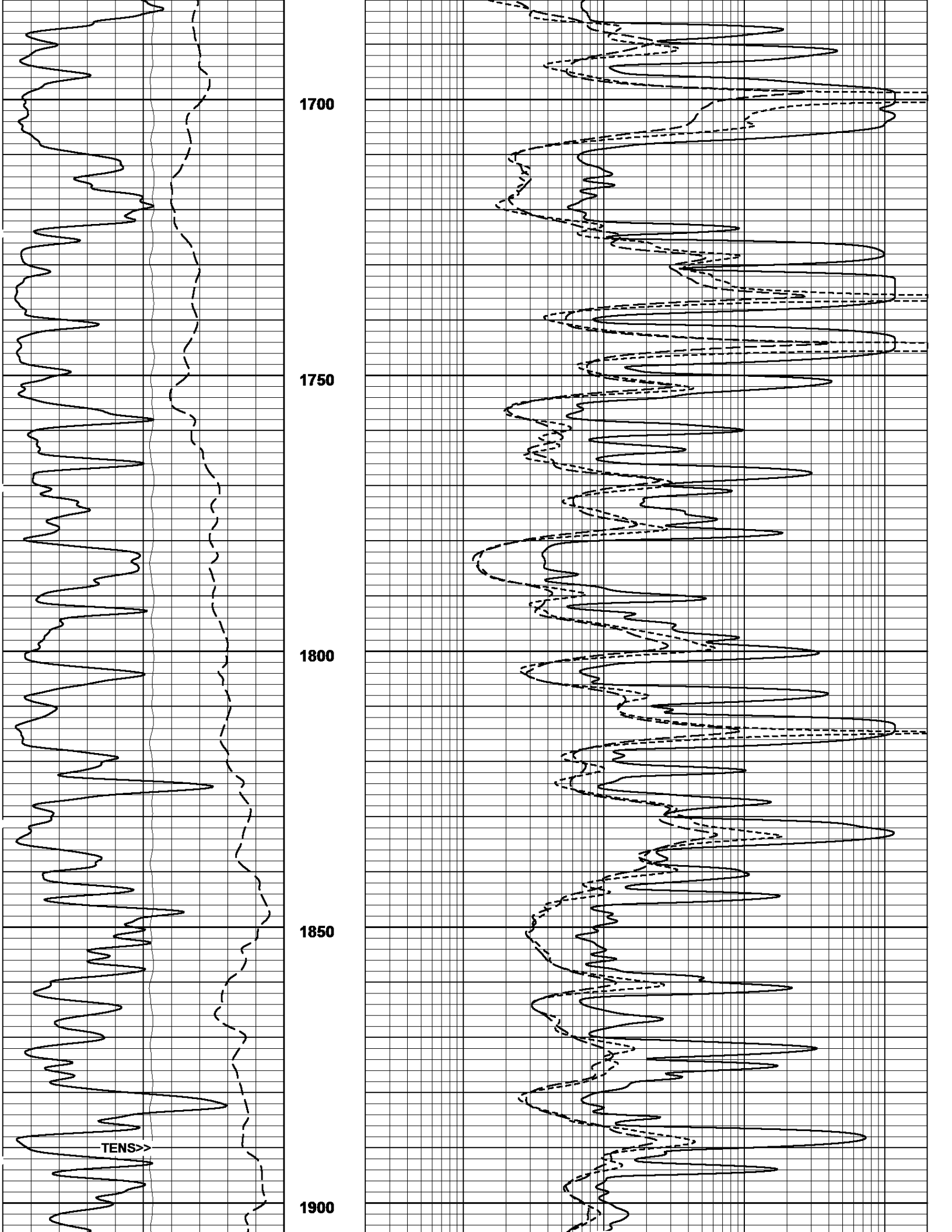
Log UP - (VER 11.19)
End Depth=> 1019.90 Feet

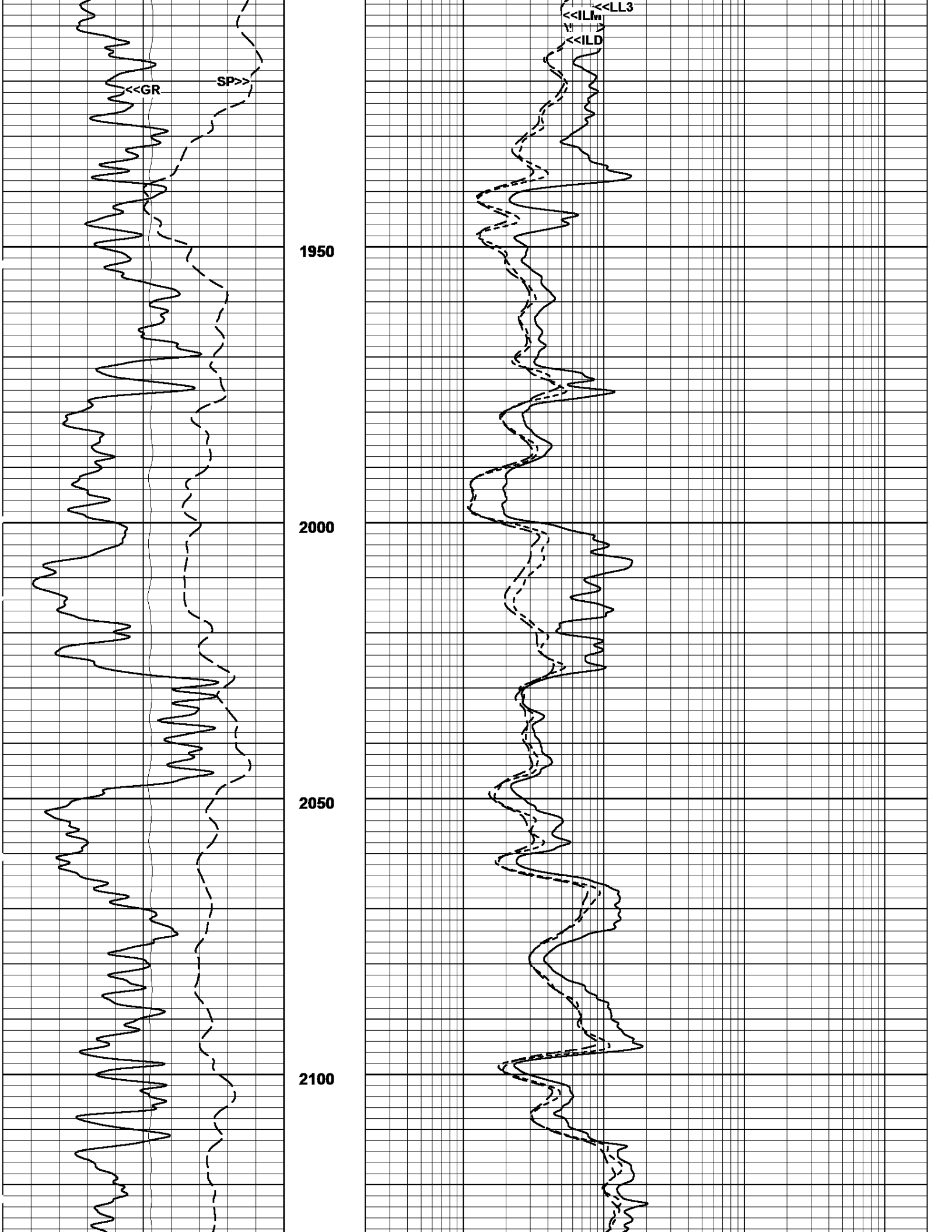
Tension (TENS)	Laterolog (LL3)
5000. Lbs 0.	0.2 ohmm 2000.
Spontaneous Potential (SP)	Med Induction (ILM)
-160. mV 40.	0.2 ohmm 2000.

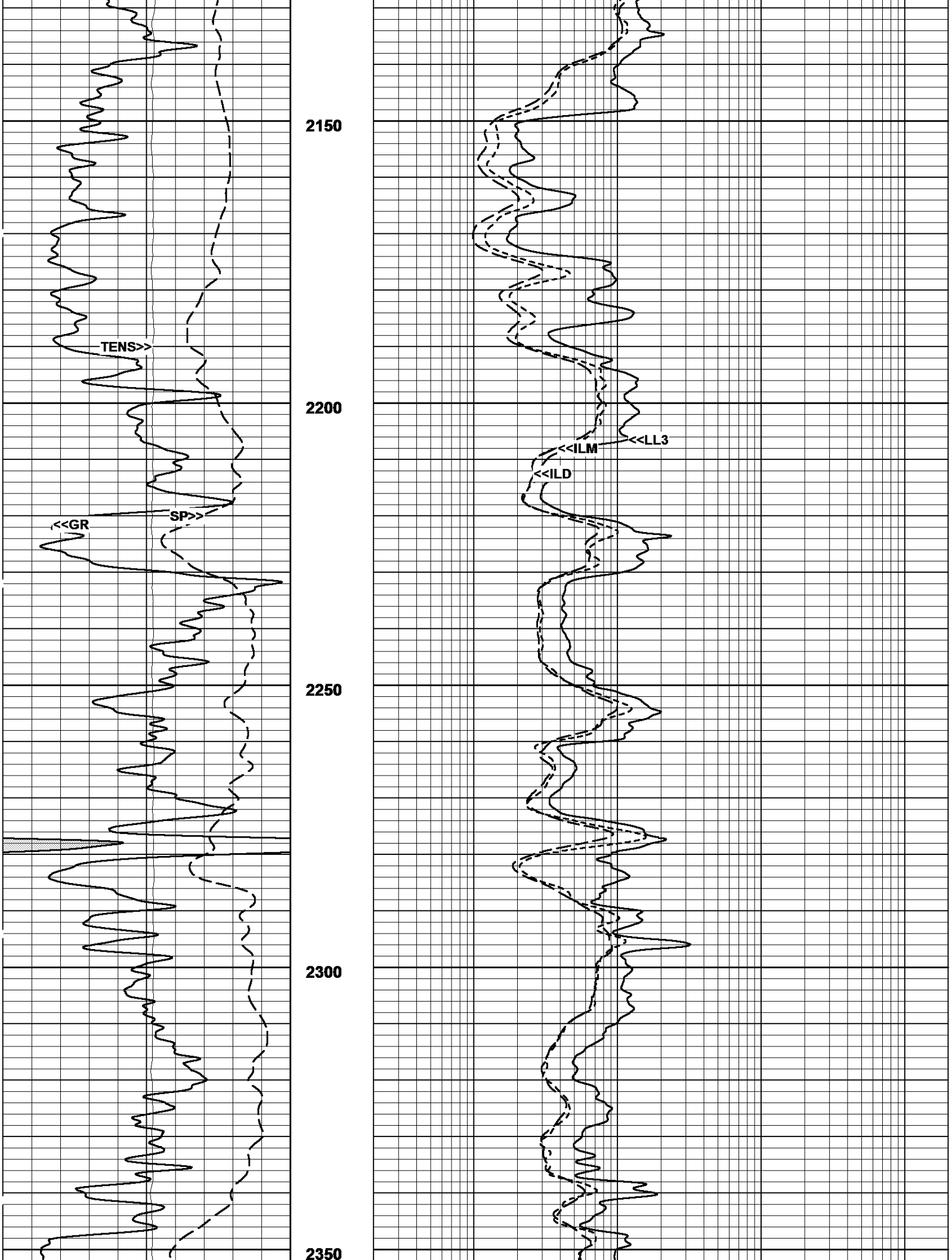

Gamma Ray (GR)
0.
API
150.
<<GR
SP>>
TENS>>
Casing
1050
1100
1150
1200
Deep Induction (ILD)
0.2
ohmm
2000.
<<ILD
<<LL3

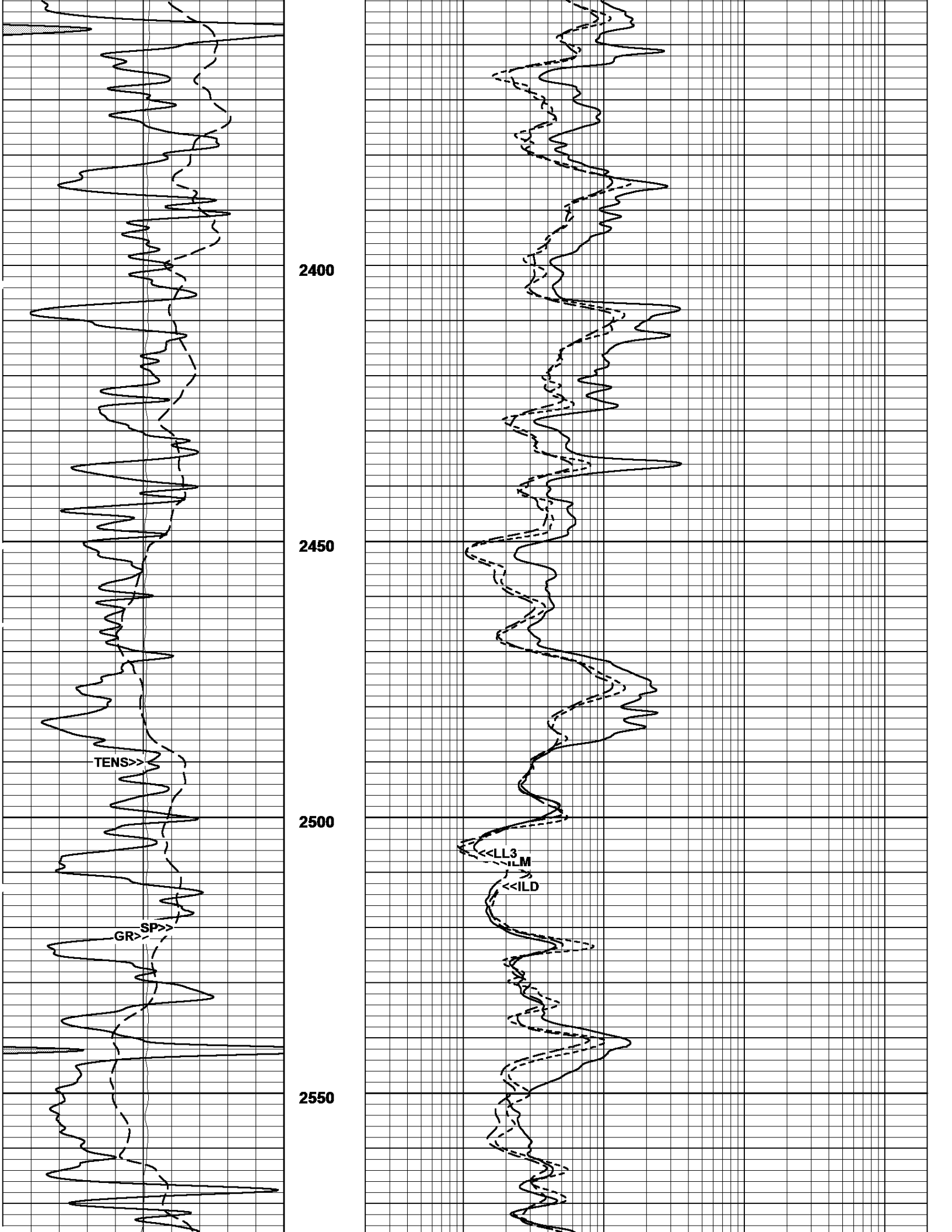

1250
1300
1350
1400
1450

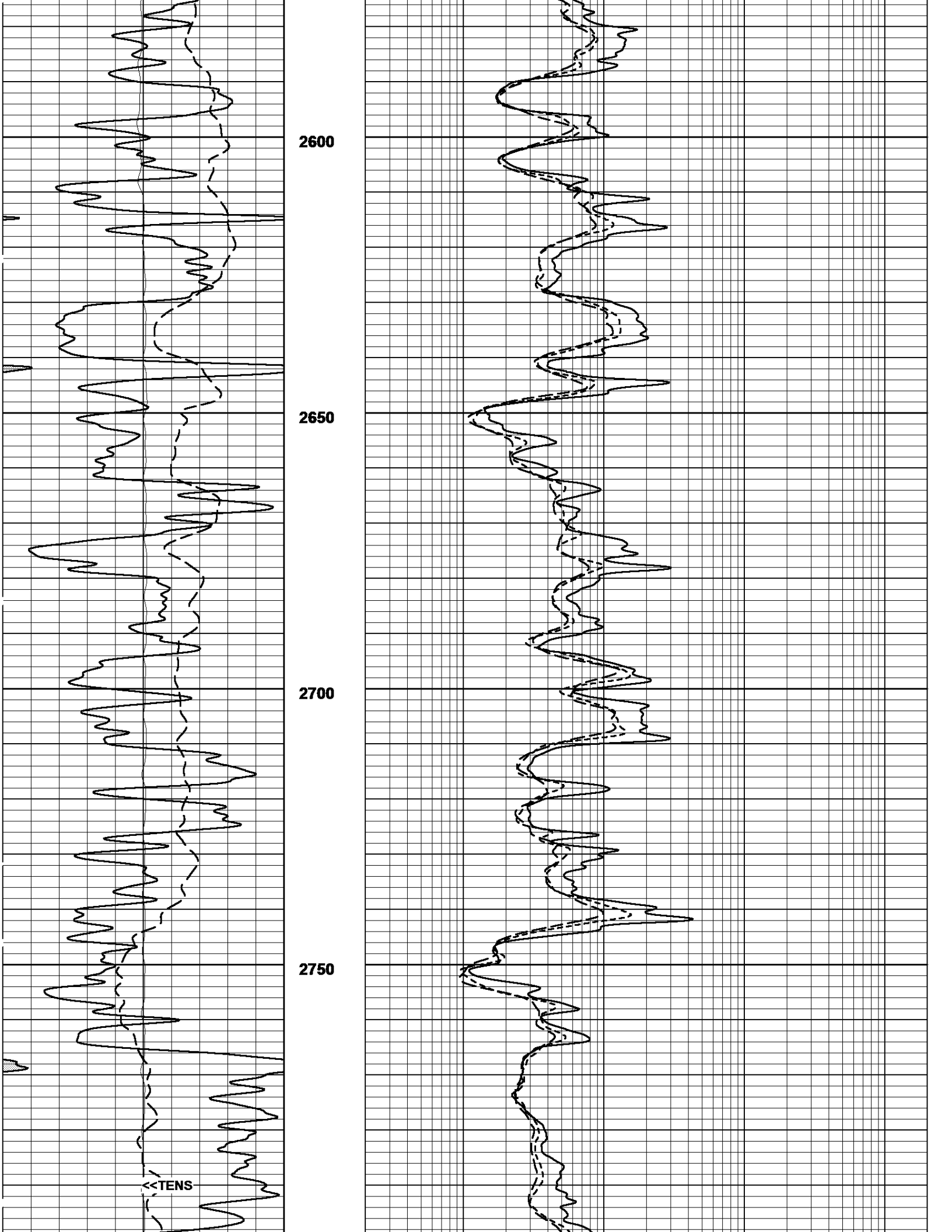

1500
1550
1600
1650
TENS>>
<<GR
SP>>
<<ILM
<<LL3
ILD>>

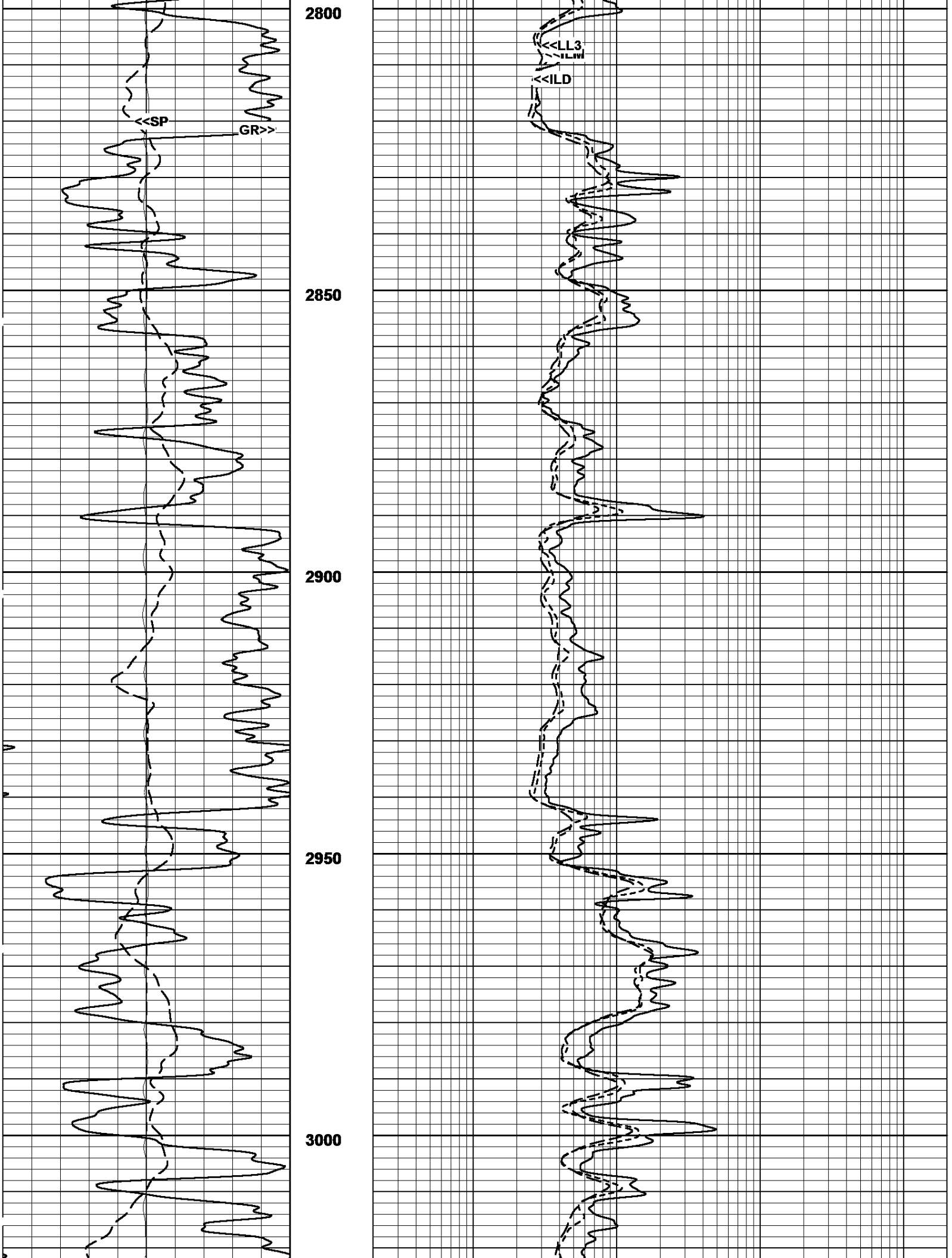

1700
1750
1800
1850
TENS>>
1900

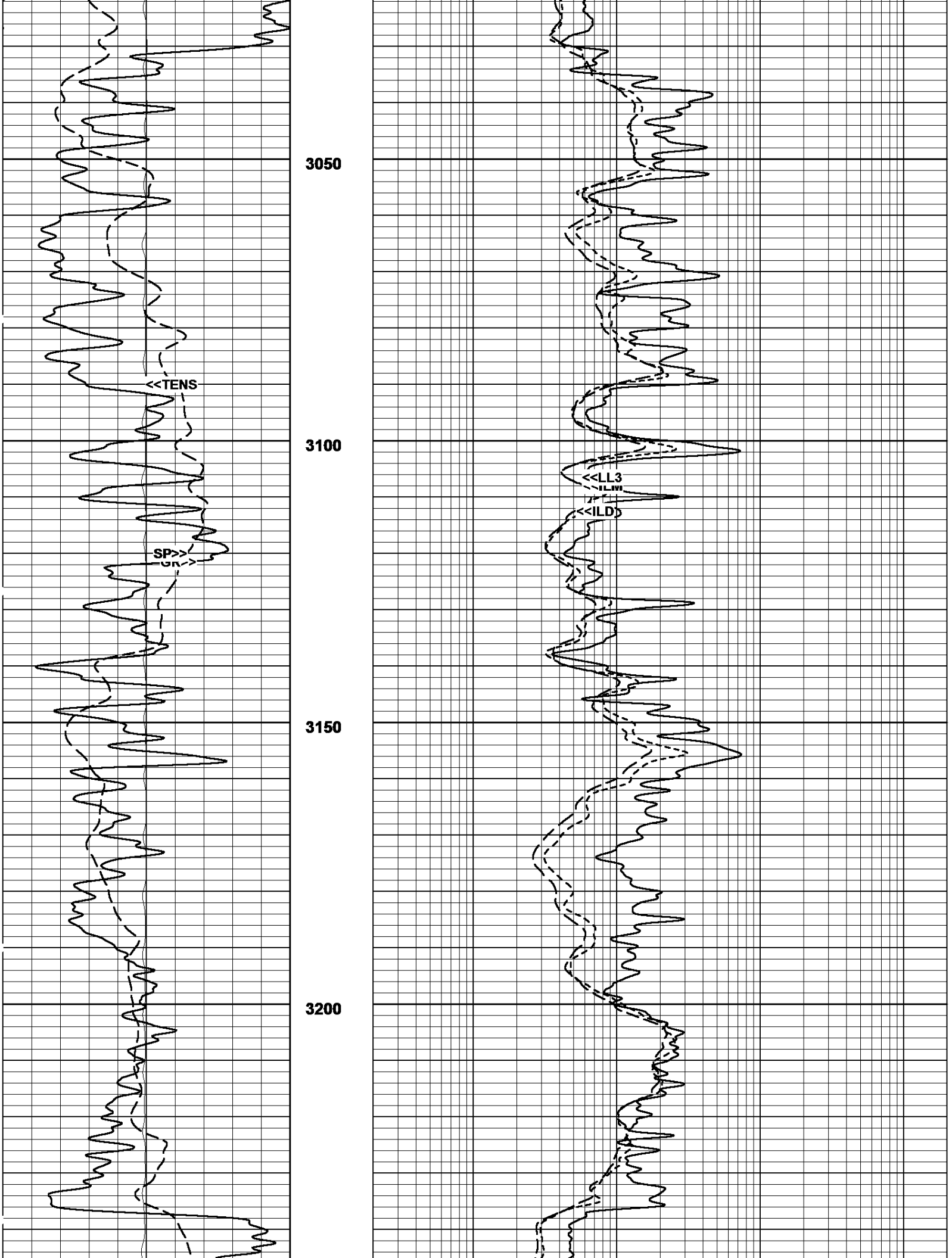

<<GR
SP>>
<<LL3
<<ILM
<<ILD
1950
2000
2050
2100

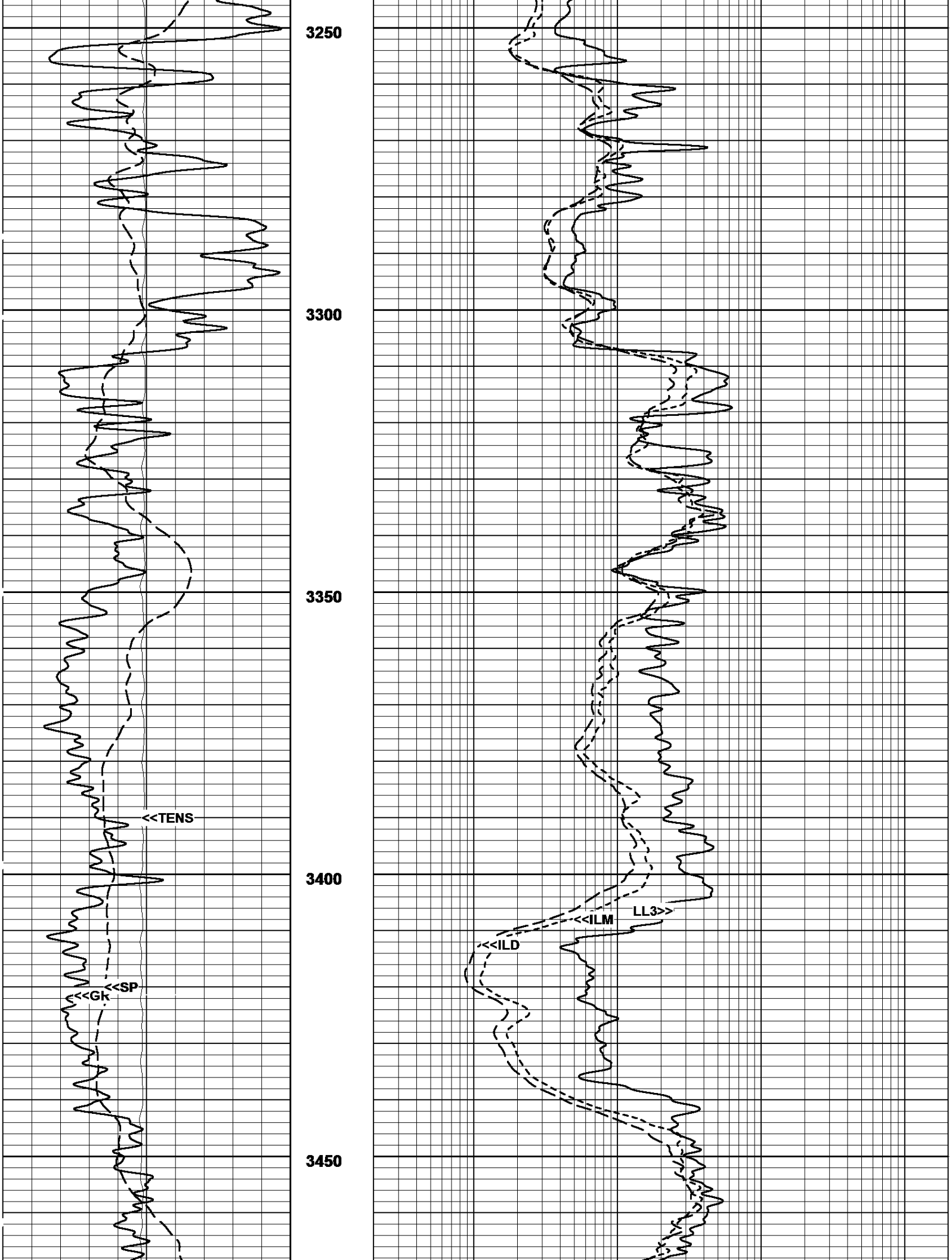

2150
2200
2250
2300
2350
TENS>>
<<GR
SP>>
<<ILM
<<LL3
<<ILD

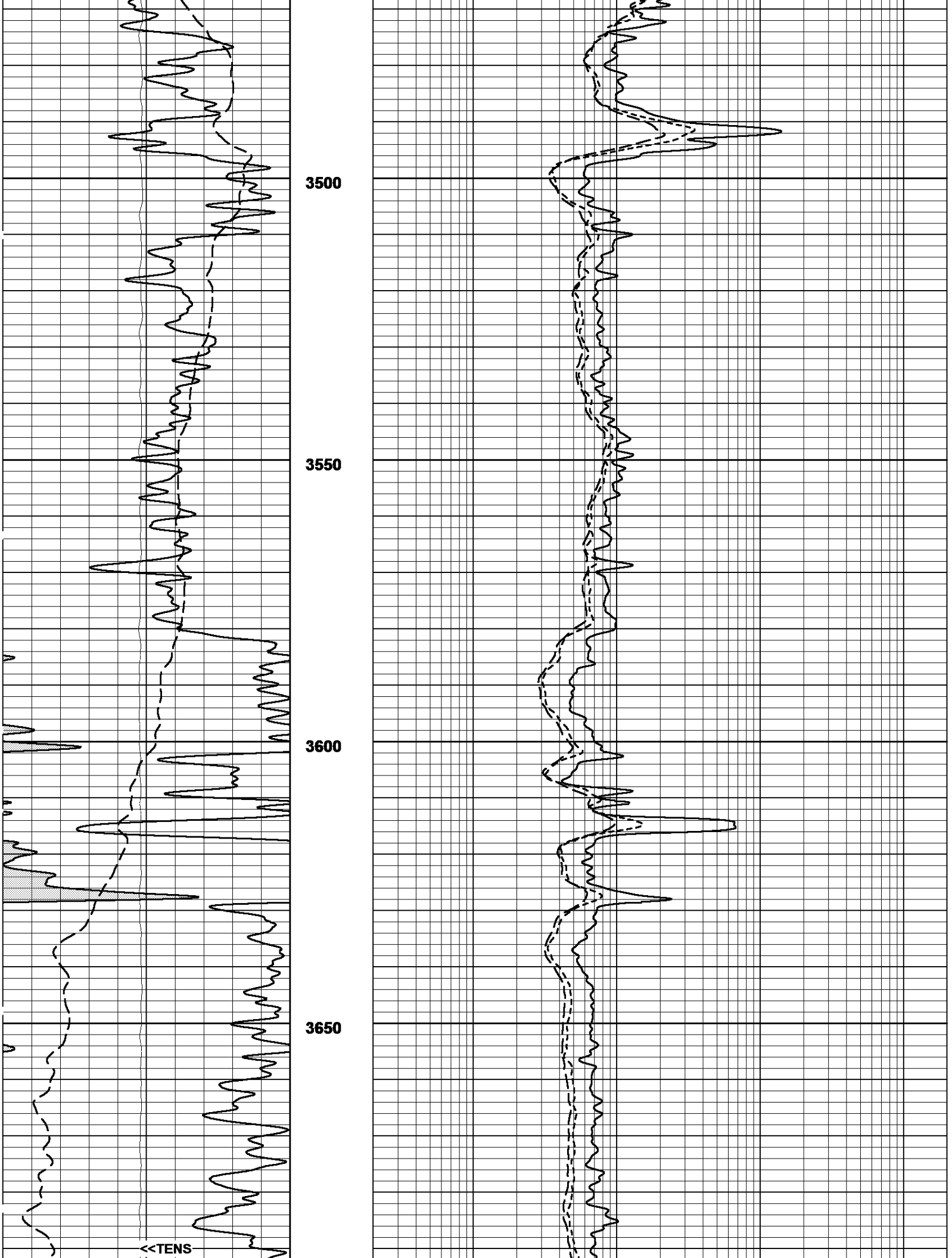

2400
2450
2500
2550
TENS>>
GR>
SP>>
<<LL3
ILM
<<ILD

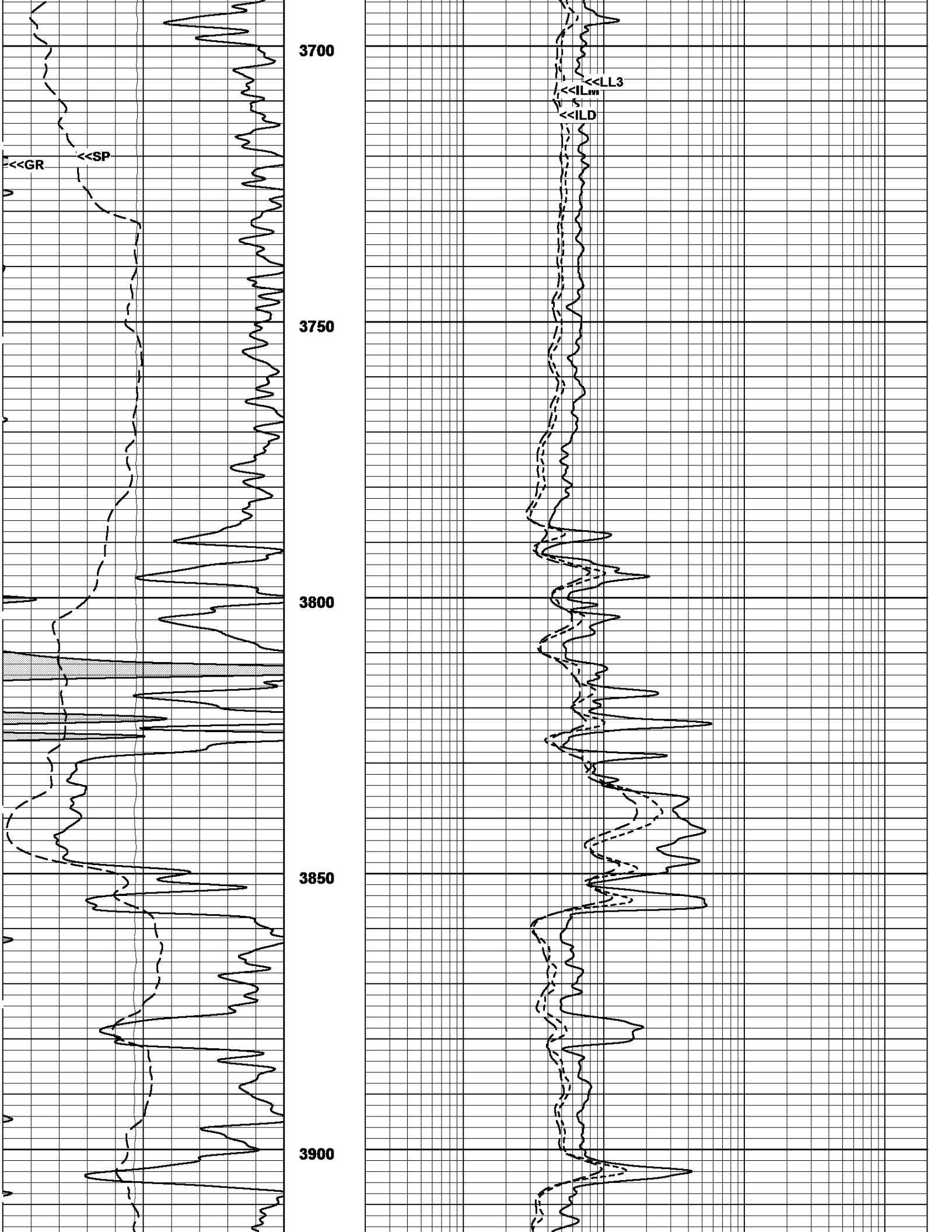

2600
2650
2700
2750
<<TENS

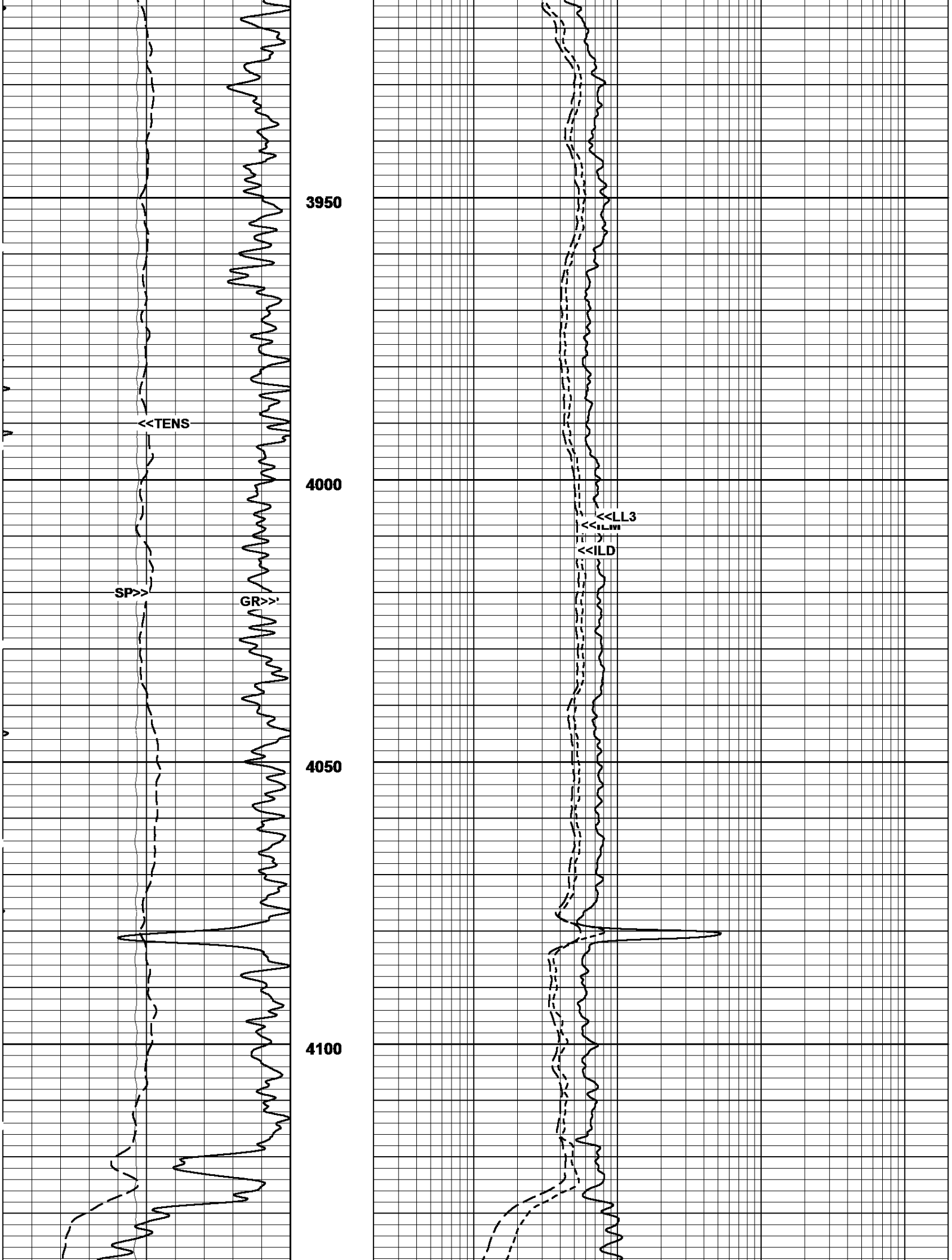

2800
<<SP
GR>>
<<LL3
<<ILD
2850
2900
2950
3000

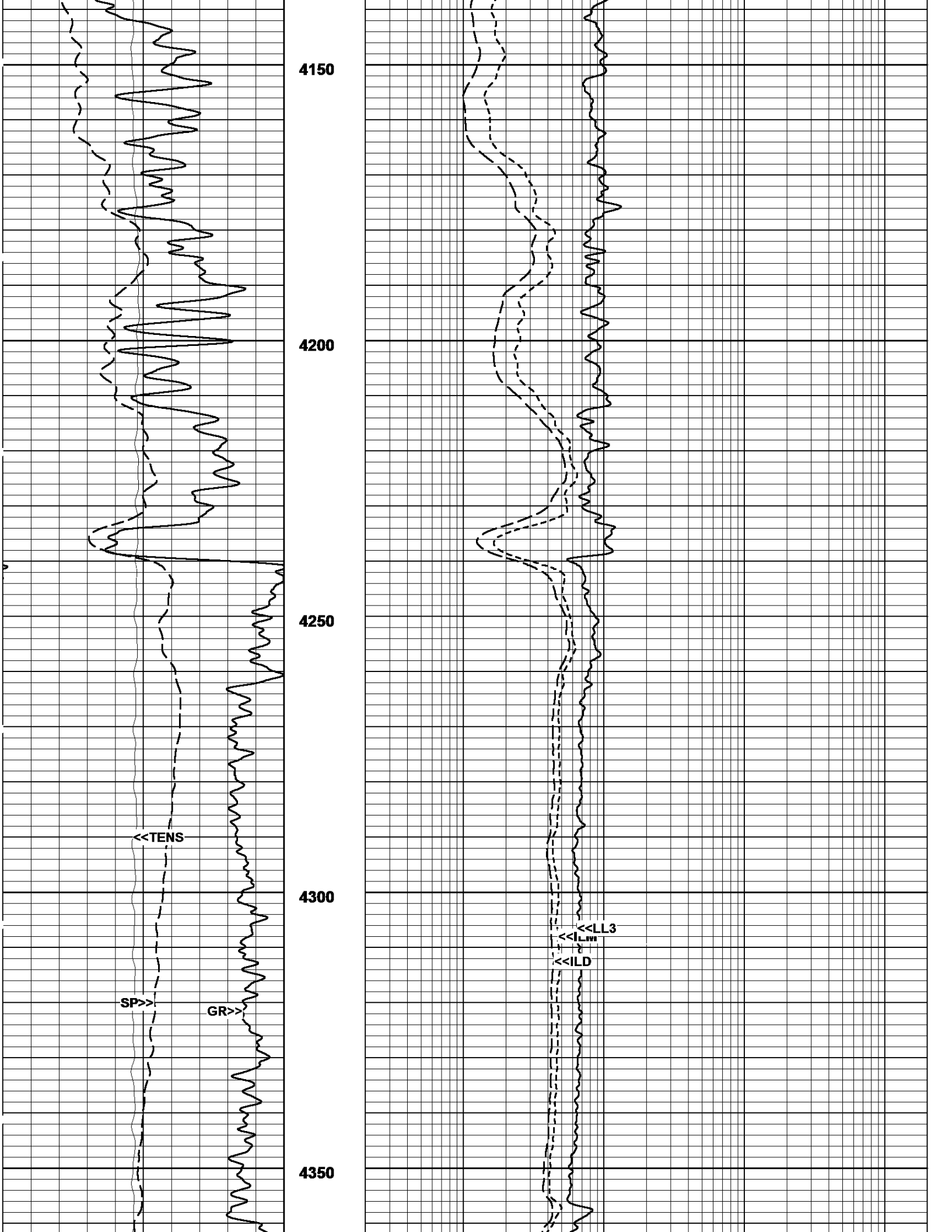

3050
3100
3150
3200
<<TENS
SP>>
<<LL3
<<ILD

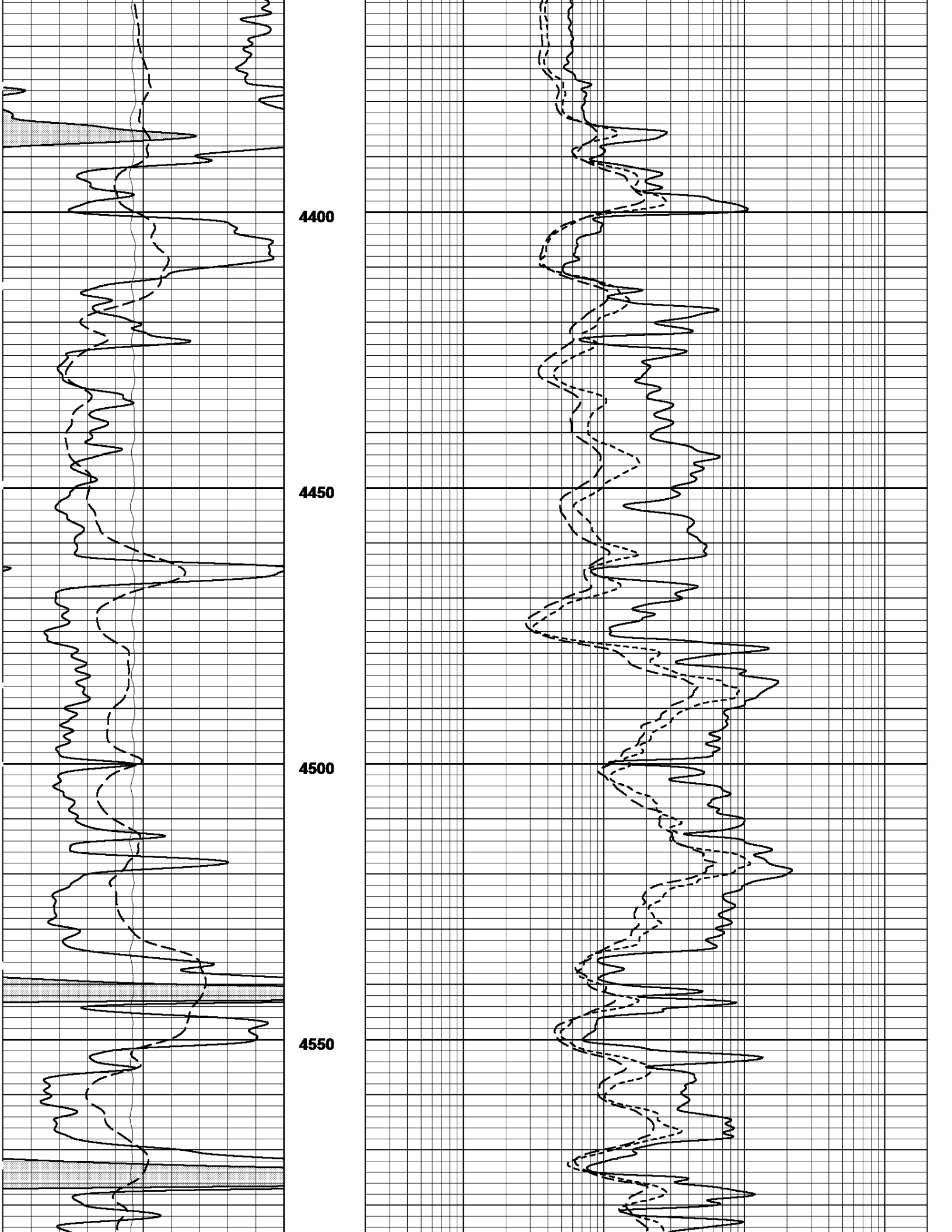

3250
3300
3350
3400
3450
<<TENS
<<SP
<<Gk
<<ILM
LL3>>
<<ILD

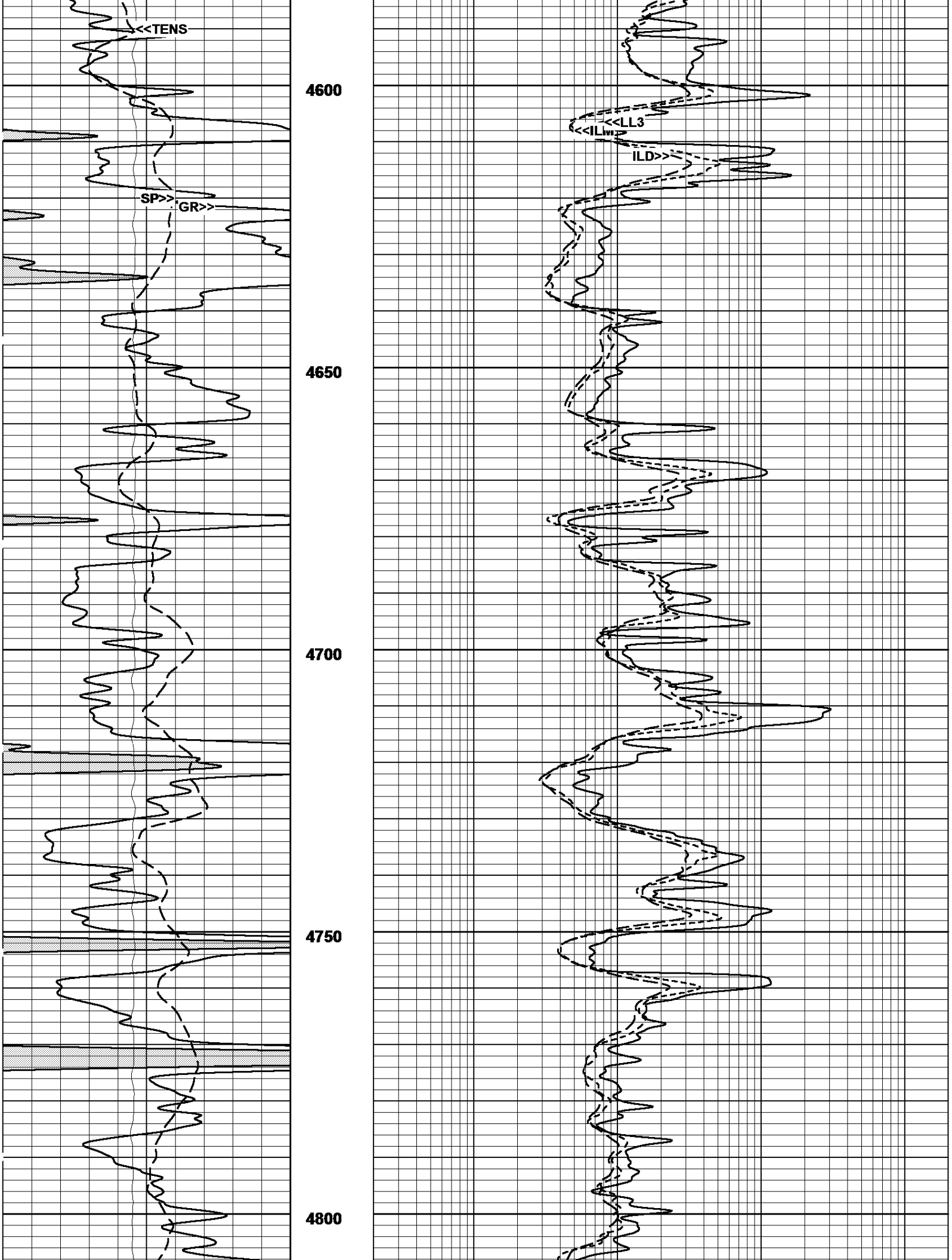

3500
3550
3600
3650
<<TENS

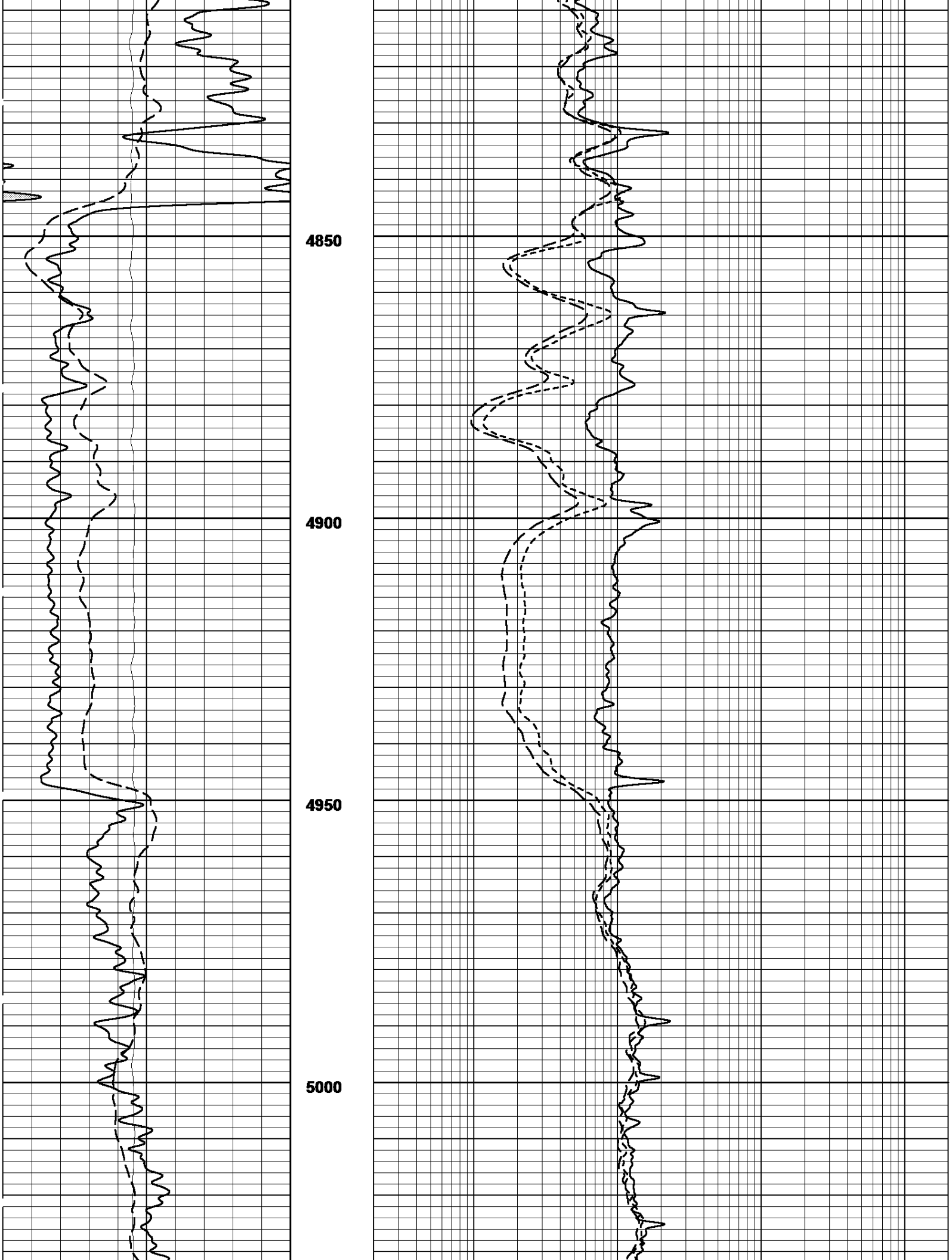

3700
3750
3800
3850
3900
<<GR
<<SP
<<LL3
<<ILm
<<ILD

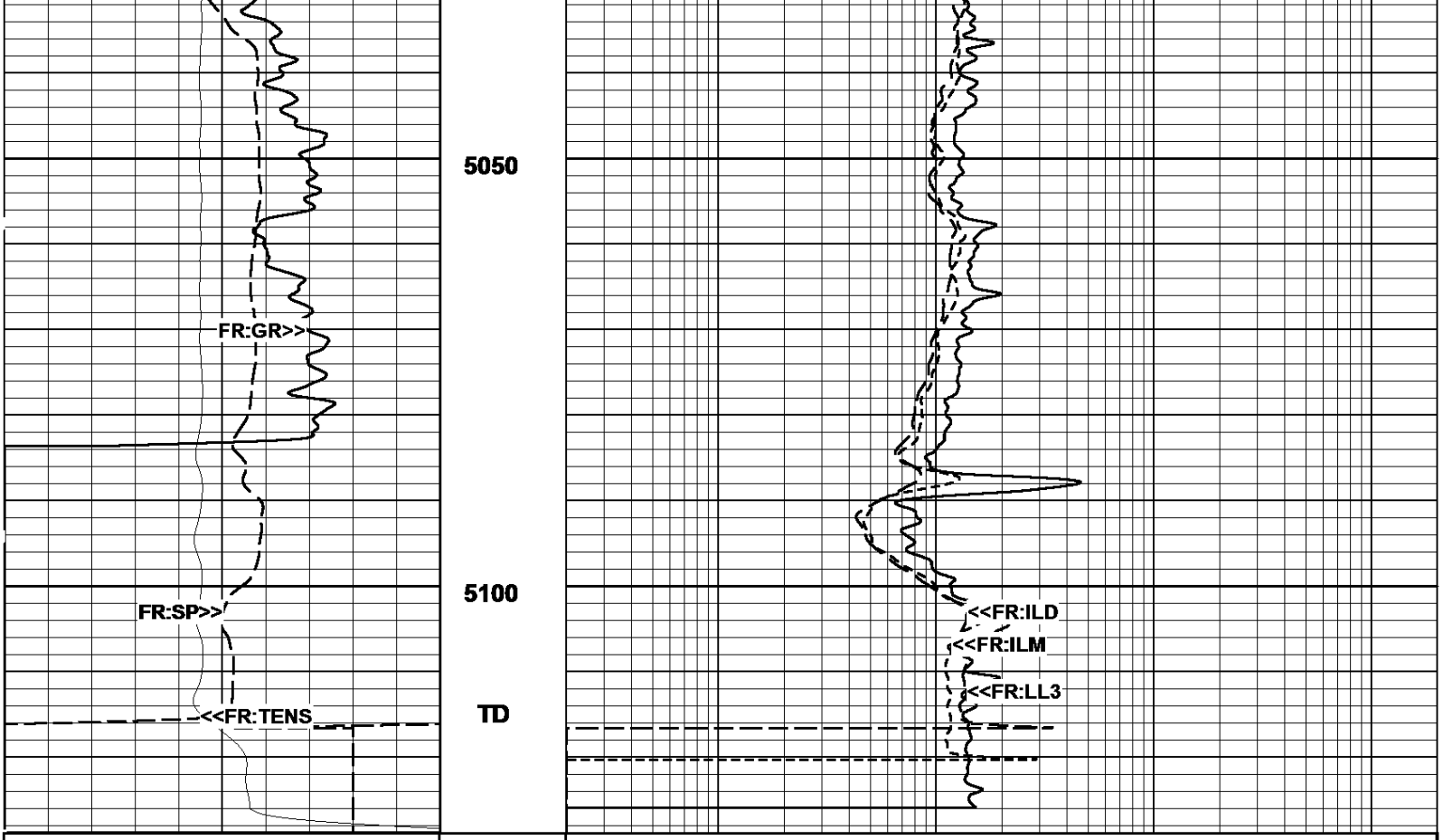

3950
4000
4050
4100
<<TENS
SP>>
GR>>
<<LL3
<<ILM
<<ILD


4150
4200
4250
4300
4350
<<TENS
SP>>
GR>>
<<LL3
<<ILD


4400
4450
4500
4550


<<TENS
4600
SP>>
GR>>
4650
4700
4750
4800
<<LL3
<<ILm
ILD>>


4850
4900
4950
5000



Gamma Ray (GR)		Deep Induction (ILD)
0. API 150.		0.2 ohmm 2000.
Spontaneous Potential (SP)		Med Induction (ILM)
-160. mV 40.		0.2 ohmm 2000.
Tension (TENS)		Laterolog (LL3)
5000. Lbs 0.		0.2 ohmm 2000.

03/13/2015
04:50:14 => Start Time

MAIN PASS (5"/100Ft)

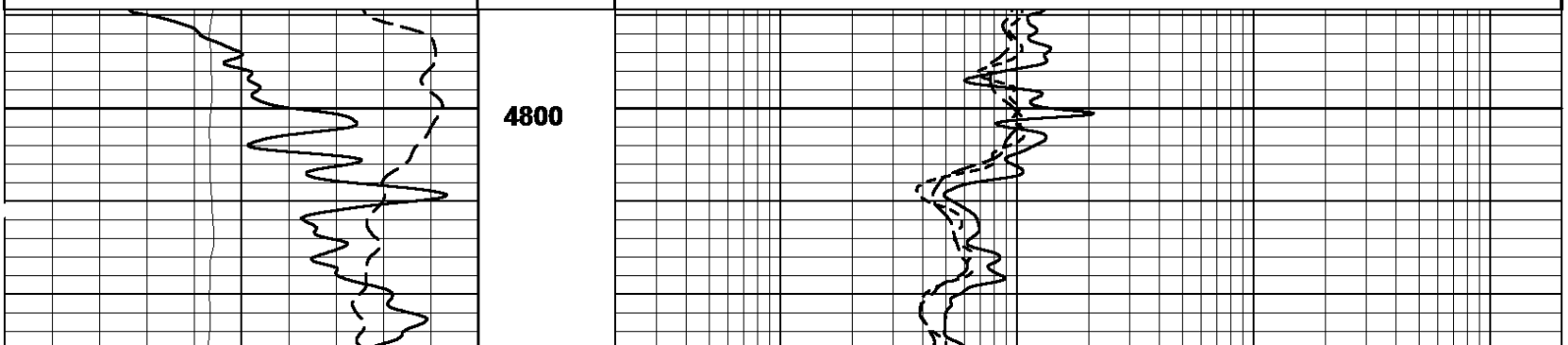
Log UP - (VER 11.19)
Start Depth=> 5128.70 Feet

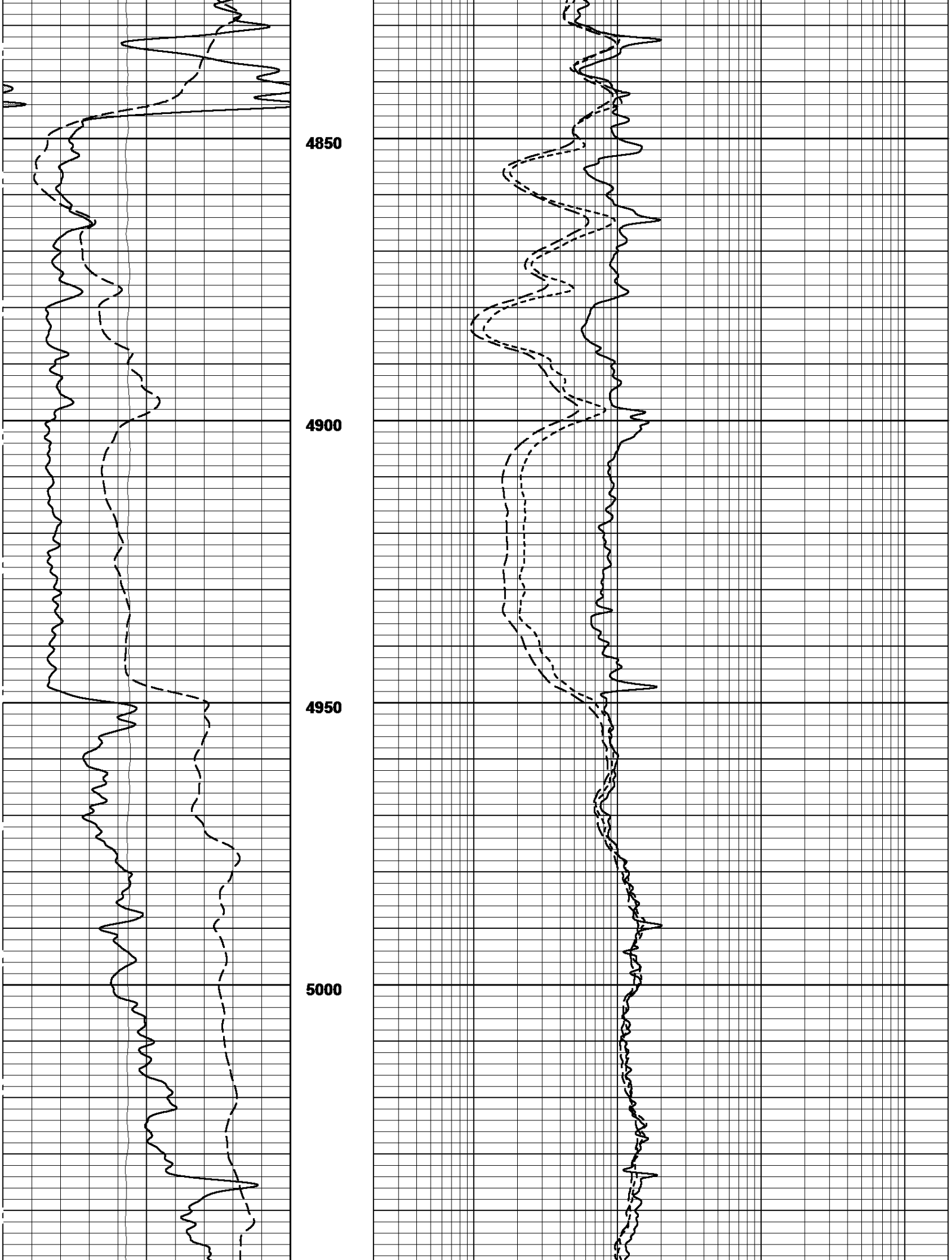
03/13/2015
04:44:31 => End Time

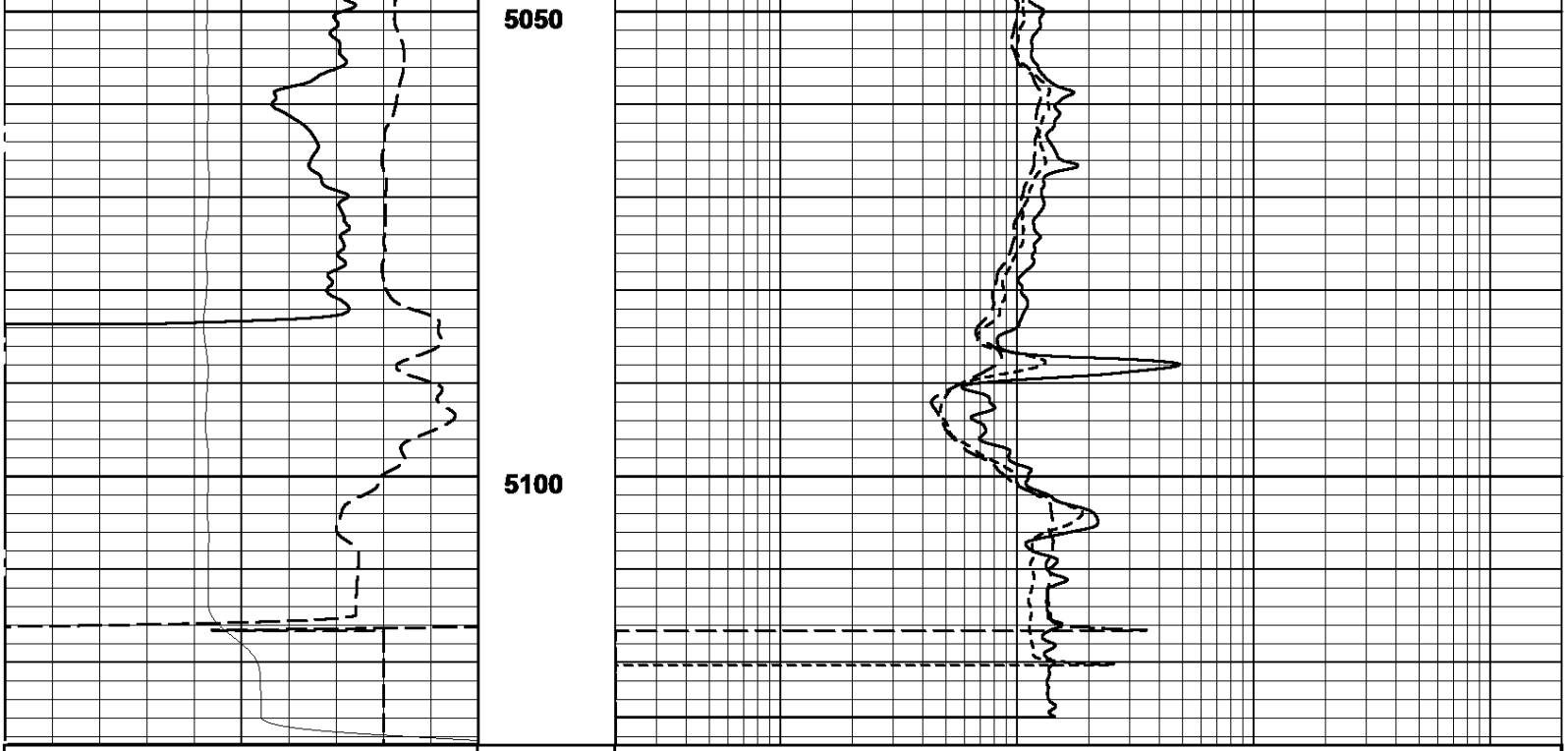
REPEAT PASS (5"/100Ft)

Log UP - (VER 11.19)
End Depth=> 4789.60 Feet

Tension (TENS)		Laterolog (LL3)
5000. Lbs 0.		0.2 ohmm 2000.
Spontaneous Potential (SP)		Med Induction (ILM)
-160. mV 40.		0.2 ohmm 2000.
Gamma Ray (GR)		Deep Induction (ILD)
0. API 150.		0.2 ohmm 2000.




4850
4900
4950
5000



Gamma Ray (GR)			Deep Induction (ILD)		
0.	API	150.	0.2	ohmm	2000.
Spontaneous Potential (SP)			**Med Induction (ILM)**		
-160.	mV	40.	0.2	ohmm	2000.
Tension (TENS)			**Laterolog (LL3)**		
5000.	Lbs	0.	0.2	ohmm	2000.

03/13/2015
04:29:28 => Start Time

REPEAT PASS (5"/100Ft)

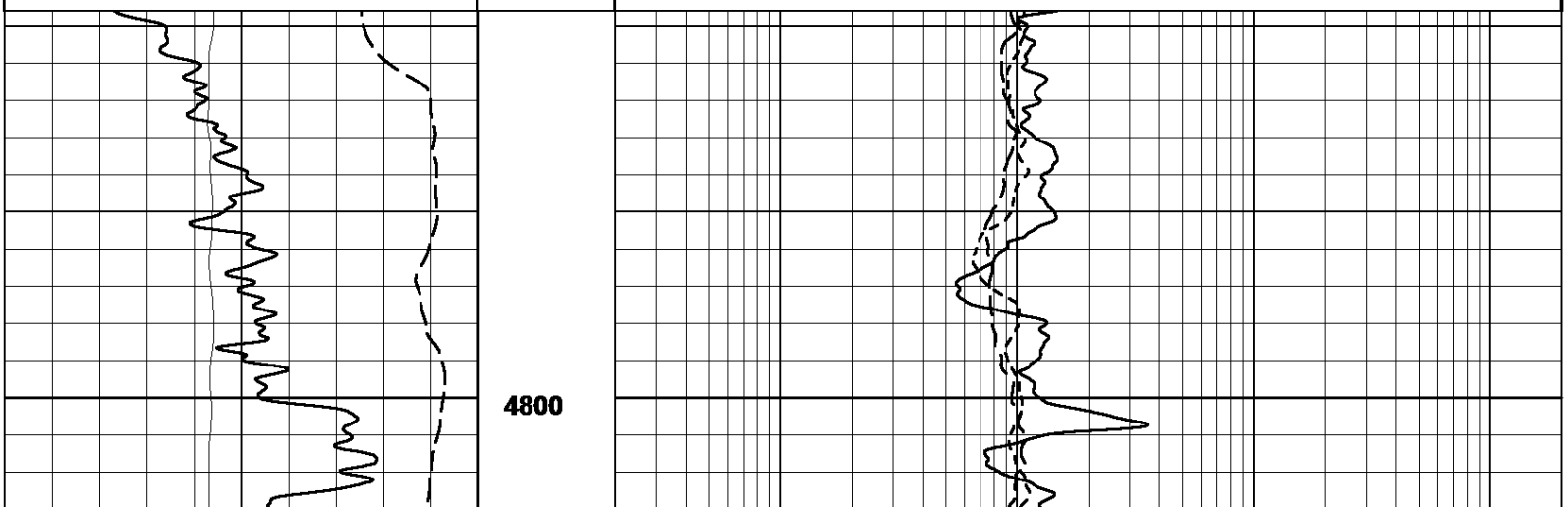
Log UP - (VER 11.19)
Start Depth=> 5128.70 Feet

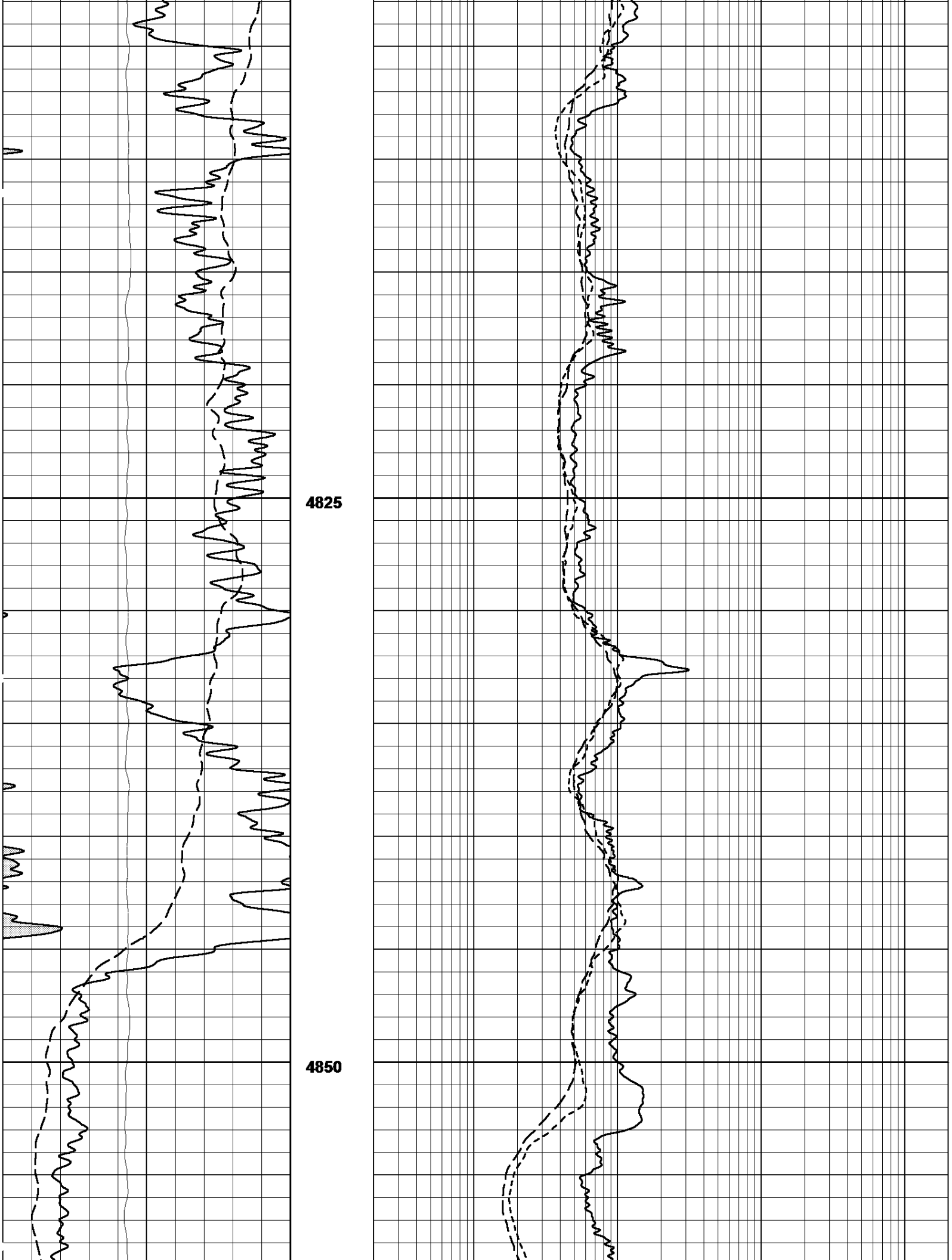
03/13/2015
04:44:31 => End Time

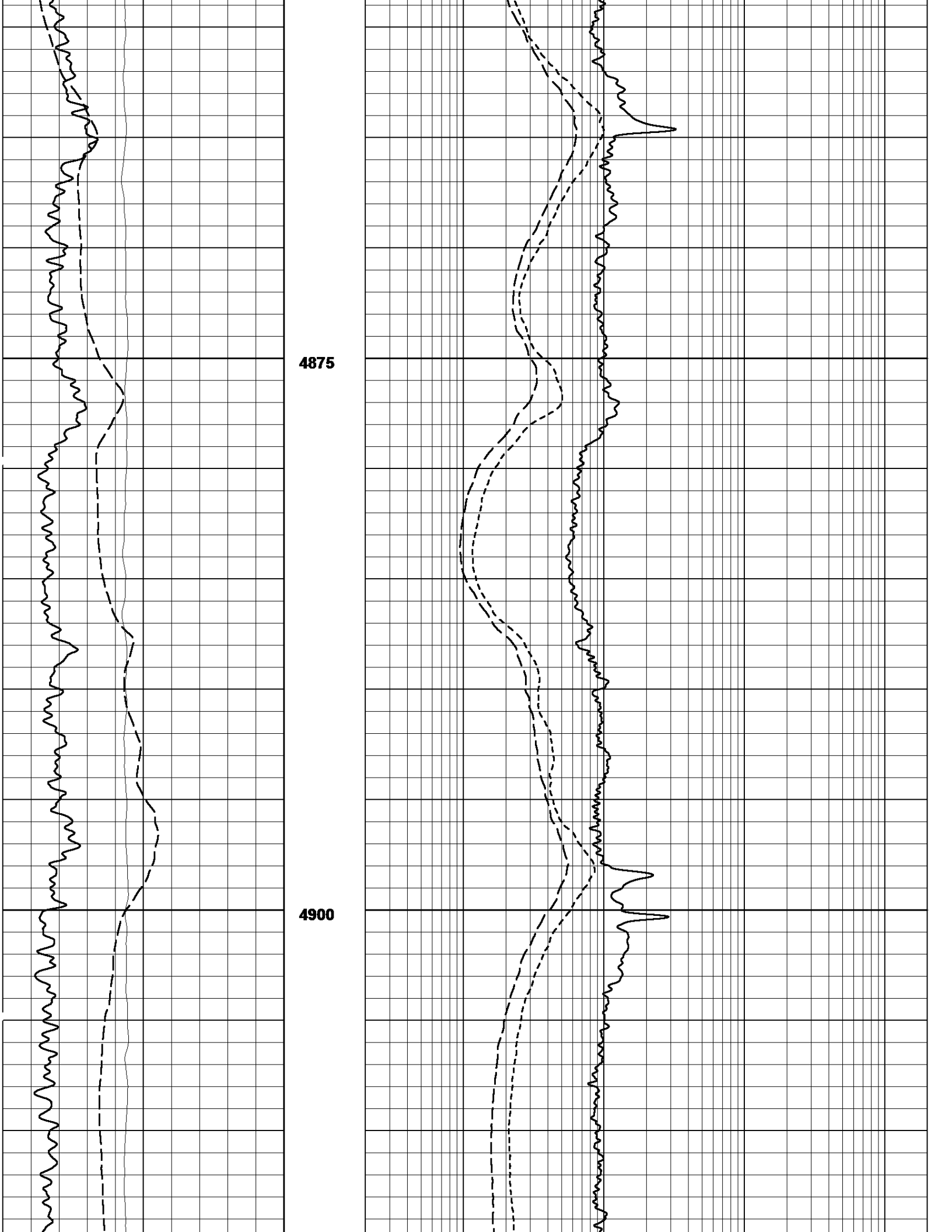
HIGH DEFINITION PASS (20"/100Ft)

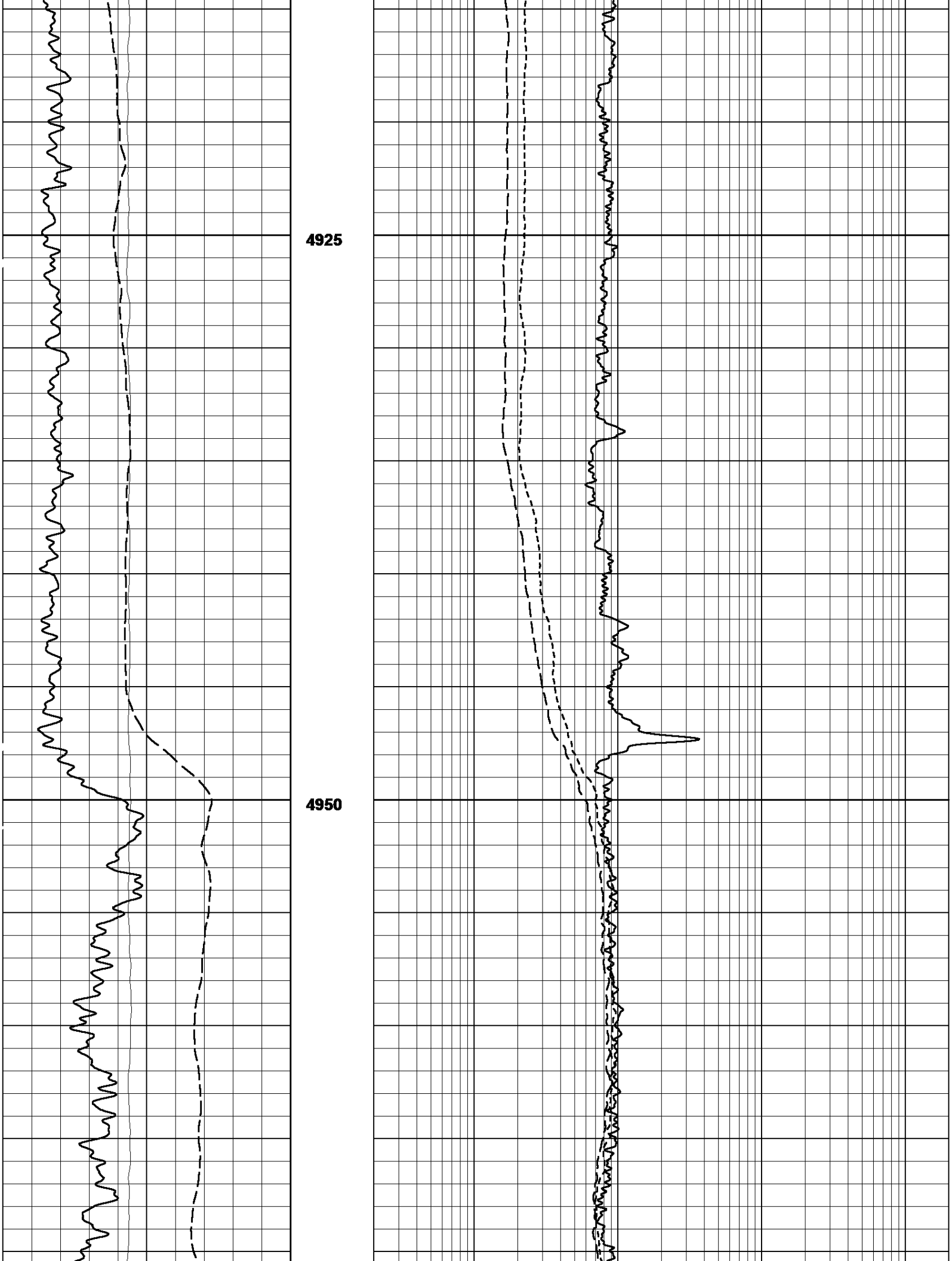
Log UP - (VER 11.19)
End Depth=> 4789.65 Feet

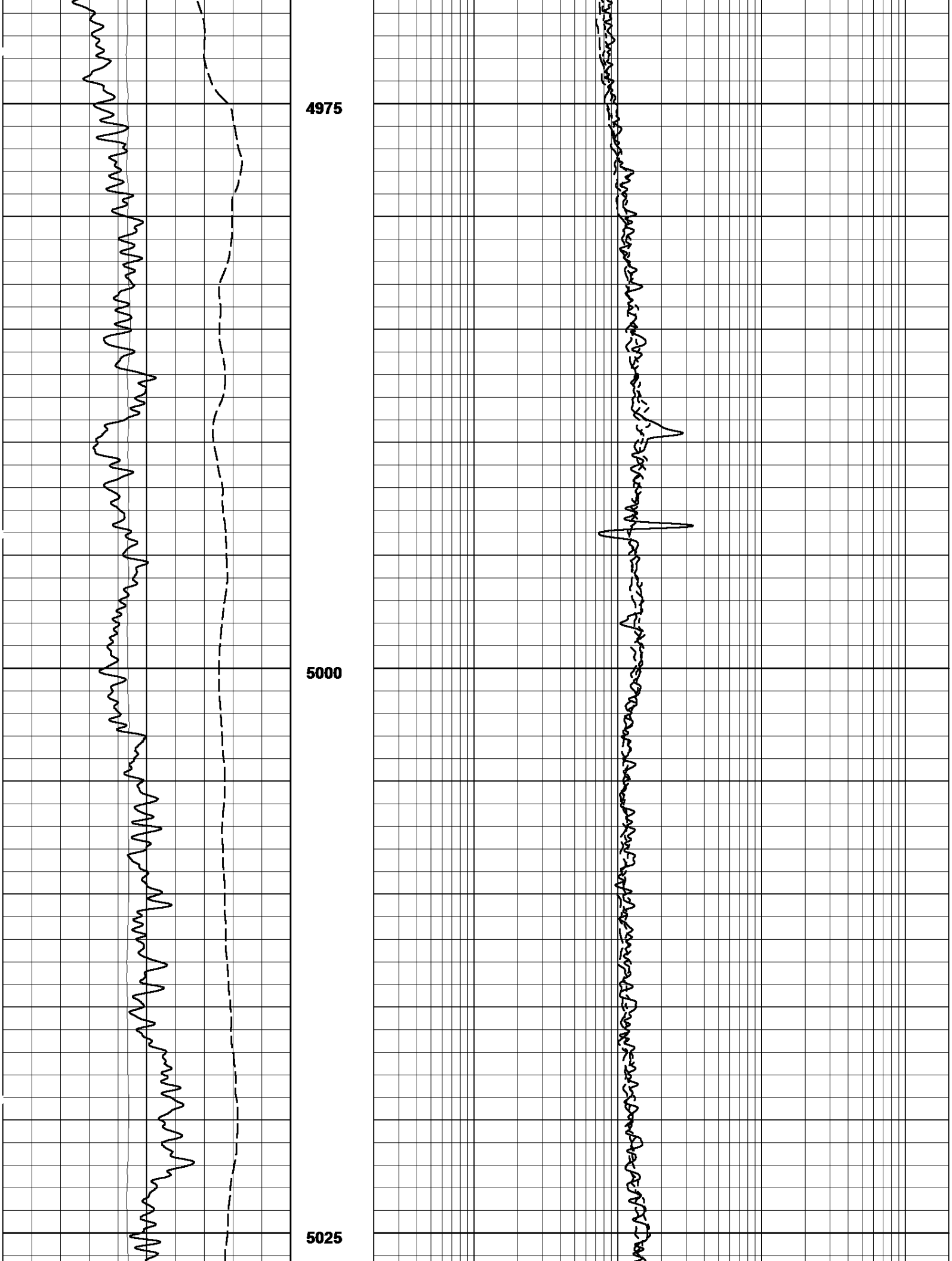
Tension (TENS)			Laterolog (LL3)		
5000.	Lbs	0.	0.2	ohmm	2000.
Spontaneous Potential (SP)			**Med Induction (ILM)**		
-160.	mV	40.	0.2	ohmm	2000.
Gamma Ray (GR)			**Deep Induction (ILD)**		
0.	API	150.	0.2	ohmm	2000.

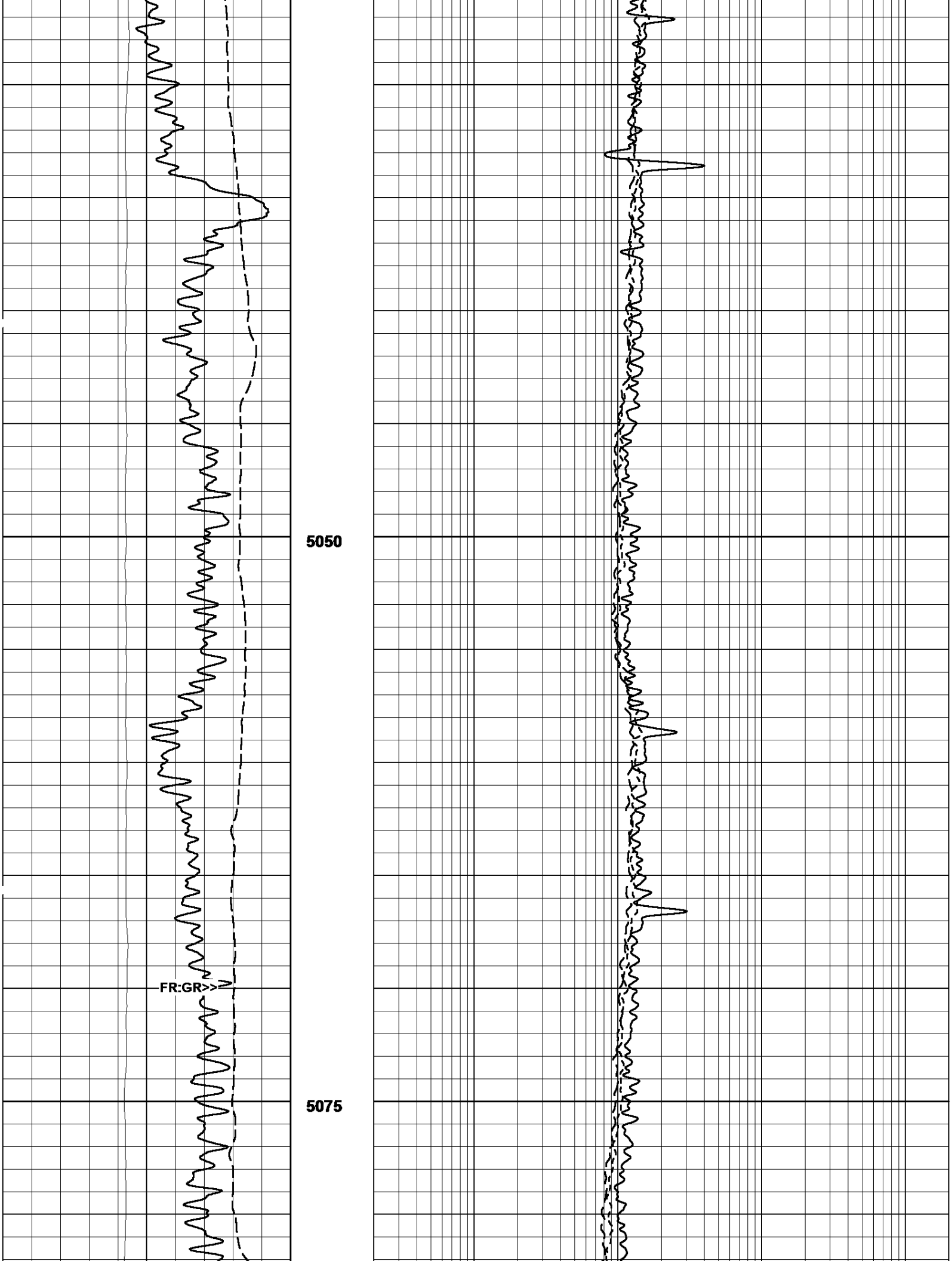


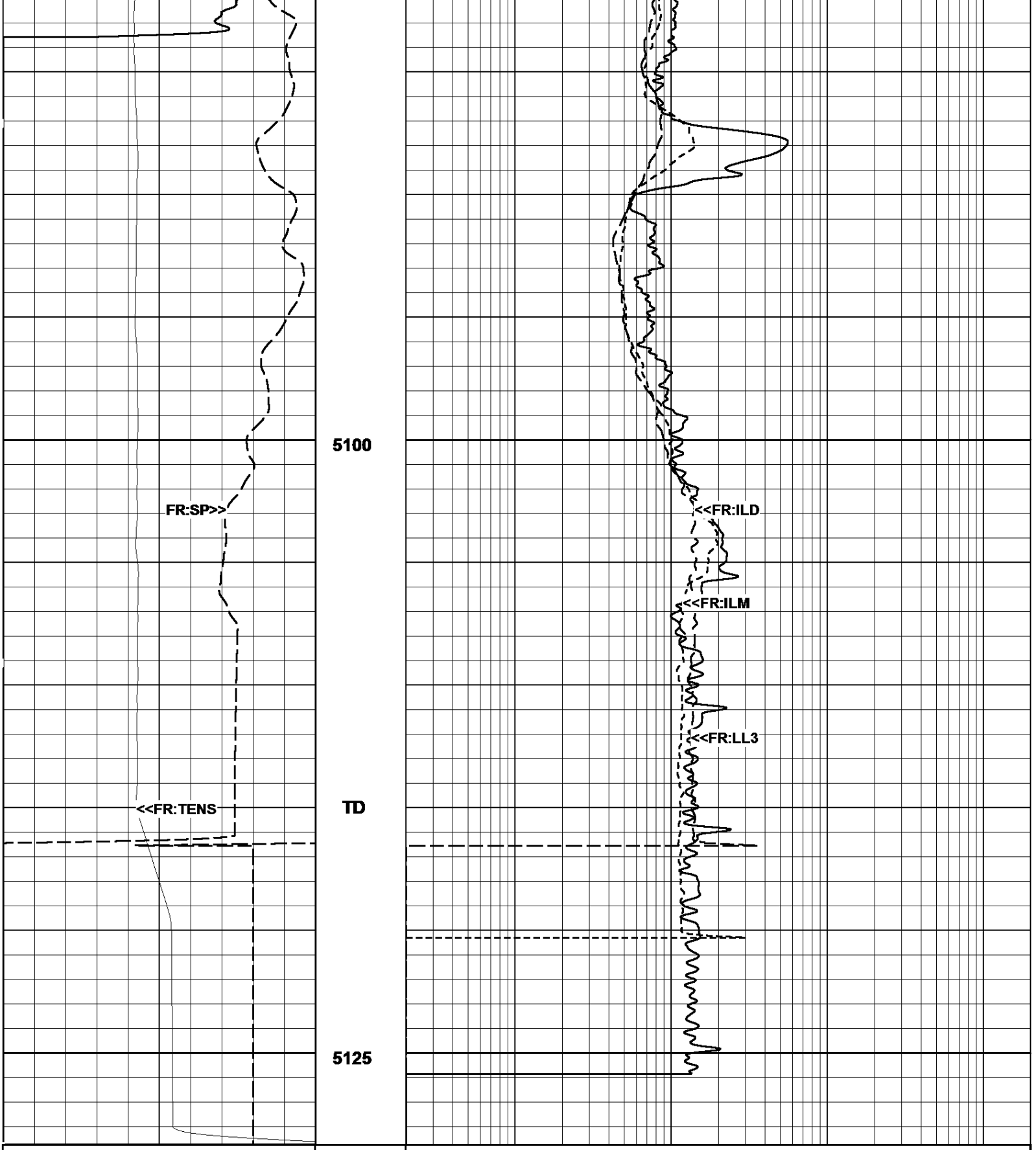

4825
4850


4875
4900


4925
4950


4975
5000
5025


5050
FR:GR>>
5075



Gamma Ray (GR)		
0.	API	150.
Spontaneous Potential (SP)		
-160.	mV	40.
Tension (TENS)		
5000.	Lbs	0.
Deep Induction (ILD)		
0.2	ohmm	2000.
Med Induction (ILM)		
0.2	ohmm	2000.
Laterolog (LL3)		
0.2	ohmm	2000.

03/13/2015
04:29:28 => Start Time

HIGH DEFINITION PASS (20"/100Ft)

Log UP - (VER 11.19)
Start Depth=> 5128.70 Feet

Induction Resistivity / Conductivity Calibrations

TOOL TYPE	Slim Hole Induction	LOOP TYPE	
SERIAL NUM	RD1102	LOOP NUM	

MASTER CALIBRATIONS

	OPEN LOOP(mmho)		CLOSED LOOP(mmho)		LOOP VERIFIER(mV)		CALIBRATION DATE	CALIBRATION TIME
	NO SKIN		NO SKIN	W/ SKIN	ZERO(mV)	SPAN(mV)		
DEEP INDUCTION	0.000		400.000	499.231	15.000	709.902	M/D/Y> 11/12/2013	H:M:S> 17:2:47
MED INDUCTION	0.000		462.500	501.895	19.500	879.458	M/D/Y> 11/12/2013	H:M:S> 17:2:50
	CALIBRATOR LOW(ohm)		CALIBRATOR HI(ohm)		LOW(mV)	HI(mV)		
SHALLOW LATERLOG	0.000		1480.000		28.568	7448.200	M/D/Y> 11/12/2013	H:M:S> 17:2:54

WELL SITE CALIBRATIONS

GAMMA RAY CALIBRATION

SERIAL NUM	RG3010
BLANKET NUM	1A

MASTER CALIBRATIONS

	BackGrnd	CalVal: 158.000 API	Gain/Offset	CALIBRATION DATE	CALIBRATION TIME
BASE CALS	127.405 - raw	727.746 - raw	0.263 - gain 0.000 - off	M/D/Y> 1/29/2015	H:M:S> 14:25:10

Company	CMX, INC.
Well	BARTENDER #4
Field	SRANATHAN
County	BARBER
State	KANSAS

RECON

DUAL INDUCTION
LATEROLOG - SP
GAMMA RAY

06:18:09 => End Time

End Depth=> 1019.50 Feet

Tension (TENS)
5000. Lbs 0.

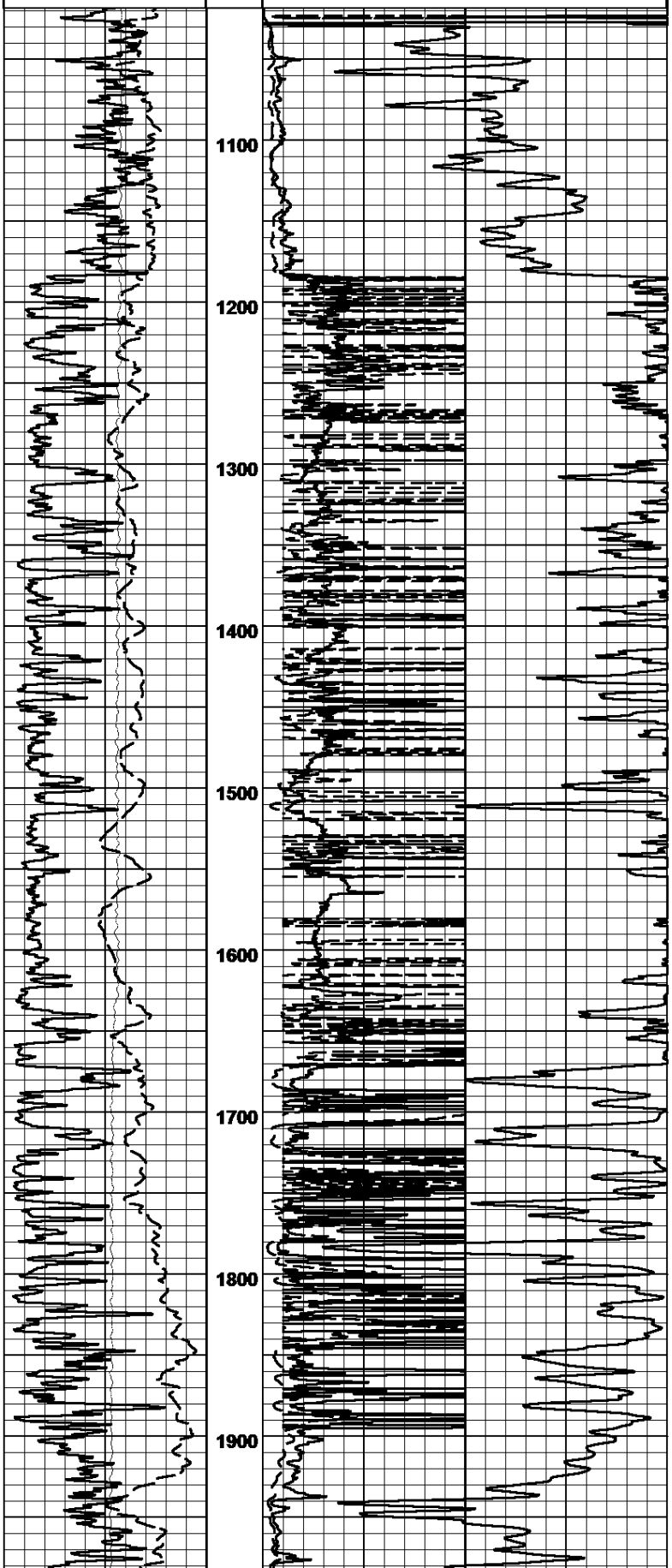
ontaneous Potential (SP)
-160. mV 40.

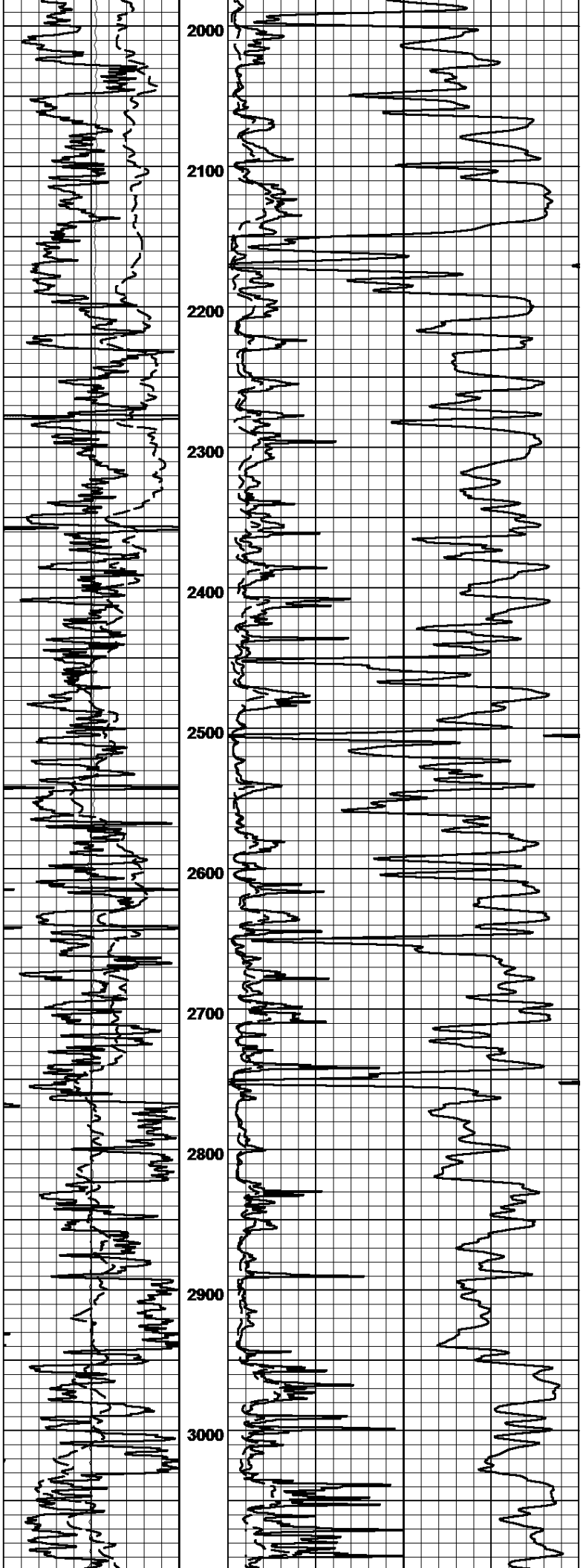
Gamma Ray (GR)
0. API 150.

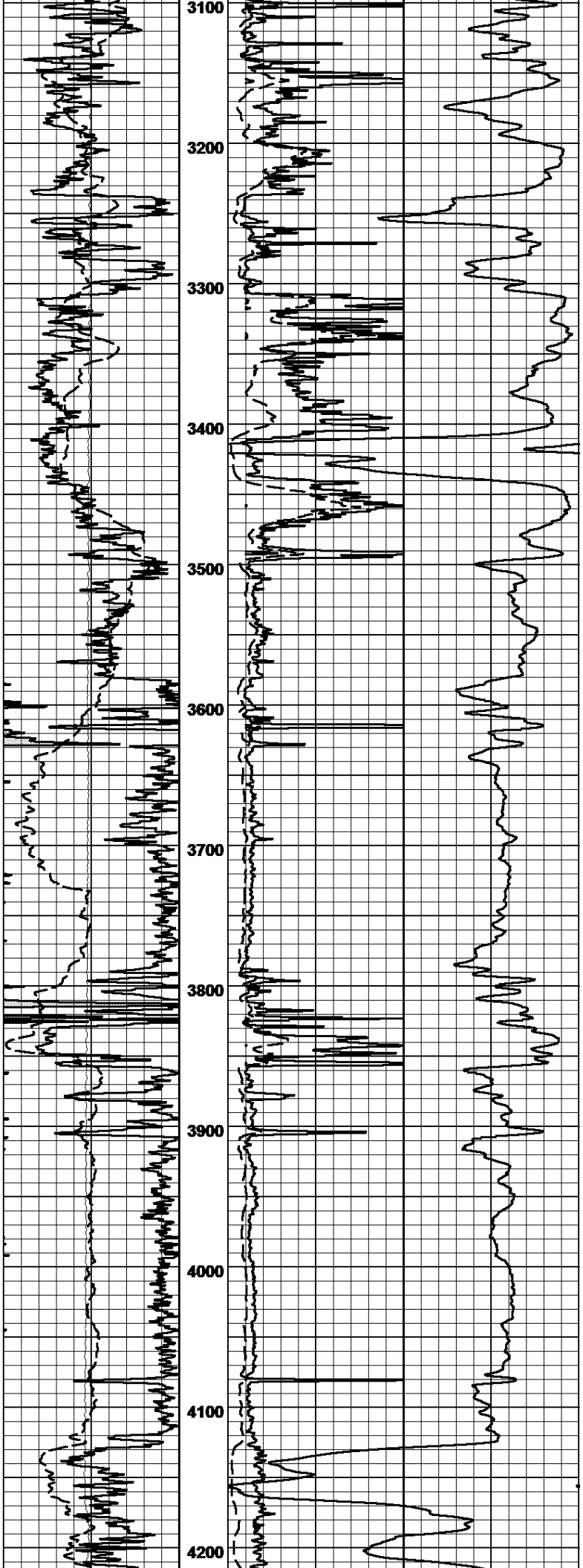
Laterolog (LL3)
0. ohmm 50.

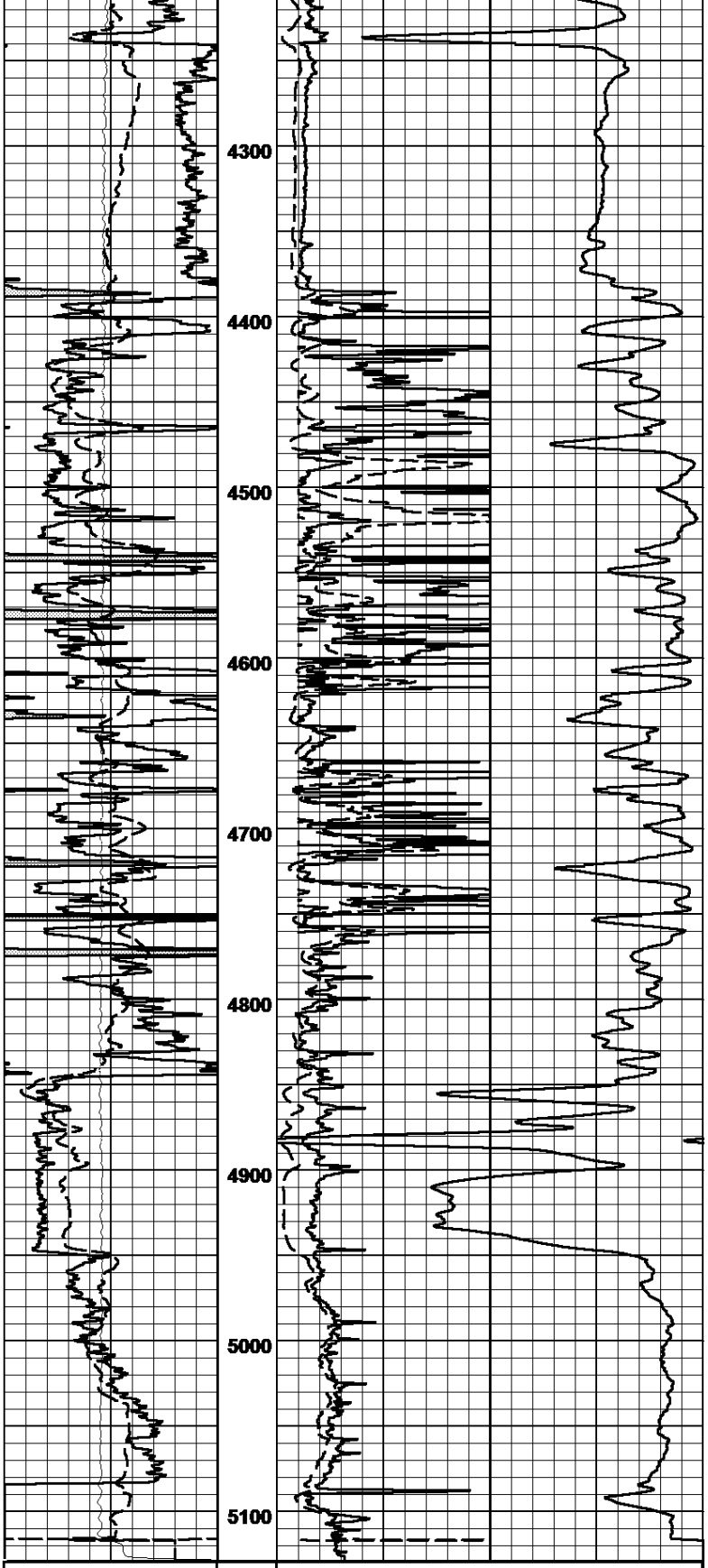
Deep Induction (ILD)
0. ohmm 50.

Deep Induction (CILD)
1000. mmhos 0.




2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000


3100
3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200



Gamma Ray (GR) 0. API 150.		Deep Induction (CILD) 1000. mmhos 0.
ontaneous Potential (SP) -160. mV 40.		Deep Induction (ILD) 0. ohmm 50.
Tension (TENS) 5000. Lbs 0.		Laterolog (LL3) 0. ohmm 50.

03/13/2015 **MAIN PASS (1"/100FT)** Log UP - (VER 11.19)

04:50:14 => Start Time Start Depth=> 5128.50 Feet