DUAL INDUCTION LOG

Company MAI OIL OPERATIONS, INC.
Well WIRTZ #11
Field FT. ZARAH
County BARTON
State KANSAS

Company MAI OIL OPERATIONS, INC.
Well WIRTZ #11
Field FT. ZARAH
County BARTON
State KANSAS

Location: API # : 15-009-26240-0000

740' FNL & 1445' FEL

SEC 33 TWP 19S RGE 12W

Other Services
CDL/CNL
MEL

Permanent Datum	GROUND LEVEL	Elevation	1810
Log Measured From	KELLY BUSHING 8' A.G.L		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B. 1818
D.F. 1816
G.L. 1810

Date	11/30/18		
Run Number	ONE		
Depth Driller	3440		
Depth Logger	3440		
Bottom Logged Interval	3438		
Top Log Interval	00		
Casing Driller	8 5/8" @ 620		
Casing Logger	620		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8500 PPM	
Density / Viscosity	9.2/47		
pH / Fluid Loss	8.0/9.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.50 @ 60F		
Rmf @ Meas. Temp	.37 @ 60F		
Rmc @ Meas. Temp	.60 @ 60F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.27 @ 111F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	111F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	JIM MUSGROVE		

<<< Fold Here >>>

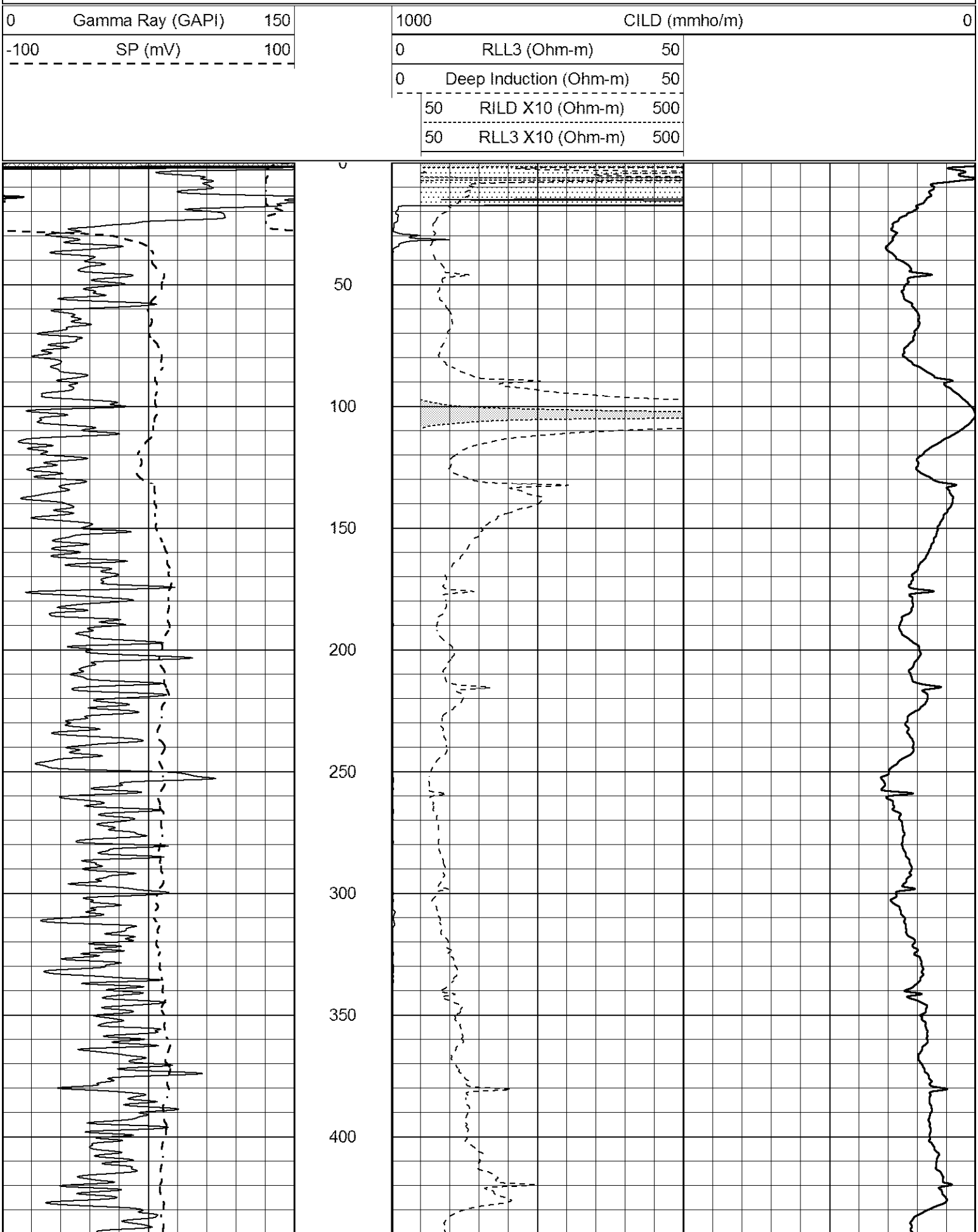
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

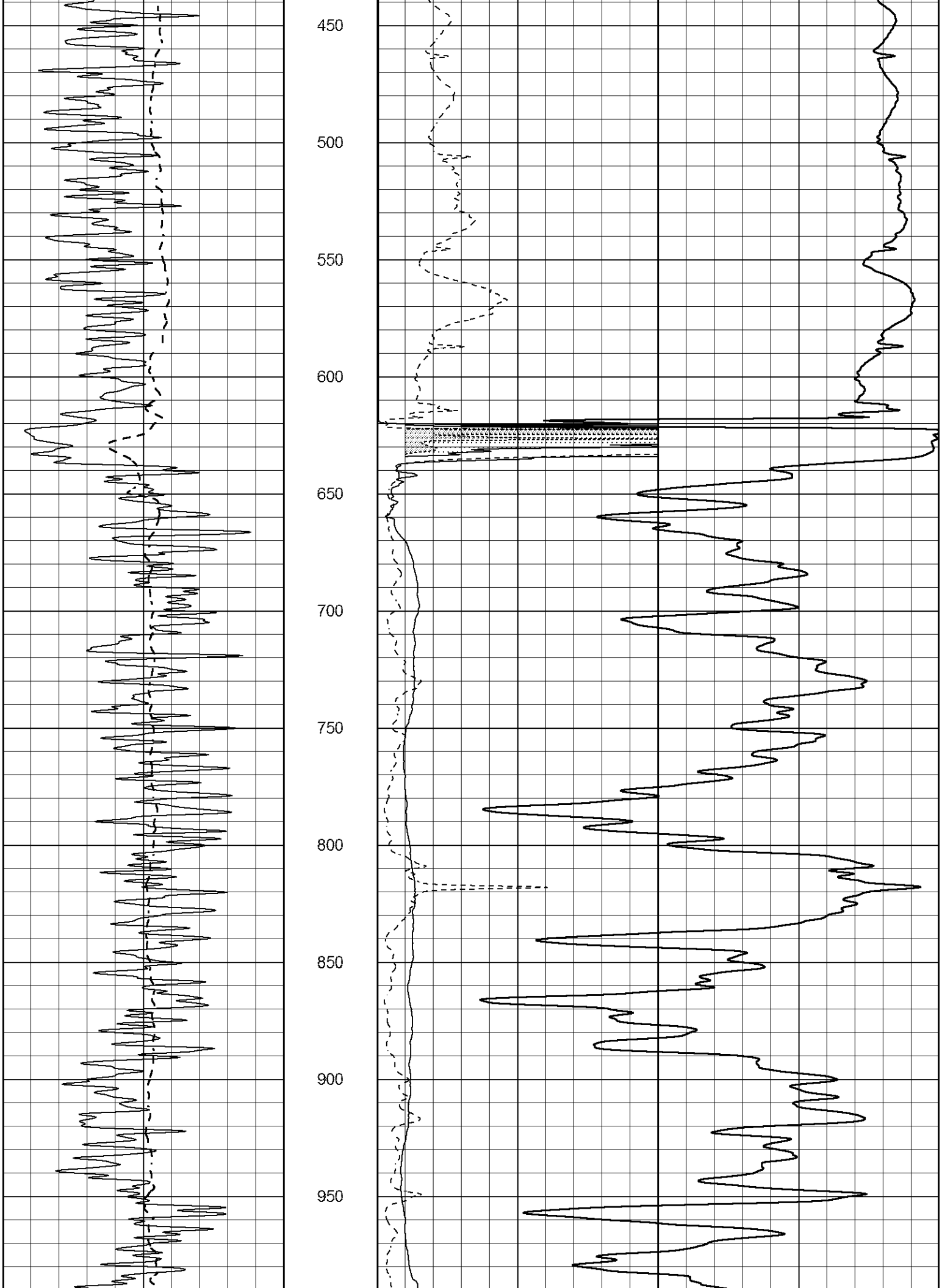
Comments

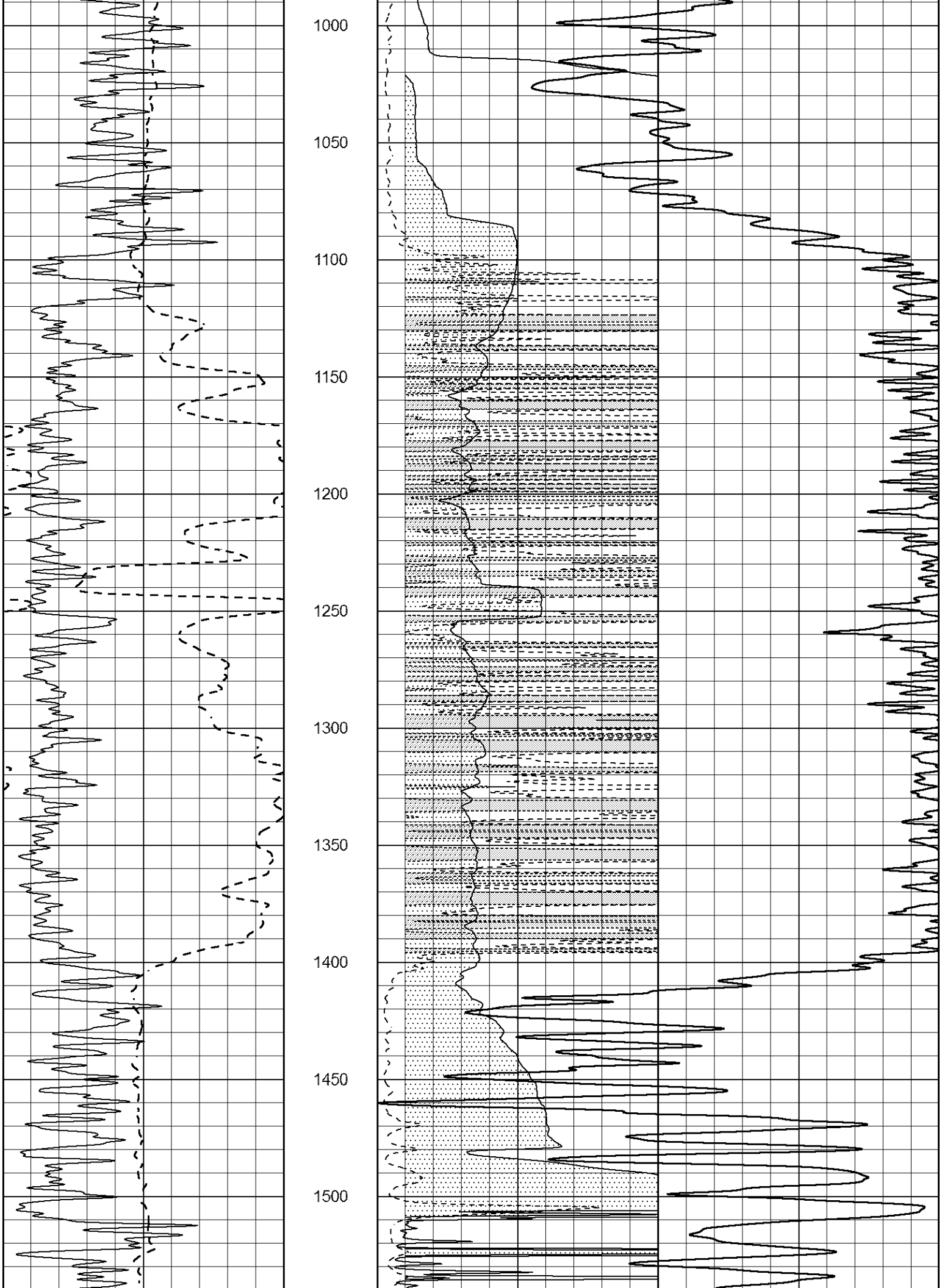
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
GREAT BEND, KS. - EAST TO DARTMOUTH BLACKTOP
1/4 SOUTH - 1 EAST - SOUTH INTO AT METAL BUILDING

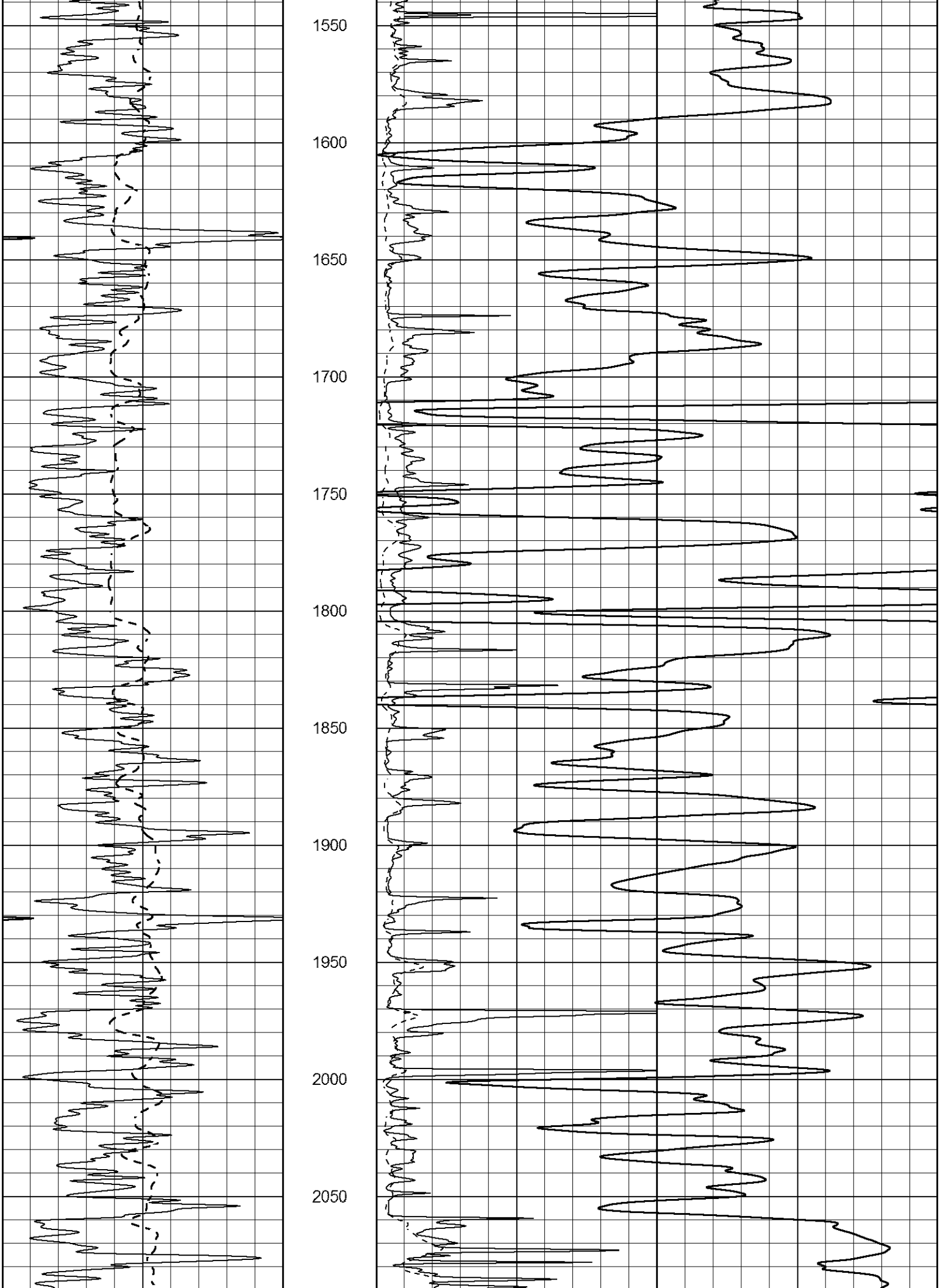
MAIN SECTION

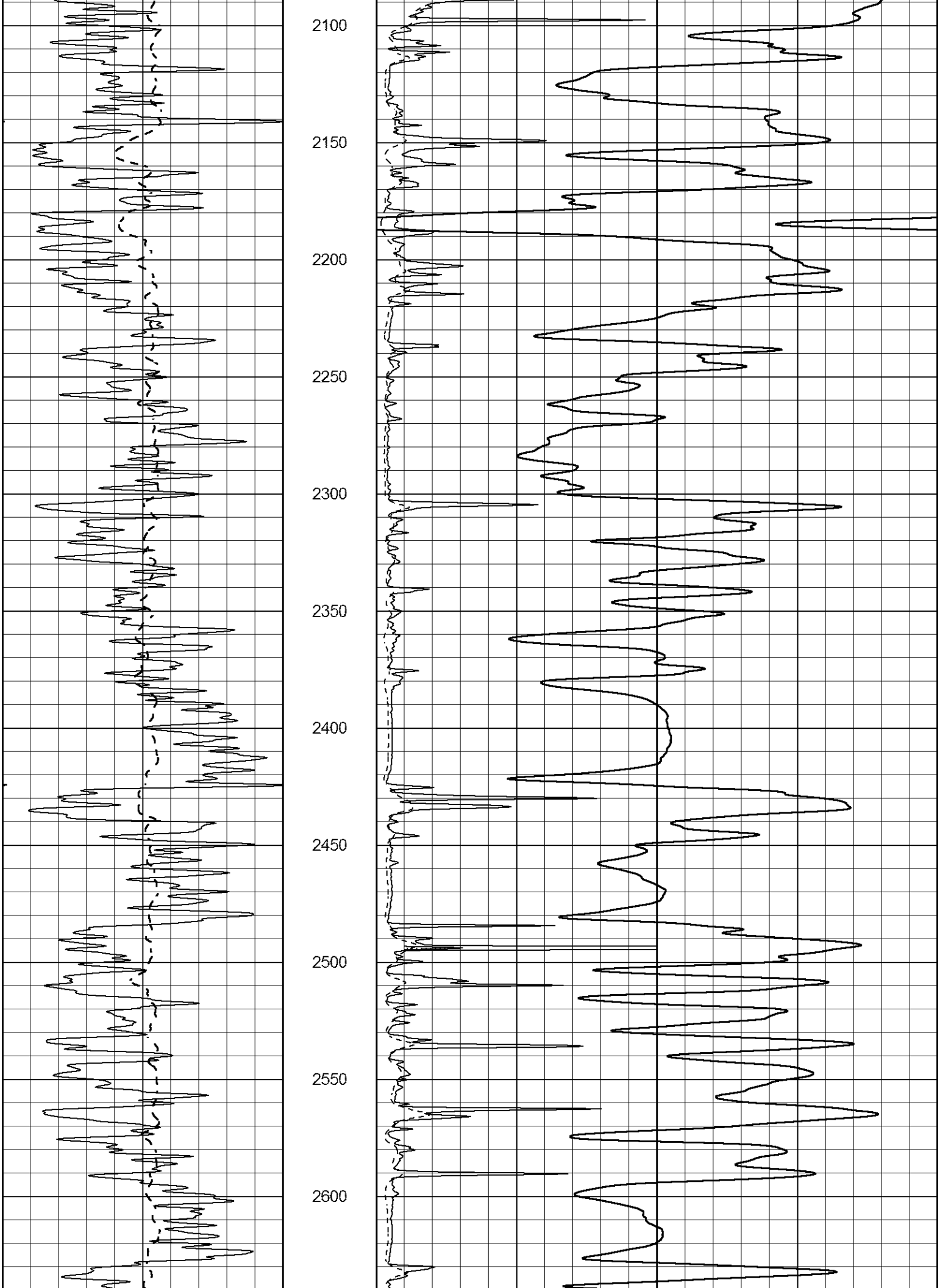
Database File	3023ddn8.db
Dataset Pathname	pass3.3
Presentation Format	_dil2
Dataset Creation	Fri Nov 30 08:40:52 2018
Charted by	Depth in Feet scaled 1:600

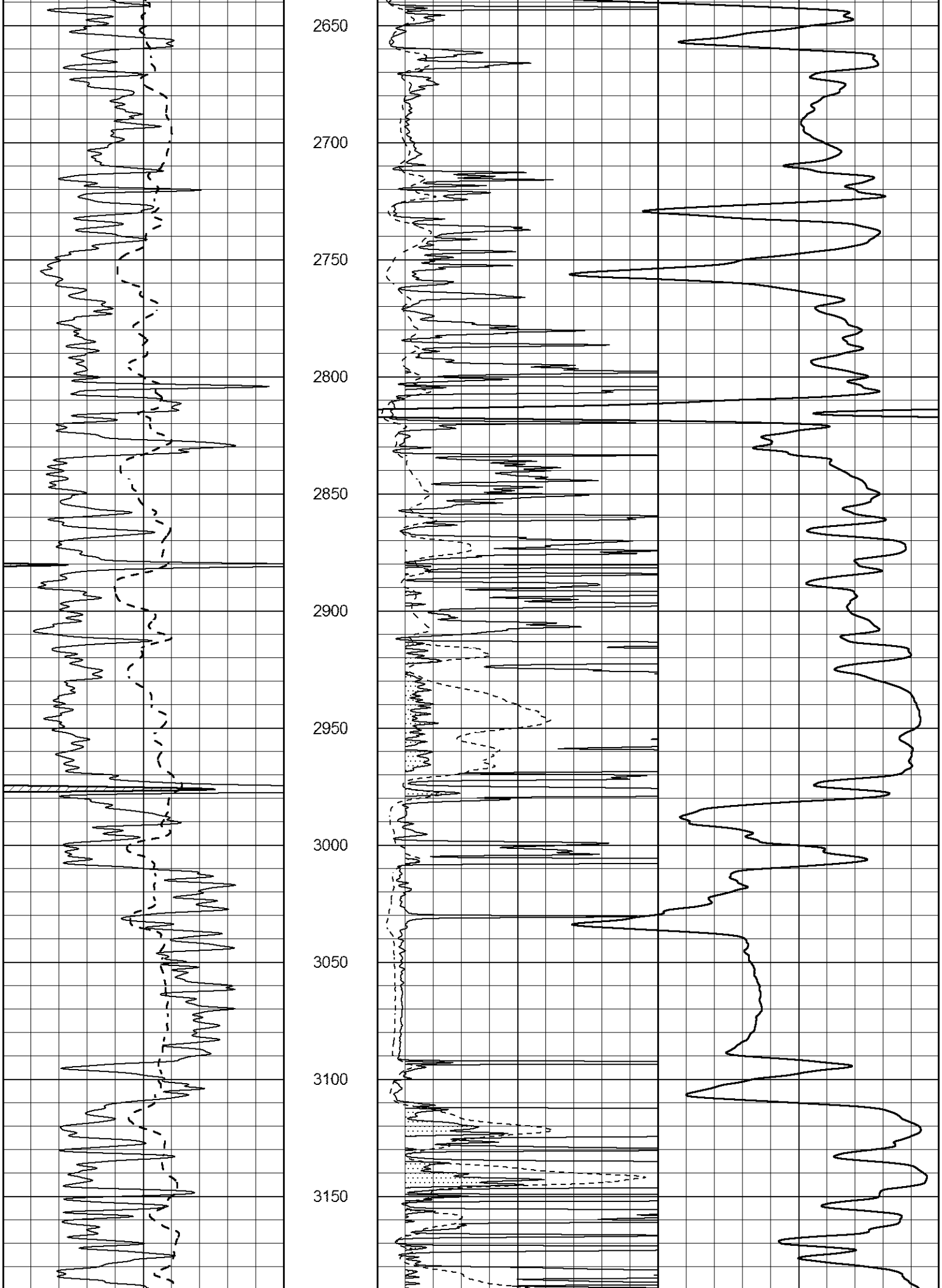


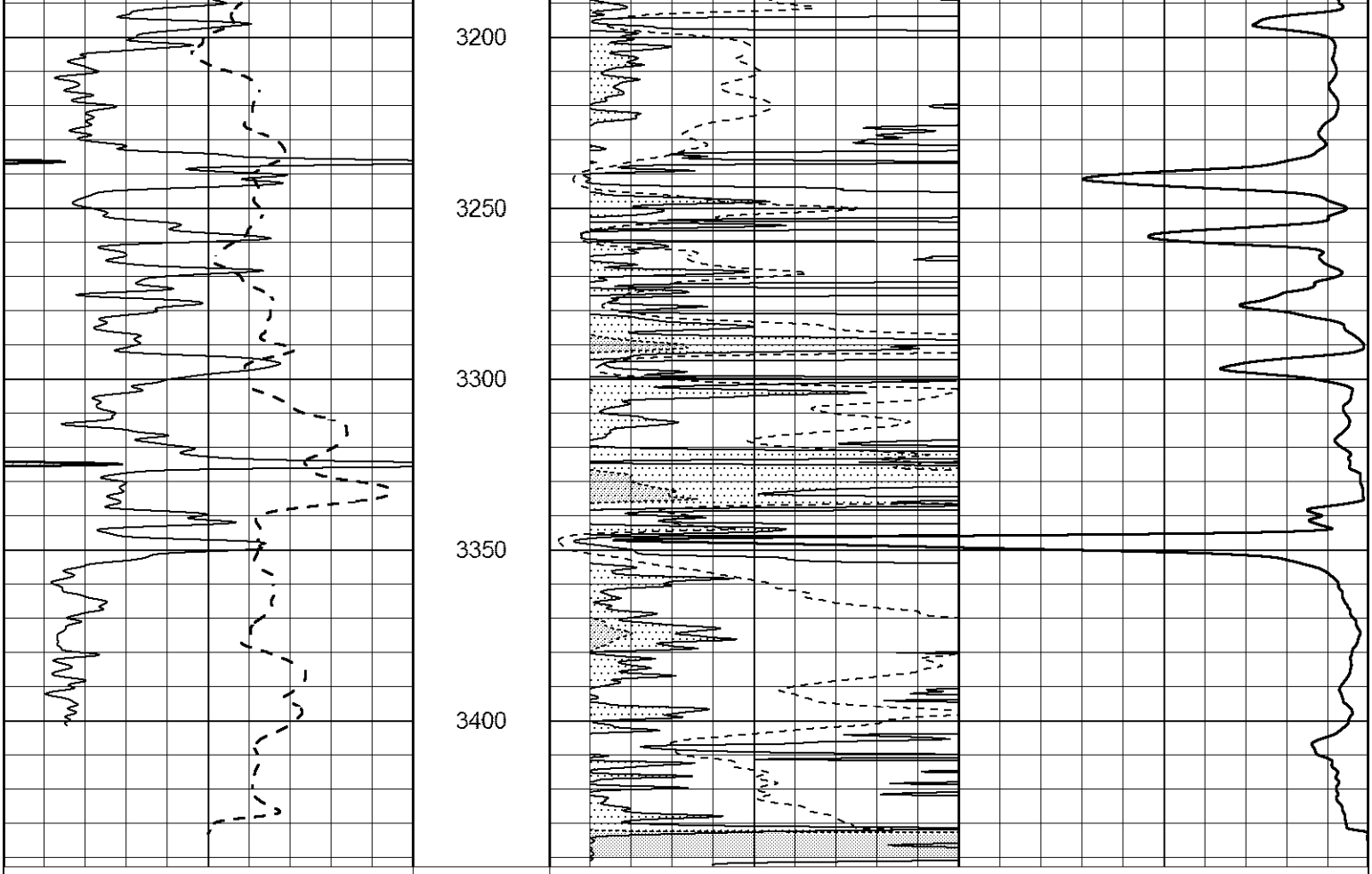

450
500
550
600
650
700
750
800
850
900
950


1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500


1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

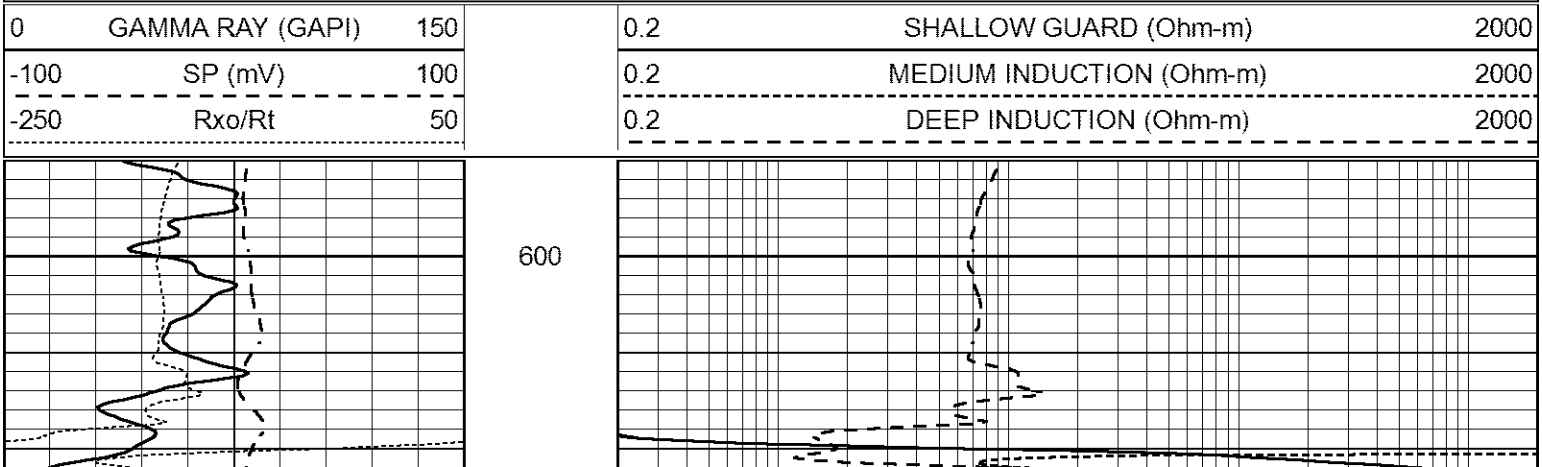

2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600

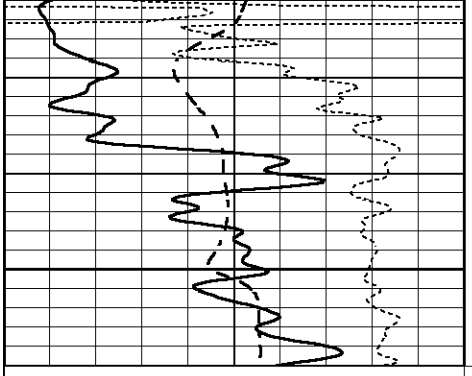

2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150

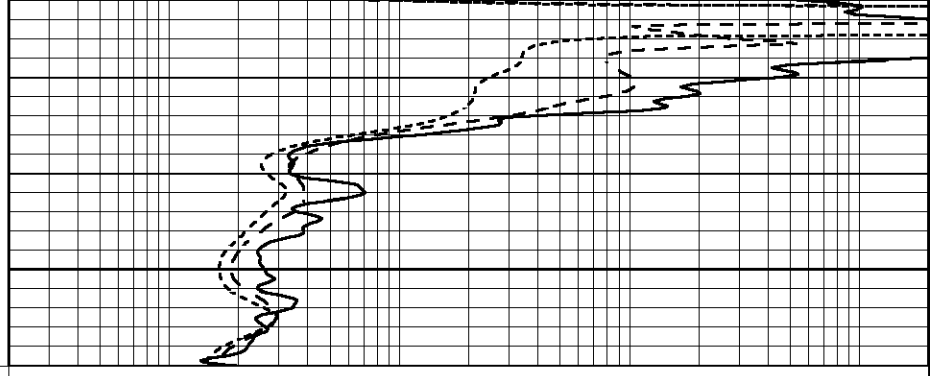


ANHYDRITE

Database File	3023ddn8.db
Dataset Pathname	pass3.2
Presentation Format	_dil
Dataset Creation	Fri Nov 30 08:15:40 2018
Charted by	Depth in Feet scaled 1:240







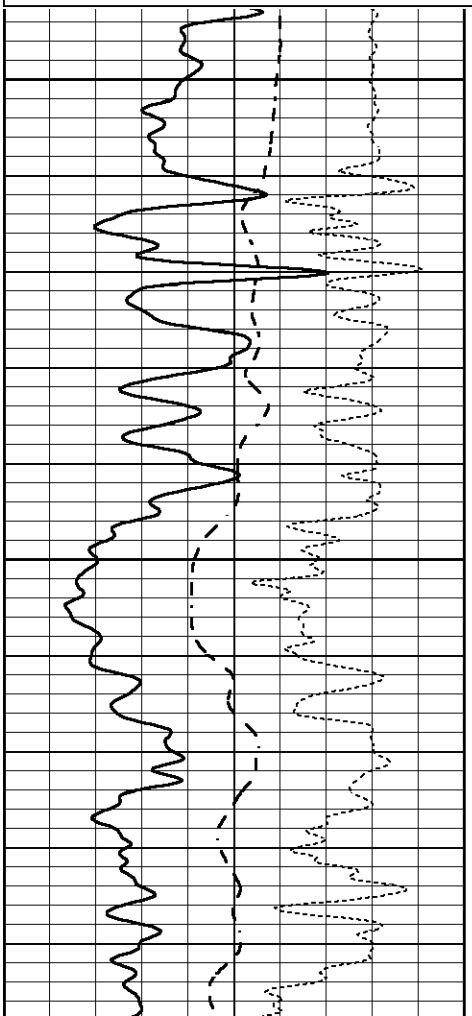
650

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

MAIN SECTION

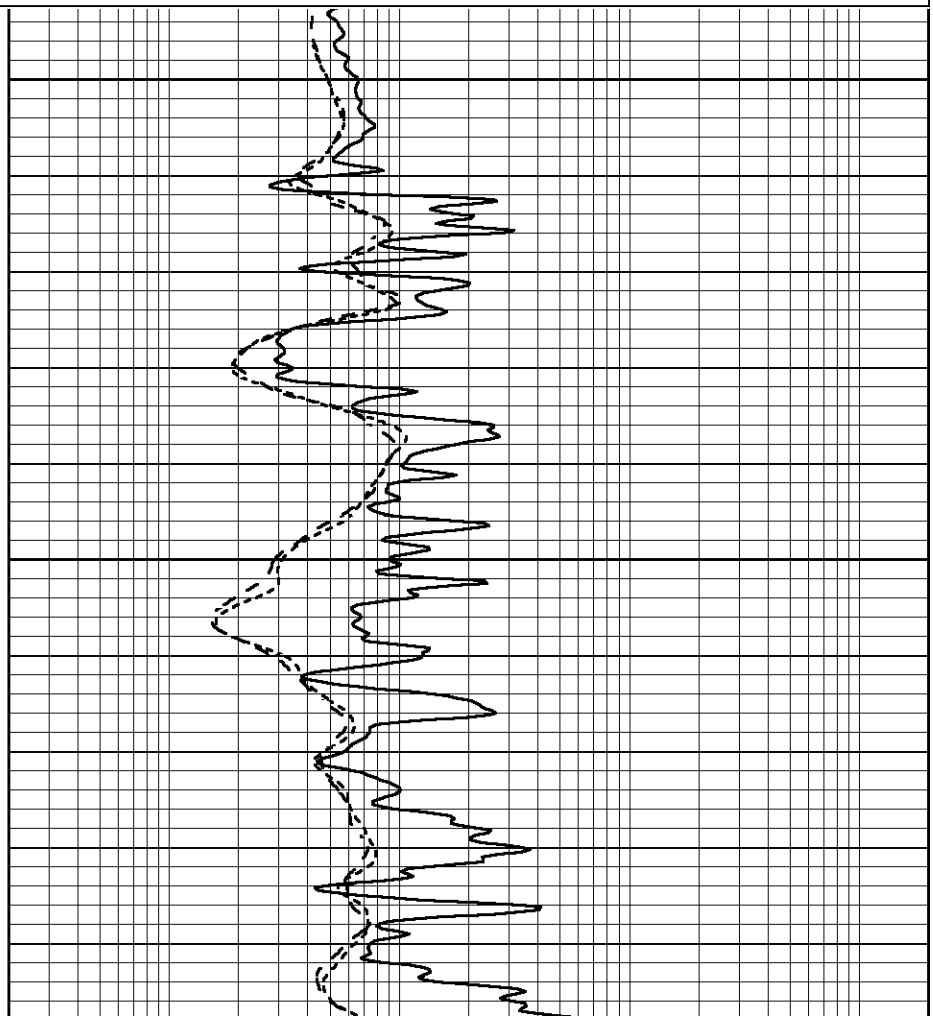
Database File	3023ddn8.db
Dataset Pathname	pass3.1
Presentation Format	_dil
Dataset Creation	Fri Nov 30 07:51:53 2018
Charted by	Depth in Feet scaled 1:240

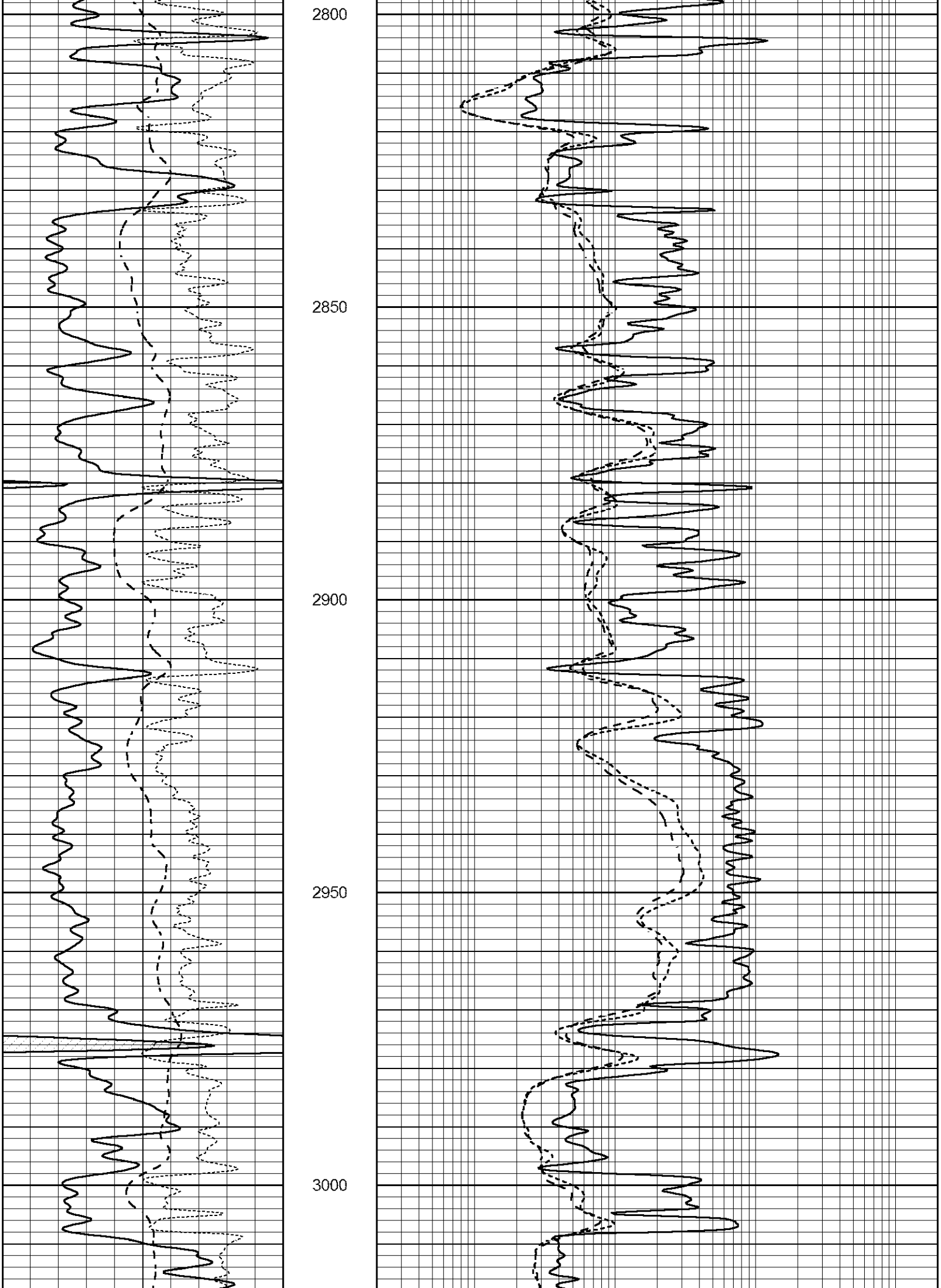
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

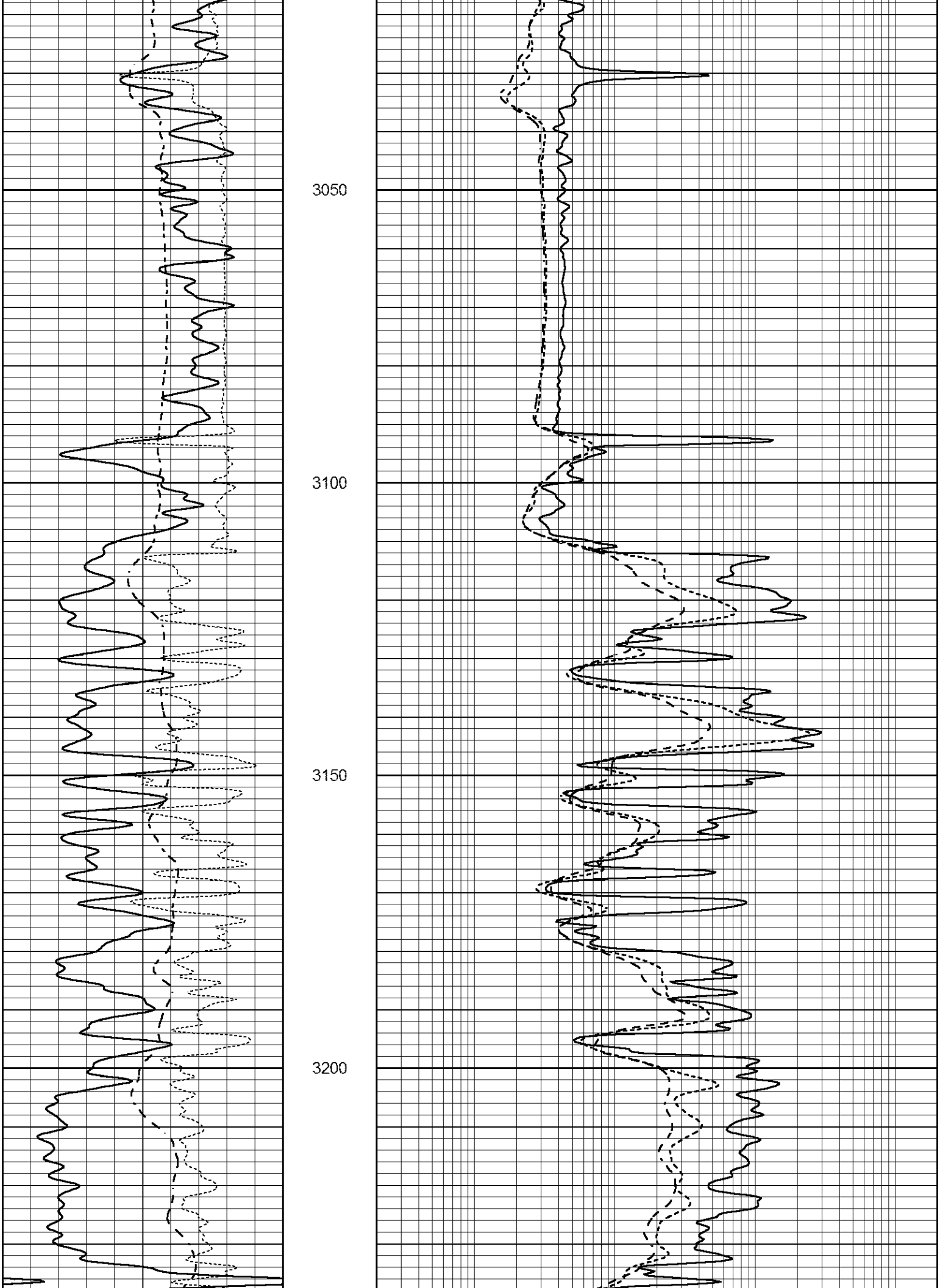


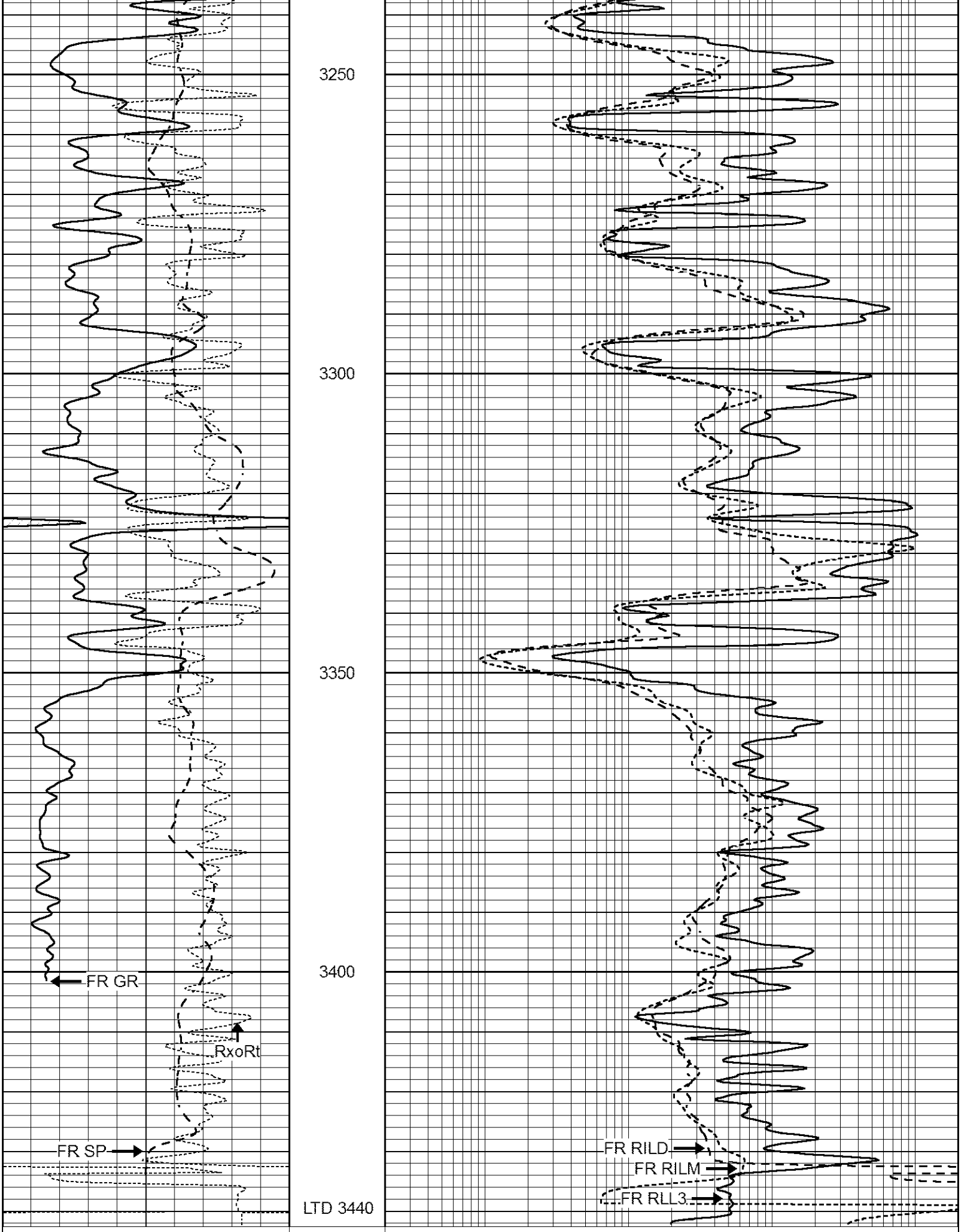
2700

2750




2800
2850
2900
2950
3000

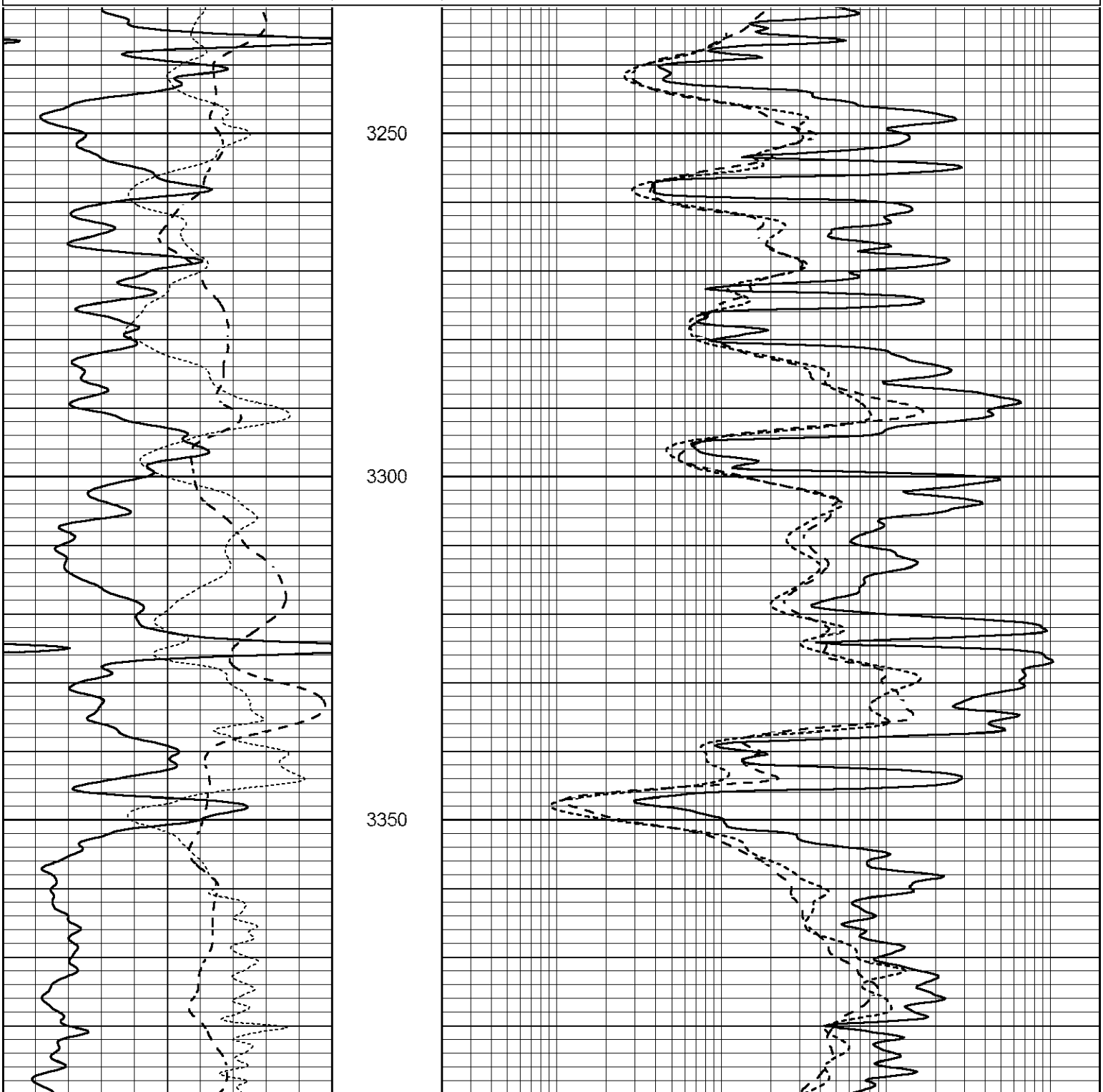

3050
3100
3150
3200

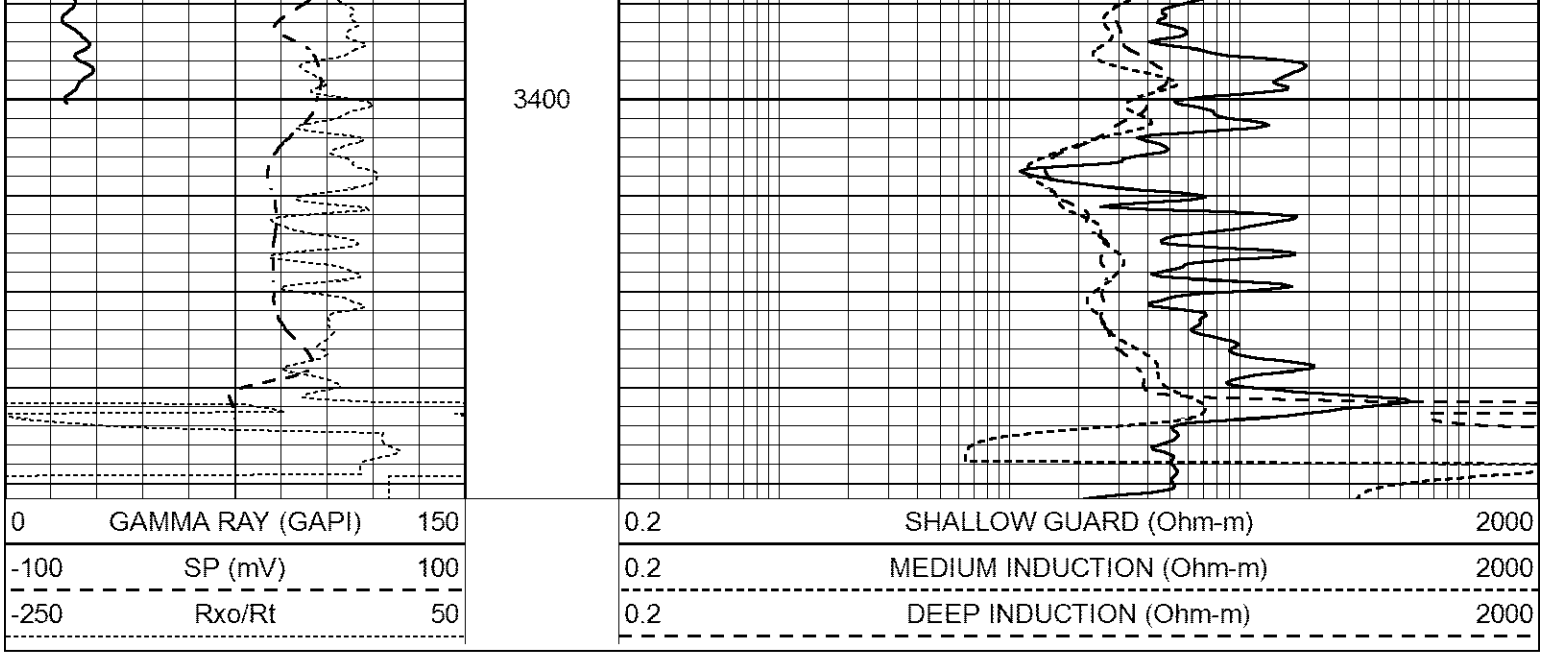

3250
3300
3350
3400
LTD 3440
FR GR
RxoRt
FR SP
FR RILD
FR RILM
FR RLL3
0 GAMMA RAY (GAPI) 150
-100 SP (mV) 100
-250 Rxo/Rt 50
0.2 SHALLOW GUARD (Ohm-m) 2000
0.2 MEDIUM INDUCTION (Ohm-m) 2000
0.2 DEEP INDUCTION (Ohm-m) 2000

REPEAT SECTION

Database File	3023ddn8.db
Dataset Pathname	pass2.1
Presentation Format	_dil
Dataset Creation	Fri Nov 30 07:42:15 2018
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000





Calibration Report

Database File	3023ddn8.db
Dataset Pathname	pass3.1
Dataset Creation	Fri Nov 30 07:51:53 2018

Dual Induction Calibration Report

Serial-Model:	FW1410-56-Probe
Surface Cal Performed:	Tue Jul 25 12:15:33 2017
Downhole Cal Performed:	Tue Jul 25 12:15:37 2017
After Survey Verification Performed:	Tue Jul 25 12:15:38 2017

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.008	0.765	V	1.000	400.000	mmho/m	527.061	-3.201
Medium	-0.056	0.761	V	1.000	464.000	mmho/m	567.187	32.510
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.005	0.624	V	0.000	400.000	mmho/m	645.611	-3.034
Medium	0.012	0.721	V	0.000	464.000	mmho/m	653.591	-7.532

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.647	301.329	mmho/m	-0.780	336.378	mmho/m	1.117	-0.058
Medium	38.256	411.013	mmho/m	39.046	441.706	mmho/m	1.080	-2.280
LL3		7.471	V		2500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.085	V		5000.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.647	301.329	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	38.256	411.013	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		

0.000	mmho-m	3745.000	mmho-m

Compensated Neutron Calibration Report

Serial Number: 080621PMC
Tool Model: NABORS

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	7	
Tool Model:	Probe1	
Performed:	Wed Jun 29 11:10:58 2016	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.4300	GAPI/cps