HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

COMPANY **SANDRIDGE ENERGY**

WELL **SIMONS 1736 1-12**

FIELD/BLOCK **BEAVER CLIFF NW**

COUNTY **WICHITA** STATE **KANSAS**

API No. 15-203-20246

Location (SHL) 200' FNL & 2240' FEL

Sect. 12 Twp. 17S Rge. 36W

Other Services:
DSN / SDL
CSNG
MICROLOG
ACRT
IDT / ICT
WSTT
MRIL

Permanent Datum	GL	Elev. 3221.0 ft	Elev.: K.B. 3230.0 ft
Log measured from	KB	9.0 ft above perm. Datum	D.F. 3229.0 ft
Drilling measured from	KB		G.L. 3221.0 ft

Date		25-Nov-13					
Run No.		ONE					
Depth - Driller		5050.00 ft					
Depth - Logger		5046.0 ft					
Bottom - Logged Interval		5036					
Top - Logged Interval		1520					
Casing - Driller		9.625 in @ 1519.0 ft		@		@	
Casing - Logger		1520.0 ft					
Bit Size		8.750 in		@		@	
Type Fluid in Hole		WATER BASED					
Density	Viscosity	9.3 ppg	44.00 s/qt				
PH	Fluid Loss	11.70 pH	5.8 cptm				
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		0.330 ohmm @ 75.00 degF		@		@	
Rmf @ Meas. Temperature		0.28 ohmm @ 75.00 degF		@		@	
Rmc @ Meas. Temperature		0.379 ohmm @ 75.00 degF		@		@	
Source Rmf	Rmc	CALCULATED	CALCULATED				
Rm @ BHT		0.21 ohmm @ 119.0 degF		@		@	
Time Since Circulation		8.0 hr					
Time on Bottom		25-Nov-13 06:33					
Max. Rec. Temperature		119.0 degF @ 5046.0 ft		@		@	
Equipment	Location	11072142	LIBERAL				
Recorded By		SHELDON INGERSOLL					
Witnessed By		P. BECKELHEIMER					

Fold here

Service Ticket No.: 900920751 API Serial No.: 15-203-20246 PGM Version: WL INSITE R3.8.4 (Build 5)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

	Sample No.					
Date						
Depth-Driller						
Type Fluid in Hole						
Density	Viscosity					
Ph	Fluid Loss					
Source of Sample						
Rm @ Meas. Temp		@	@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@	@
Rmc @ Meas. Temp.		@	@	@	@	@
Source Rmf	Rmc					
Rm @ BHT		@	@	@	@	@
Rmf @ BHT		@	@	@	@	@
Rmc @ BHT		@	@	@	@	@

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	ONE	ACRT	N/A	1.5" S.O.	
		11005909			

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11021139	Serial No.	10753396	Serial No.	10865884	Serial No.	11055304
Model No.	GTET	Model No.	WSTT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	2	Diameter	5.3"	Diameter	3.625"
Detector Model No.	T-102	Spacing	.5'	Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS-137	Source Type	AM-241BE
Length	8"	LSA [Y/N]	YES	Serial No.	5168GW	Serial No.	DSN-424
Distance to Source	N/A	FWDA [Y/N]	YES	Strength	1.5 CI	Strength	15 CI

LOGGING DATA

GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	5046	1520	REC	0	150	30	-10	47.6 us/ft	30	-10	2.71 gm/cc	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

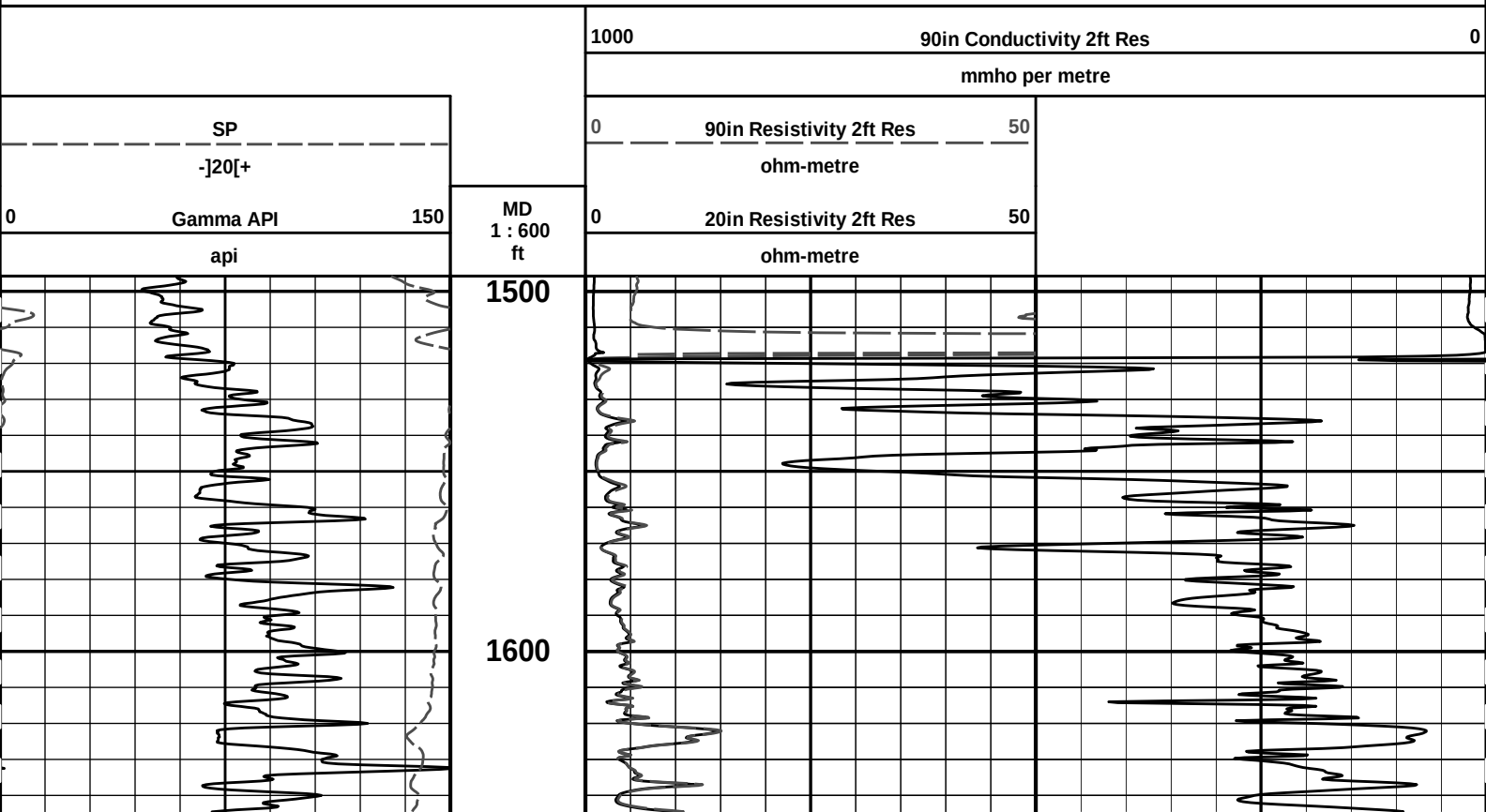
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 7 INCH CASING.

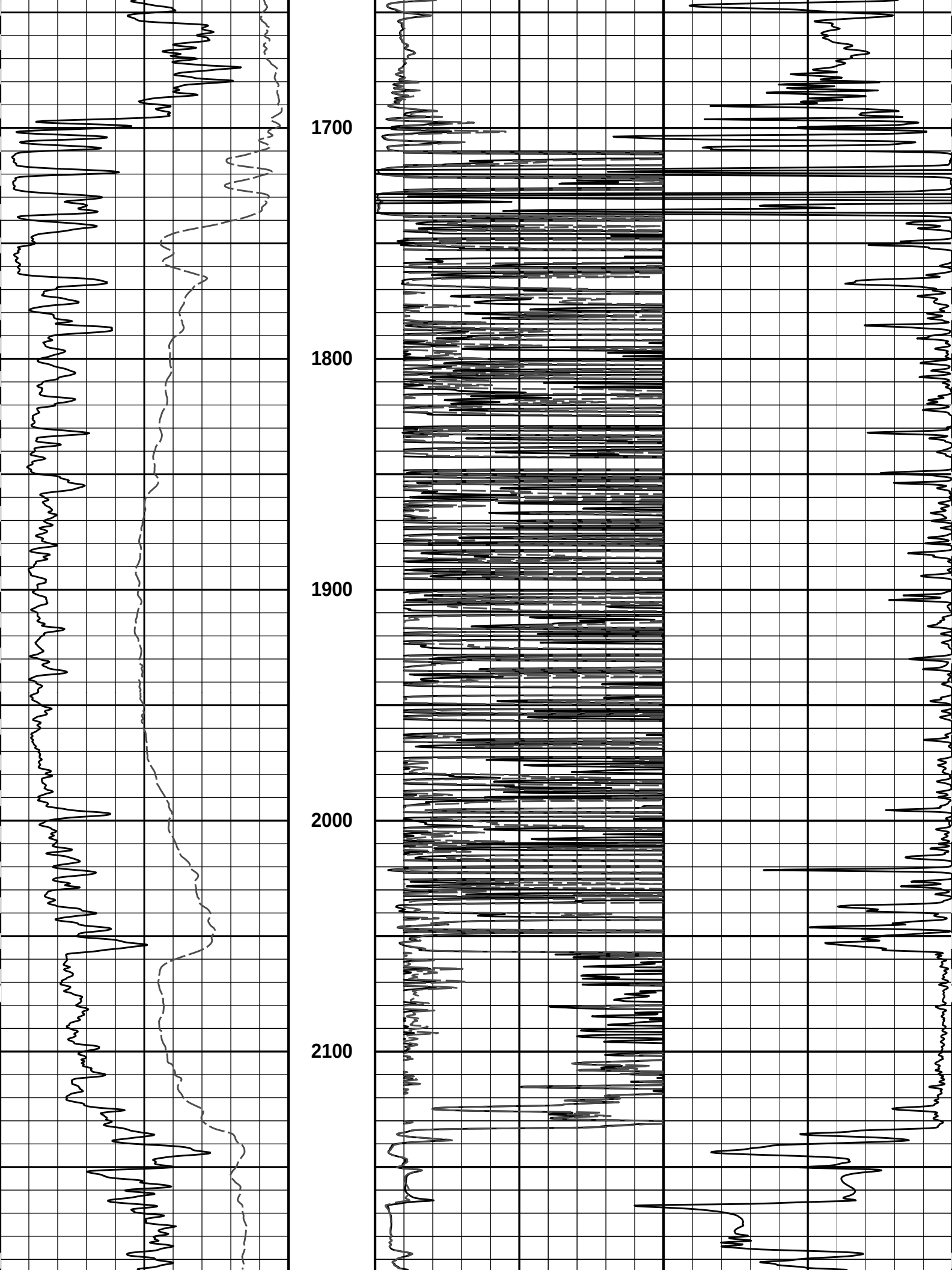
CHLORIDES REPORTED AT 18,000 mg/L.

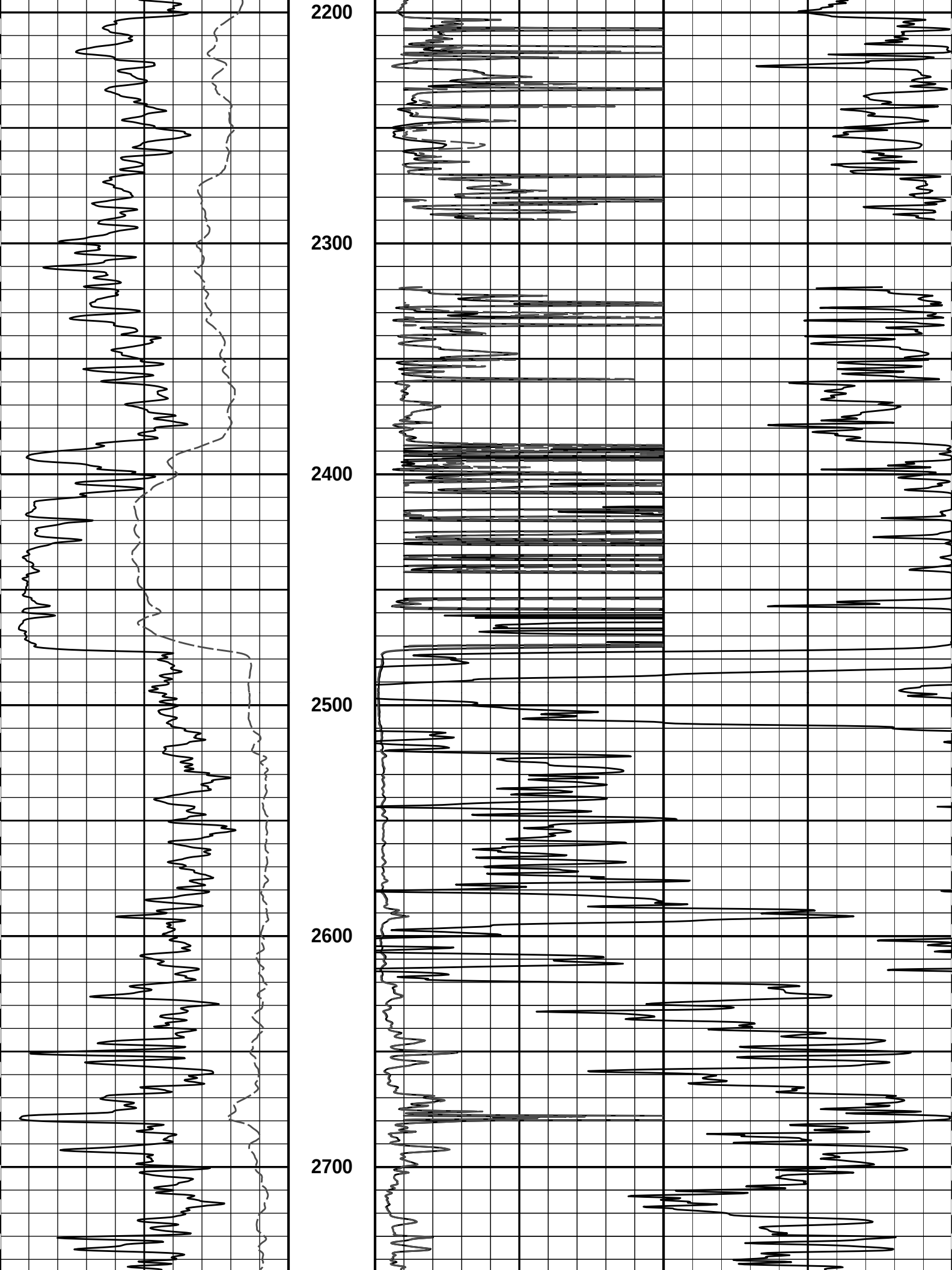
HALLIBURTON

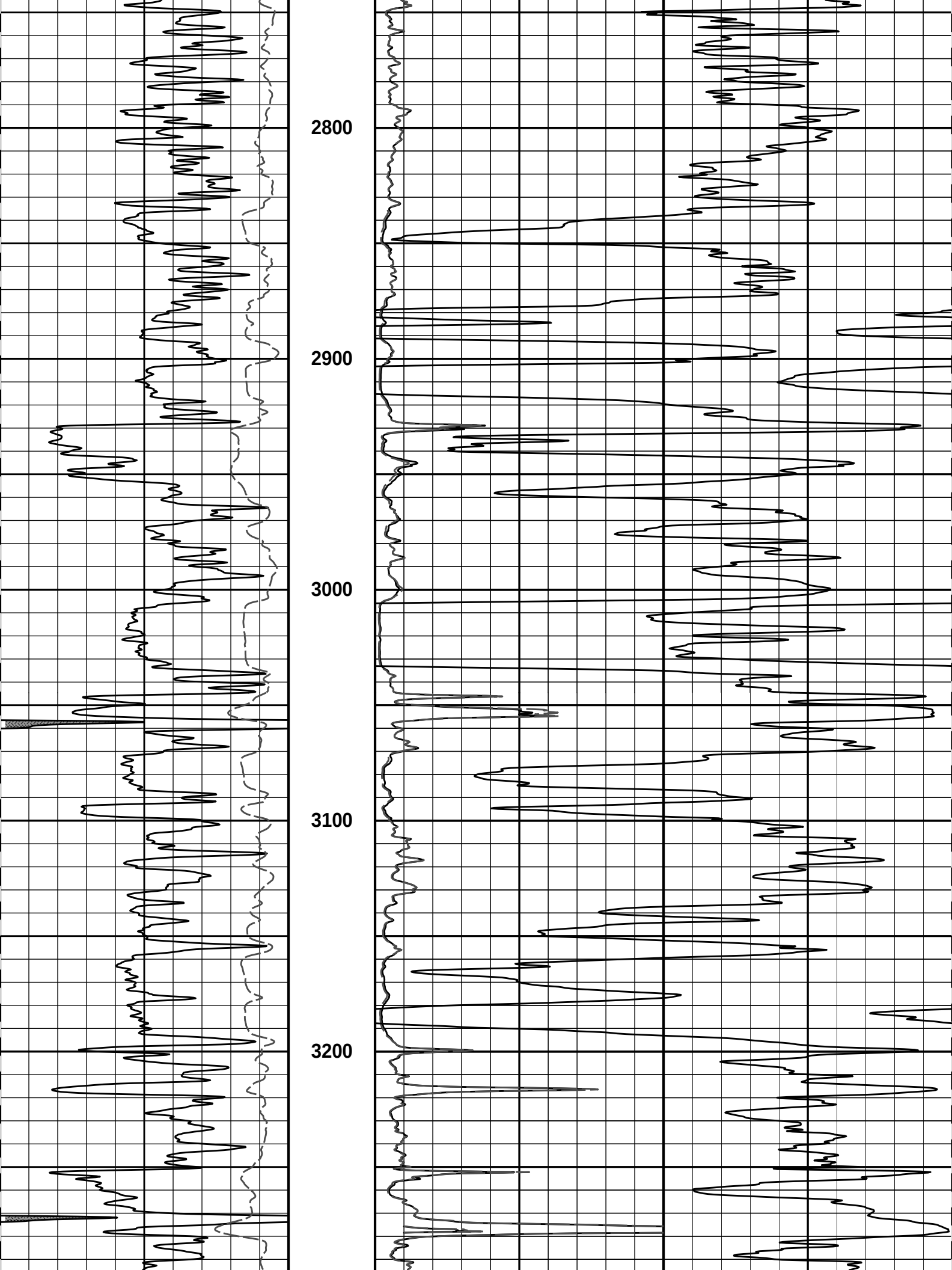
Plot Time: 25-Nov-13 15:57:39
Plot Range: 1495.75 ft to 5049.75 ft
Data: SIMONS_1736_112\Well Based\R1 CASING
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_2_lib

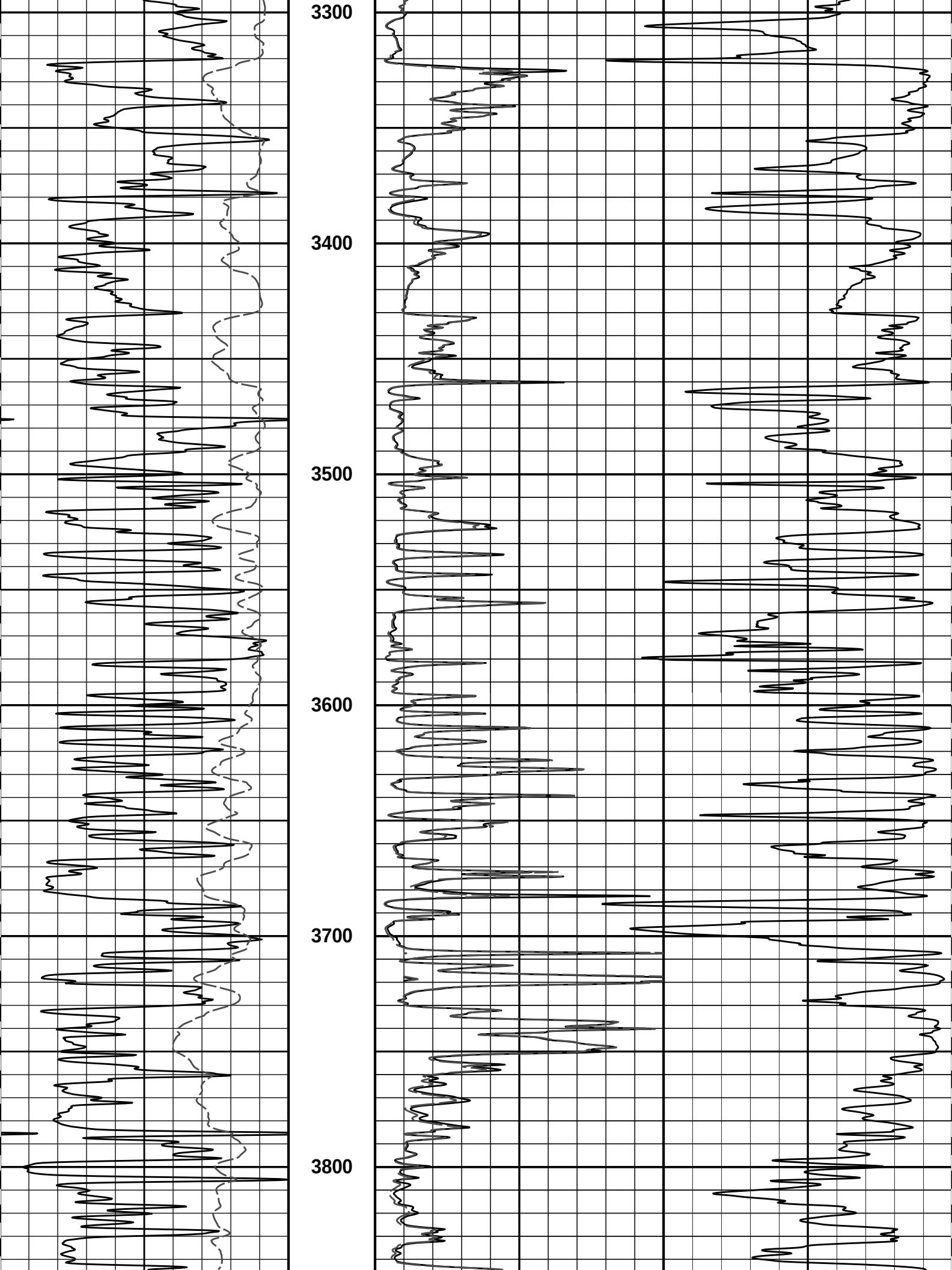
2 INCH MAIN LOG

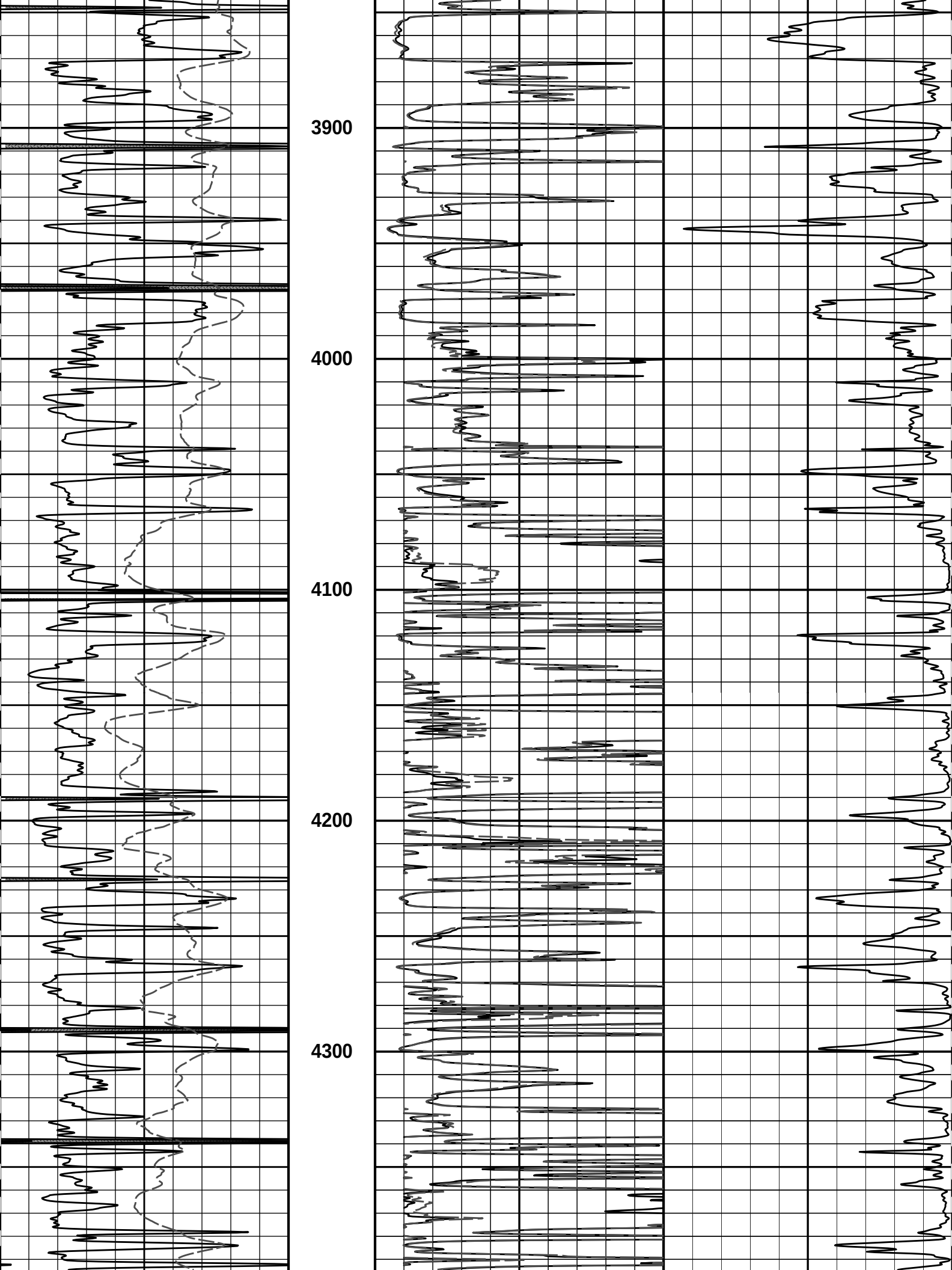


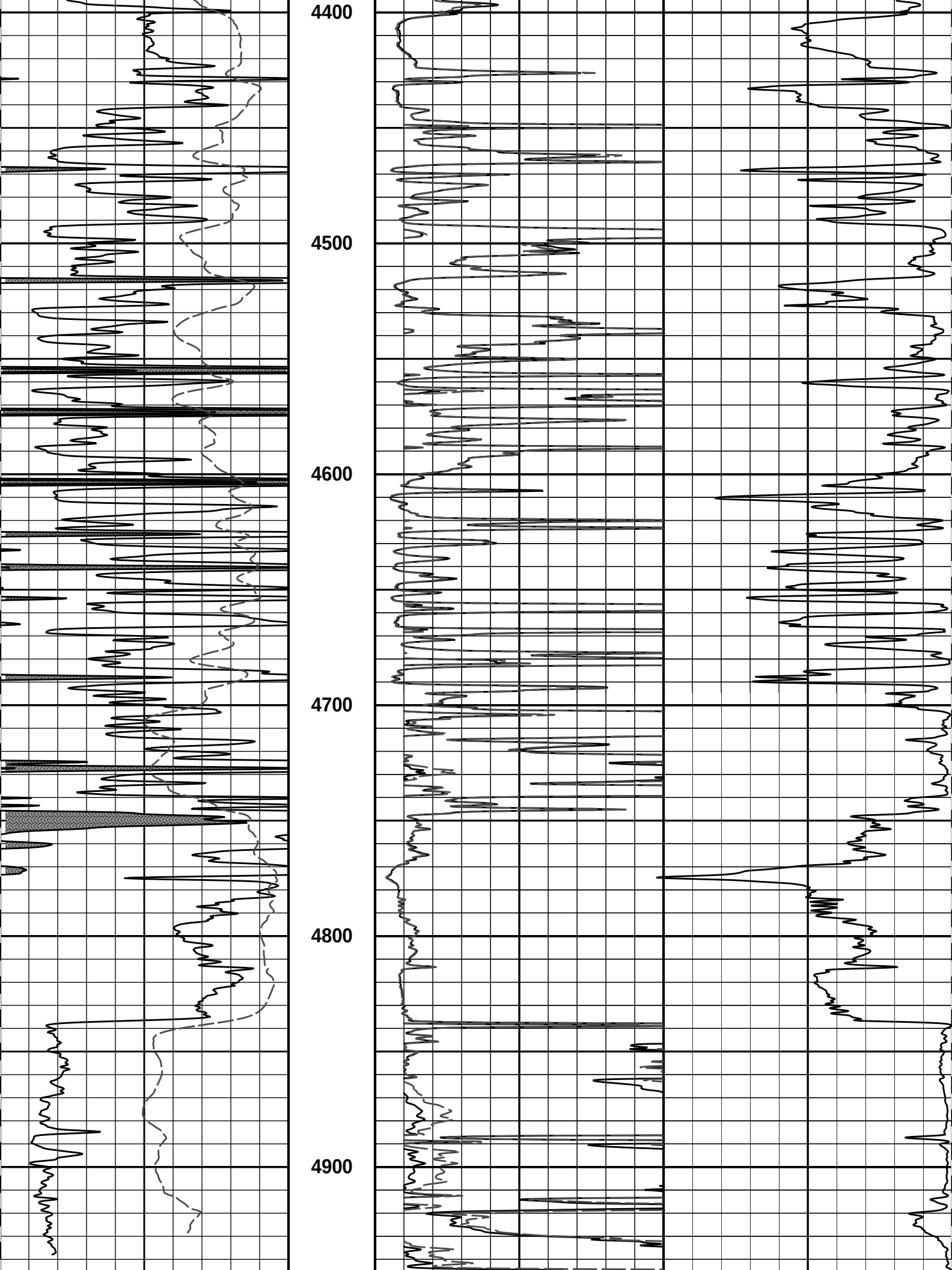

1700
1800
1900
2000
2100

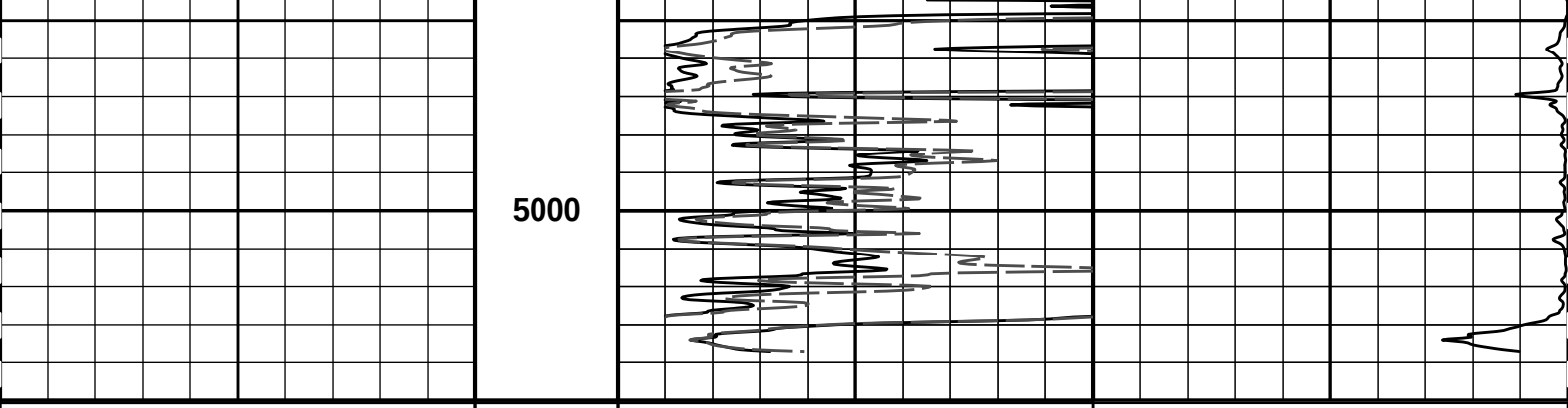

2200
2300
2400
2500
2600
2700


2800
2900
3000
3100
3200


3300
3400
3500
3600
3700
3800


3900
4000
4100
4200
4300


4400
4500
4600
4700
4800
4900



0 Gamma API 150	MD 1 : 600 ft	0 20in Resistivity 2ft Res 50
api		ohm-metre
SP		0 90in Resistivity 2ft Res 50
-]20[+		ohm-metre
		1000 90in Conductivity 2ft Res 0
		mmho per metre

HALLIBURTON

Plot Time: 25-Nov-13 15:58:03
Plot Range: 1495.75 ft to 5049.75 ft
Data: SIMONS_1736_112\Well Based\R1 CASING\
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_2_lib

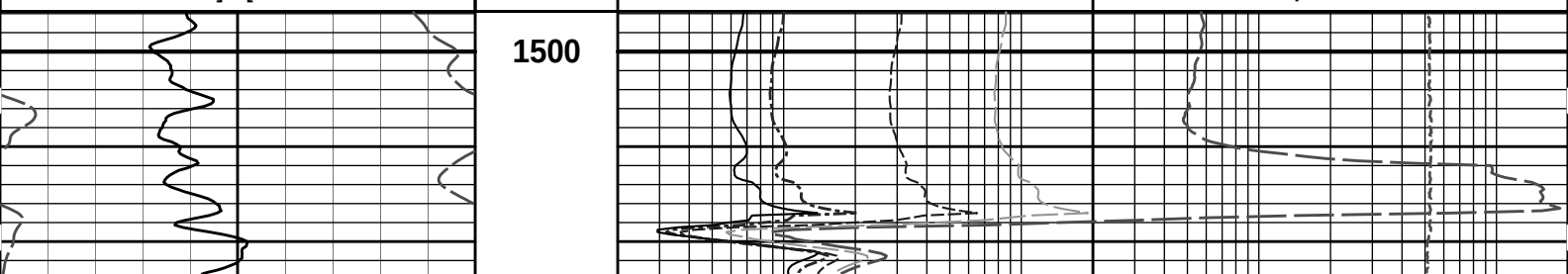
2 INCH MAIN LOG

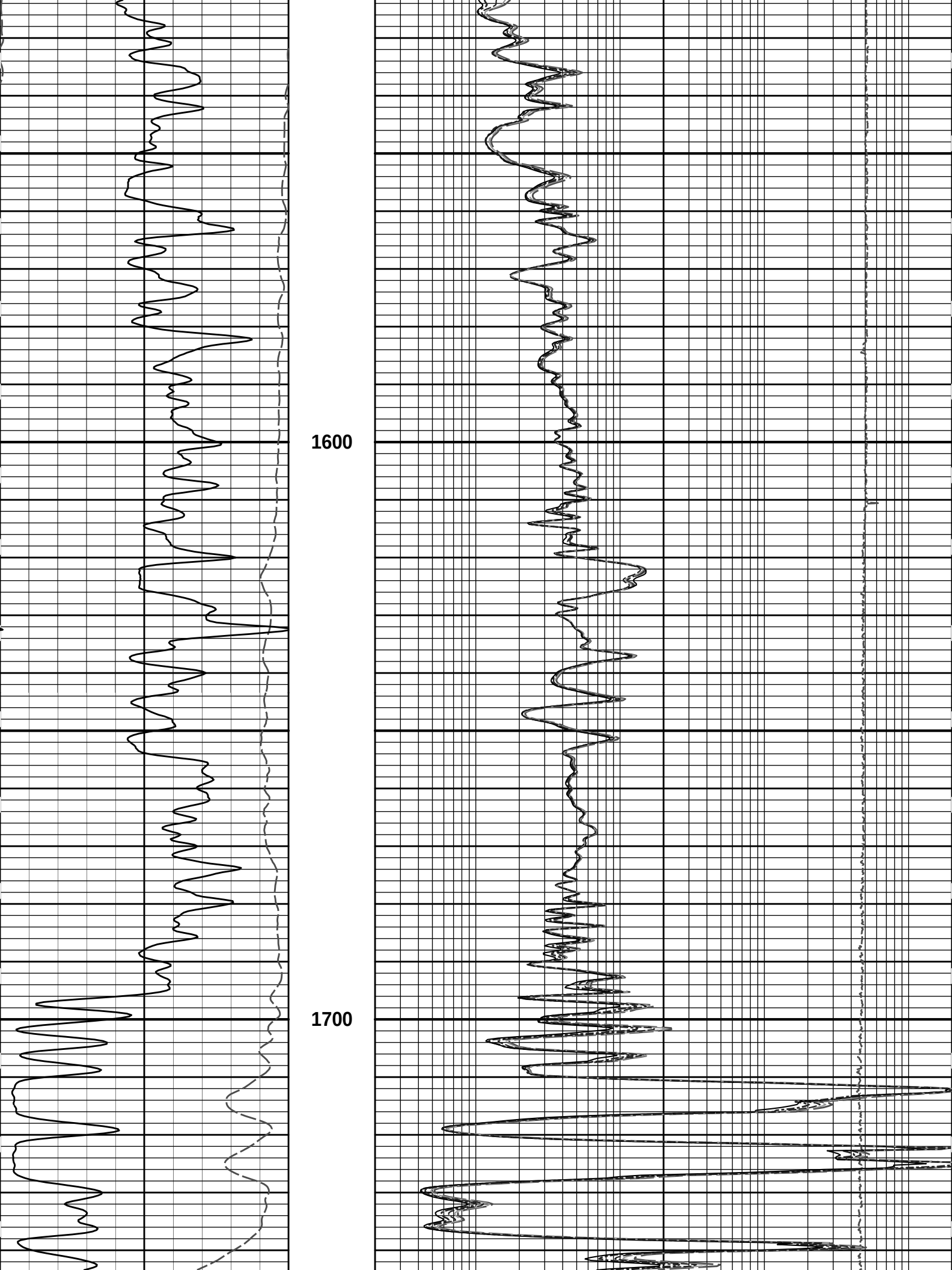
HALLIBURTON

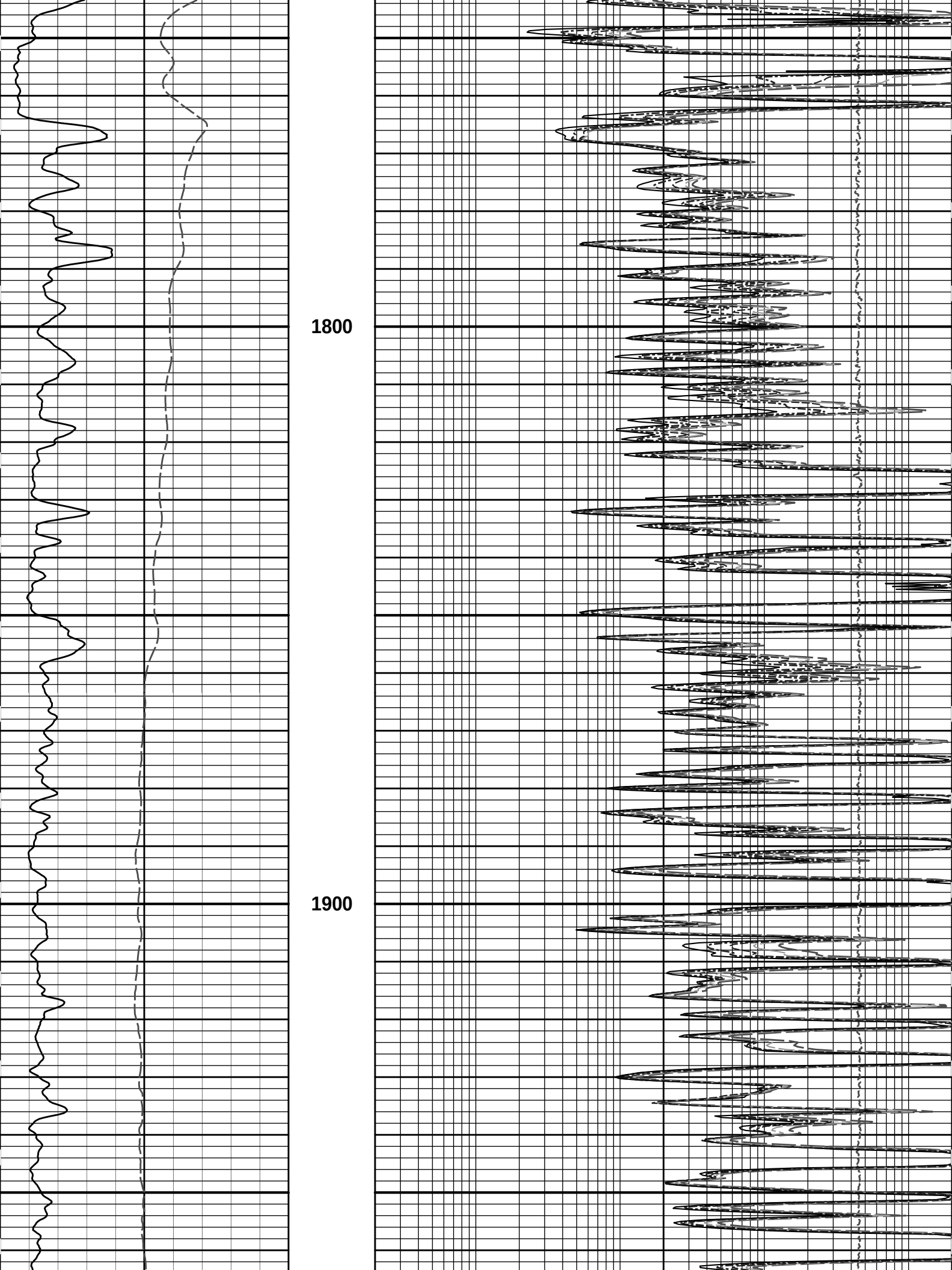
Plot Time: 25-Nov-13 15:58:03
Plot Range: 1495.75 ft to 5049.75 ft
Data: SIMONS_1736_112\Well Based\R1 CASING\
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_5_main_lib

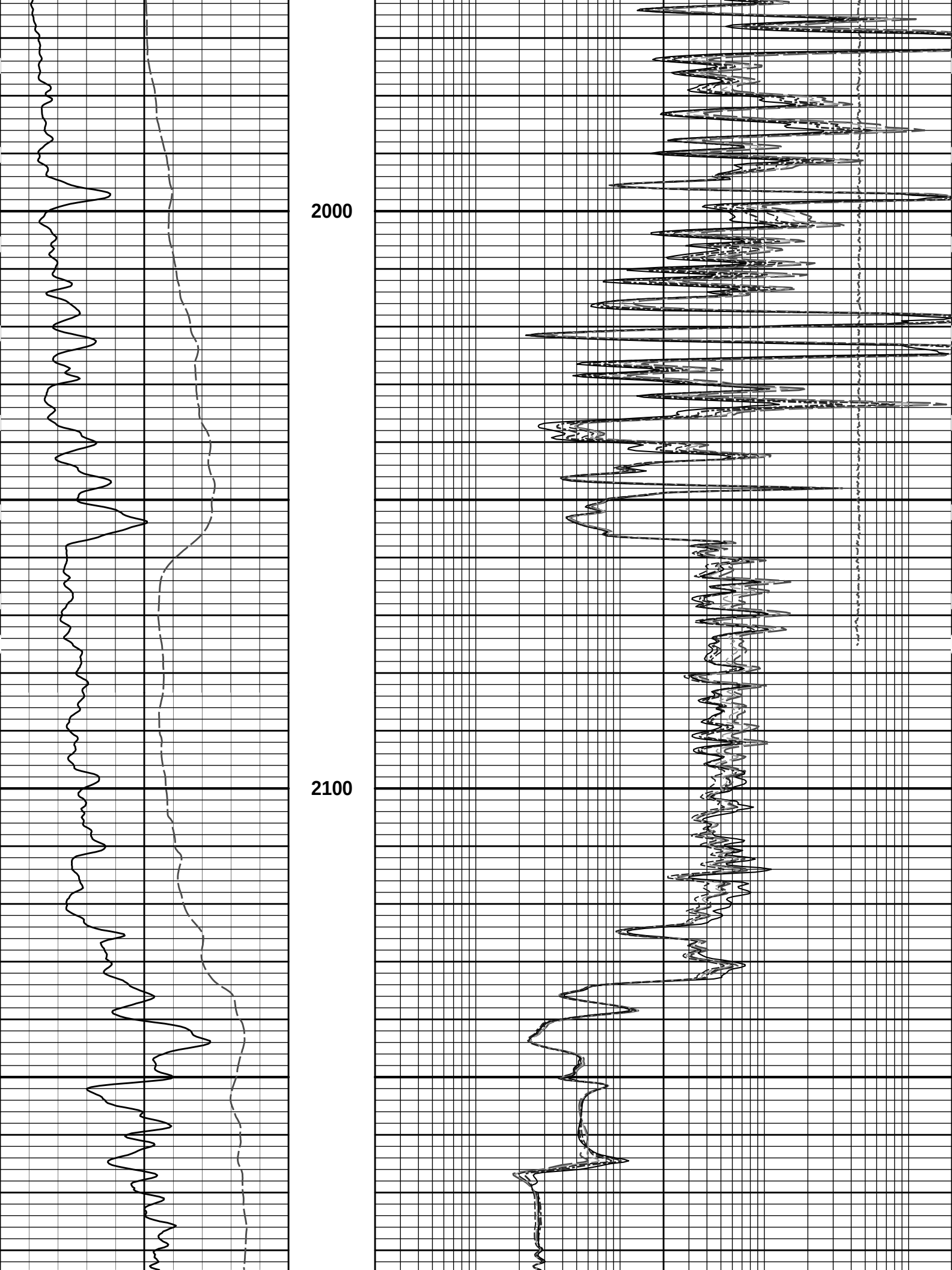
5 INCH MAIN LOG

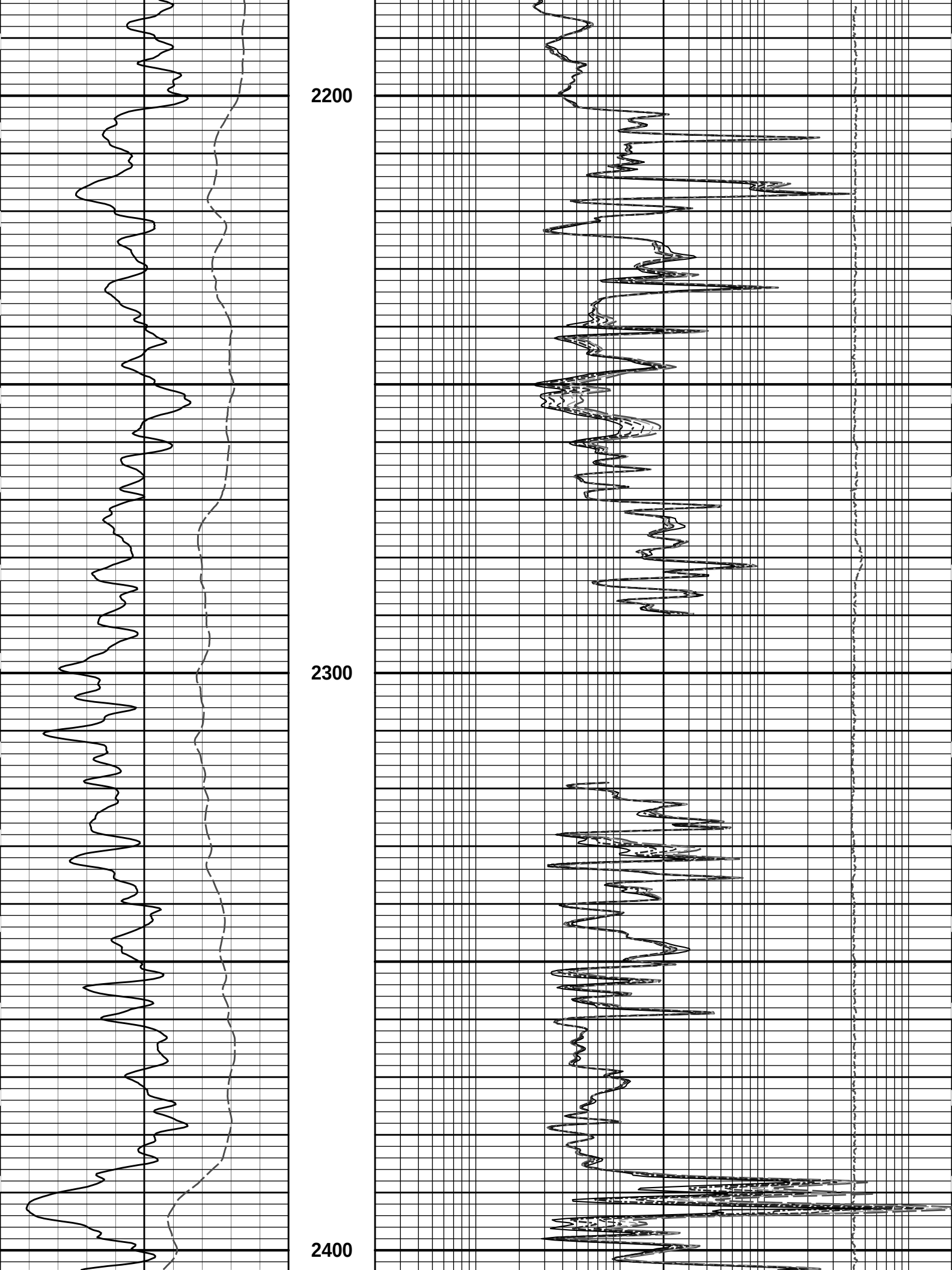
		0.2 90in Resistivity 2ft Res 2000
		ohmm
		0.2 60in Resistivity 2ft Res 2000
		ohmm
		0.2 30in Resistivity 2ft Res 2000
		ohm-metre
		0.2 20in Resistivity 2ft Res 2000
		ohmm
		0.2 10in Resistivity 2ft Res 2000
		ohmm
SHALE		
0 Gamma API 150	MD 1 : 240 ft	10K Tension 0
api		pounds
SP		
-]20[+		

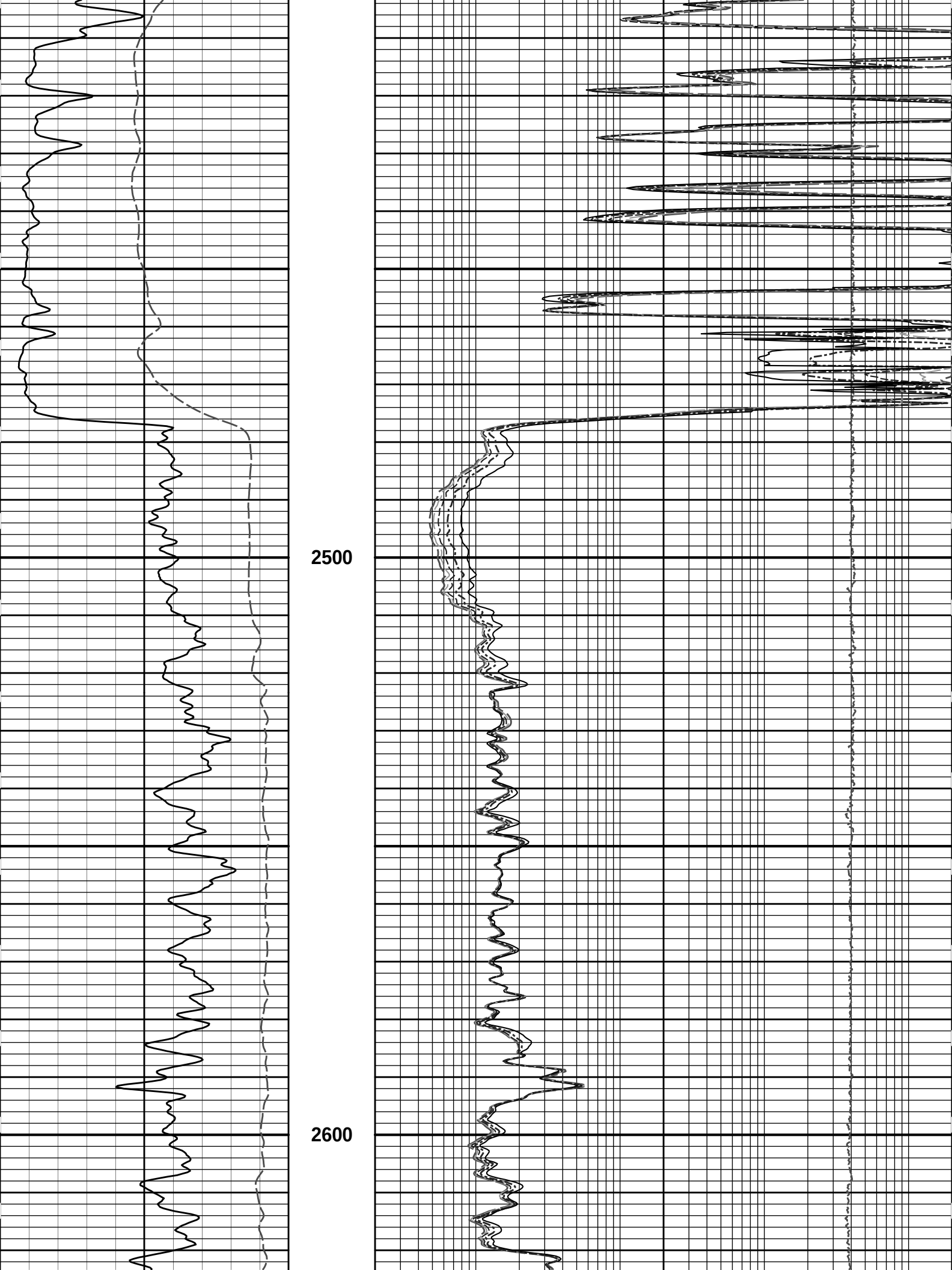


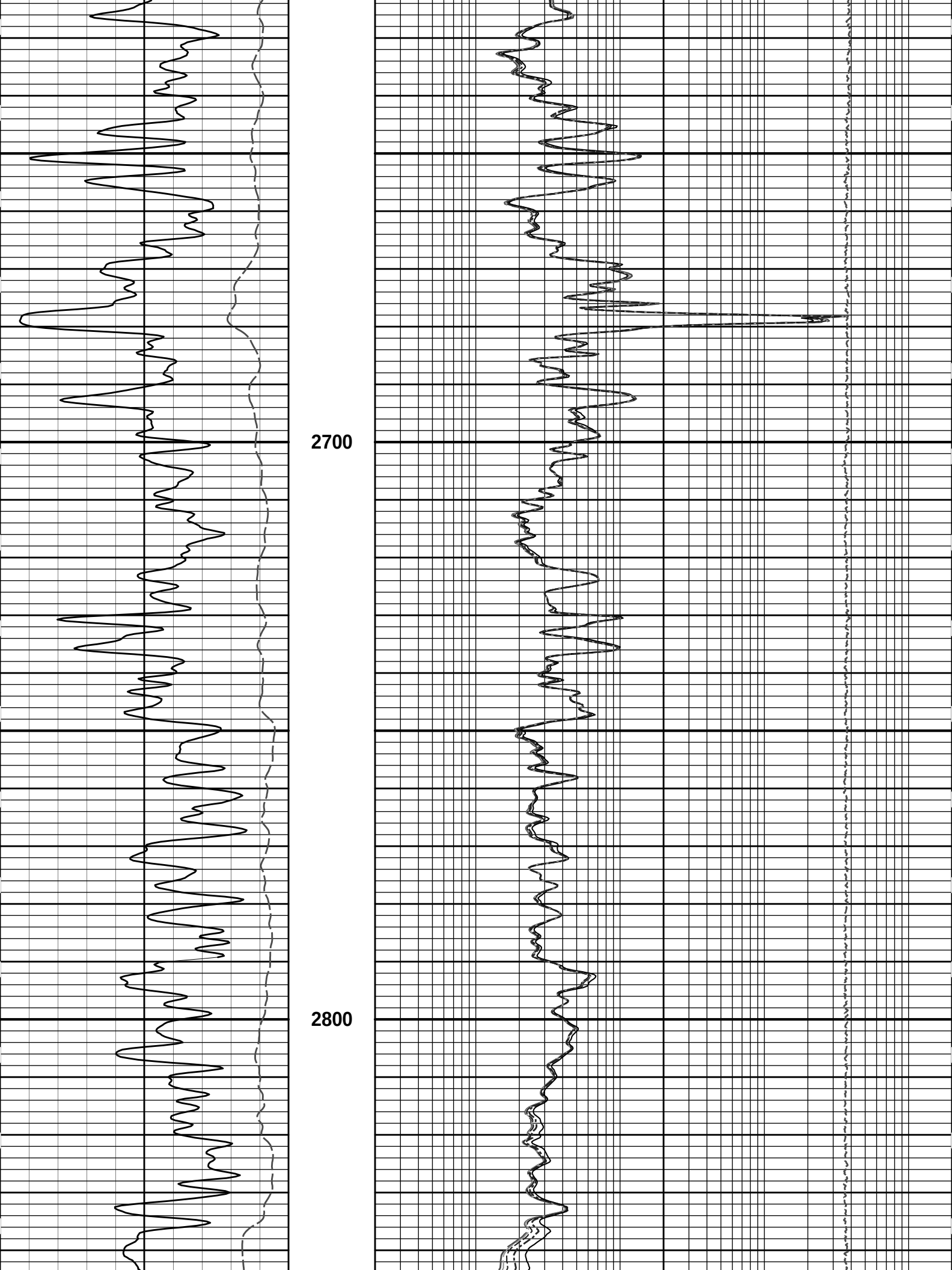

1600
1700

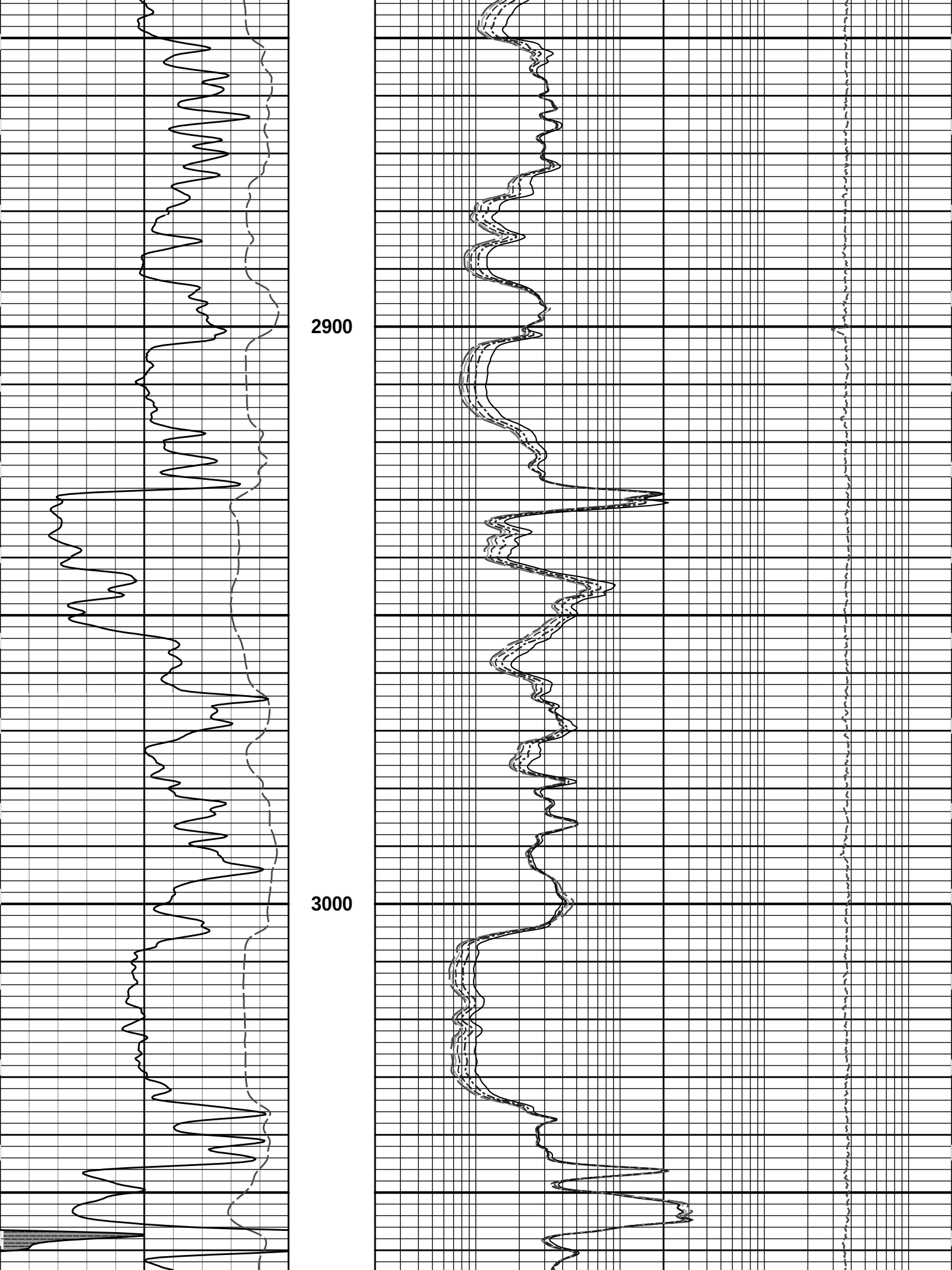

1800
1900

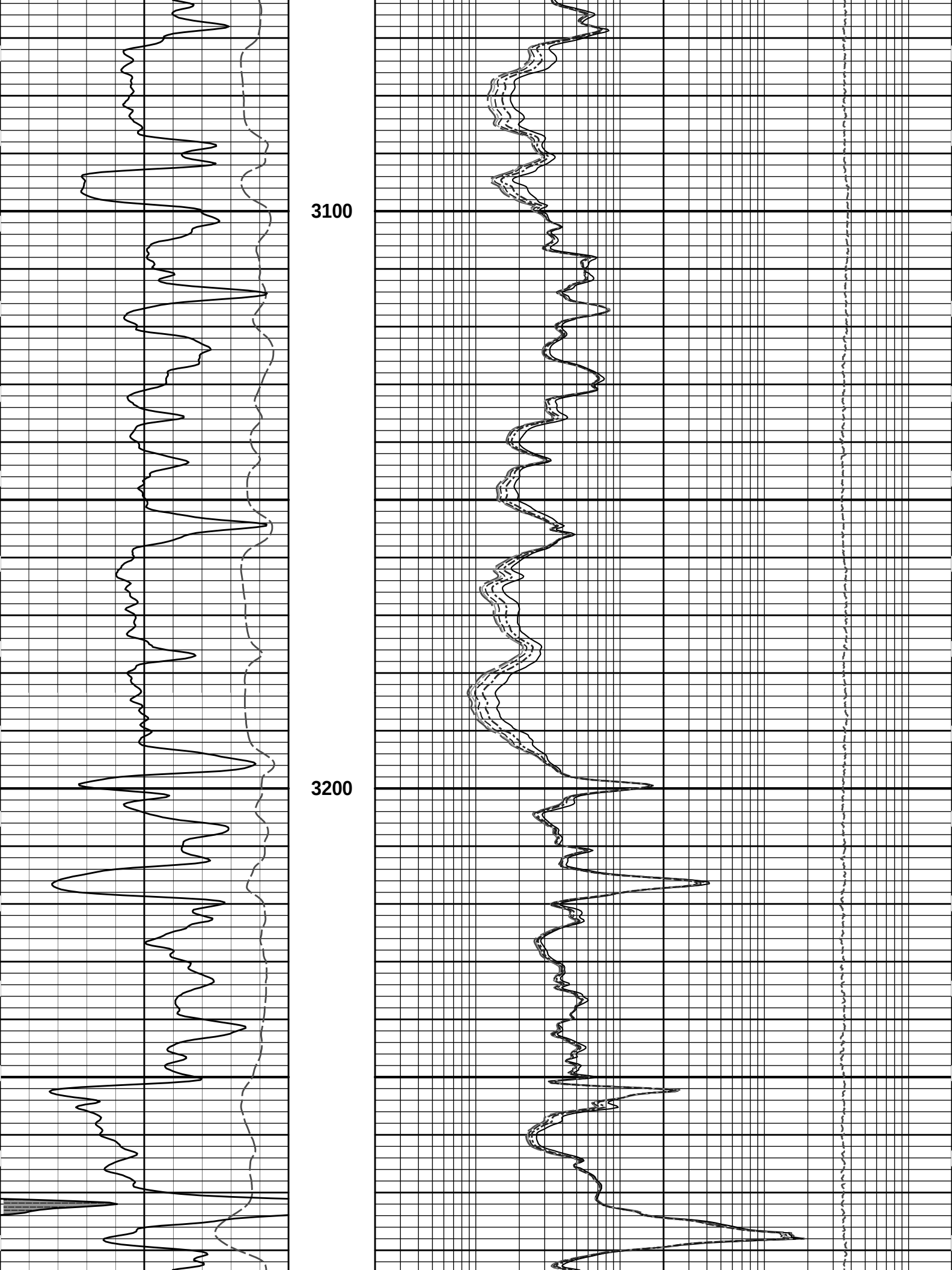

2000
2100

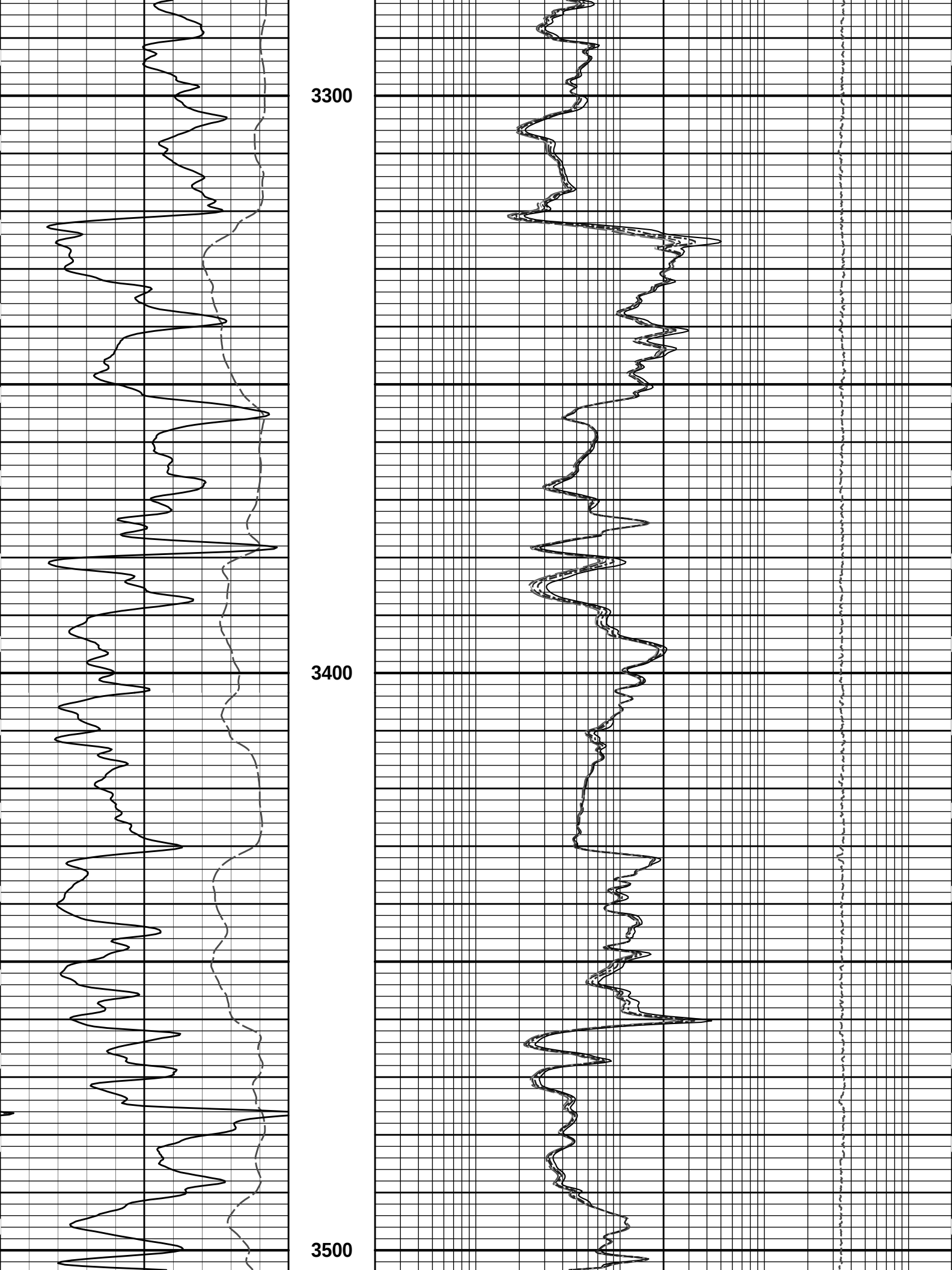

2200
2300
2400

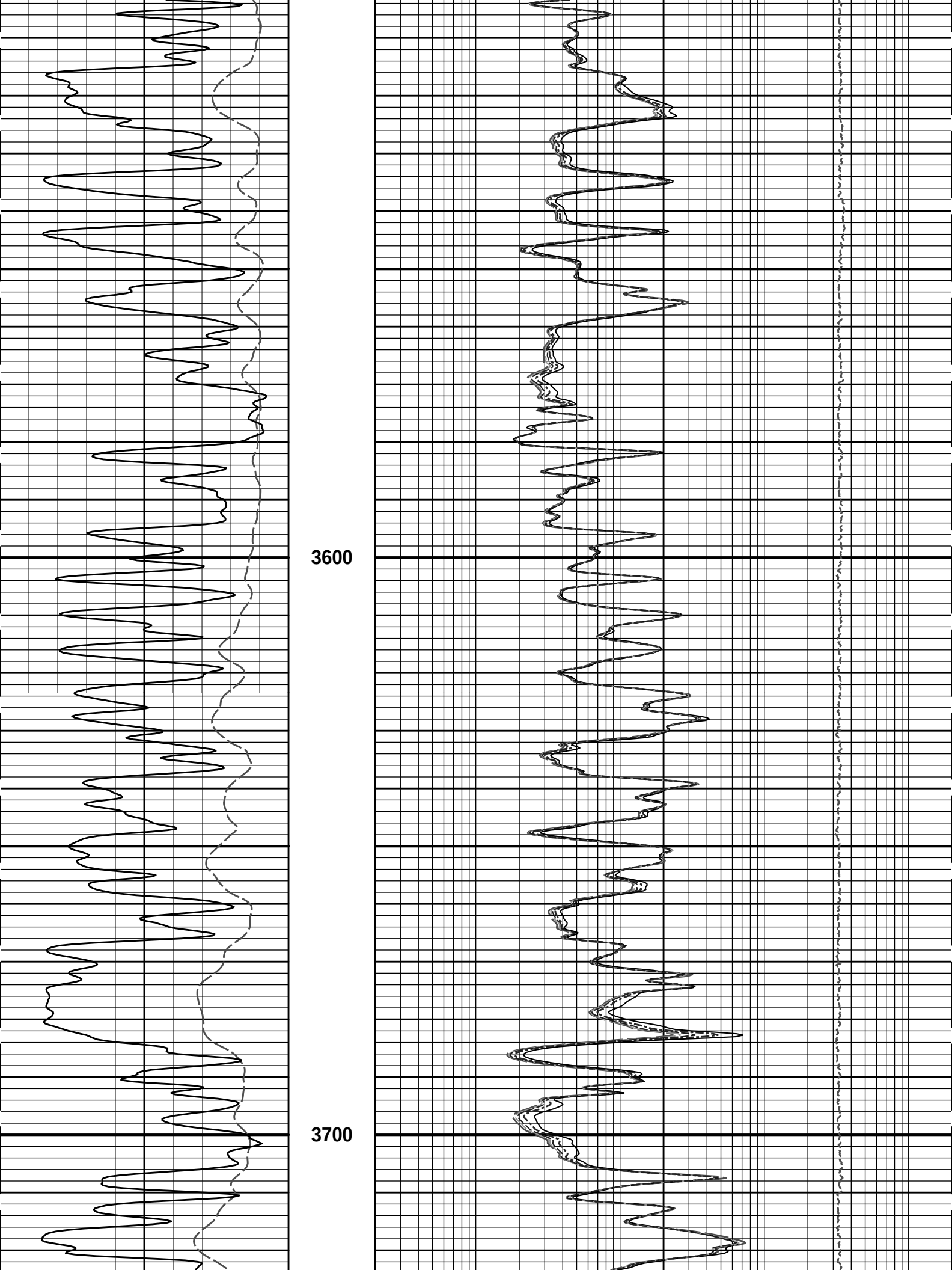

2500
2600

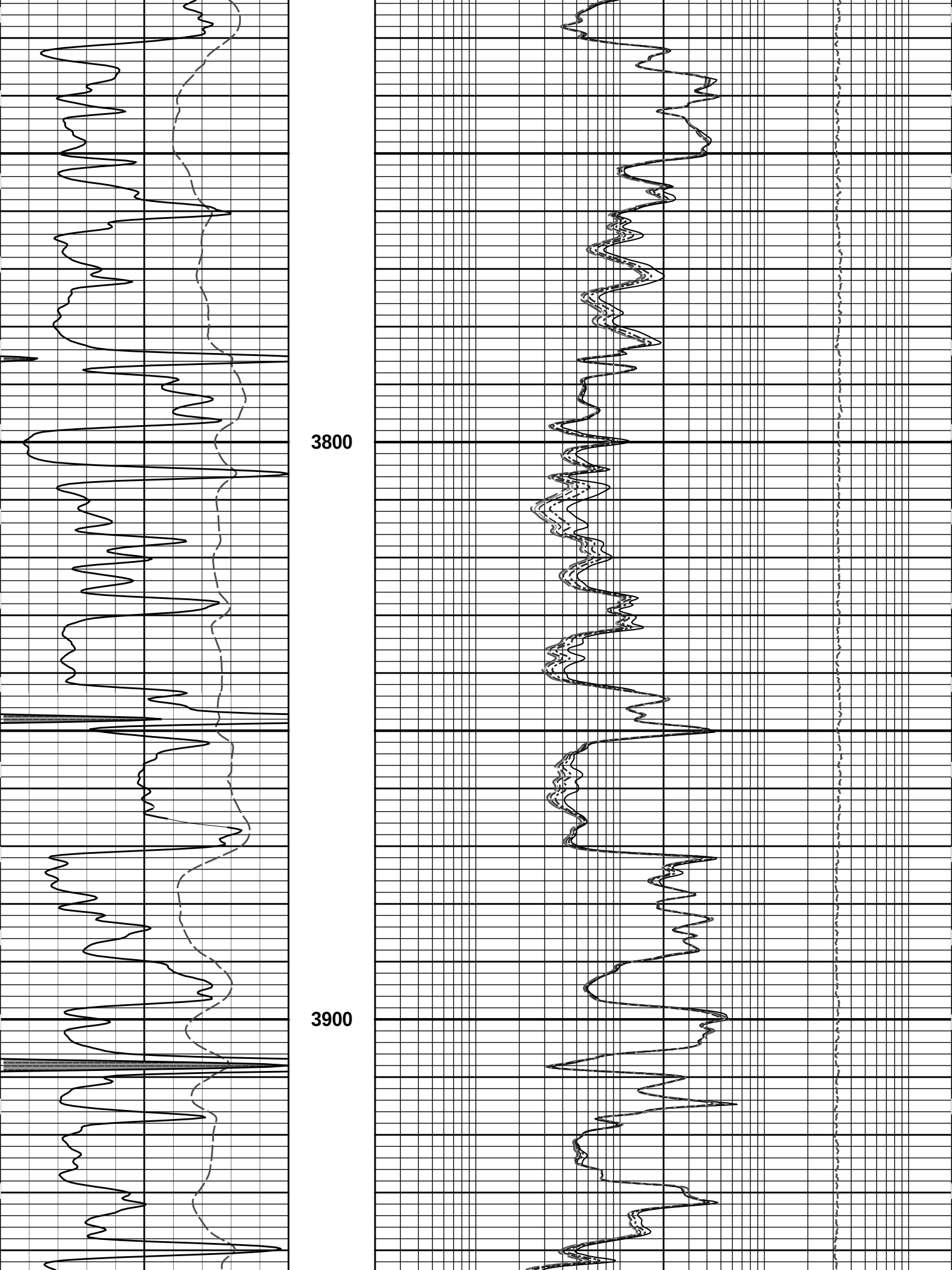

2700
2800

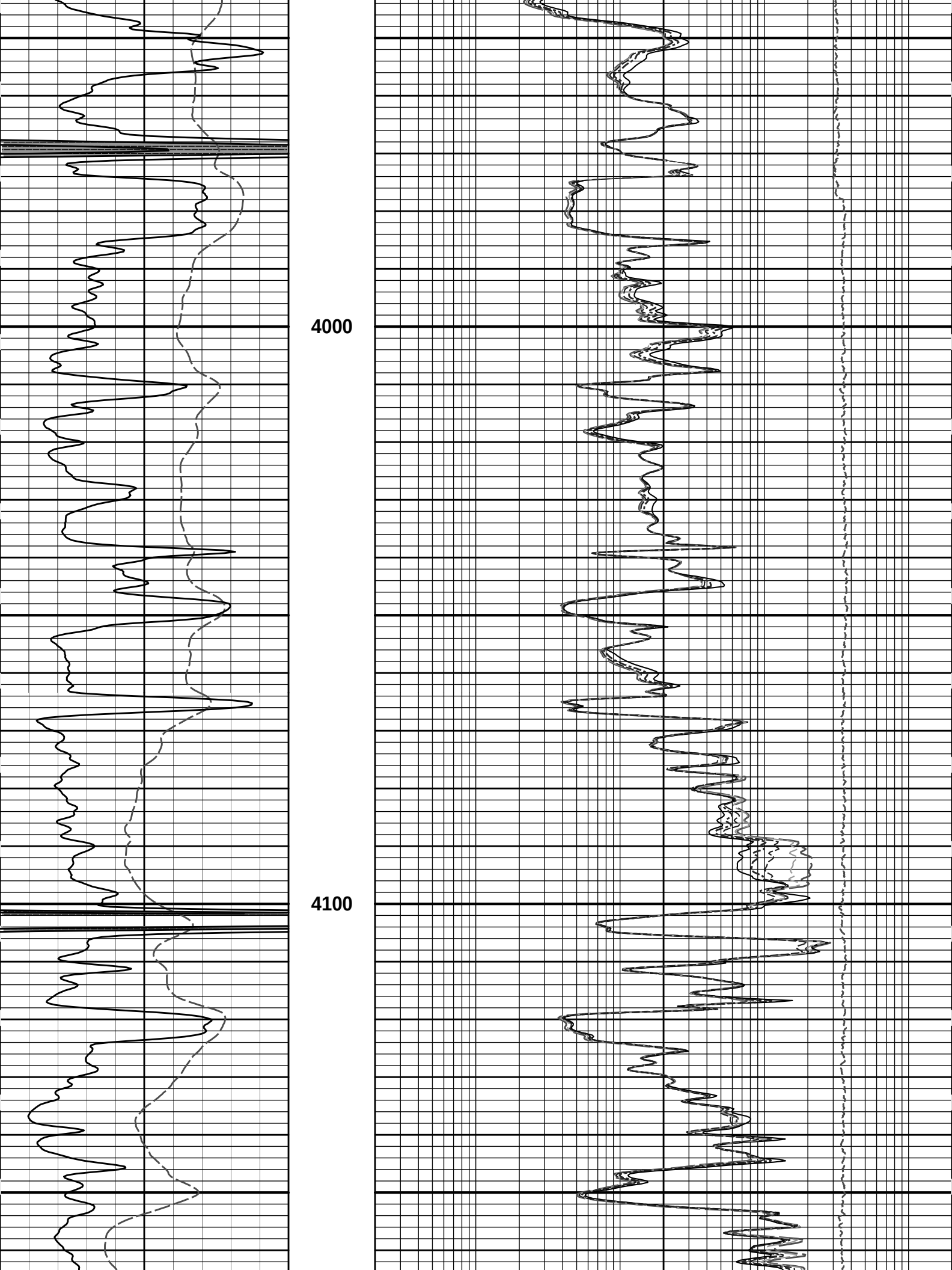

2900
3000

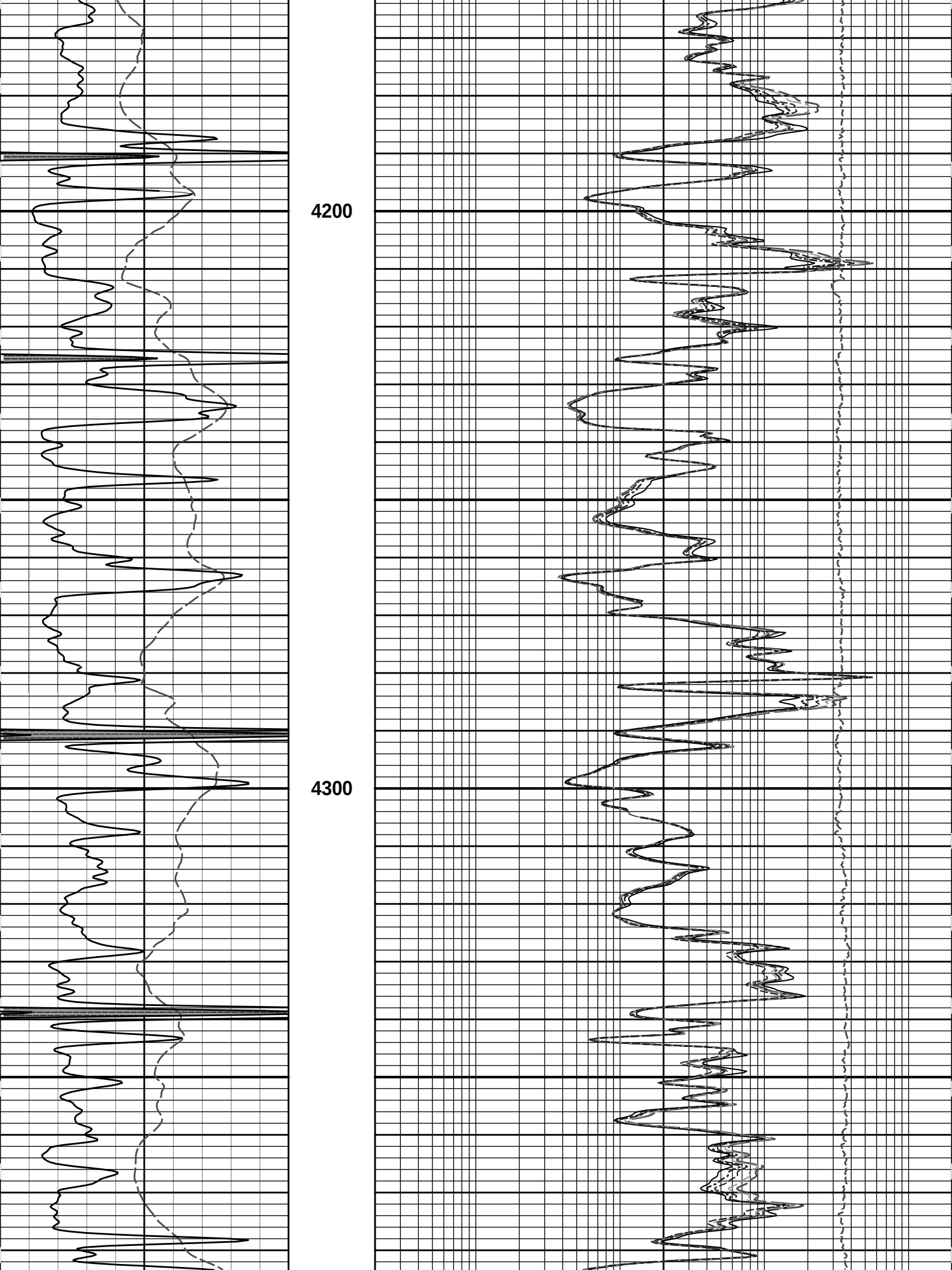

3100
3200

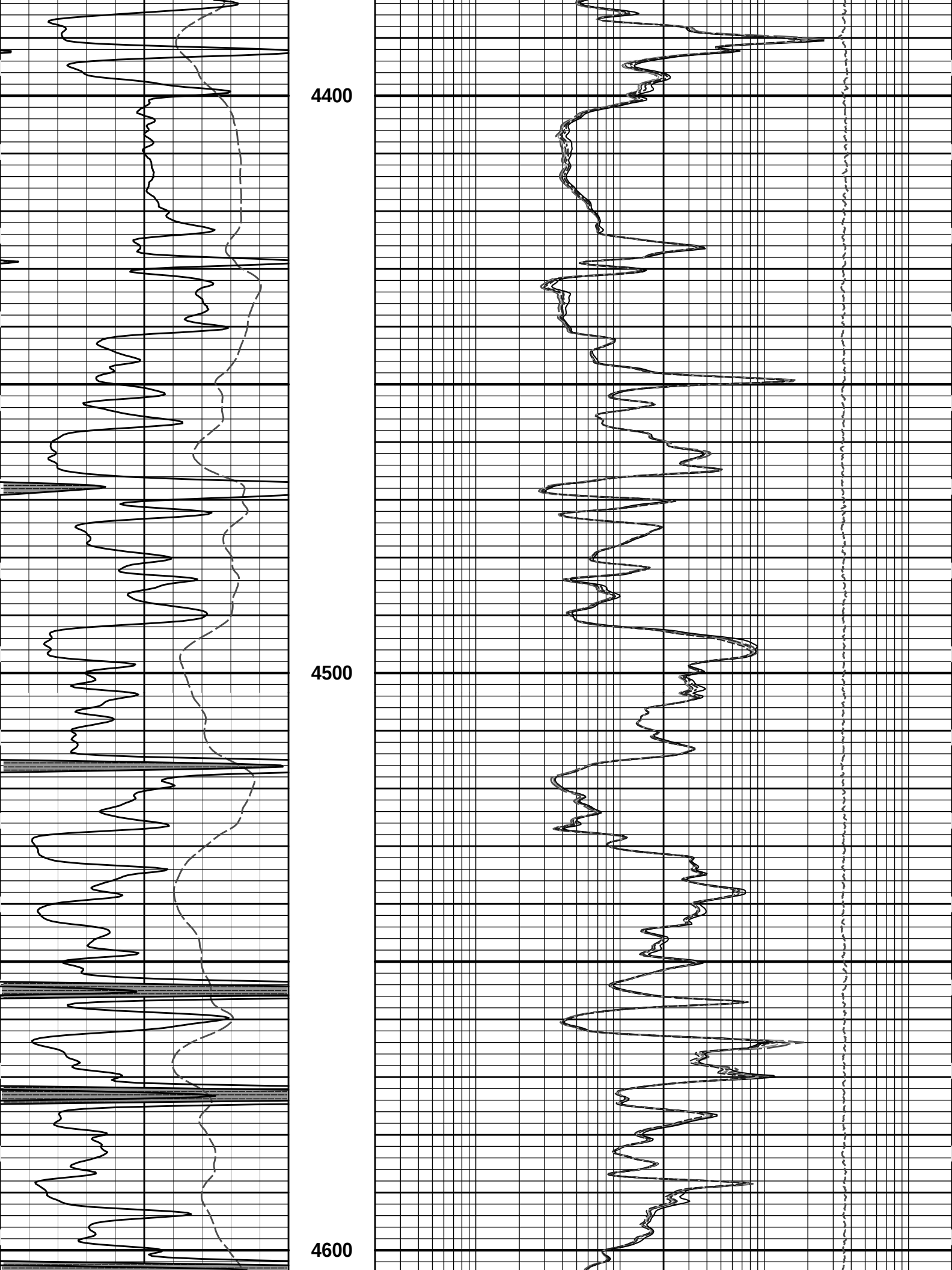

3300
3400
3500

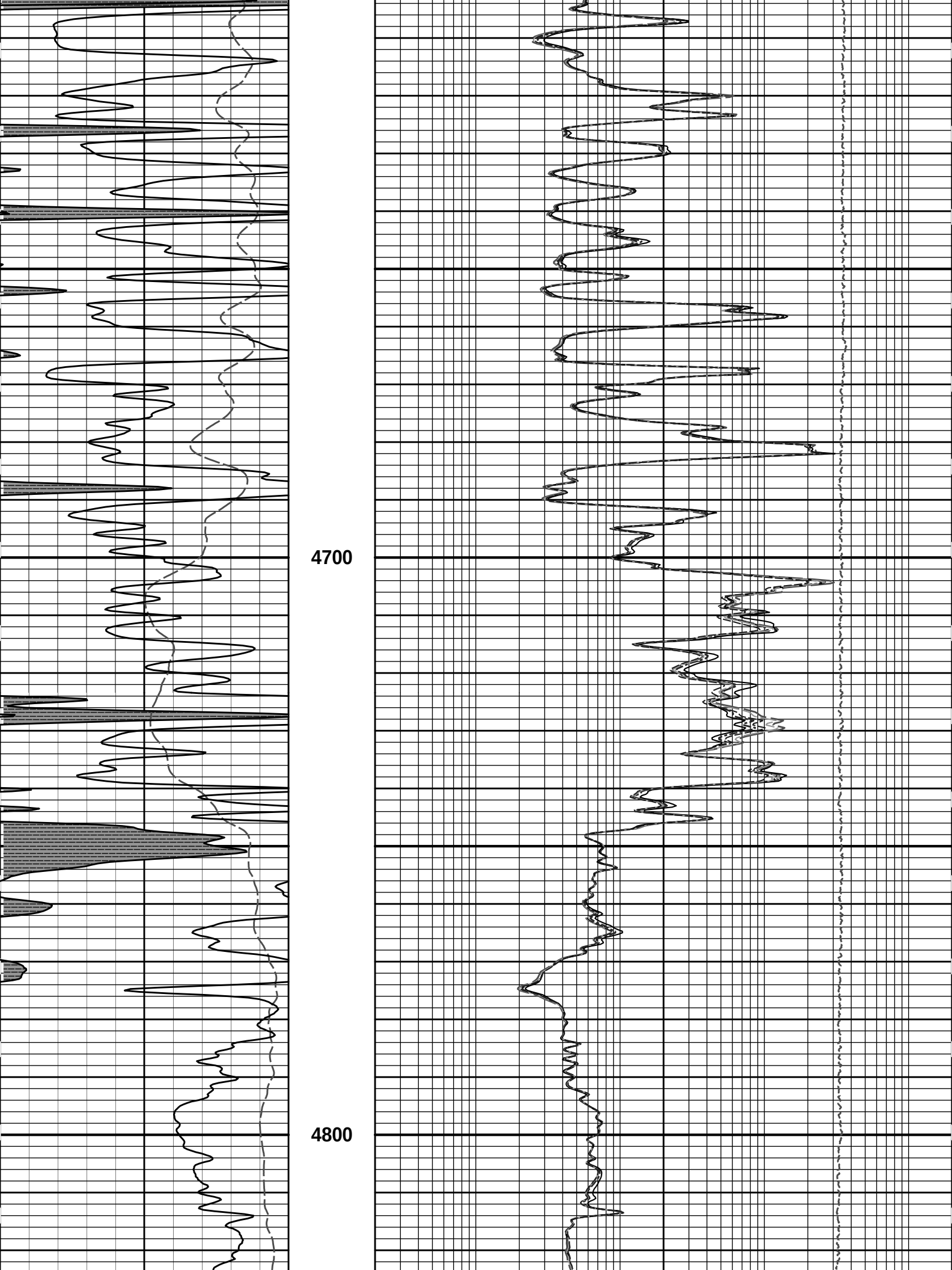

3600
3700

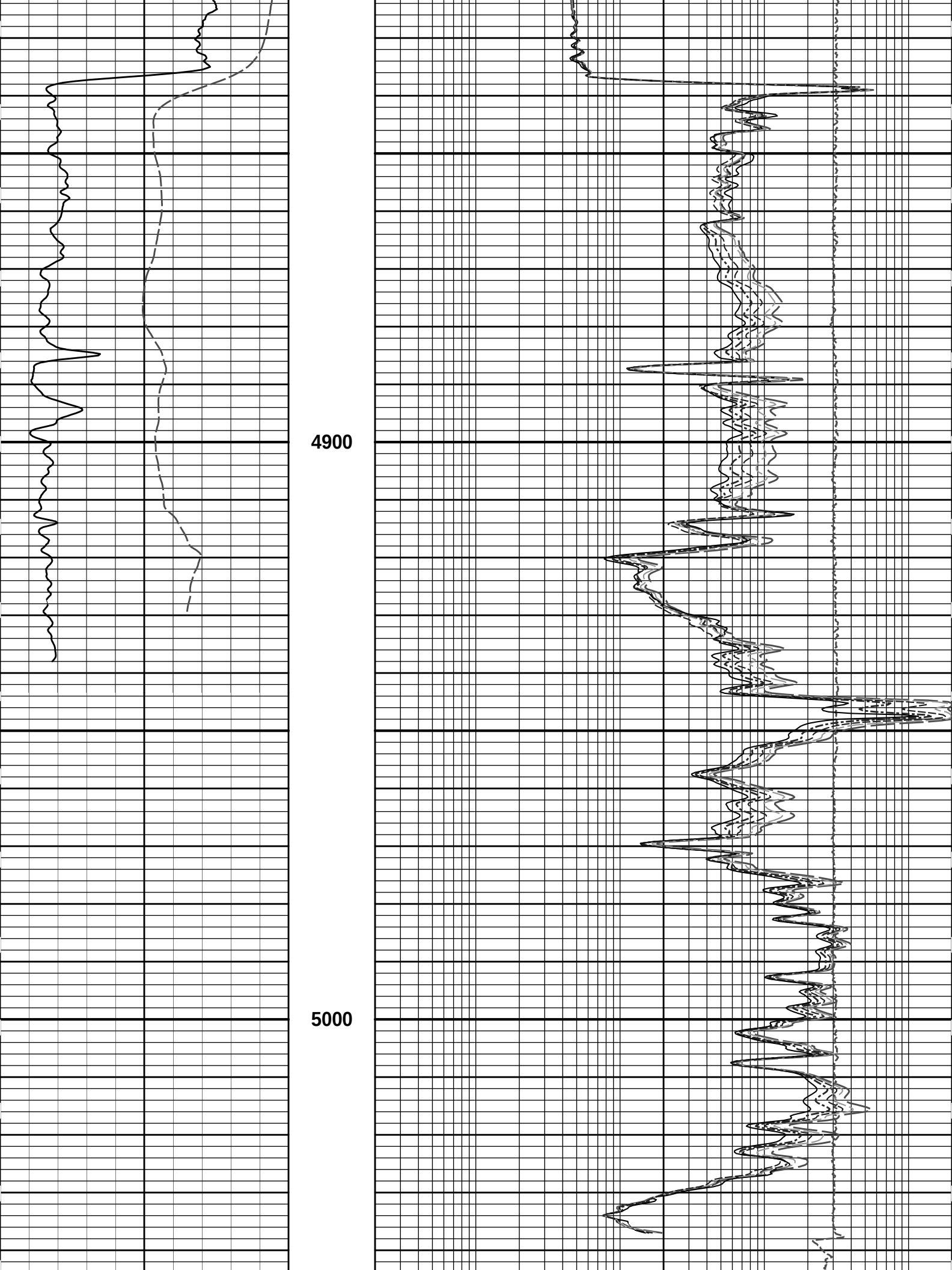

3800
3900

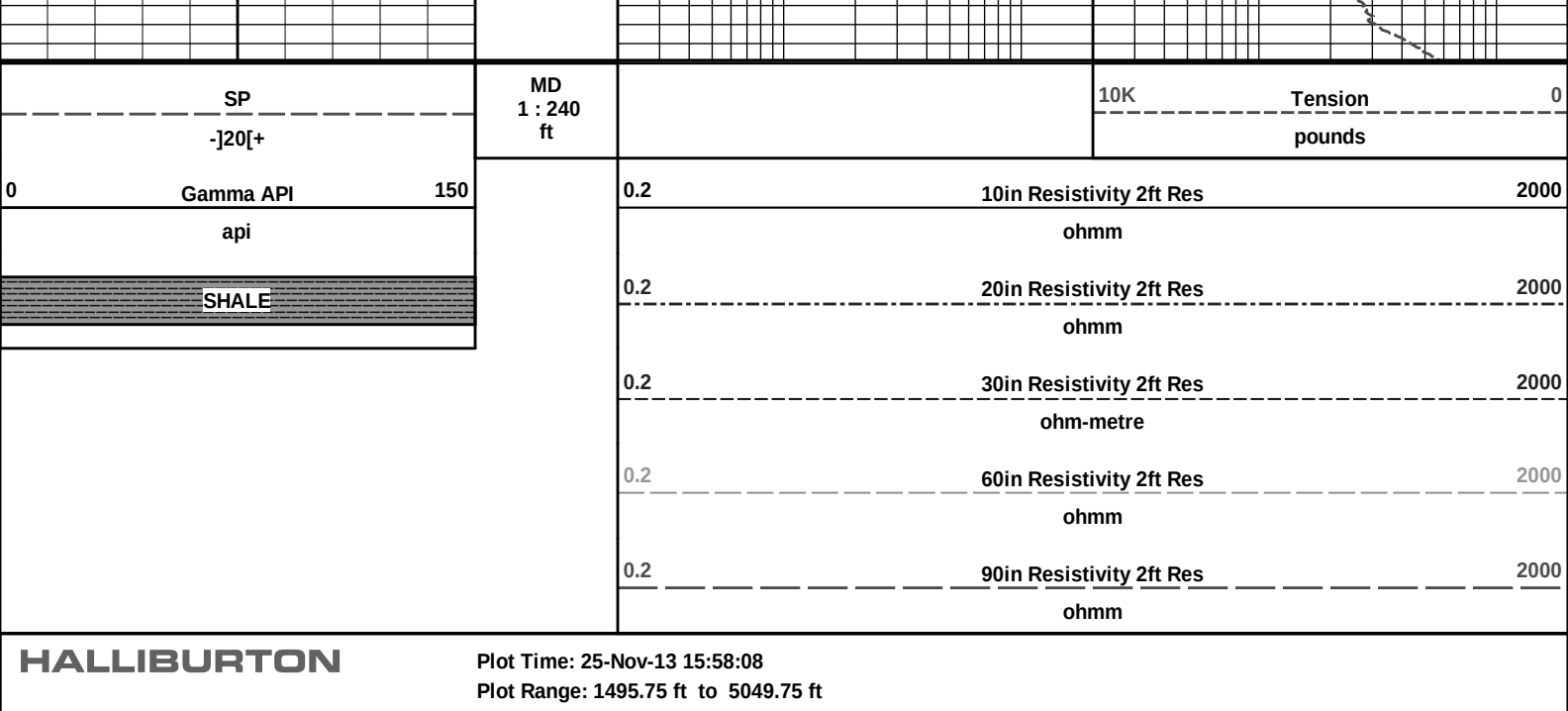

4000
4100


4200
4300


4400
4500
4600


4700
4800


4900
5000



HALLIBURTON

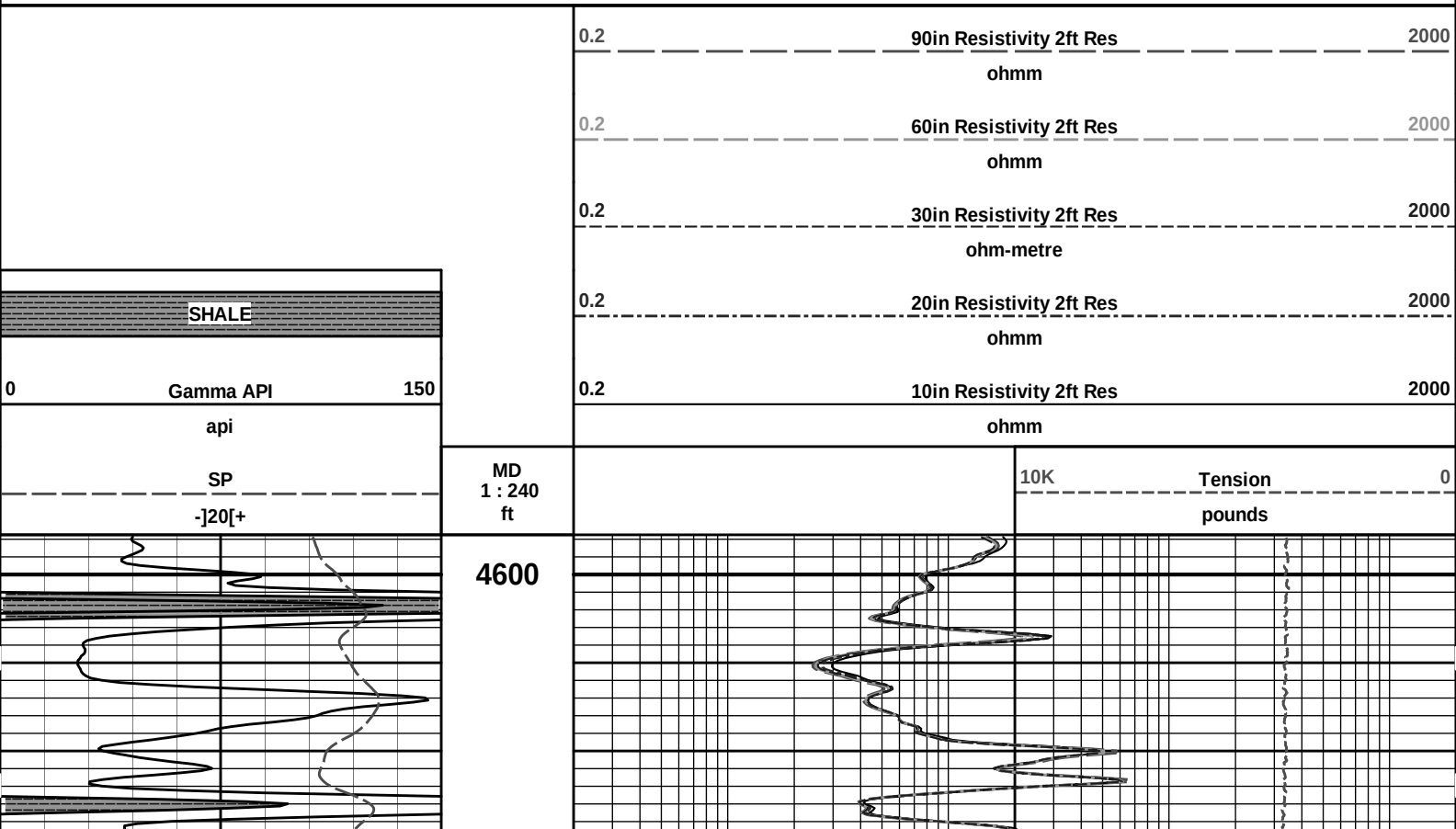
Plot Time: 25-Nov-13 15:58:08
Plot Range: 1495.75 ft to 5049.75 ft
Data: SIMONS_1736_112\Well Based\R1 CASING\
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_5_main_lib

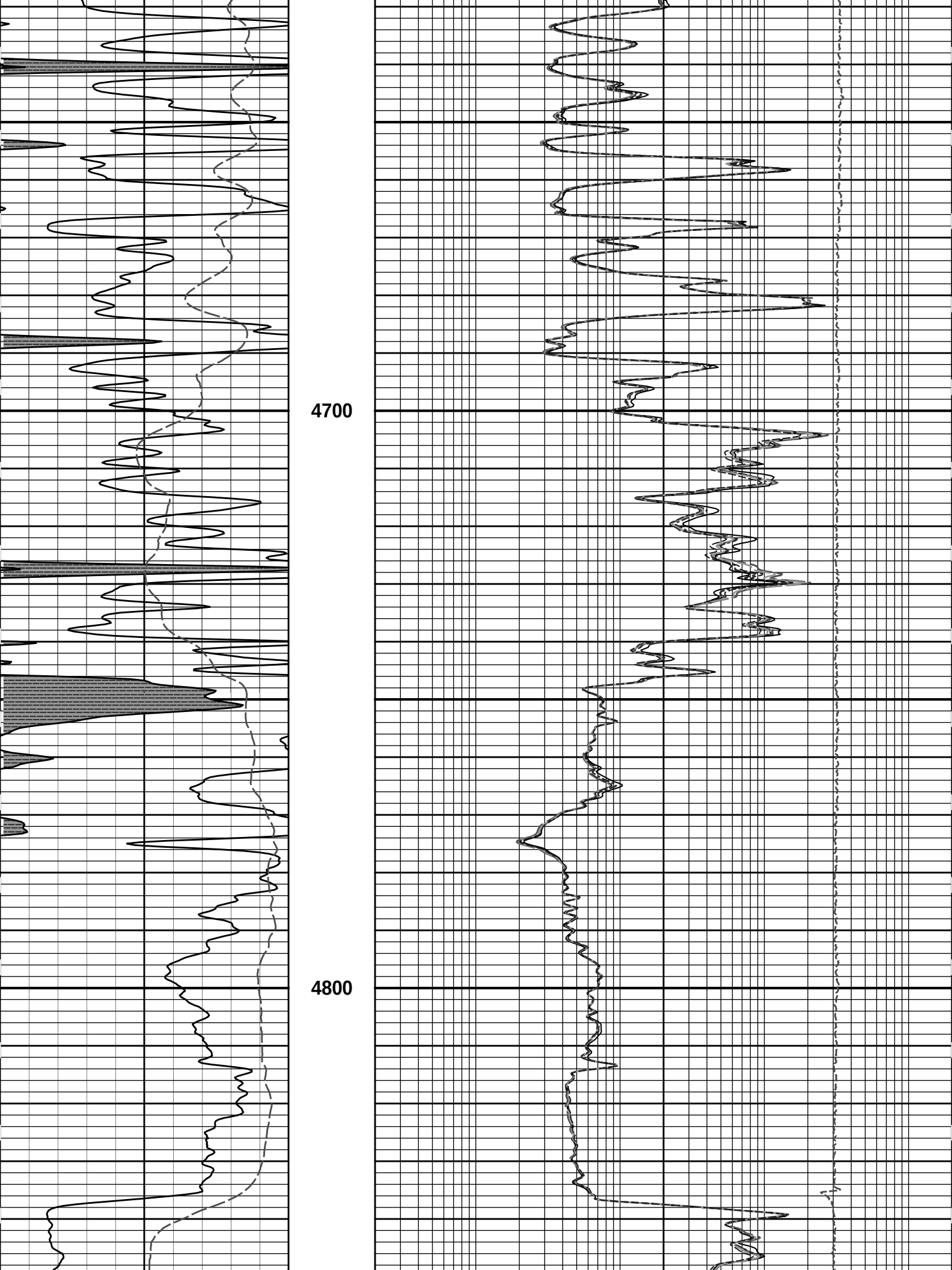
5 INCH MAIN LOG

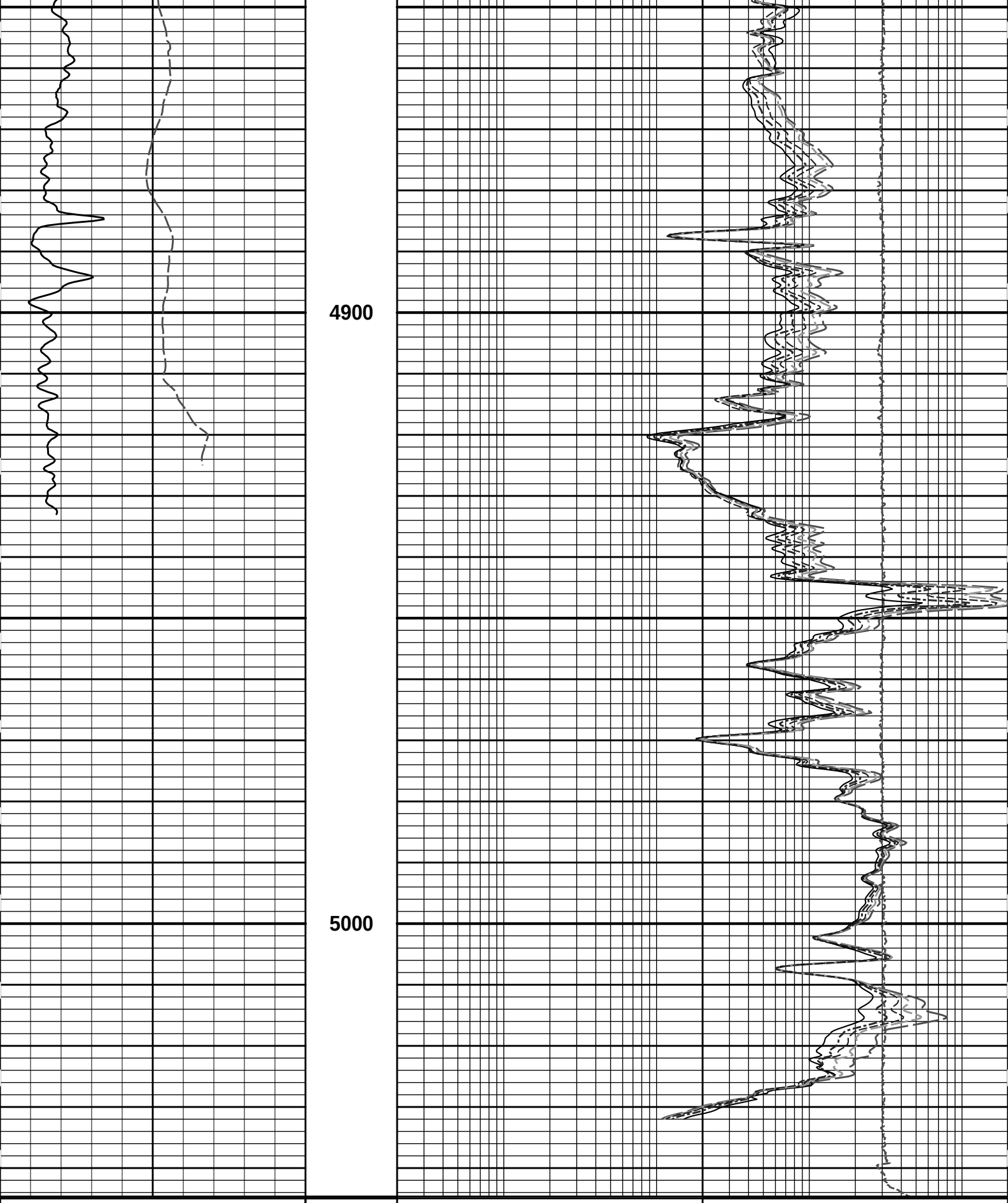
HALLIBURTON

Plot Time: 25-Nov-13 15:58:08
Plot Range: 4595.5 ft to 5044.67 ft
Data: SIMONS_1736_112\Well Based\R1 REPEAT\
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_5_repeat_lib

REPEAT SECTION




4700
4800



SP -]20[+	MD 1 : 240 ft	10K Tension 0 pounds
0 Gamma API 150 api		0.2 10in Resistivity 2ft Res 2000 ohmm
		0.2 20in Resistivity 2ft Res 2000

SHALE

	20in Resistivity 2ft Res	
	ohmm	
0.2	30in Resistivity 2ft Res	2000
	ohm-metre	
0.2	60in Resistivity 2ft Res	2000
	ohmm	
0.2	90in Resistivity 2ft Res	2000
	ohmm	

HALLIBURTON

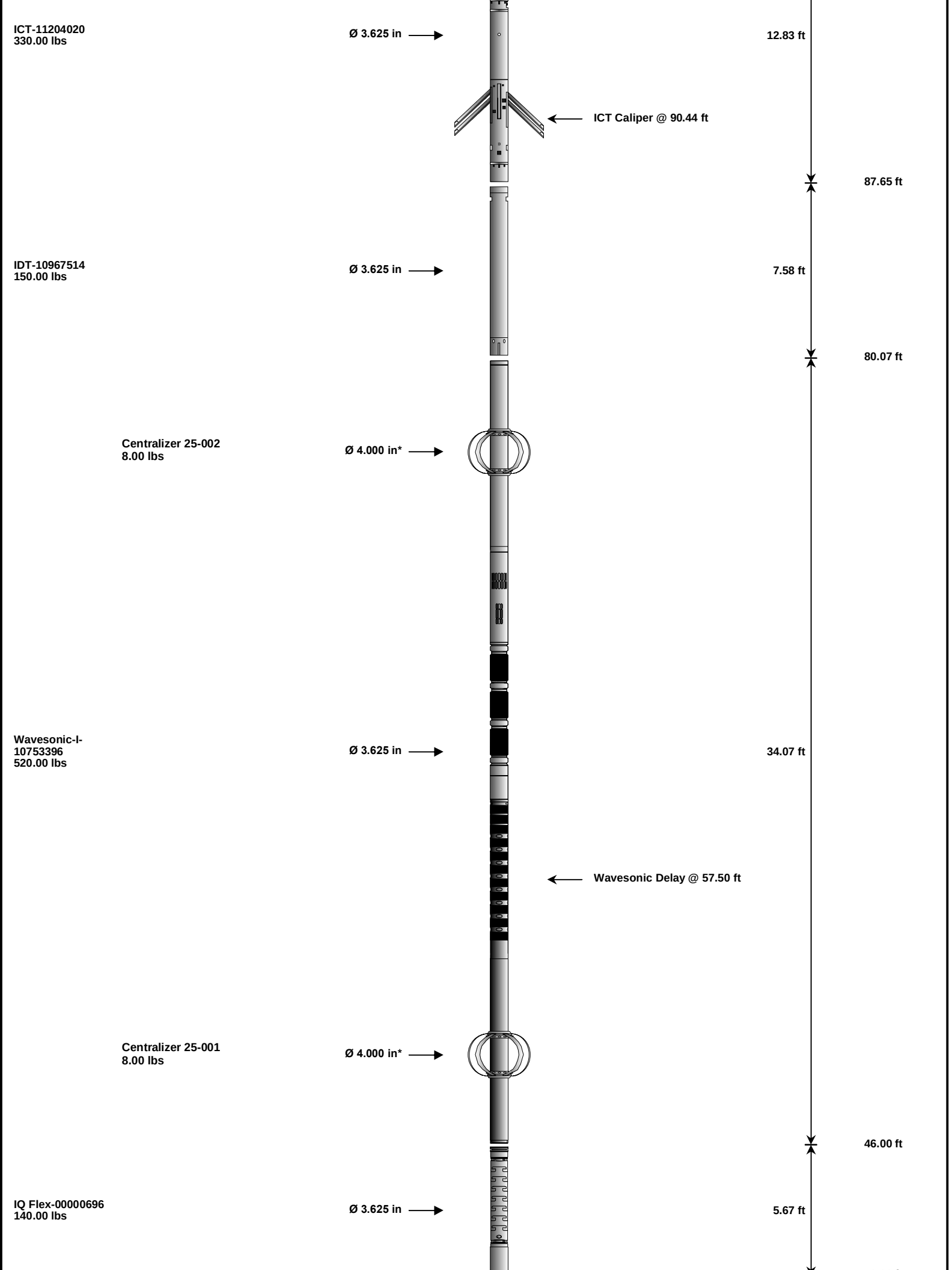
Plot Time: 25-Nov-13 15:58:13
Plot Range: 4595.5 ft to 5044.67 ft
Data: SIMONS_1736_112\Well Based\R1 REPEAT\
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_5_repeat_lib

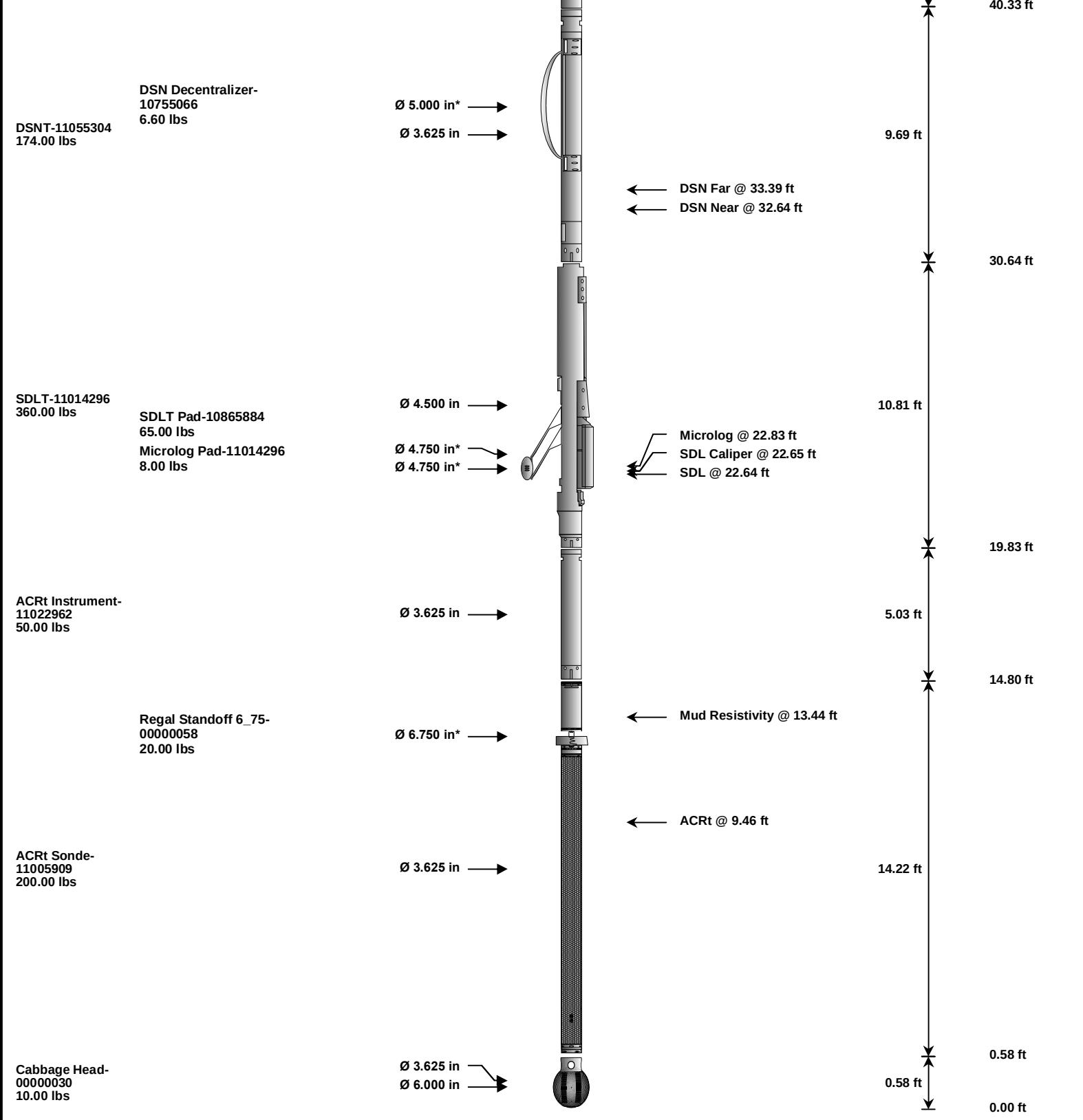
REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						127.16 ft
RWCH-12156658 135.00 lbs		Ø 3.625 in		Load Cell @ 123.47 ft BH Temperature @ 122.91 ft	6.25 ft	
						120.91 ft
SP Sub-11441455 60.00 lbs		Ø 3.625 in		SP @ 119.13 ft	3.74 ft	
						117.17 ft
GTET-11021139 165.00 lbs		Ø 3.625 in		GammaRay @ 111.11 ft	8.52 ft	
						108.65 ft
CSNG-10965402 114.00 lbs		Ø 3.625 in		CSNG @ 103.02 ft	8.17 ft	
						100.48 ft


ICT-11204020
330.00 lbs
Ø 3.625 in
12.83 ft
ICT Caliper @ 90.44 ft
87.65 ft
IDT-10967514
150.00 lbs
Ø 3.625 in
7.58 ft
80.07 ft
Centralizer 25-002
8.00 lbs
Ø 4.000 in*
Wavesonic-I-
10753396
520.00 lbs
Ø 3.625 in
34.07 ft
Wavesonic Delay @ 57.50 ft
Centralizer 25-001
8.00 lbs
Ø 4.000 in*
46.00 ft
IQ Flex-00000696
140.00 lbs
Ø 3.625 in
5.67 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25		120.91	300.00
SP	SP Sub	11441455	60.00	3.74		117.17	300.00
GTET	Gamma Telemetry Tool	11021139	165.00	8.52		108.65	60.00
CSNG	Compensated Spectral Natural Gamma	10965402	114.00	8.17		100.48	15.00
ICT	Six Independent Arm Caliper	11204020	330.00	12.83		87.65	30.00
IDT	Insite Directional Tool	10967514	150.00	7.58		80.07	30.00
WSTT	WaveSonic Insite	10753396	520.00	34.07		46.00	30.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08	*	48.85	300.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08	*	74.99	300.00
IQF	IQ Flex tool	00000696	140.00	5.67		40.33	300.00
DSNT	Dual Spaced Neutron	11055304	174.00	9.69		30.64	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	33.97	300.00
SDLT	Spectral Density Tool	11014296	360.00	10.81		19.83	60.00
ACRT	ACRt Instrument	11022962	50.00	5.03		14.80	60.00
RSOT	Regal Standoff 6_75	00000058	20.00	4.80		9.77	60.00
ACRS	ACRt Sonde	11005909	200.00	14.22		14.22	60.00
CHT	Cabbage Head	00000030	10.00	0.58		0.58	60.00

SDLP	Density Insite Pad	10865884	65.00	2.55	*	22.04	60.00
MICP	Microlog Pad	11014296	8.00	1.00	*	22.33	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11022962	50.00	5.03		14.80	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11005909	200.00	14.22		0.58	300.00
RSOF	Regal Standoff 6.75in	00000058	20.00	0.52	*	12.45	300.00
CBHD	Cabbage Head	00000030	10.00	0.58		0.00	300.00
Total			**2,523.60**	**127.16**			

* Not included in Total Length and Length Accumulation.

Data: SIMONS_1736_112\0001 SP-GTET-CSNG-ICT-IDT-WAVE-FLEX-DSN-SDL-ACRT-CH\006 25-Nov-13 09:21 Up @5050.3f **Date: 25-Nov-13 12:46:09**

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	8.750	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.300	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.500	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	7.000	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5050.00	ft
	SHARED	BHT	Bottom Hole Temperature	135.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	IDT	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	IDT	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	ICT	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	CSNG	CGOK	Process CSNG Data?	Yes	
	CSNG	CENT	Is Tool Centralized?	No	

CSNG	CENT	Is Tool Centralized?	No	
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.00	
CSNG	ORDG	Use Fixed Gain	No	
CSNG	ORDO	Use Fixed Offset	No	
CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
ICT	CLOK	Process Caliper Outputs?	Yes	
ICT	DARM	Disable Caliper Arm	No	
ICT	ATDS	Arm To Disable	0	
ICT	REPM	Method to replace arm?	Caliper Average	
ICT	ARMV	Diameter to use for disabled arm	0.00	in
ICT	DARM	Disable Second Caliper Arm	No	
ICT	ATDS	Second Arm To Disable	0	
ICT	REPM	Method to replace second arm?	Caliper Average	
ICT	ARMV	Diameter to use for second disabled arm	0.00	in
ICT	NAVS	Navigation Source Tool	IDT	
ICT	CL1O	Radius 1 Offset	0.0	in
ICT	CL2O	Radius 2 Offset	0.0	in
ICT	CL3O	Radius 3 Offset	0.0	in
ICT	CL4O	Radius 4 Offset	0.0	in
ICT	CL5O	Radius 5 Offset	0.0	in
ICT	CL6O	Radius 6 Offset	0.0	in
ICT	BHVC	Radius type for borehole volume calcuations	Elliptical	
IDT	WRTI	Survey Writing Interval	30	ft
IDT	SOPT	Smoothing Option	None	
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	AFIL	Adaptive Filtering?	No	
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	User define	
Wavesonic-I	DTMA	Delta -T Matrix	47.60	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.7100	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	SMTH	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	NAVS	Navigation Source Tool	IDT	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc

SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm

BOTTOM

Data: SIMONS_1736_112\0001 SP-GTET-CSNG-ICT-IDT-WAVE-FLEX-DSN-SDL-ACRT-CH\006 25-Nov-13 09:21 Up @5050.3f **Date: 25-Nov-13 12:45:41**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11021139**	**Reference Calibration Date:**	**01-Jan-70 00:00:00**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**16-Nov-13 17:40:06**
Software Version:	**WL INSITE R3.8.4 (Build 5)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	47.8	47.8	api
Background + Calibrator	317.5	317.5	api
Calibrator	269.6	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11021139**	**Reference Calibration Date:**	**16-Nov-13 17:40:06**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**24-Nov-13 21:38:26**
Software Version:	**WL INSITE R3.8.4 (Build 5)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	47.8	94.1	api
Background + Calibrator	317.5	372.2	api
Calibrator	269.6	278.1	api

Shop	Field	Difference	Tolerance
269.6	278.1	-8.5	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 11005909**	**Reference Calibration Date:**	**04-Sep-13 10:01:35**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**18-Nov-13 11:00:42**
Software Version:	**WL INSITE R3.8.4 (Build 5)**	**Calibration Version:**	**1**
Host Tool Name:	**ACRt Instrument - 11022962**		

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.01	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A2 (50")	0.95	1.01	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.00	1.05	0.95	1.00	1.05	0.95	1.00	1.05
A4 (17")	0.95	1.00	1.05	0.95	1.00	1.05	0.95	1.00	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.99	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.98	1.05	0.95	0.98	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.49	2	-6	-3.53	-2	-8	-5.15	-2
A2 (50")	-7	-1.49	0	-7	-3.49	0	-7	-4.56	0
A3 (29")	-27	-14.45	-9	-9	-4.51	-3	-7	-2.82	-1
A4 (17")	-180	-100.45	-60	-45	-30.22	-15	-39	-25.84	-13
A5 (10")	N/A	N/A	N/A	-150	-98.67	-50	-80	-44.57	-10
A6 (6")	N/A	N/A	N/A	175	284.68	525	90	150.79	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.88	1.3
36K	1.0	1.34	2.0
72K	1.0	1.58	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

PASS/FAIL SUMMARY

GAIN RANGE CHK	PASS
SONDE OFFSET RANGE CHK	PASS
Tx CURRENT GAIN	PASS
Rmud VERIFICATION	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11021139						
Gamma Ray Calibrator	269.6	278.1	----------	-8.5	+/- 9.00	api
ACRt Sonde-11005909						
Mud Cell	1.00	----------	----------	0.00	----------	ohm-m

Data: SIMONS_1736_112\0001 SP-GTET-CSNG-ICT-IDT-WAVE-FLEX-DSN-SDL-ACRT-CH\006 25-Nov-13 09:21 Up @5050.3f **Date: 25-Nov-13 12:49:36**

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
RWCH				
DHTN	DownholeTension	0.00	BLK	0.000

DHTN	Downhole Tension	0.00	BLK	0.000

SP Sub				
PLTC	Plot Control Mask	119.13	NO	
SP	Spontaneous Potential	119.13	BLK	1.250
SPR	Raw Spontaneous Potential	119.13	NO	
SPO	Spontaneous Potential Offset	119.13	NO	

GTET				
TPUL	Tension Pull	111.11	NO	
GR	Natural Gamma Ray API	111.11	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	111.11	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	111.11	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	

CSNG				
TPUL	Tension Pull	103.02	NO	
STAT	Status	103.02	NO	
FRMC	Tool Frame Count	103.02	BLK	0.250
TFRM	Total Frames	103.02	NO	
LSPD	Line Speed	103.02	BLK	0.250
CTIM	Accumulation time for sample	103.02	BLK	0.250
NOIS	Spectral Noise	103.02	BLK	0.250
STAB	Stabilizer Voltage in mv	103.02	BLK	0.250
STBP	Stabilizer 60 KEV Peak	103.02	BLK	0.250
AMER	Americium	103.02	BLK	0.250
FTMP	Flask PCB Temperature	103.02	BLK	0.250
SPEL	Low Energy Spectrum	103.02	BLK	0.250
SPEH	High Energy Spectrum	103.02	BLK	0.250
SSP	Stabilization Energy Spectrum	103.02	BLK	0.250
CSPC	CSNG Lo Hi Spectrum Data	103.02	NO	

ICT				
TPUL	Tension Pull	90.44	NO	
	Arm Potentiometer excitation V	87.65	NO	
	Caliper 1 measurement	90.44	BLK	1.250
	Caliper 2 measurement	90.44	BLK	1.250
	Caliper 3 measurement	90.44	BLK	1.250
	Caliper 4 measurement	90.44	BLK	1.250
	Caliper 5 measurement	90.44	BLK	1.250
	Caliper 6 measurement	90.44	BLK	1.250
	Caliper Global measurement	90.44	BLK	1.250
MOTI	Motor Current	87.65	NO	
MOT1	Motor Voltage Monitor 1	87.65	NO	
STA1	Status word #1	87.65	NO	
STA2	Status word #2	87.65	NO	
PRES	Caliper percentage of total compression of the spring	87.65	NO	
HAZI	Hole Azimuth	90.44	NO	
RB	Relative Bearing	90.44	NO	
AZI1	PAD1 Azimuth	90.44	NO	
DEVI	Inclination	90.44	NO	

IDT				
TPUL	Tension Pull	81.07	NO	
ACCX	Accelerometer X	81.07	NO	
ACCY	Accelerometer Y	81.07	NO	

ACCZ	Accelerometer Z	81.07	NO
MAGX	magnetometer x with unit	81.07	NO
MAGY	Magnetometer Y with unit	81.07	NO
MAGZ	magnetometer z with unit	81.07	NO
IAMP	Accelerometer Temperature	81.07	NO
MTMP	Magnetometer Temperature	81.07	NO

Wavesonic-I			
TPUL	Tension Pull	57.50	NO
DPSX	Dipole Source X Structurel	46.00	NO
DPSY	Dipole Source Y Structurel	46.00	NO
DPSM	Monopole Source Structure	46.00	NO
WVST	Wavesonic Compressed Data	57.50	NO
TPUL	Tension Pull	57.50	NO
XMS1	Wave Sonic Status Word 1	46.00	NO
XMS2	Wave Sonic Status Word 2	46.00	NO
XMS1	Wave Sonic XMITStatus Word 1	46.00	NO
XMS1	Wave Sonic XMITStatus Word 2	46.00	NO
F1HA	Dipole 1 HV After	46.00	NO
F1HB	Dipole 1 HV Before	46.00	NO
F2HA	Dipole 2 HV After	46.00	NO
F2HB	Dipole 2 HV Before	46.00	NO
F3HA	Monopole HV After	46.00	NO
F3HB	Monopole HV Before	46.00	NO
INVT	Input Voltage	46.00	NO
5VOL	5 Volts	46.00	NO
MI5A	Minus 5 Volts Analog	46.00	NO
ITMP	Instrument Temperature	46.00	NO
PL5A	Plus 5 Volts Analog	46.00	NO
5VD	Plus 5 Volts Digital	46.00	NO
TCUR	Tool Current	46.00	NO
SUPV	Supply Voltage	46.00	NO
PRVT	Preregulated voltage	46.00	NO
PRVT	Pre-regulated voltage Xmter	46.00	NO
TEMP	Temperature	46.00	NO
ACQN	Acquisition Number	46.00	NO
XDP	Delay Reference	57.50	NO
MITM	MIT Mode	57.50	NO
VERS	Version	46.00	NO
D1CT	Dipole 1 Compressed Word Count	57.50	NO
D2CT	Dipole 2 Compressed Word Count	57.50	NO
MCNT	Monopole Compressed Word Count	57.50	NO
SEQN	Sequence Number	46.00	NO
FREV	Firmware Revision	46.00	NO
MSMP	Monopole Sample Rate	46.00	NO
MSMP	Dipole Sample Rate	46.00	NO
MFWF	Monopole Firing Waveform	46.00	NO
MFRQ	Monopole Frequency	46.00	NO
MDLY	Monopole Delay	46.00	NO
DXWF	Dipole X Firing Waveform	46.00	NO
XFRQ	Dipole X Frequency	46.00	NO
XDLY	Dipole X Delay	46.00	NO
DYWF	Dipole Y Firing Waveform	46.00	NO
YFRQ	Dipole Y Frequency	46.00	NO
YDLY	Dipole Y Delay	46.00	NO

DPSX	Dipole Source X Structurel	46.00	NO
DPSY	Dipole Source Y Structurel	46.00	NO
DPSM	Monopole Source Structure	46.00	NO
WVST	Wavesonic Compressed Data	57.50	NO
AUTM	Auto Mode	46.00	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	46.00	NO
MSL	Monopole Lower Travel Time	57.50	NO
MSH	Monopole Upper Travel Time	57.50	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	46.00	NO
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	46.00	NO
DLTT	Dipole Lower Travel Time	46.00	NO
DUTT	Dipole Upper Travel Time	46.00	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	46.00	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	46.00	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	46.00	NO
MUTS	Mute/Enable Sides	46.00	NO
WSRB	Relative Bearing	57.50	NO
WSAZ	WSX Azimuth Pad 1	57.50	NO
TPUL	Tension Pull	57.50	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	57.50	NO
WXX	Dipole X for SIDES - A-C	57.50	NO
WYY	Dipole Y for SIDES - B-D	57.50	NO
WXY	Dipole X for SIDES - B-D	57.50	NO
WYX	Dipole Y for SIDES - A-C	57.50	NO
TPUL	Tension Pull	57.50	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	57.50	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	57.50	NO
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	57.50	NO
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	57.50	NO
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	57.50	NO
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	57.50	NO
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	57.50	NO
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	57.50	NO
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	57.50	NO
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	57.50	NO
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	57.50	NO
WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	57.50	NO
GAR1	Gain Side A Receiver 1	46.00	NO
GAR2	Gain Side A Receiver 2	46.00	NO
GAR3	Gain Side A Receiver 3	46.00	NO
GAR4	Gain Side A Receiver 4	46.00	NO
GAR5	Gain Side A Receiver 5	46.00	NO
GAR6	Gain Side A Receiver 6	46.00	NO
GAR7	Gain Side A Receiver 7	46.00	NO
GAR8	Gain Side A Receiver 8	46.00	NO
GBR1	Gain Side B Receiver 1	46.00	NO
GBR2	Gain Side B Receiver 2	46.00	NO
GBR3	Gain Side B Receiver 3	46.00	NO
GBR4	Gain Side B Receiver 4	46.00	NO

GBR5	Gain Side B Receiver 5	46.00	NO	
GBR6	Gain Side B Receiver 6	46.00	NO	
GBR7	Gain Side B Receiver 7	46.00	NO	
GBR8	Gain Side B Receiver 8	46.00	NO	
GCR1	Gain Side C Receiver 1	46.00	NO	
GCR2	Gain Side C Receiver 2	46.00	NO	
GCR3	Gain Side C Receiver 3	46.00	NO	
GCR4	Gain Side C Receiver 4	46.00	NO	
GCR5	Gain Side C Receiver 5	46.00	NO	
GCR6	Gain Side C Receiver 6	46.00	NO	
GCR7	Gain Side C Receiver 7	46.00	NO	
GCR8	Gain Side C Receiver 8	46.00	NO	
GDR1	Gain Side D Receiver 1	46.00	NO	
GDR2	Gain Side D Receiver 2	46.00	NO	
GDR3	Gain Side D Receiver 3	46.00	NO	
GDR4	Gain Side D Receiver 4	46.00	NO	
GDR5	Gain Side D Receiver 5	46.00	NO	
GDR6	Gain Side D Receiver 6	46.00	NO	
GDR7	Gain Side D Receiver 7	46.00	NO	
GDR8	Gain Side D Receiver 8	46.00	NO	
	DSNT			
TPUL	Tension Pull	32.54	NO	
RNDS	Near Detector Telemetry Counts	32.64	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.39	TRI	0.583
DNTT	DSN Tool Temperature	32.64	NO	
DSNS	DSN Tool Status	32.54	NO	
ERND	Near Detector Telemetry Counts EVR	32.64	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.39	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.64	NO	
	SDLT			
TPUL	Tension Pull	22.65	NO	
PCAL	Pad Caliper	22.65	TRI	0.250
ACAL	Arm Caliper	22.65	TRI	0.250
	ACRt Sonde			
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000

F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Current Raw 12K X Receiver	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

SDLT Pad				
TPUL	Tension Pull	22.64	NO	
NAB	Near Above	22.46	BLK	0.920
NHI	Near Cesium High	22.46	BLK	0.920
NLO	Near Cesium Low	22.46	BLK	0.920
NVA	Near Valley	22.46	BLK	0.920
NBA	Near Barite	22.46	BLK	0.920
NDE	Near Density	22.46	BLK	0.920
NPK	Near Peak	22.46	BLK	0.920
NLI	Near Lithology	22.46	BLK	0.920
NBAU	Near Barite Unfiltered	22.46	BLK	0.250
NLIU	Near Lithology Unfiltered	22.46	BLK	0.250
FAB	Far Above	22.81	BLK	0.250
FHI	Far Cesium High	22.81	BLK	0.250
FLO	Far Cesium Low	22.81	BLK	0.250
FVA	Far Valley	22.81	BLK	0.250
FBA	Far Barite	22.81	BLK	0.250
FDE	Far Density	22.81	BLK	0.250
FPK	Far Peak	22.81	BLK	0.250
FLI	Far Lithology	22.81	BLK	0.250
PTMP	Pad Temperature	22.65	BLK	0.920

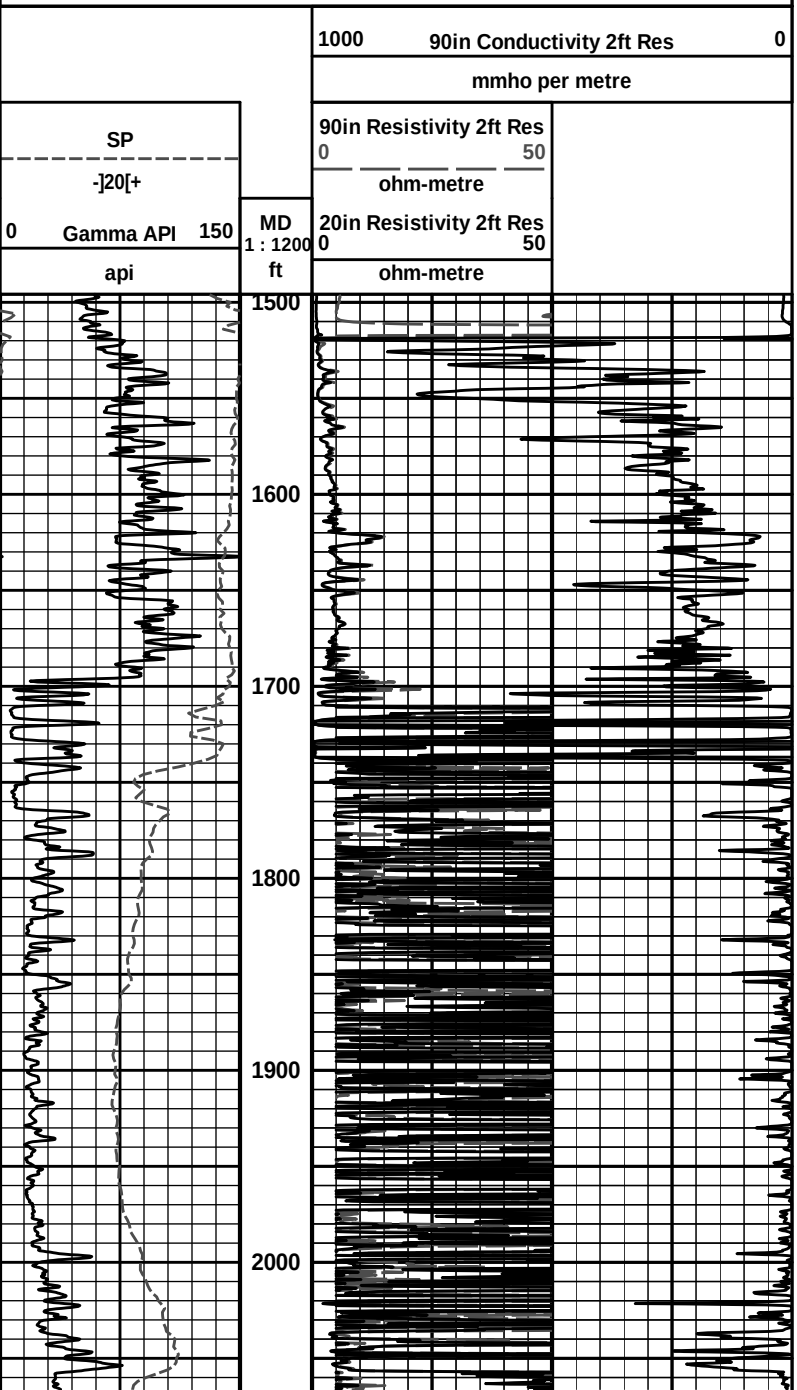
NHV	Near Detector High Voltage	22.04	NO	
FHV	Far Detector High Voltage	22.04	NO	
ITMP	Instrument Temperature	22.04	NO	
DDHV	Detector High Voltage	22.04	NO	
	Microlog Pad			
TPUL	Tension Pull	22.83	NO	
MINV	Microlog Lateral	22.83	BLK	0.750
MNOR	Microlog Normal	22.83	BLK	0.750

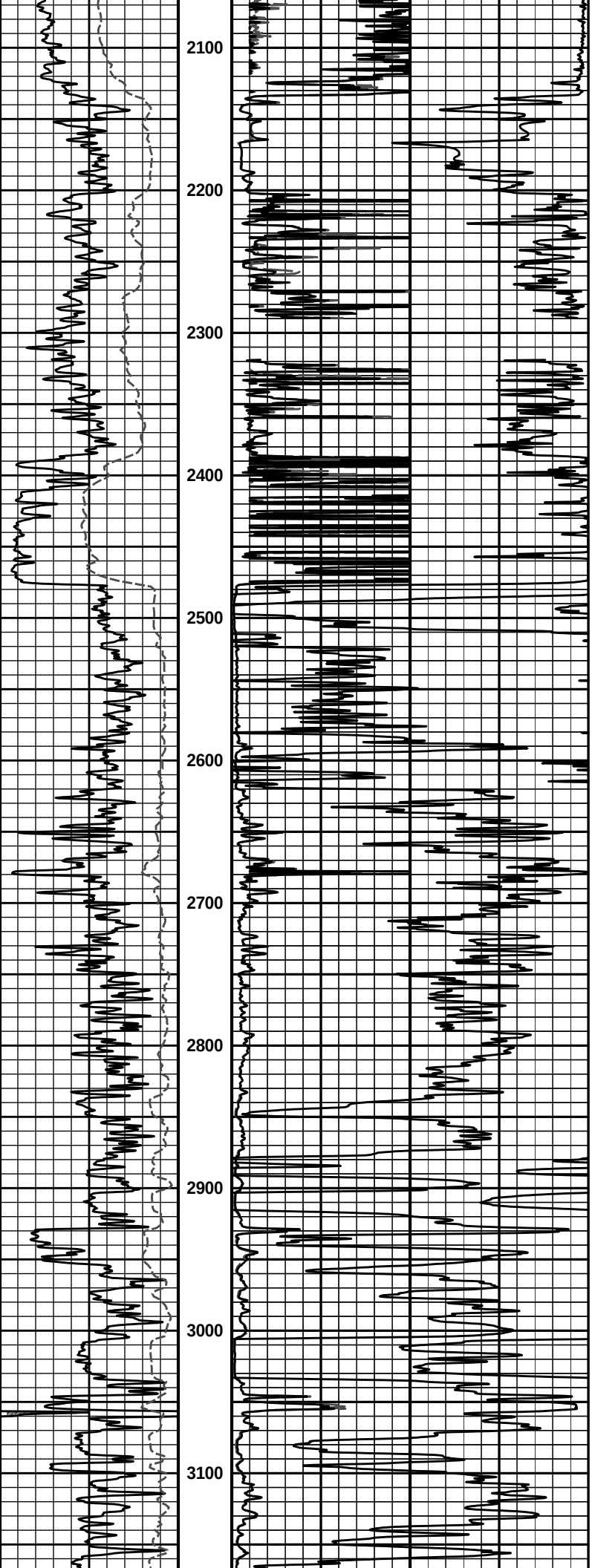
Data: SIMONS_1736_112\0001 SP-GTET-CSNG-ICT-IDT-WAVE-FLEX-DSN-SDL-ACRT-CH\006 25-Nov-13 09:21 Up @5050.3f **Date: 25-Nov-13 12:45:00**

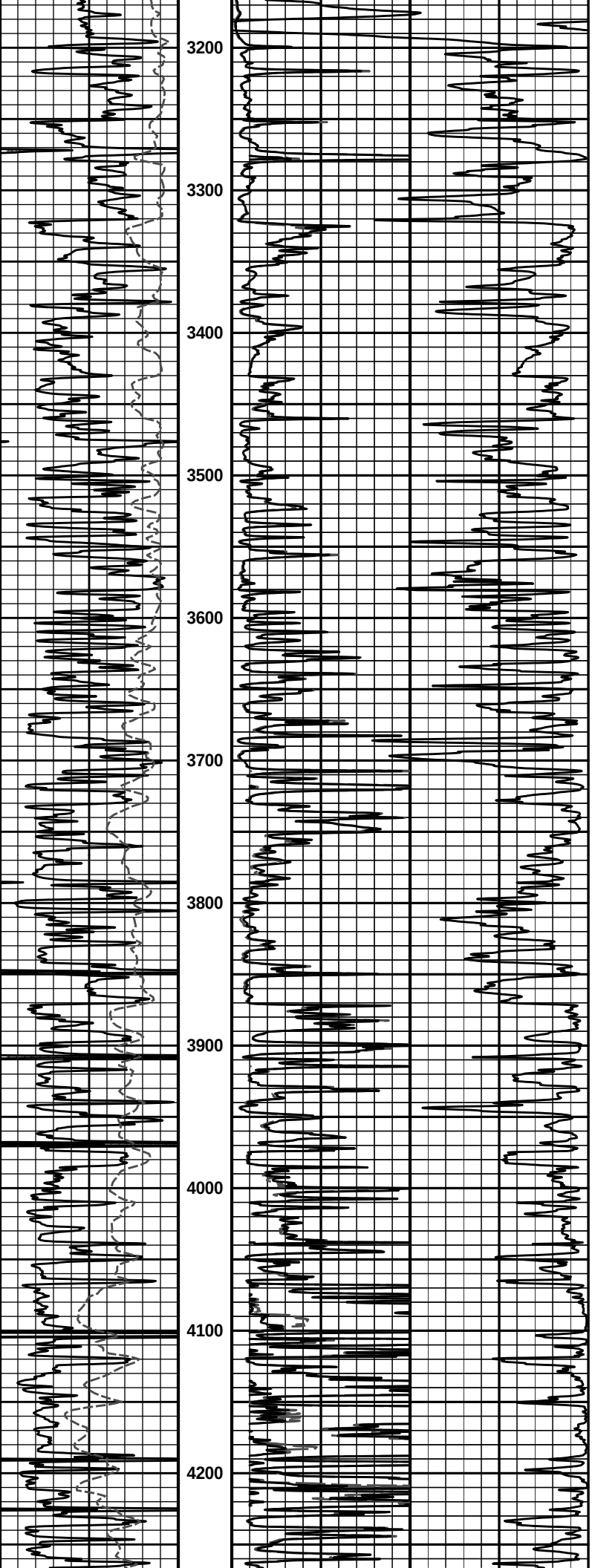
HALLIBURTON

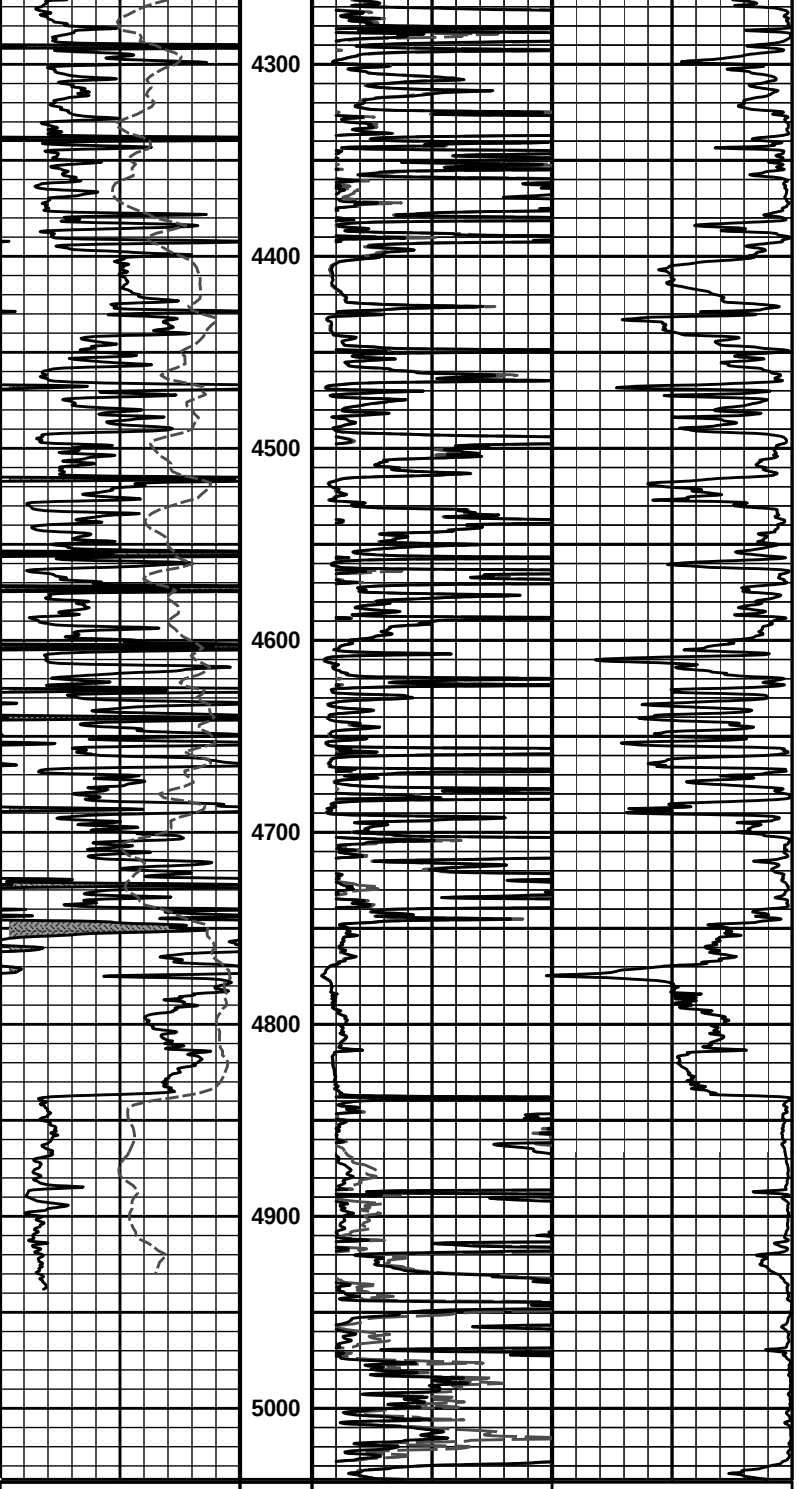
Plot Time: 25-Nov-13 15:58:14
Plot Range: 1495.75 ft to 5037 ft
Data: SIMONS_1736_112\Well Based\R1 CASING
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_1_lib

1 INCH MAIN LOG




2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100


3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200



0 Gamma API 150	MD 1 : 1200 ft	20in Resistivity 2ft Res 0 50
api		ohm-metre
SP		90in Resistivity 2ft Res 0 50
-]20[+		ohm-metre
		1000 90in Conductivity 2ft Res 0
		mmho per metre

HALLIBURTON

Plot Time: 25-Nov-13 15:58:17
Plot Range: 1495.75 ft to 5037 ft
Data: SIMONS_1736_112\Well Based\R1 CASING
Plot File: \\-LOCAL-\SIMONS_1736_112\Well Based\ACRT\ACRT_1_lib

1 INCH MAIN LOG

COMPANY	**SANDRIDGE ENERGY**

COMPANY	**SANDRIDGE ENERGY**		
WELL	**SIMONS 1736 1-12**		
FIELD	**BEAVER CLIFF NW**		
COUNTY	**WICHITA**	STATE	**KANSAS**

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG