

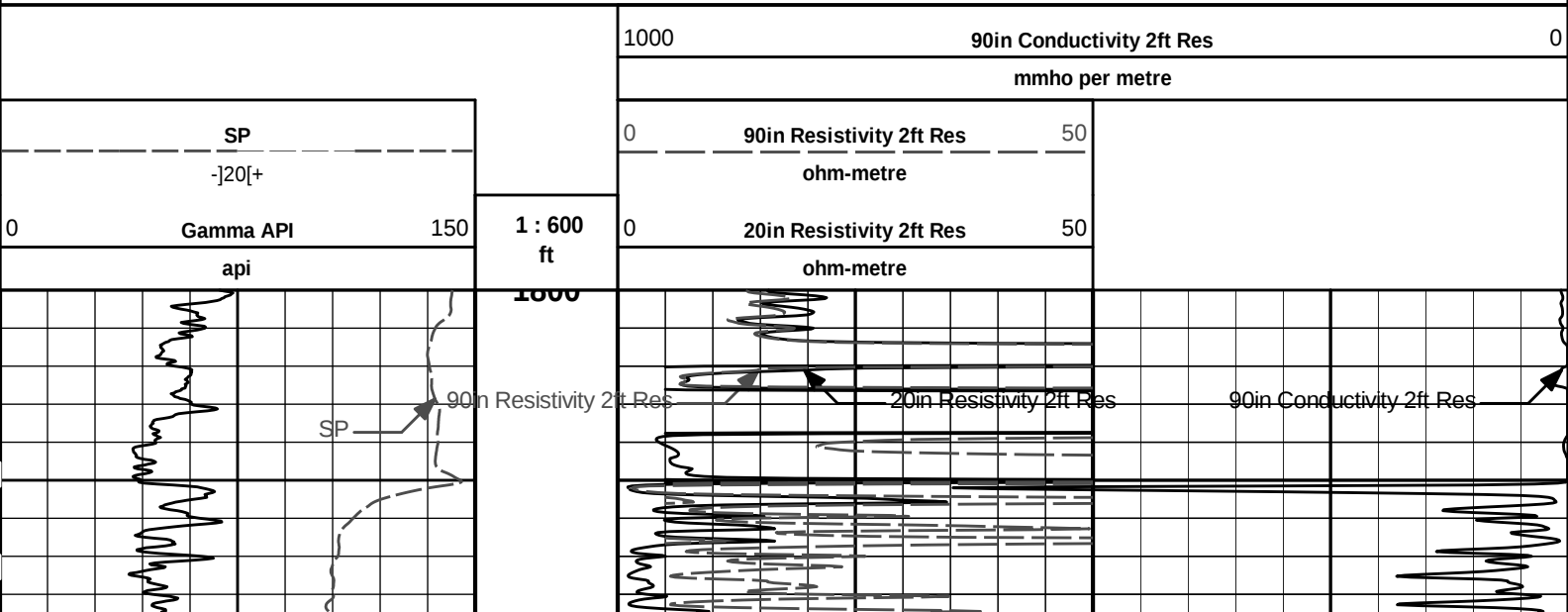
HALLIBURTON				ARRAY COMPENSATED RESISTIVITY LOG			
COMPANY HARTMAN OIL COMPANY				COMPANY HARTMAN OIL COMPANY			
WELL DAMME #46				WELL DAMME #46			
FIELD DAMME				FIELD DAMME			
COUNTY FINNEY				COUNTY FINNEY			
STATE KANSAS				STATE KANSAS			
COMPANY HARTMAN OIL COMPANY				COMPANY HARTMAN OIL COMPANY			
WELL DAMME #46				WELL DAMME #46			
FIELD DAMME				FIELD DAMME			
COUNTY FINNEY				COUNTY FINNEY			
STATE KANSAS				STATE KANSAS			
API No. 15-055-22126				Other Services: ACRT DSN/SDL MICROLOG			
Location (SHL) 1650' FNL & 990' FEL							
Sect. 28 Twp. 22S Rge. 33W							
Permanent Datum GL				Elev.: K.B. 2896.0 ft			
Log measured from KB				D.F. 2895.0 ft			
Drilling measured from KB				G.L. 2886.0 ft			
Date 13-Mar-12							
Run No. ONE							
Depth - Driller 4850.00 ft							
Depth - Logger 4854.0 ft							
Bottom - Logged Interval 4844							
Top - Logged Interval 1851							
Casing - Driller 8.625 in @ 1848.0 ft				@			
Casing - Logger 1851.0 ft							
Bit Size 7.875 in				@			
Type Fluid in Hole WBM							
Density 9.2 ppg				60.00 s/qt			
PH 9.00 pH				8.0 cp/m			
Source of Sample MUDPIT							
Rm @ Meas. Temperature 0.950 ohmm @ 88.00 degF				@			
Rmf @ Meas. Temperature 0.81 ohmm @ 85.00 degF				@			
Rmc @ Meas. Temperature 1.260 ohmm @ 85.00 degF				@			
Source Rmf MEAS				MEAS			
Rm @ BHT 0.70 ohmm @ 121.0 degF				@			
Time Since Circulation 6.0 hr							
Time on Bottom 13-Mar-12 17:33							
Max. Rec. Temperature 121.0 degF @ 4854.0 ft				@			
Equipment 10975786 FTSM							
Recorded By WHITLOCK				INGERSOLL			
Witnessed By STAN MITCHELL				KITT NOAH			

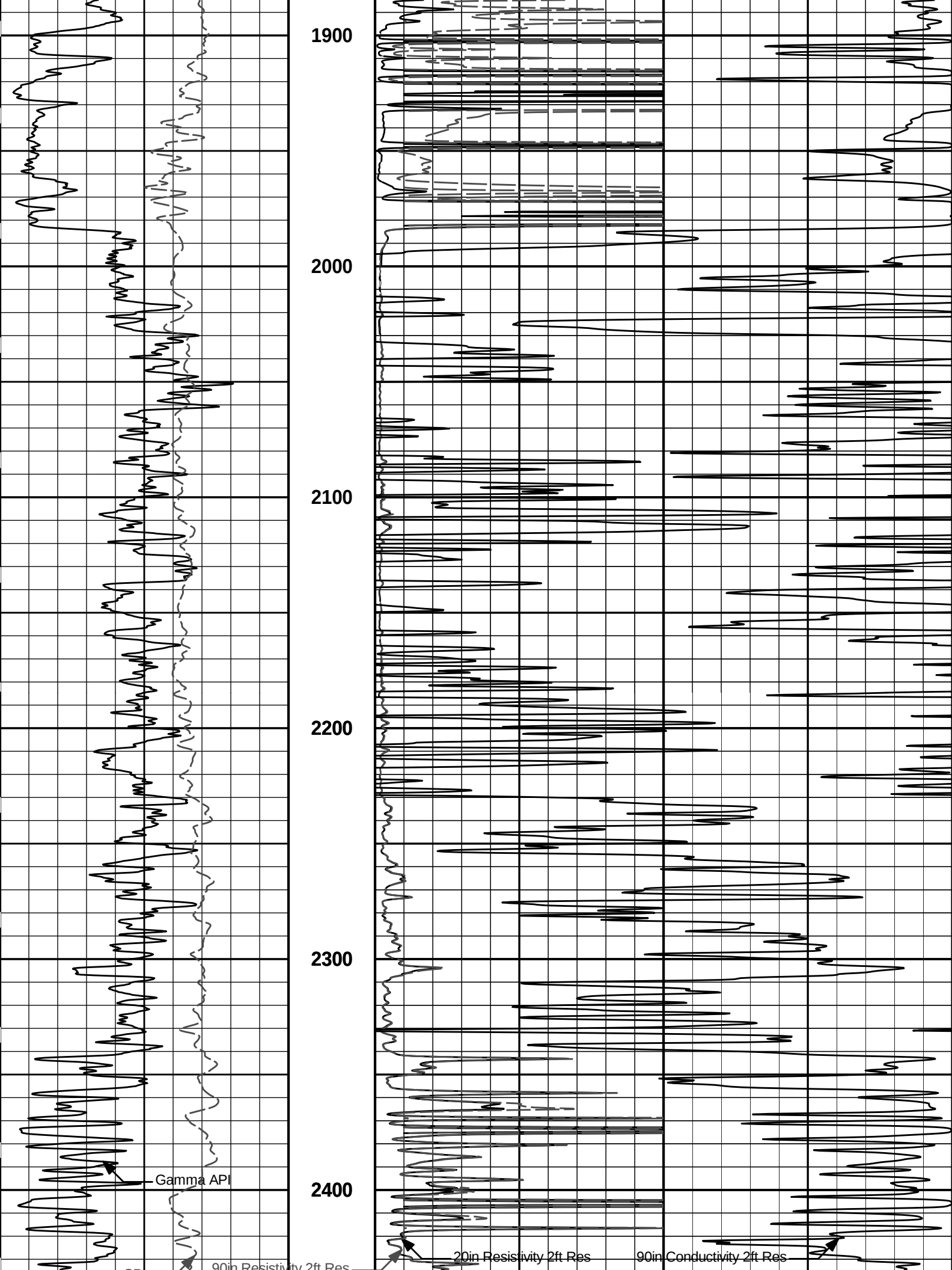
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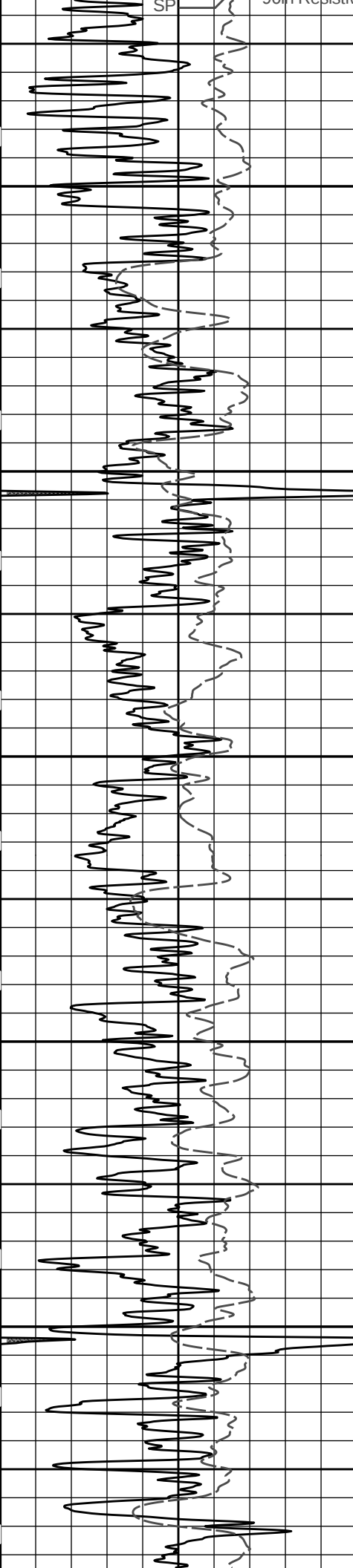
Service Ticket No.: 9355656						API Serial No.: 15-055-22126						PGM Version: WL INSITE R3.4.2 (Build 2)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole									
Depth-Driller																													
Type Fluid in Hole																													
Density		Viscosity																											
Ph		Fluid Loss																											
Source of Sample												RESISTIVITY EQUIPMENT DATA																	
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.				Pad Type				Tool Pos.				Other			
Rmf @ Meas. Temp.				@				@				ONE		ACRT								1.5" S.O.							
Rmc @ Meas. Temp.				@				@						I. I816S708															
Source Rmf		Rmc												S. I816S708															
Rm @ BHT				@				@																					
Rmf @ BHT				@				@																					
Rmc @ BHT				@				@																					
EQUIPMENT DATA																													
GAMMA						ACOUSTIC						DENSITY						NEUTRON											
Run No.		ONE				Run No.						Run No.		ONE				Run No.		ONE									
Serial No.		11091172				Serial No.						Serial No.		I378M477P870				Serial No.		10951378									
Model No.		GTET				Model No.						Model No.		SDLT				Model No.		DSNT									
Diameter		3.625				No. of Cent.						Diameter		4.5				Diameter		3.625									
Detector Model No.		GTET				Spacing						Log Type		GAM-GAM				Log Type		NEU-NEU									
Type		SCINT										Source Type		CS-137				Source Type		AM241BE									
Length		8"				LSA [Y/N]						Serial No.		20784B				Serial No.		373									
Distance to Source		N/A				FWDA [Y/N]						Strength		1.5 CI				Strength		15 CI									

LOGGING DATA

GENERAL			GAMMA			ACOUSTIC			DENSITY			NEUTRON		
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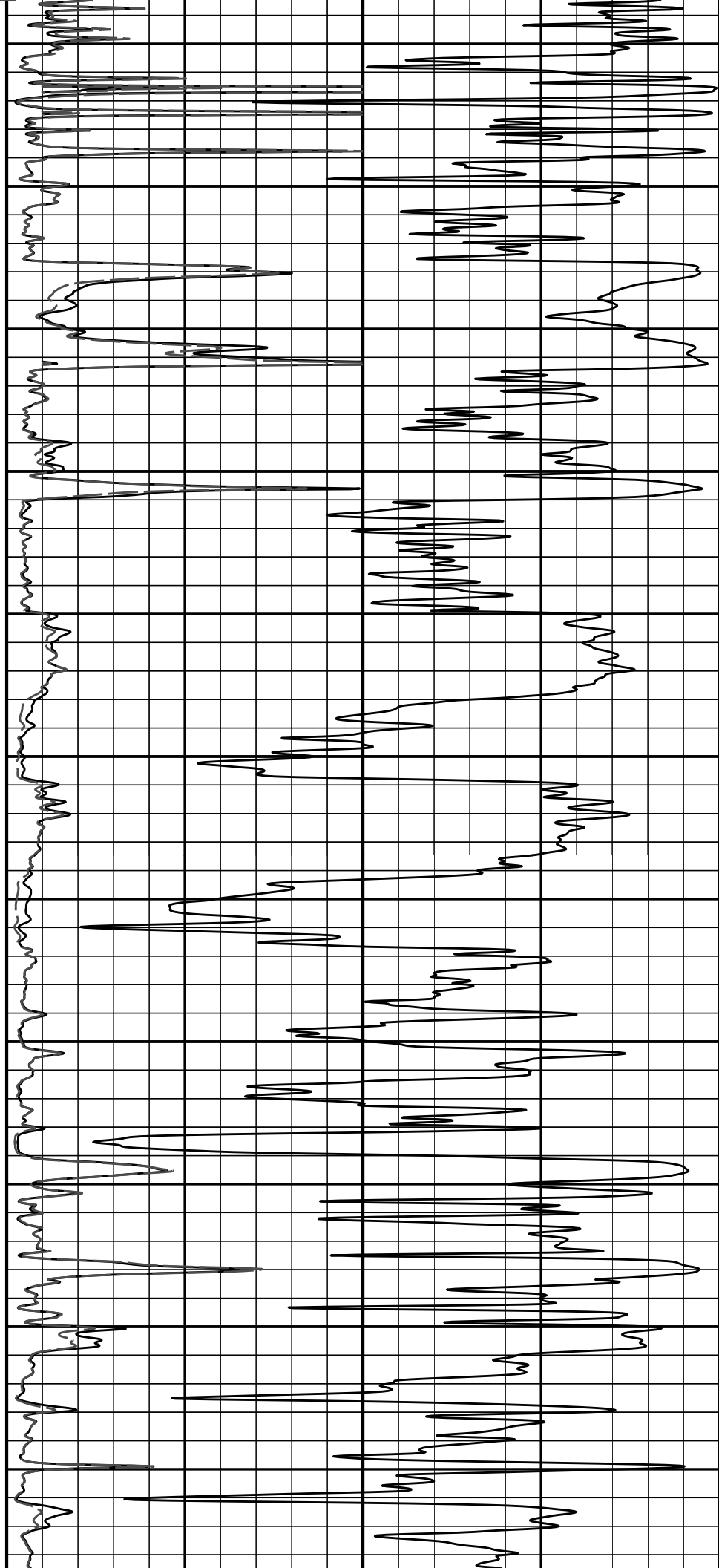
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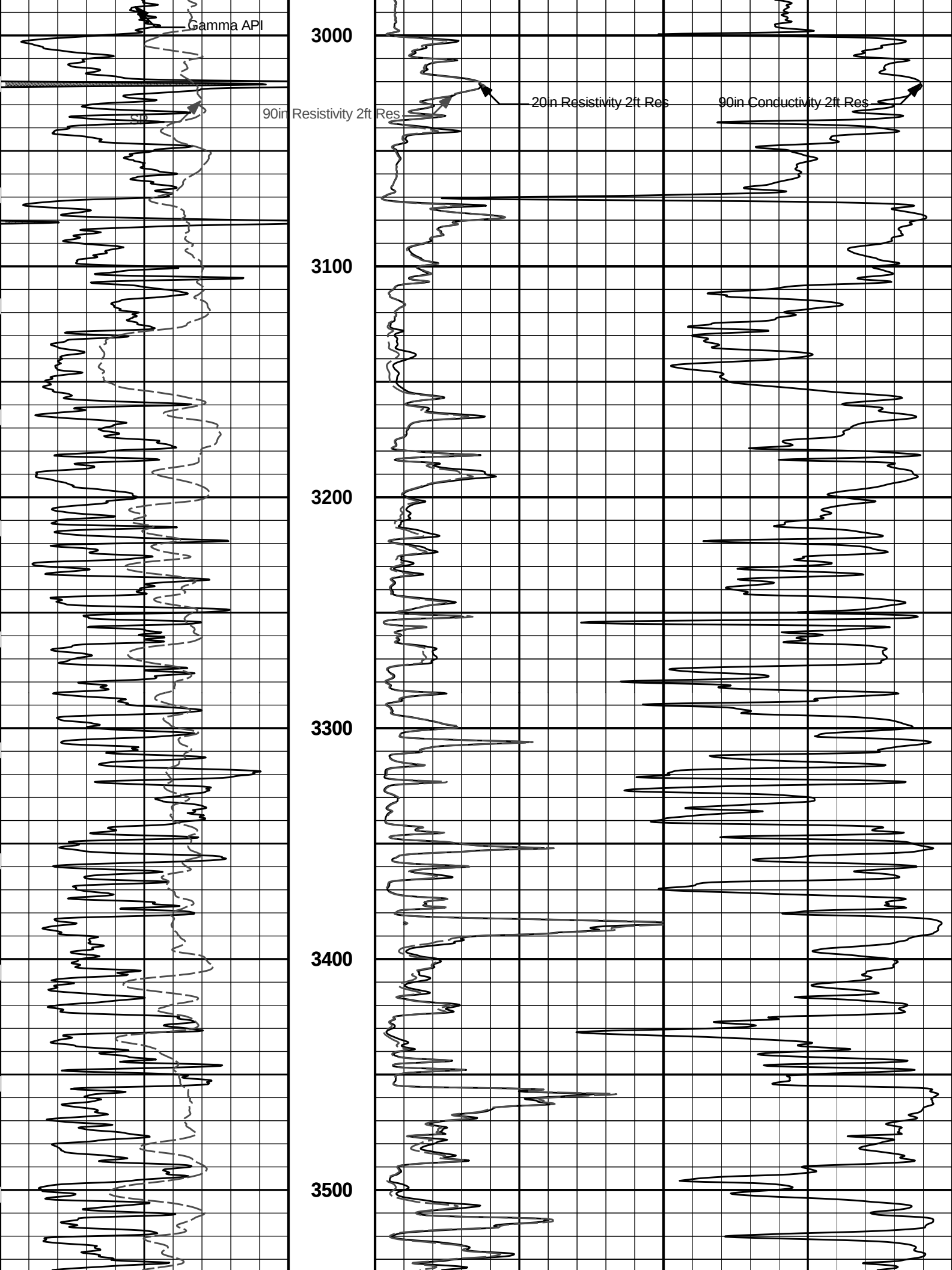
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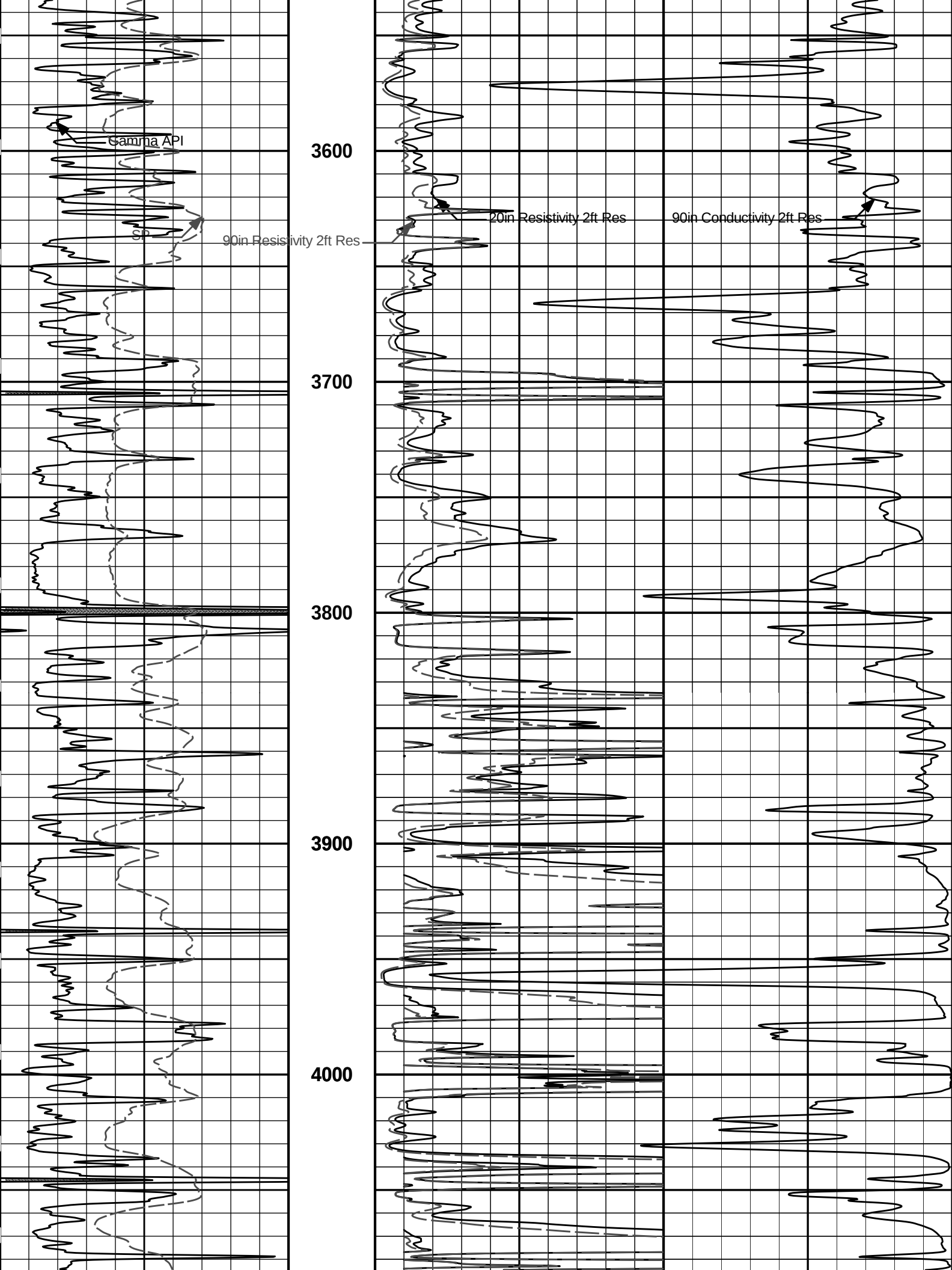
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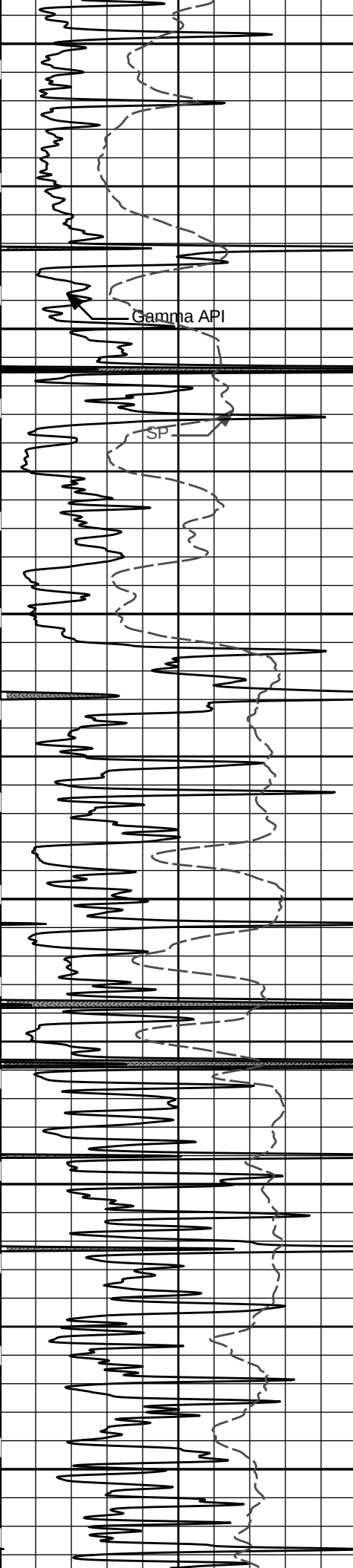
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2900









4100

4200

4300

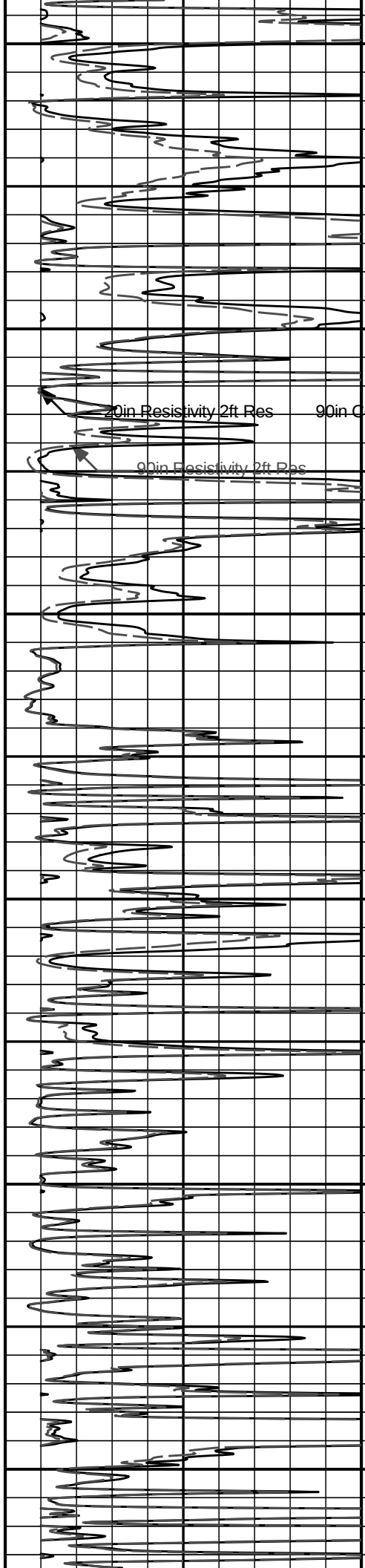
4400

4500

4600

Gamma API

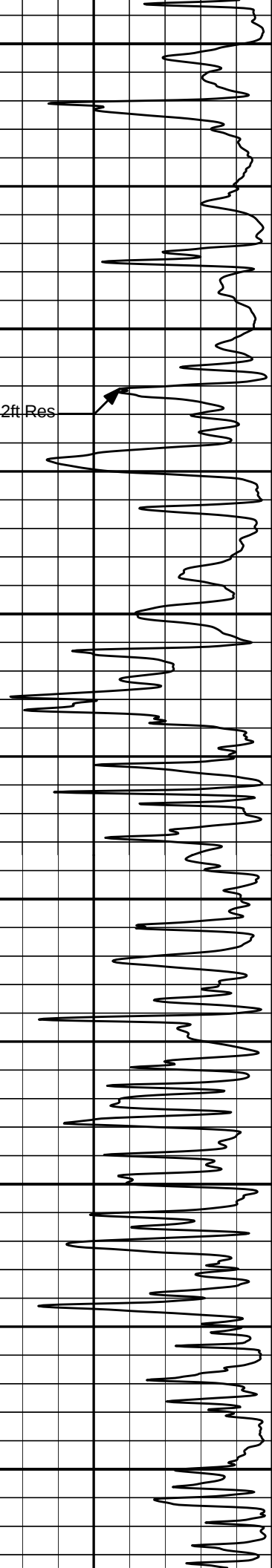
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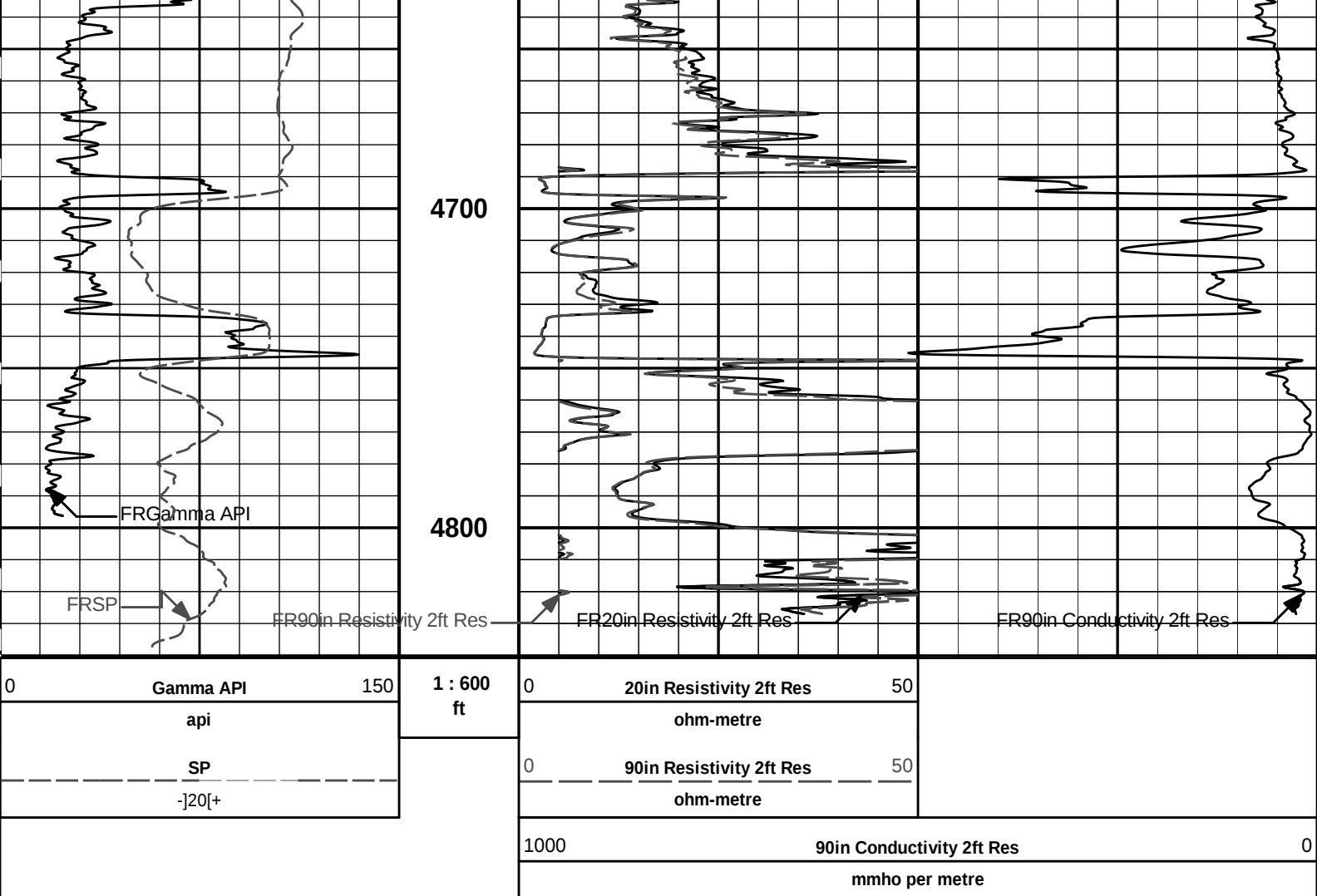


20in Resistivity 2ft Res

90in Resistivity 2ft Res

90in Conductivity 2ft Res





HALLIBURTON

Plot Time: 13-Mar-12 19:03:30
Plot Range: 1800 ft to 4840.08 ft
Data: HART_DAMME_46\Well Based\DAQ-0001-007\
Plot File: \\LOCAL\HART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\ACRT\ACRT_2_main

2 INCH MAIN LOG

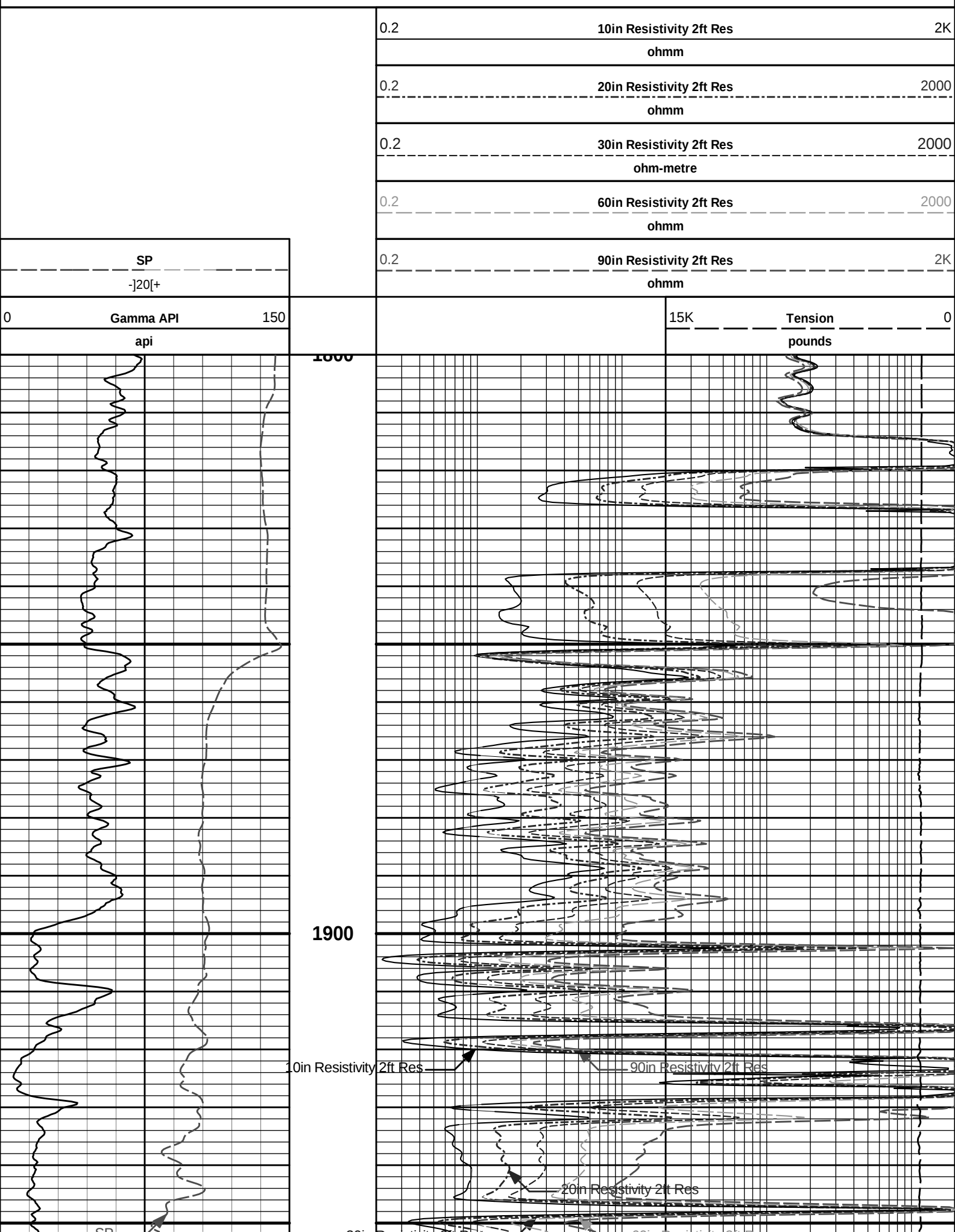
2 INCH MAIN LOG

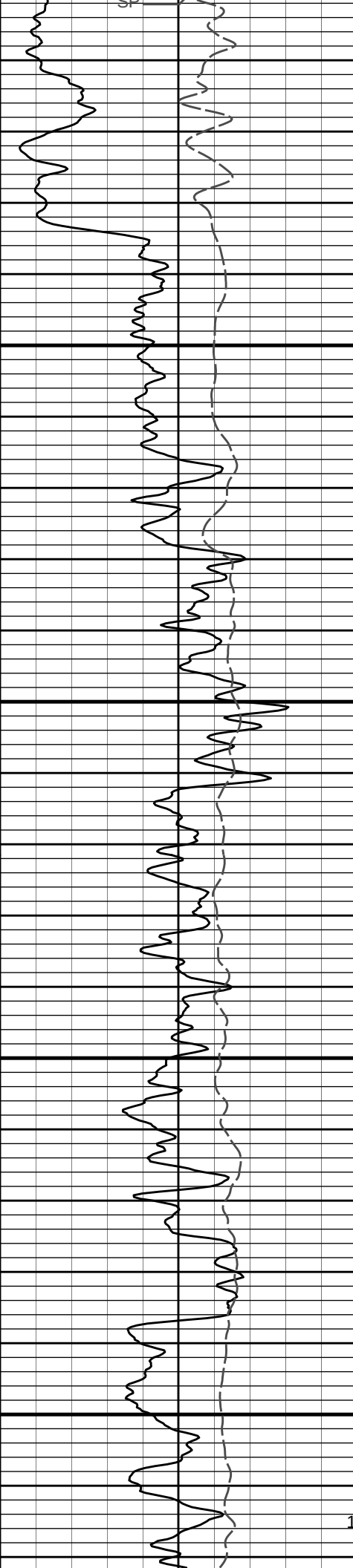
HALLIBURTON

Plot Time: 13-Mar-12 19:03:30
Plot Range: 1800 ft to 4840.08 ft
Data: HART_DAMME_46\Well Based\DAQ-0001-007\
Plot File: \\LOCAL\HART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\ACRT\ACRT_5inch_main

5 INCH MAIN LOG

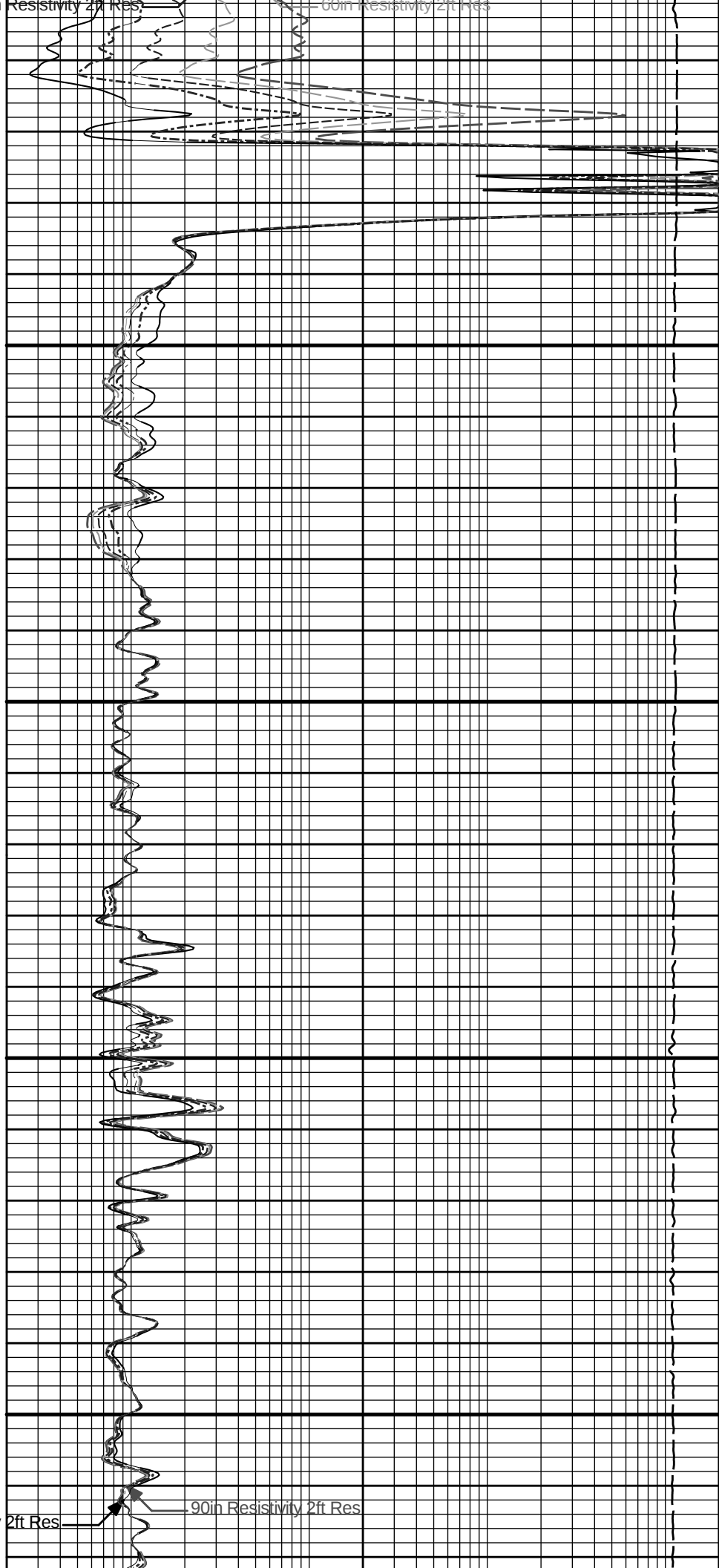
5 INCH MAIN LOG





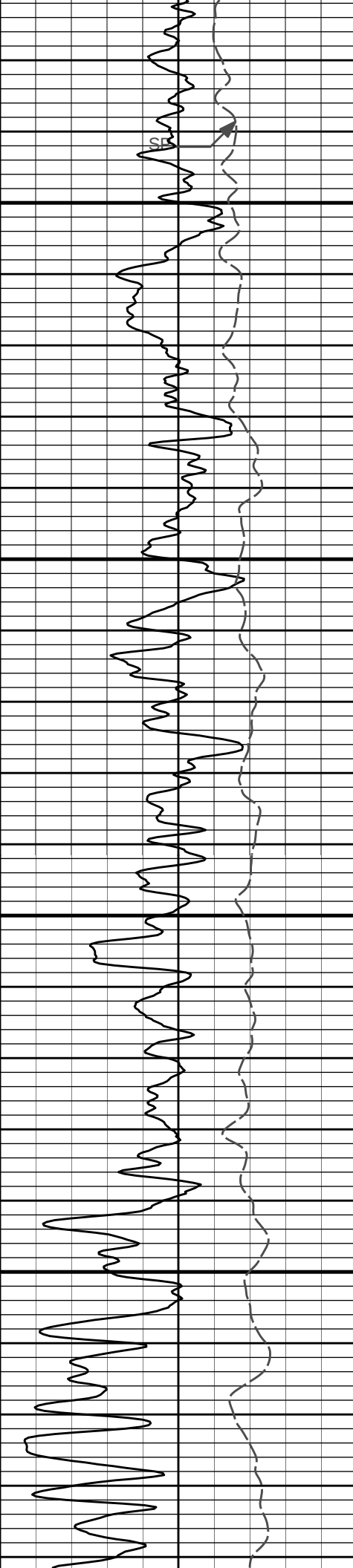
2000

2100



10in Resistivity 2ft Res

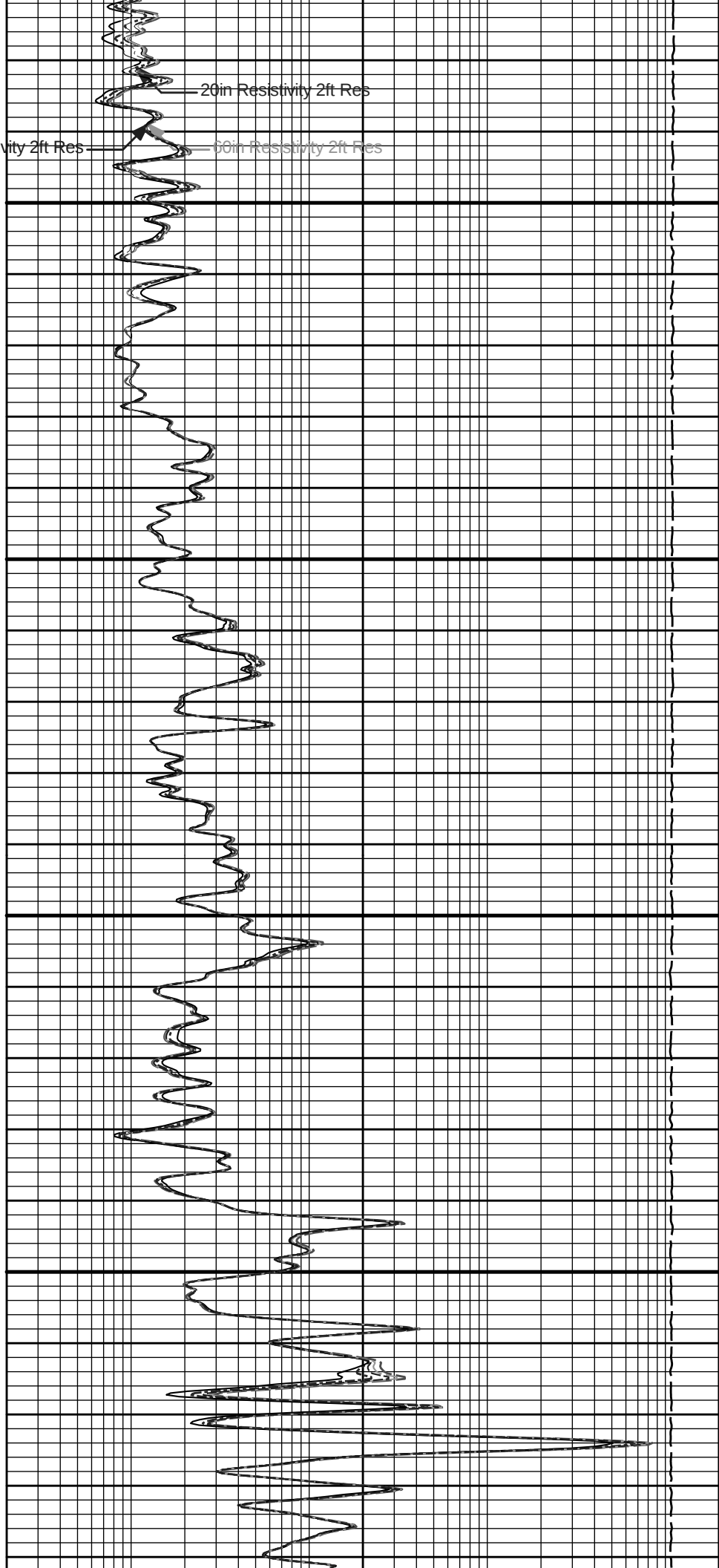
90in Resistivity 2ft Res



30in Resistivity 2ft Res

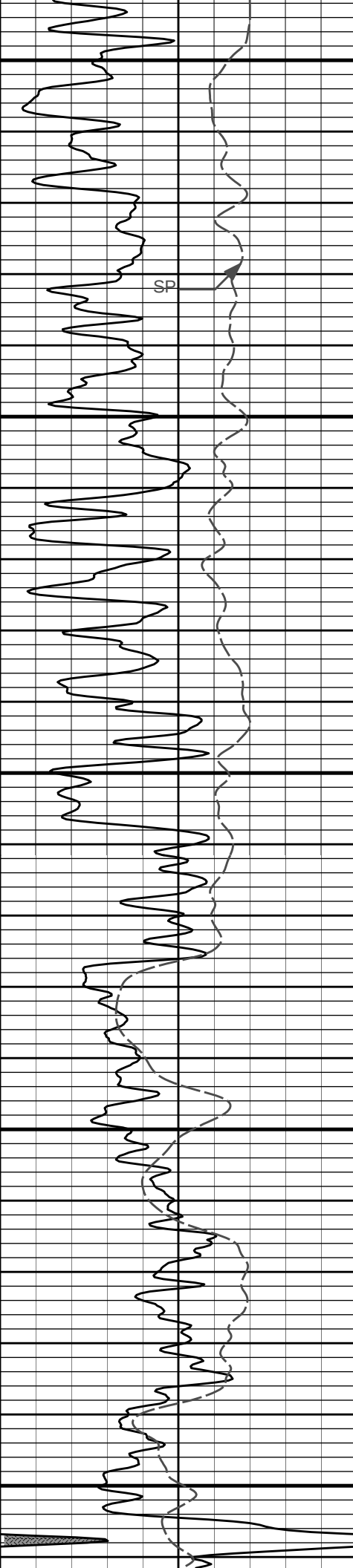
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2300



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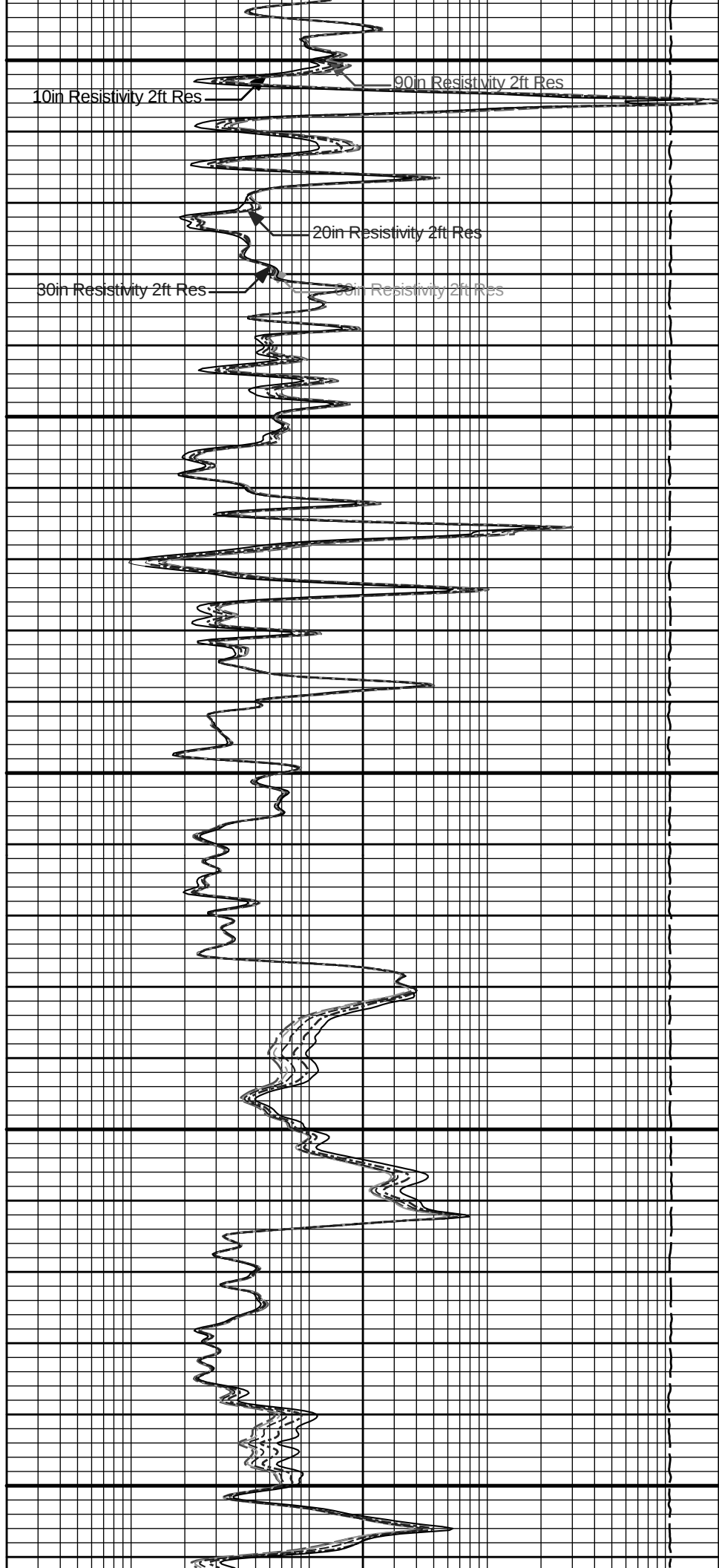
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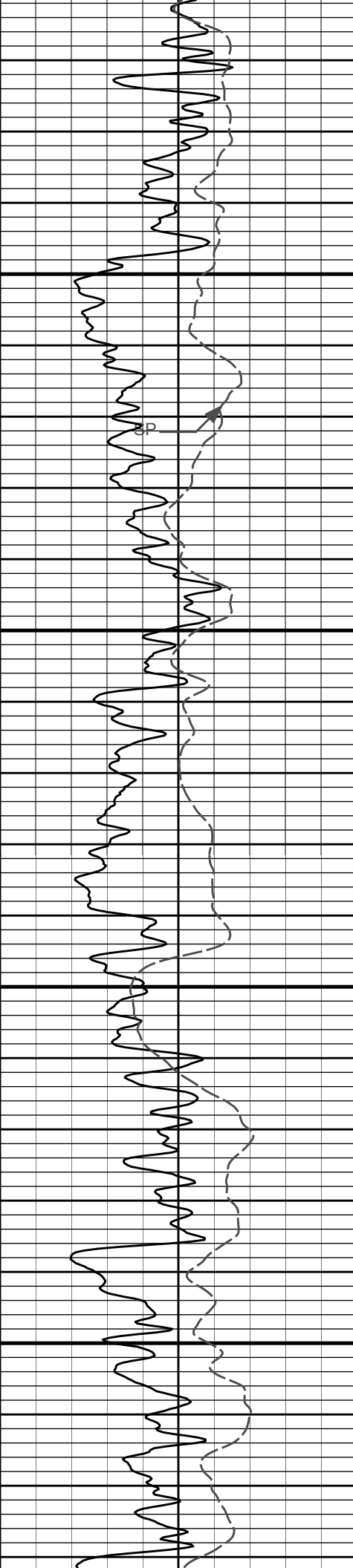


2400

2500

2600





2700

2800

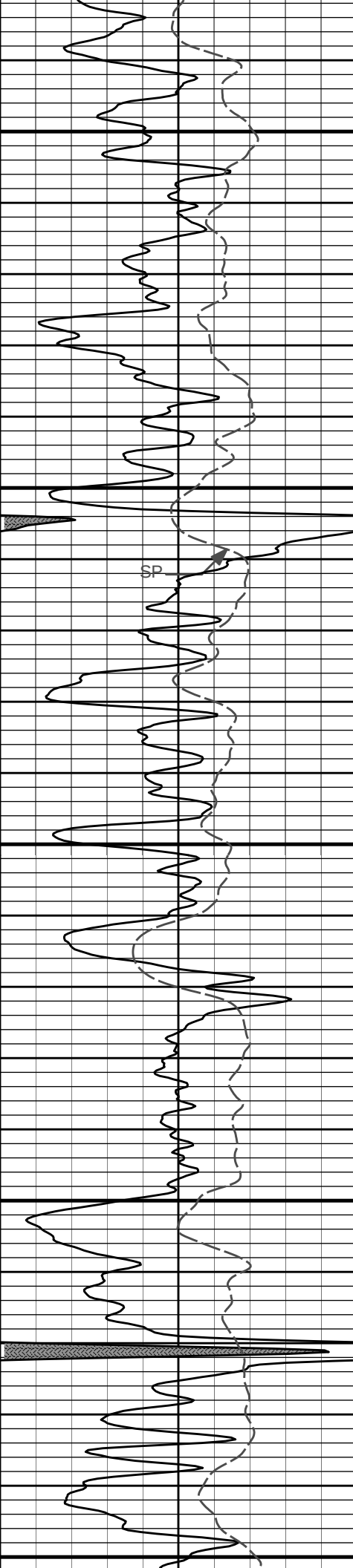
10in Resistivity 2ft Res

90in Resistivity 2ft Res

20in Resistivity 2ft Res

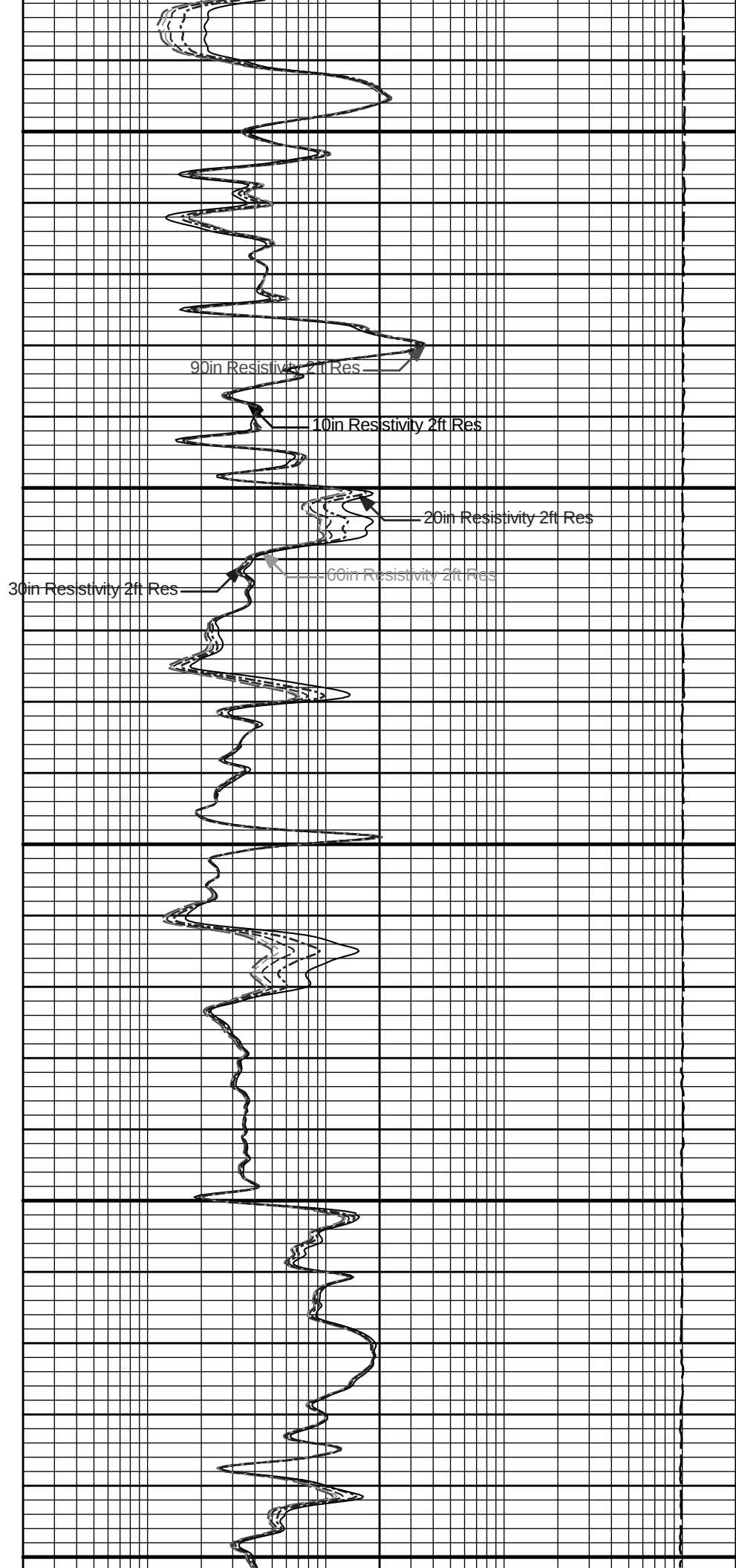
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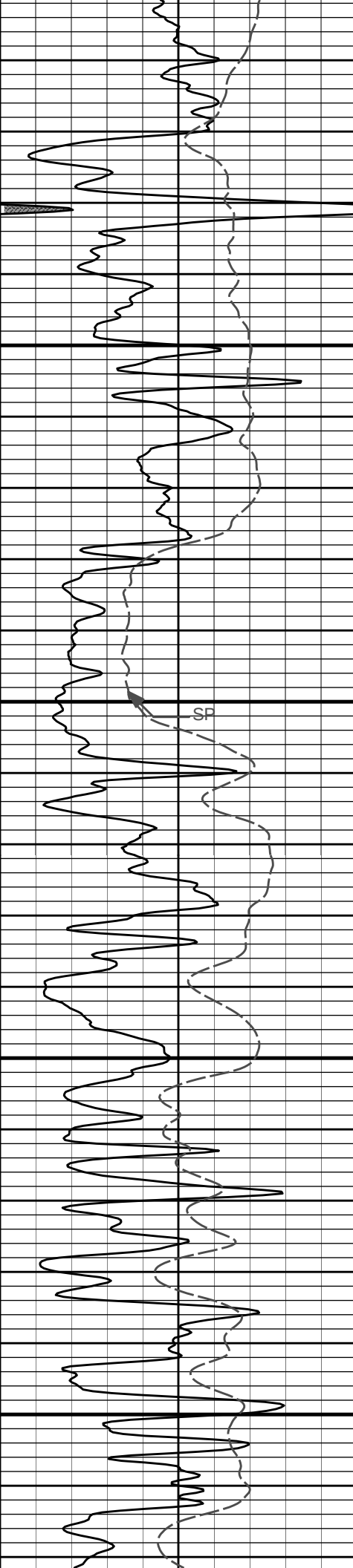
60in Resistivity 2ft Res



2900

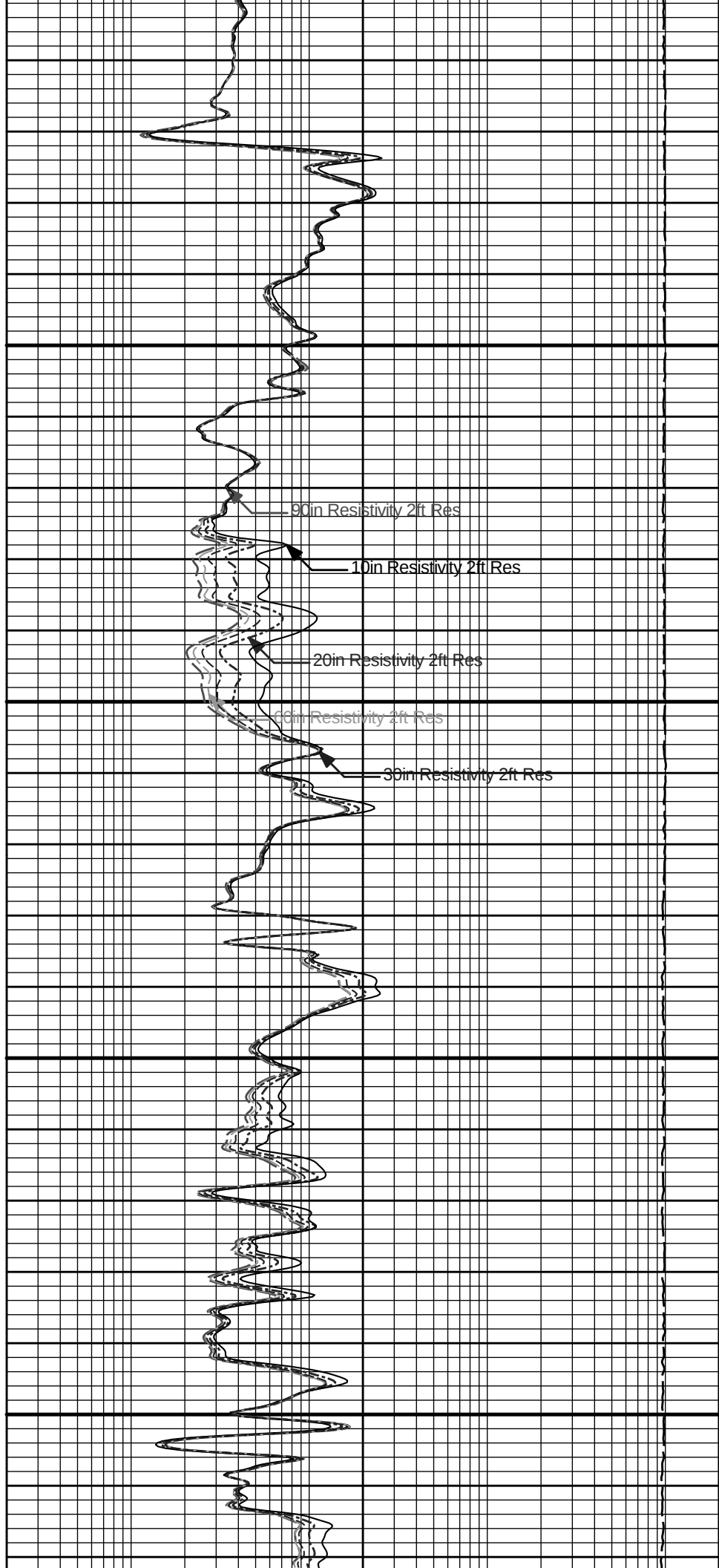
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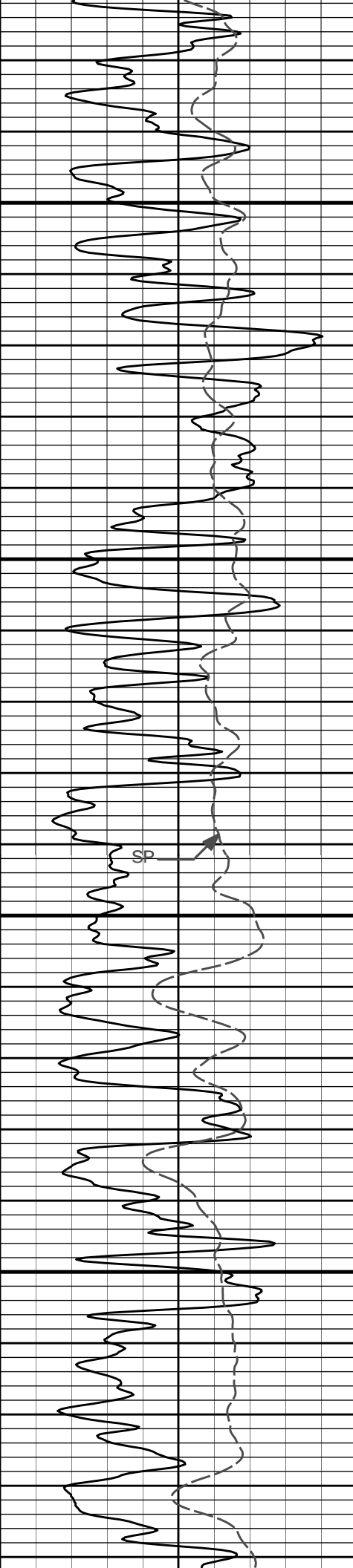




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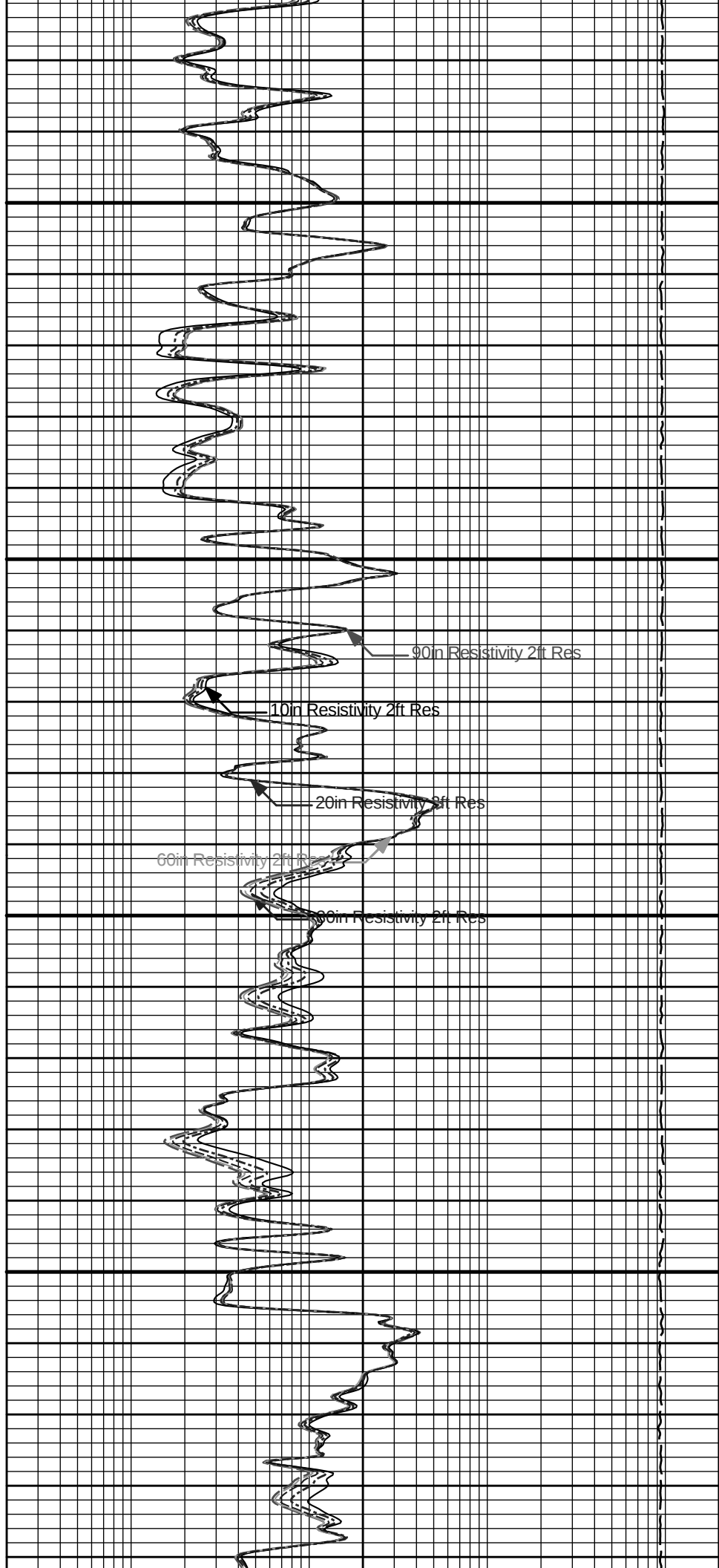
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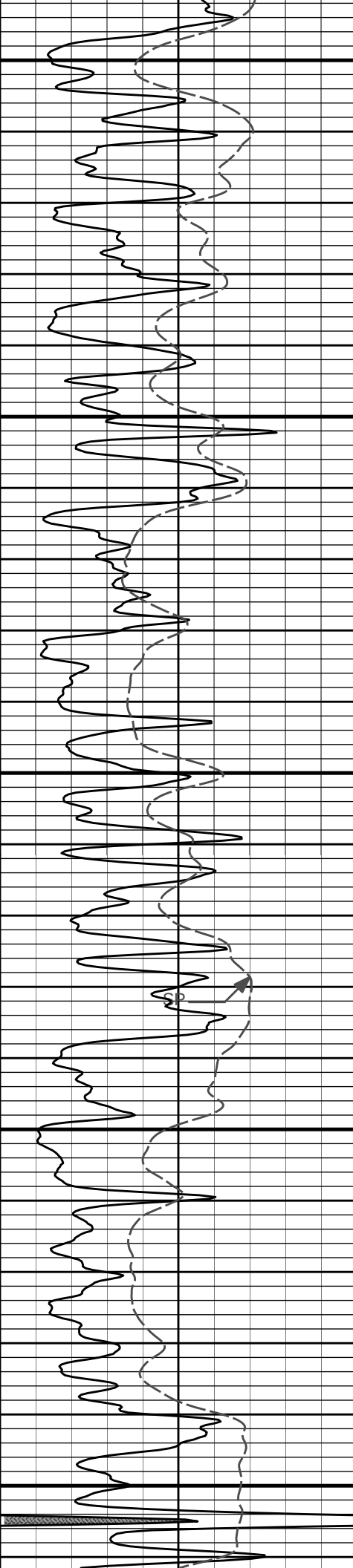




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3400

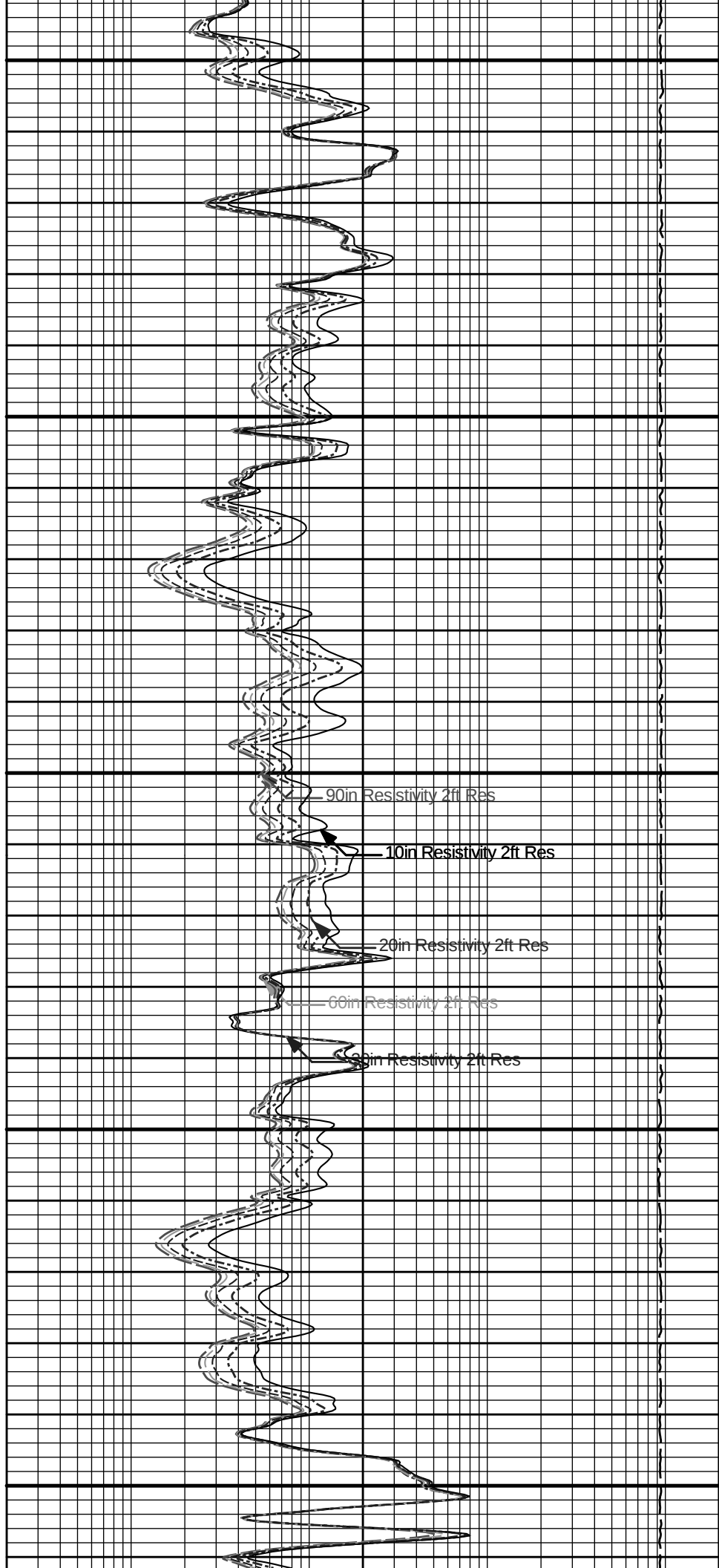


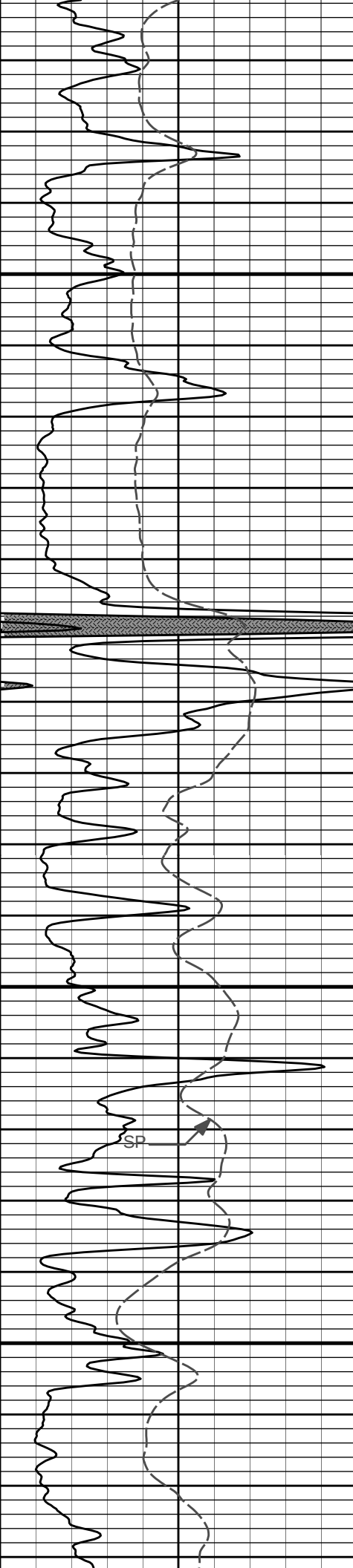


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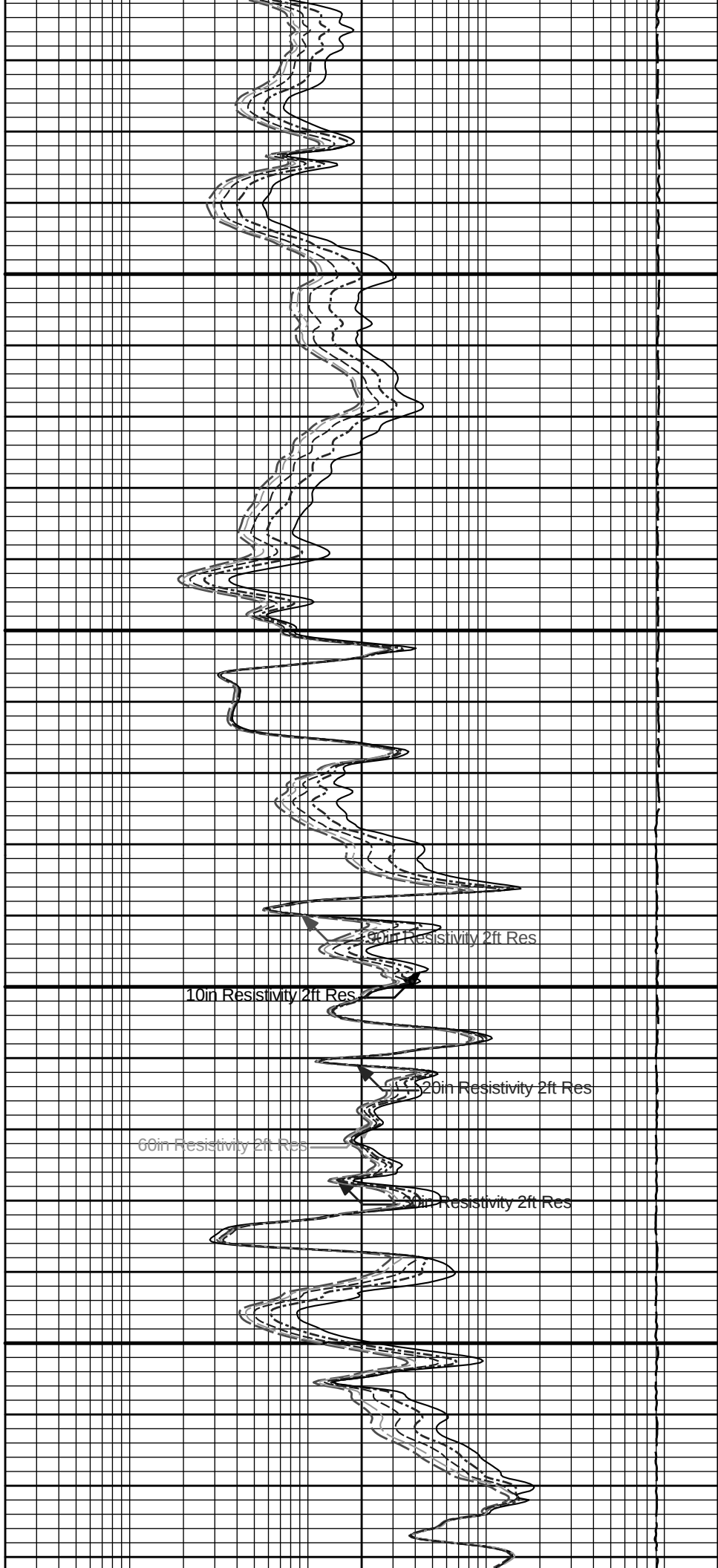
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3800

3900



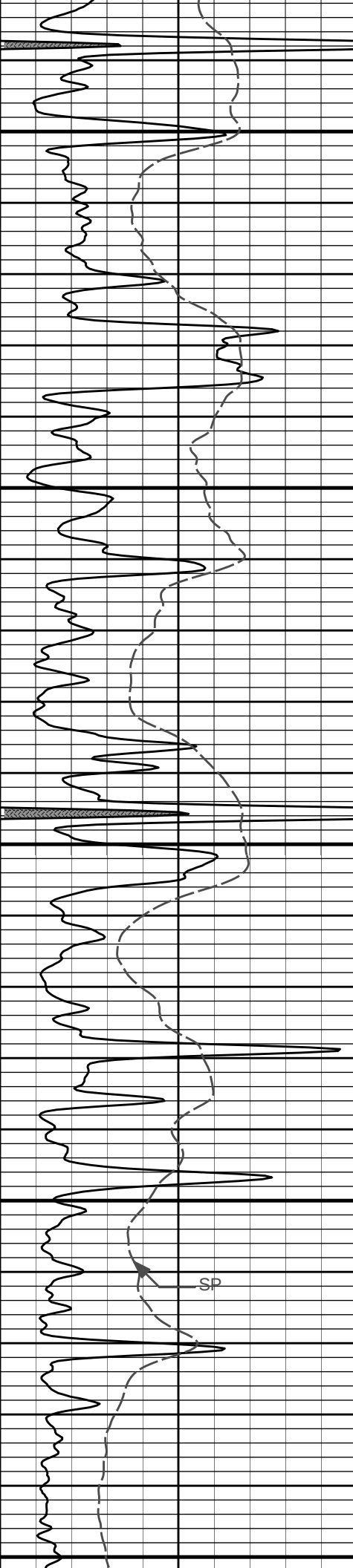
80in Resistivity 2ft Res

10in Resistivity 2ft Res

41-520in Resistivity 2ft Res

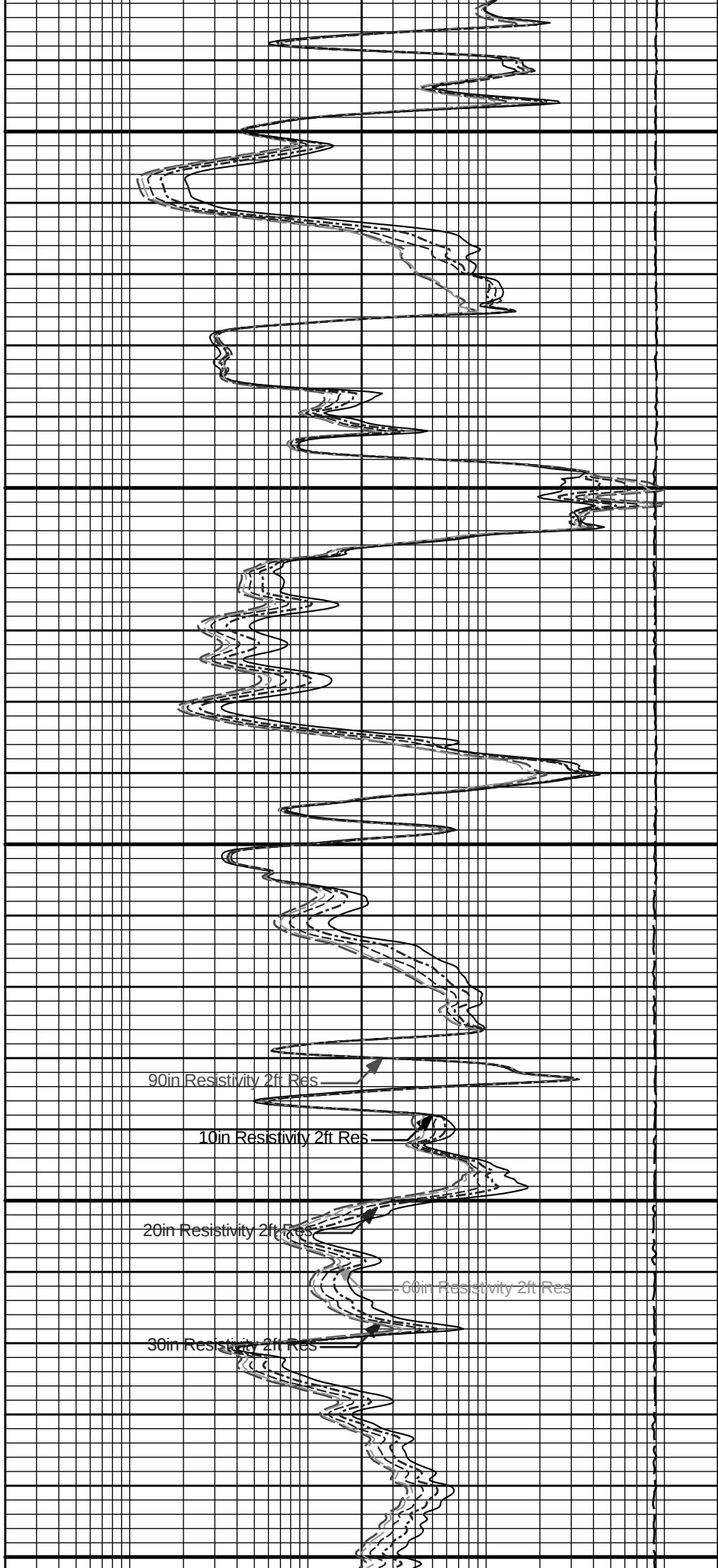
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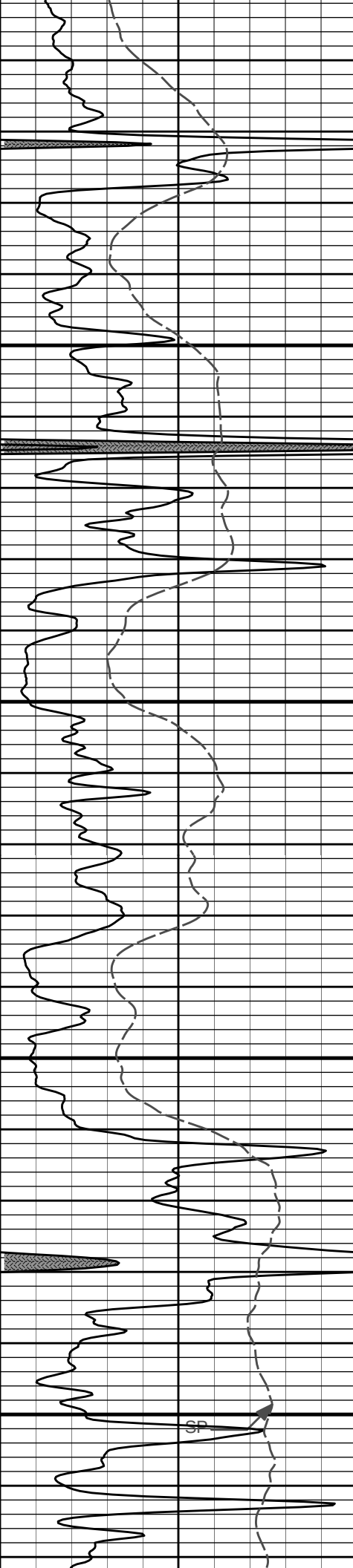
30in Resistivity 2ft Res



4000

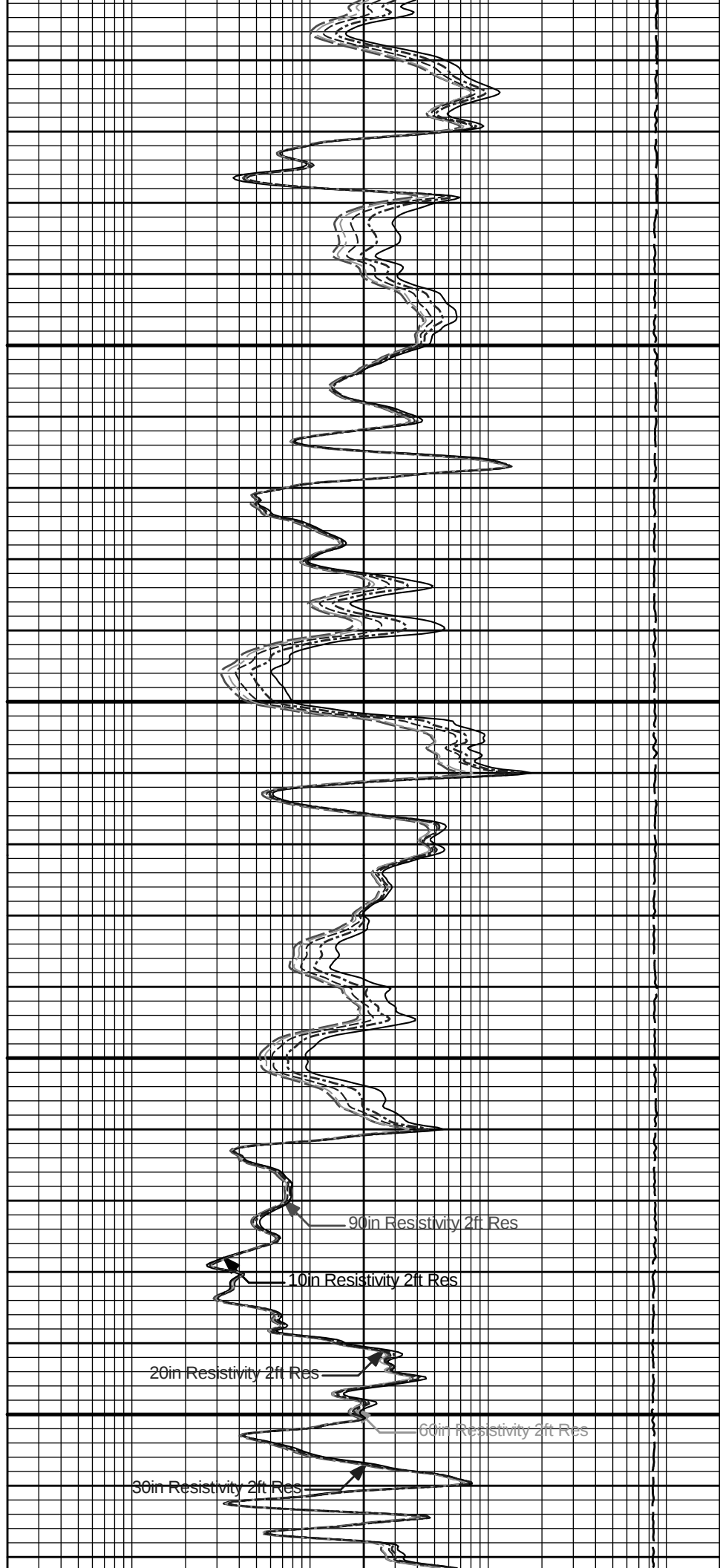
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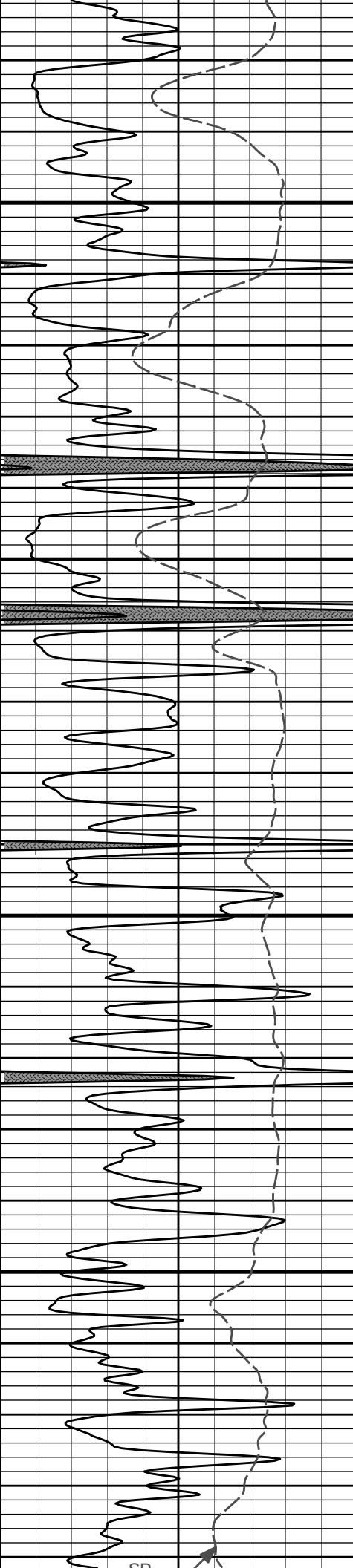




4200

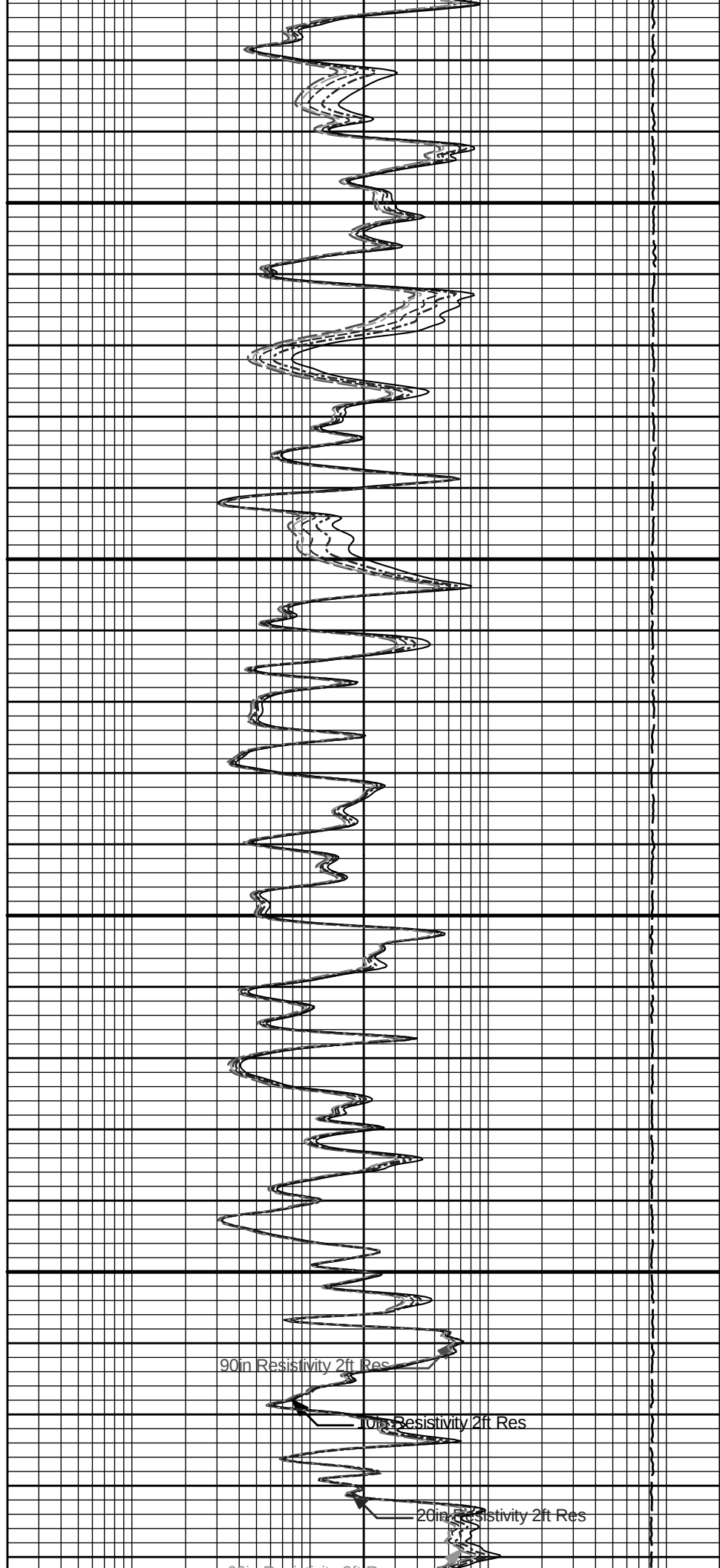
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4400

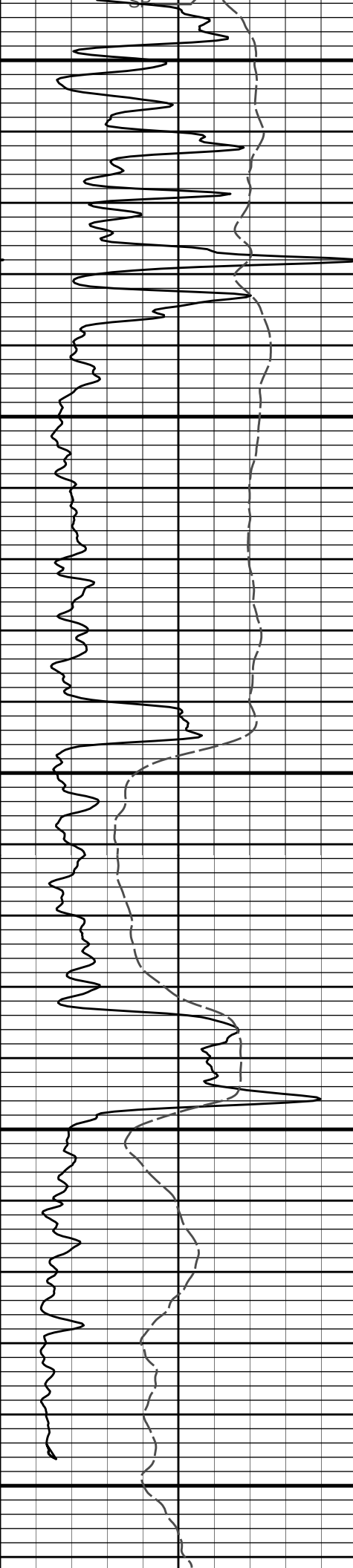
4500



90in Resistivity 2ft Res

10in Resistivity 2ft Res

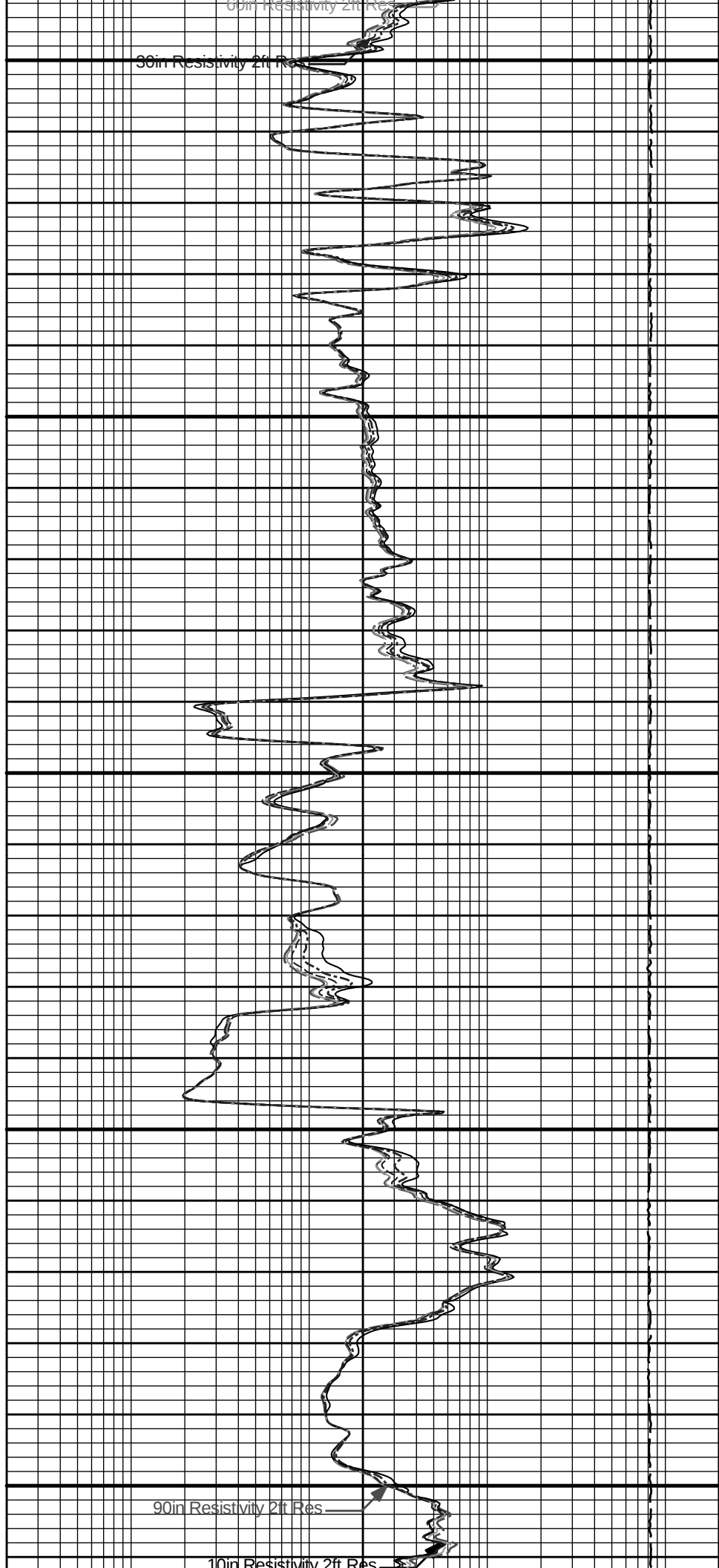
20in Resistivity 2ft Res

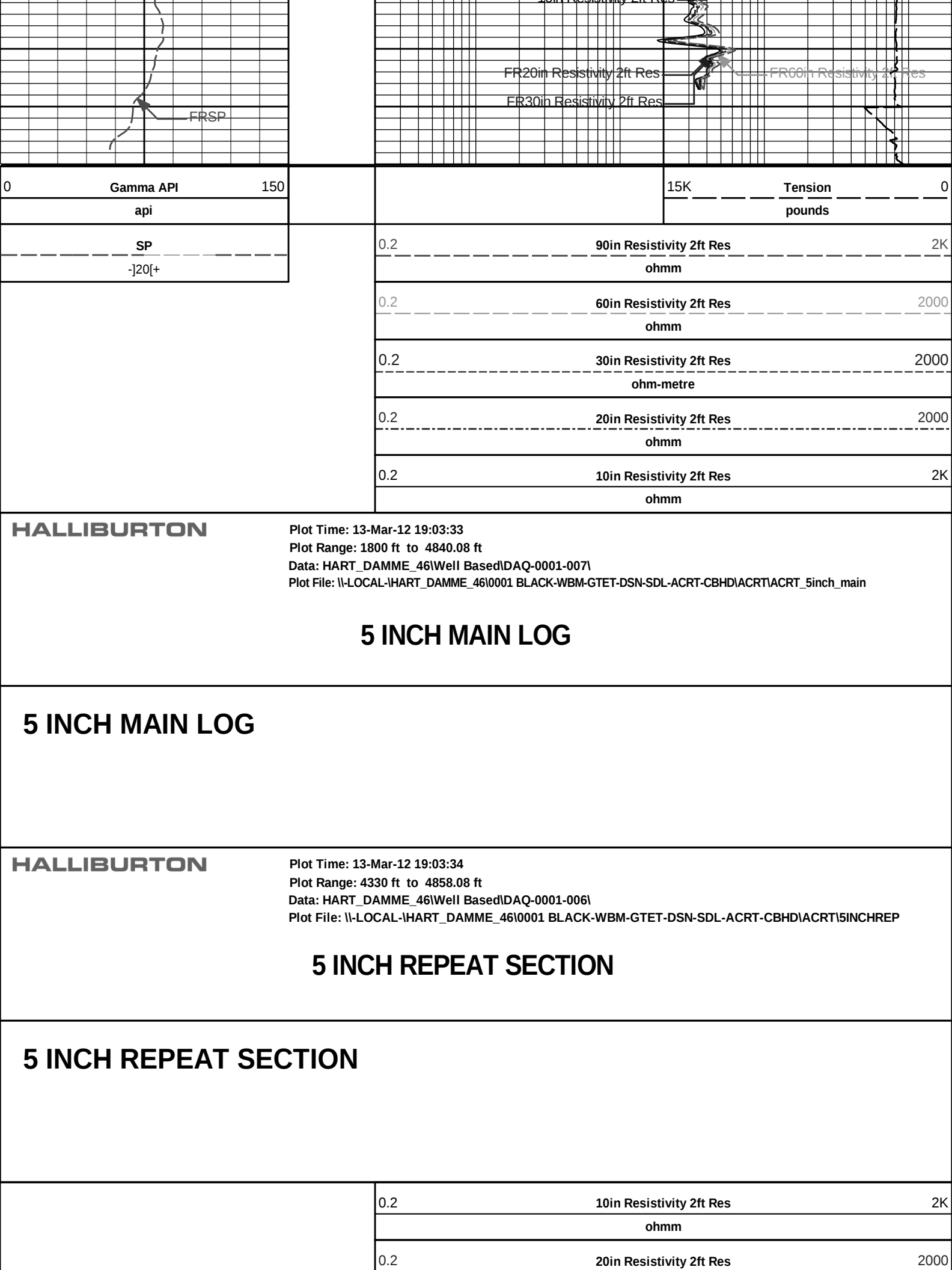


4600

4700

4800





FRSP

FR20in Resistivity 2ft Res

FR60in Resistivity 2ft Res

ER30in Resistivity 2ft Res

0	Gamma API	150
	api	
	SP	
	-]20[+	

	15K	Tension	0
		pounds	
0.2	90in Resistivity 2ft Res	2K	
	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	2K	
	ohmm		

HALLIBURTON

Plot Time: 13-Mar-12 19:03:33
Plot Range: 1800 ft to 4840.08 ft
Data: HART_DAMME_46\Well Based\DAQ-0001-007\
Plot File: \\-LOCAL-HART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\ACRT\5inch_main

5 INCH MAIN LOG

5 INCH MAIN LOG

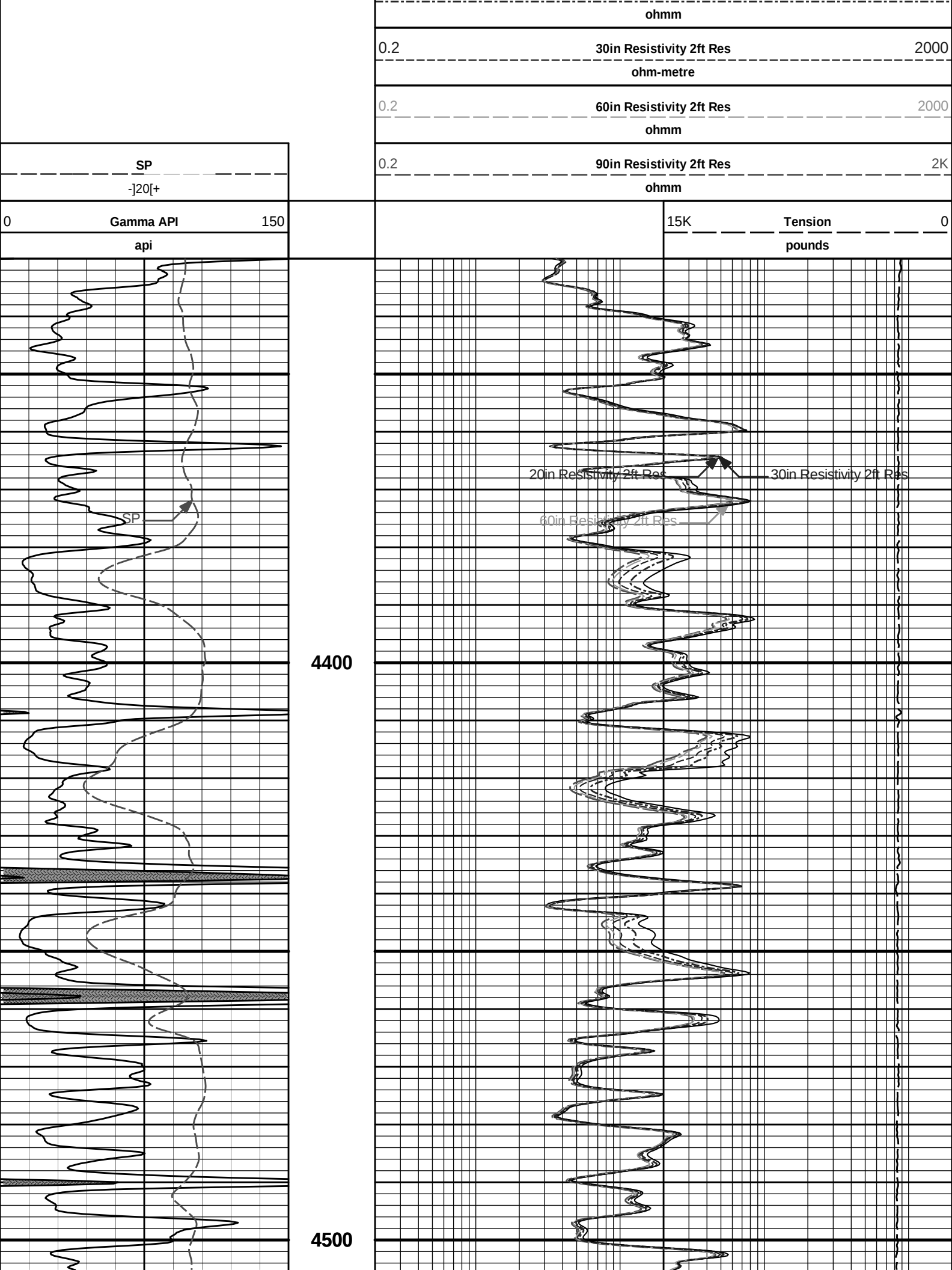
HALLIBURTON

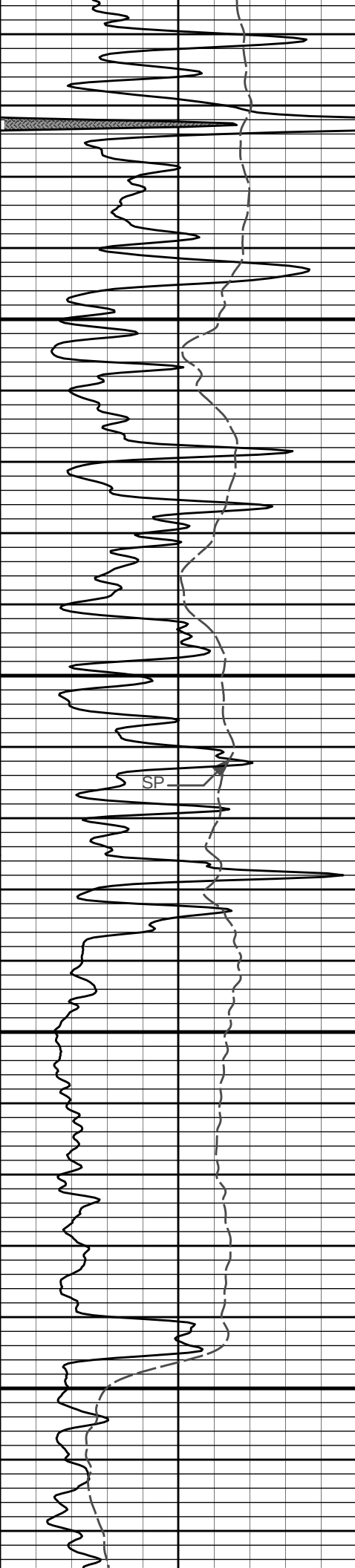
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5 INCH REPEAT SECTION

5 INCH REPEAT SECTION

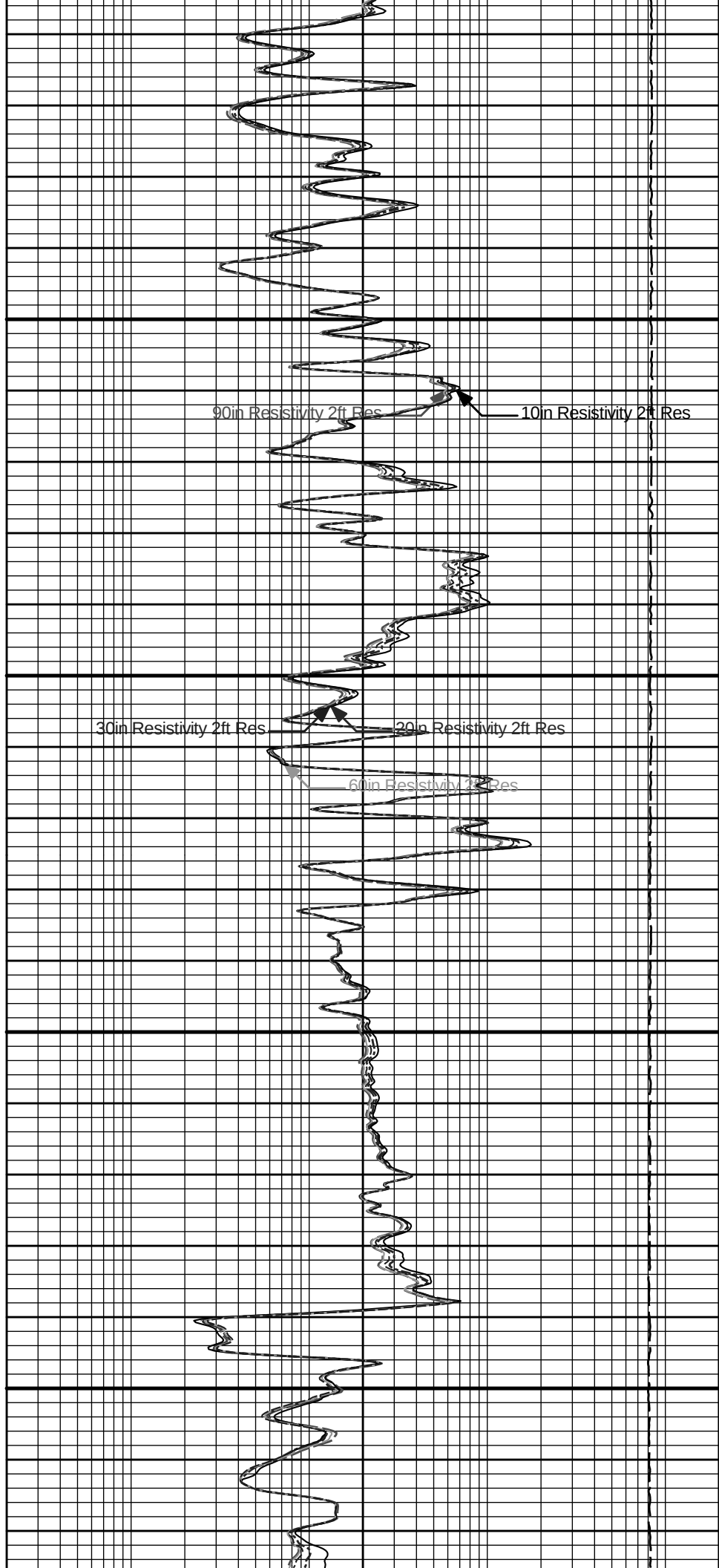
0.2	10in Resistivity 2ft Res	2K
	ohmm	
0.2	20in Resistivity 2ft Res	2000

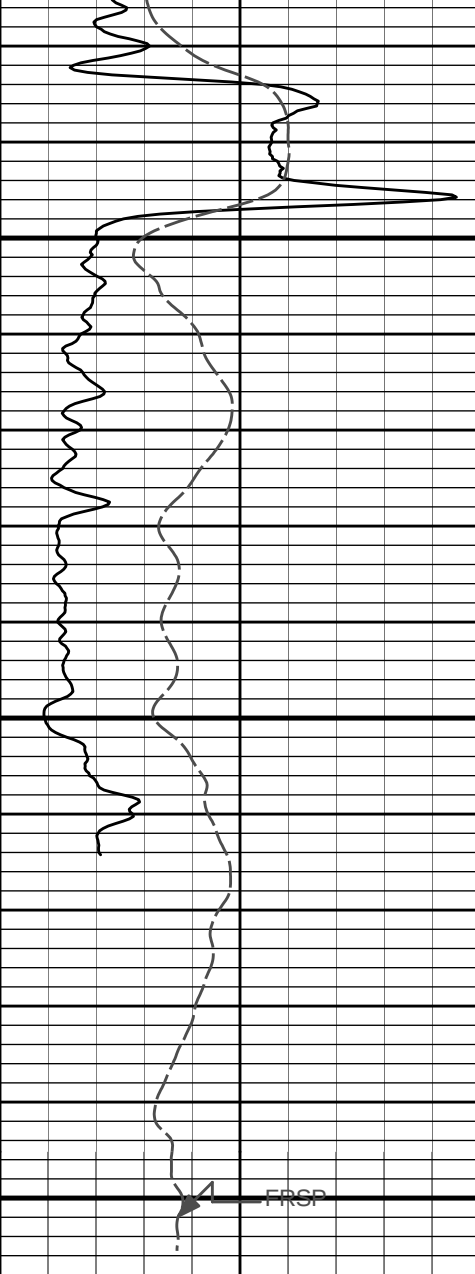




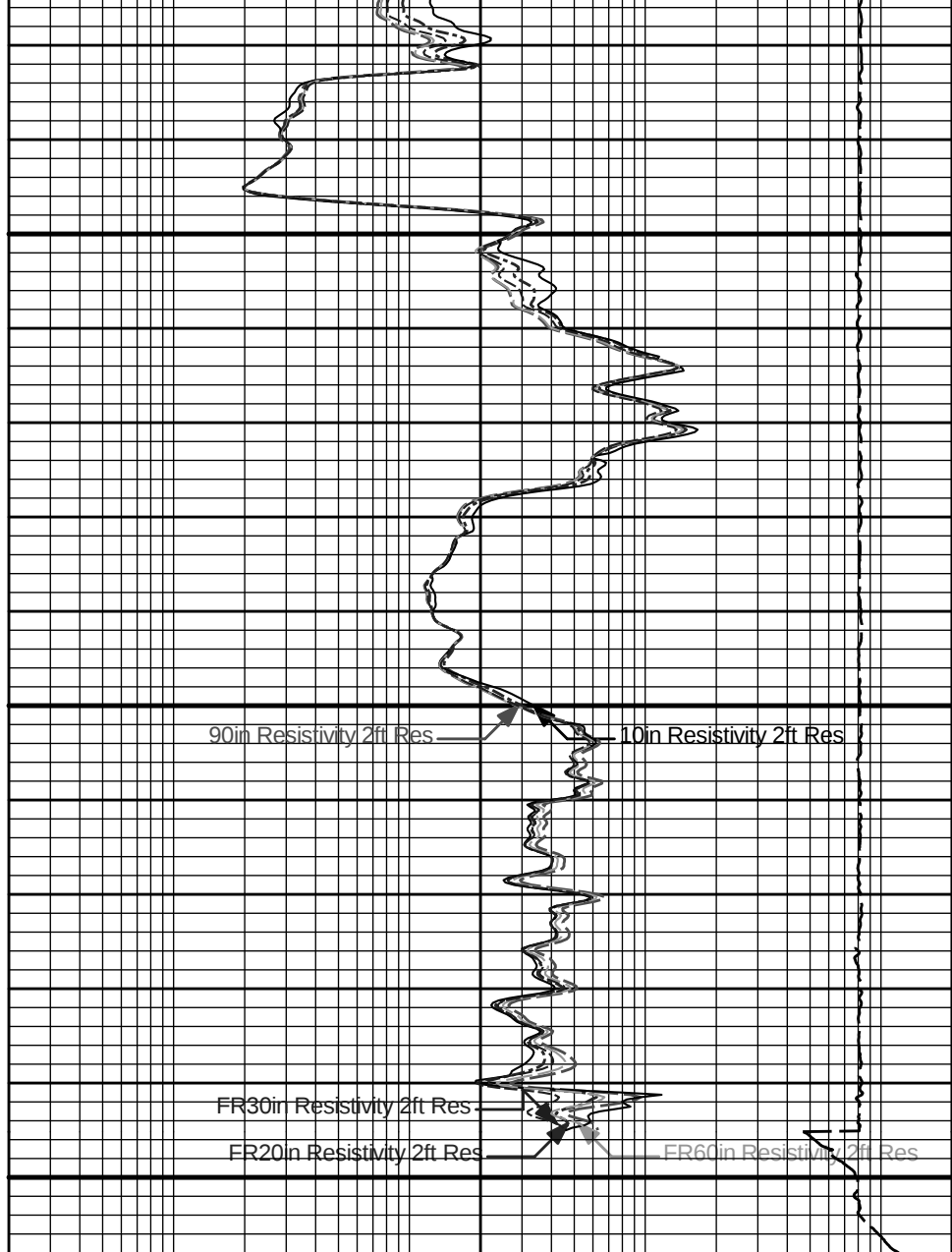
4600

4700





4800



0	Gamma API	150
	api	
	SP	
	-]20[+	

	15K	Tension	0
		pounds	
0.2	90in Resistivity 2ft Res	2K	
	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	2K	
	ohmm		

5 INCH REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

SURFACE TENSION SHOP CALIBRATION

Tool Name:	Depth Panel - PROT01	Reference Calibration Date:	13-Jan-08 19:31:38
Engineer:	WHITLOCK	Calibration Date:	26-Mar-09 09:42:21
Software Version:	WL INSITE R2.4 (Build 1)	Calibration Version:	1

SURFACE TENSION LOAD CELL				
Measurement	Load Cell Value	Measurement	Calibrated	Units
Low	9877.87	32908.03	0.00	lbs
High	16448.28	55771.74	7800.00	lbs

DOWNHOLE TENSION SHOP CALIBRATION

Tool Name:	CH_HOS - CH_HOS_I	Reference Calibration Date:	07-Nov-11 21:53:28
Engineer:	WHITLOCK	Calibration Date:	10-Feb-12 05:29:34
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

DOWNHOLE LOAD CELL				
Measurement	Tool Value	Measurement	Calibrated	Units
Low	1695.54	-190.76	0.00	lbs
High	9060.32	856.01	1076.00	lbs

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 10971172	Reference Calibration Date:	07-Feb-12 10:09:50
Engineer:	WHITLOCK	Calibration Date:	27-Feb-12 09:55:44
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Calibrator Source S/N: TB-79
Calibrator API Reference:222.00 api
Equivalent Calibrator API Reference:225.9 api

Measurement	Measured	Calibrated	Units
Background	34.1	34.3	api
Background + Calibrator	258.2	260.2	api
Calibrator	224.1	225.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 10971172	Reference Calibration Date:	27-Feb-12 09:55:44
Engineer:	WHITLOCK	Calibration Date:	12-Mar-12 09:28:26
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Calibrator Source S/N: TB-79
Calibrator API Reference:222.00 api
Equivalent Calibrator API Reference:225.9 api

Field Verification	Shop	Field	Units
Background	34.3	52.9	api

Background + Calibrator		260.2	276.1	api
Calibrator		225.9	223.2	api
Shop		Field	Difference	Tolerance
225.9		223.2	2.7	+/- 9.00

ACCELEROMETER SHOP CALIBRATION			
Tool Name:	GTET - 10971172	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	WHITLOCK	Calibration Date:	20-Oct-08 14:40:55
Software Version:	WL INSITE R2.2 (Build 2)	Calibration Version:	1

	Horizontal-1 Telemetry	Horizontal-2 Telemetry	Vertical Telemetry	Units
	-85.64	-67.18	-16422.00	cnts
	Coefficient	Coefficient Value	Tolerance	
	Gain	-0.000061	-----	
	Offset	-0.005	-----	
	Noise	0.0000	0.0000 - 0.0000	
	Orientation	Measured	Tolerance	Calibrated
	Horizontal	-76.41	-0.10 - 0.10	0.00
	Vertical	-16422.00	0.90 - 1.10	1.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 10951378	Reference Calibration Date:	07-Feb-12 13:10:35
Engineer:	WHITLOCK	Calibration Date:	05-Mar-12 12:23:01
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-373

Tank Serial Number: FTSM HWT

Reference value assigned to Tank: 56.100

Snow Block S/N: 10975786

Calibration Tank Water Temperature: 75 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.009	1.006	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2365	0.2358	0.0008	+/- 0.0020
Calibrated Ratio:	10.58	10.56	0.025	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0803	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

Snow-Block Check: Passed				
DUAL SPACED NEUTRON FIELD CALIBRATION				
Tool Name:	DSNT - 10951378	Reference Calibration Date:	05-Mar-12 12:23:01	
Engineer:	WHITLOCK	Calibration Date:	12-Mar-12 09:32:51	
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1	
Logging Source S/N: DSN-373				
Snow Block S/N: 10975786				
NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0803	0.0679	-0.0125	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:			Passed	
Snow Block Stat Check:			Passed	
Temperature Check:			Passed	

DENSITY CALIPER SHOP CALIBRATION				
Tool Name:	SDLT - I378_M477_P870	Reference Calibration Date:	01-Nov-11 12:44:52	
Engineer:	HOFKAMP	Calibration Date:	01-Nov-11 12:48:51	
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1	
CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-1565.21	-1542.68	-7000.00 - -1000.00	
Pad Gain	0.0003866	0.0003840	0.000200 - 0.000600	
Arm Offset	-482.77	-456.98	-5000.00 - 3000.00	
Arm Gain	0.0004767	0.0004734	0.000300 - 0.000700	
Arm Power	-0.000002553	-0.000002353	-0.000010 - 0.000010	
The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER				
Tool Diameter: 4.50 in				
CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.01	2.00	-0.01	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20
Medium Ring (in)	8.25	8.25	0.00	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	
Ring-Measurement Check:			Passed	
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	

SDLT CALIPER FIELD CALIBRATION				
Tool Name:	SDLT - I378_M477_P870	Reference Calibration Date:	01-Nov-11 12:48:51	
Engineer:	HOFKAMP	Calibration Date:	01-Nov-11 12:50:10	
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1	

MEASURED CALIPER VALUES									
Measurement			Shop	Field	Change	Control Limit On New Value			
Pad Extension			3.75	3.75	0.00	+/- 0.10			
Ring Diameter			8.25	8.23	-0.02	+/- 0.15			
PASS/FAIL SUMMARY									
Pad Extension Check:					Passed				
Diameter Check:					Passed				
ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION									
Tool Name:			ACRt Sonde - I816_S708			Reference Calibration Date:		21-Sep-11 13:58:42	
Engineer:			HOFKAMP			Calibration Date:		03-Jan-12 09:45:28	
Software Version:			WL INSITE R3.4.2 (Build 2)			Calibration Version:		1	
TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0353	1.05	0.95	1.0124	1.05	0.95	1.0031	1.05
A2 (50")	0.95	1.0437	1.05	0.95	1.0210	1.05	0.95	1.0094	1.05
A3 (29")	0.95	1.0354	1.05	0.95	1.0124	1.05	0.95	1.0009	1.05
A4 (17")	0.95	1.0255	1.05	0.95	1.0019	1.05	0.95	0.9959	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9971	1.05	0.95	0.9892	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9959	1.05	0.95	0.9887	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	0.928	2	-6	-4.573	-2	-8	-5.812	-2
A2 (50")	-7	0.314	-1	-6	-3.738	-2	-7	-5.333	-2
A3 (29")	-27	-12.244	-9	-9	-4.322	-3	-7	-4.343	-1
A4 (17")	-180	-99.972	-60	-45	-31.306	-15	-39	-24.956	-13
A5 (10")	N/A	N/A	N/A	-150	-99.875	-50	-80	-47.603	-10
A6 (6")	N/A	N/A	N/A	175	327.313	525	90	166.084	270
TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION				
Signal	Lower		R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)	
12K		0.6	0.8154	1.3	Mud Cell	0.95	1.004	1.05	
36K		1.0	1.1504	2.0					
72K		1.0	1.3123	2.0					
SPECTRAL DENSITY SHOP CALIBRATION									
Tool Name:			SDLT Pad - I378_M477_P870			Reference Calibration Date:		07-Feb-12 10:44:34	
Engineer:			WHITLOCK			Calibration Date:		05-Mar-12 10:04:59	
Software Version:			WL INSITE R3.4.2 (Build 2)			Calibration Version:		1	
Logging Source S/N: 20784B									
Aluminum Block S/N: FTSM AL BLOCK				Density: 2.581g/cc				Pe: 3.170	
Magnesium Block S/N: FTSM MG BLOCK				Density: 1.687g/cc				Pe: 2.594	
DENSITY CALIBRATION SUMMARY									
Measurement		Previous Value		New Value		Control Limit			
Near Bar Gain		1.0295		1.0402		0.90 - 1.10			

Near Dens Gain	1.0210	1.0433	0.90 - 1.10
Near Peak Gain	1.0285	1.0808	0.90 - 1.10
Near Lith Gain	1.0504	1.0861	0.90 - 1.10
Far Bar Gain	1.0096	1.0107	0.90 - 1.10
Far Dens Gain	1.0022	1.0030	0.90 - 1.10
Far Peak Gain	0.9978	0.9996	0.90 - 1.10
Far Lith Gain	0.9872	0.9798	0.90 - 1.10
Near Bar Offset	-0.0854	-0.1837	NONE
Near Dens Offset	-0.0149	-0.2146	NONE
Near Peak Offset	-0.0798	-0.5189	NONE
Near Lith Offset	-0.2768	-0.5818	NONE
Far Bar Offset	0.0320	0.0197	NONE
Far Dens Offset	0.0782	0.0658	NONE
Far Peak Offset	0.0898	0.0656	NONE
Far Lith Offset	0.1440	0.1823	NONE
Near Bar Background	901.39	900.68	700 - 1450
Near Dens Background	295.56	293.31	230 - 480
Near Peak Background	128.95	128.47	100 - 210
Near Lith Background	158.39	157.51	125 - 260
Far Bar Background	543.29	546.24	450 - 900
Far Dens Background	211.48	212.31	175 - 345
Far Peak Background	83.59	84.47	70 - 140
Far Lith Background	87.68	87.24	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.682	1.687	0.005	+/- 0.015
Pe	2.541	2.554	0.013	+/- 0.150
ALUMINUM				
Density (g/cc)	2.579	2.581	0.002	+/- 0.01500
Pe	3.069	3.127	0.058	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0015	+/- 0.0110	-0.0027	+/- 0.0140
Magnesium Block	-0.0015	+/- 0.0110	0.0002	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	0.0002	+/- 0.0140
Resolution	9.12	6.00 - 11.50	8.62	6.00 - 11.50
Internal Verifier(B+D+P+L)	1480	1200 - 2700	930	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Coins Check:	Passed

Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK					
Tool Name:	SDLT Pad - I378_M477_P870			Reference Calibration Date:	05-Mar-12 10:04:59
Engineer:	WHITLOCK			Calibration Date:	12-Mar-12 09:38:31
Software Version:	WL INSITE R3.4.2 (Build 2)			Calibration Version:	1

Pad Temperature: 50.5 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1479.967	1477.747	-2.220	15.508
Far (B+D+P+L) cps	930.256	930.978	0.722	16.502
Near Resolution	9.12	9.26	0.140	0.50
Far Resolution	8.62	9.13	0.510	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

MICRO LOG SHOP CALIBRATION					
Tool Name:	Microlog Pad - I378_M477_P870			Reference Calibration Date:	15-Dec-11 10:52:18
Engineer:	WHITLOCK			Calibration Date:	16-Feb-12 13:59:17
Software Version:	WL INSITE R3.4.2 (Build 2)			Calibration Version:	1

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.18	-0.14	-0.00	-0.00	ohmm
Calibration Point #1	-0.04	0.00	-0.00	0.00	ohmm
Calibration Point #2	19.96	20.00	19.99	20.00	ohmm
Internal Reference	19.81	19.86	19.99	20.00	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	0.43		0.82		V
Calibration Point #1	37.45		1.94		V
Calibration Point #2	5295.78		6863.62		V
Internal Reference	5257.79		6861.95		V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - I378_M477_P870			Reference Calibration Date:	16-Feb-12 13:59:17
Engineer:	WHITLOCK			Calibration Date:	12-Mar-12 09:38:40
Software Version:	WL INSITE R3.4.2 (Build 2)			Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.14	-0.14	-0.00	-0.00	ohmm
Internal Reference	19.86	19.81	20.00	19.95	ohmm
Summary					
Signal	Shop	Field	Difference		Tolerance
Microlog Normal	19.86	19.81	0.05		+/- 0.80

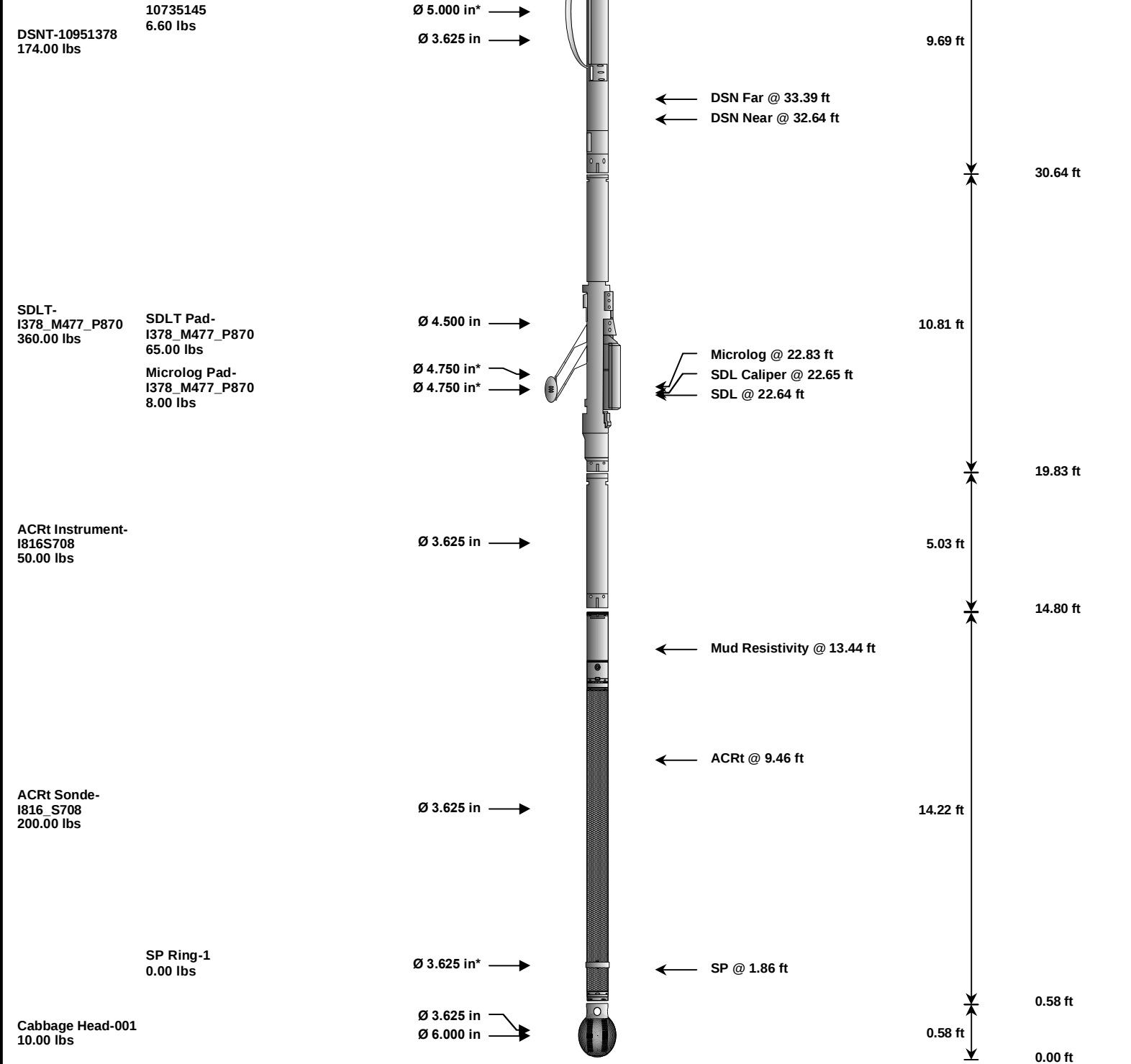
Microlog Lateral		20.00	19.95	0.05	+/- 0.80	
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
Depth Panel-PROT01						
Tension Zero	0.00	-----	-----	0.00	-----	lbs
Tension Cal	7800.00	-----	-----	0.00	-----	lbs
CH_HOS-CH_HOS_I						
DH Tension Zero	0.00	-----	-----	0.00	-----	lbs
DH Tension Cal	1076.00	-----	-----	0.00	-----	lbs
GTET-10971172						
Gamma Ray Calibrator	225.9	223.2	-----	2.7	+/- 9.00	api
DSNT-10951378						
Snow-Block Porosity	0.0803	0.0679	-----	0.0124	+/- 0.0150	decp
SDLT-I378_M477_P870						
Pad Extension	3.75	3.75	-----	0.00	+/-0.10	in
Ring Diameter	8.25	8.23	-----	0.020	+/-0.15	in
ACRt Sonde-I816_S708						
Mud Cell	1.004	-----	-----	0.000	-----	ohm-m
SDLT Pad-I378_M477_P870						
Near(B+D+P+L)	1479.967	1477.747	-----	2.220	+/-15.508	cps
Far(B+D+P+L)	930.256	930.978	-----	-0.722	+/-16.502	cps
Microlog Pad-I378_M477_P870						
MicroLog Normal	19.86	19.81	-----	0.05	+/-0.80	ohmm
MicroLog Lateral	20.00	19.95	-----	0.05	+/-0.80	ohmm
Data: HART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\IDLE					Date: 13-Mar-12 13:48:32	

HALLIBURTON					
PARAMETERS REPORT					
Depth (ft))	Tool Name	Mnemonic	Description	Value	Units
TOP-----					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	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	0.850	ohmm
	SHARED	TRM	Temperature of Mud	85.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4850.00	ft
	SHARED	BHT	Bottom Hole Temperature	125.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	

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	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DSNO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.200	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
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 Up	
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	
BOTTOM				

Data: HART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\IDLE

Date: 13-Mar-12 13:49:28



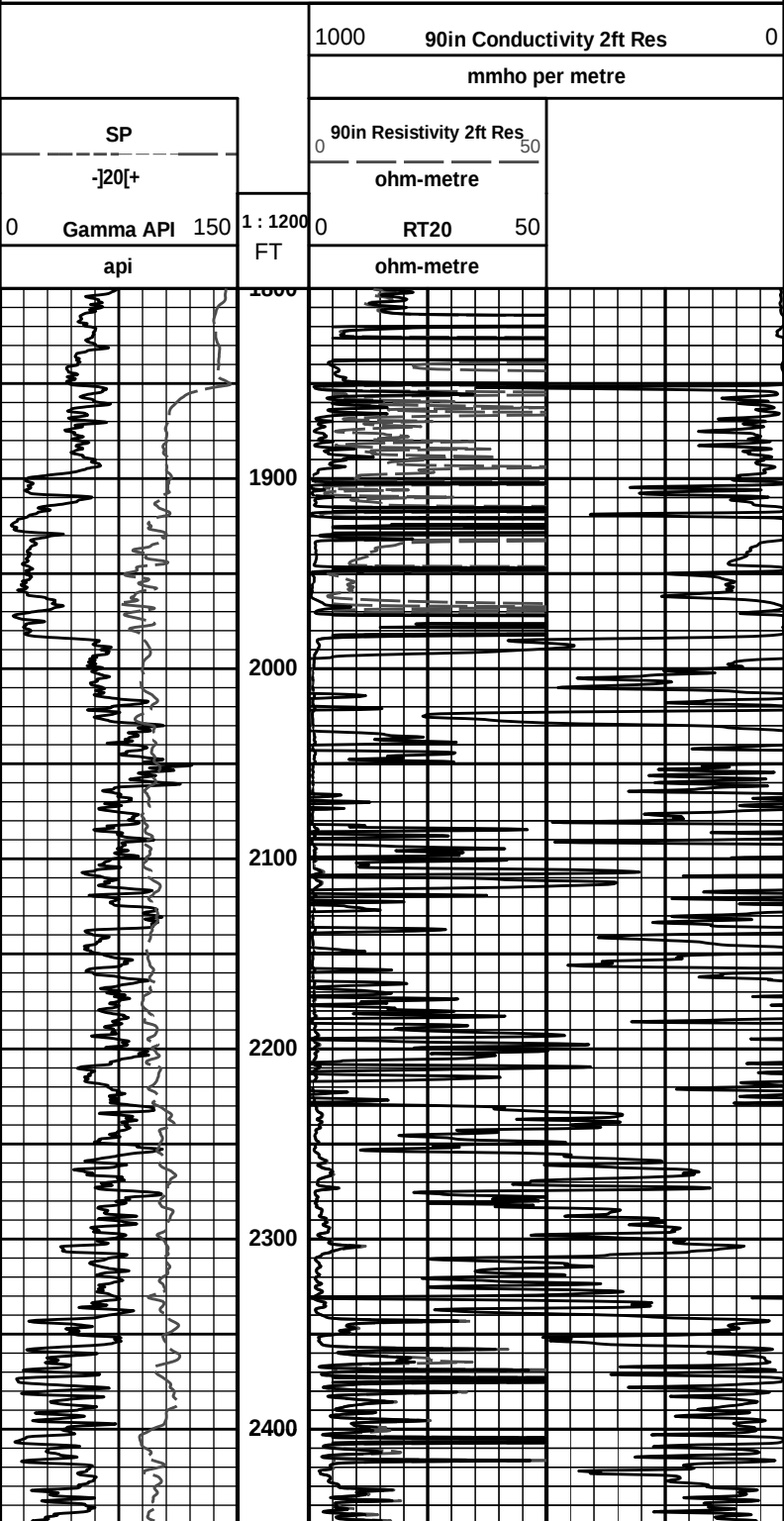
Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)	
CH_HOS	Hostile Cable Head with Load Cell	CH_HOS_I	37.50	3.25	48.85	300.00	
GTET	Gamma Telemetry Tool	10971172	165.00	8.52	40.33	60.00	
DSNT	Dual Spaced Neutron	10951378	174.00	9.69	30.64	60.00	
DCNT	DSN Decentralizer	10735145	6.60	5.13	*	33.97	300.00
SDLT	Spectral Density Tool	I378_M477_P870	360.00	10.81	19.83	60.00	
SDLP	Density Insite Pad	I378_M477_P870	65.00	2.55	*	22.04	60.00
MICP	Microlog Pad	I378 M477 P870	8.00	1.00	*	22.33	60.00
ACRt	Array Compensated True Resistivity Instrument Section	I816S708	50.00	5.03	14.80	300.00	
ACRt	Array Compensated True Resistivity	I816 S708	200.00	14.22	0.58	300.00	
SP	SP Ring	1	0.00	0.25	*	1.86	300.00
CBHD	Cabbage Head	001	10.00	0.58	0.00	300.00	
Total			1,076.10	52.10			
* Not included in Total Length and Length Accumulation.							
Data: HART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\IDLE					Date: 13-Mar-12 13:49:53		

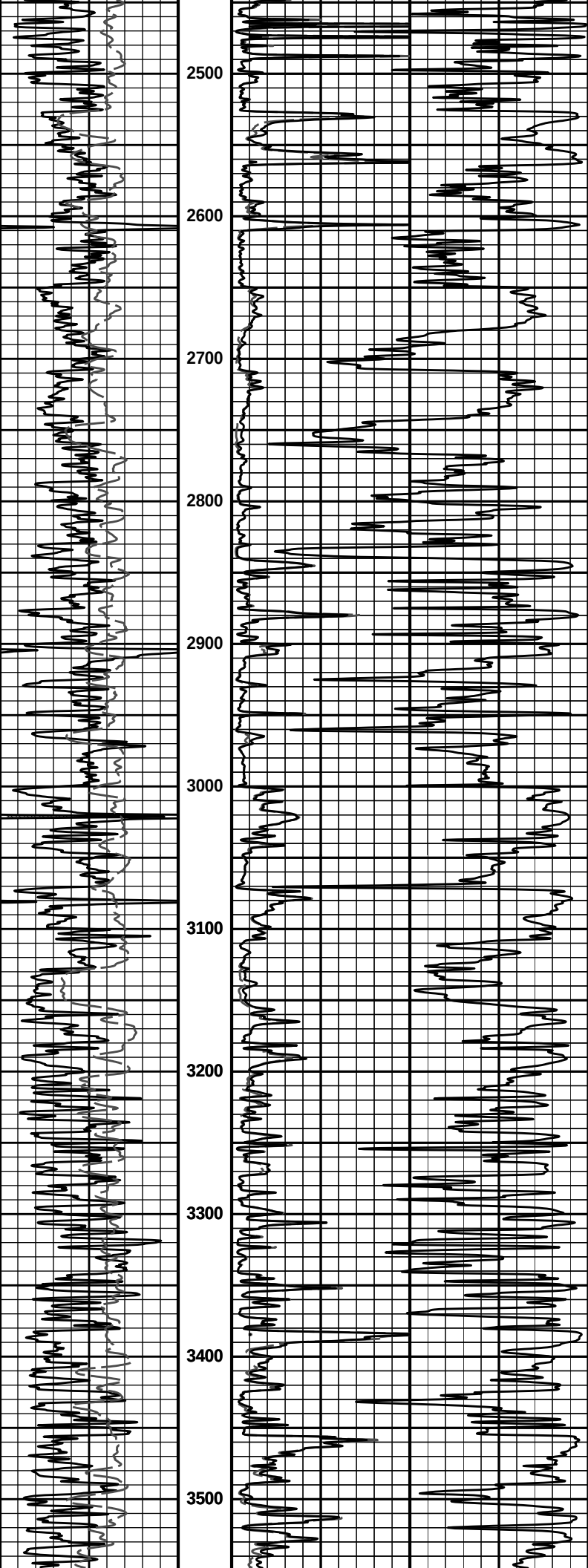
HALLIBURTON

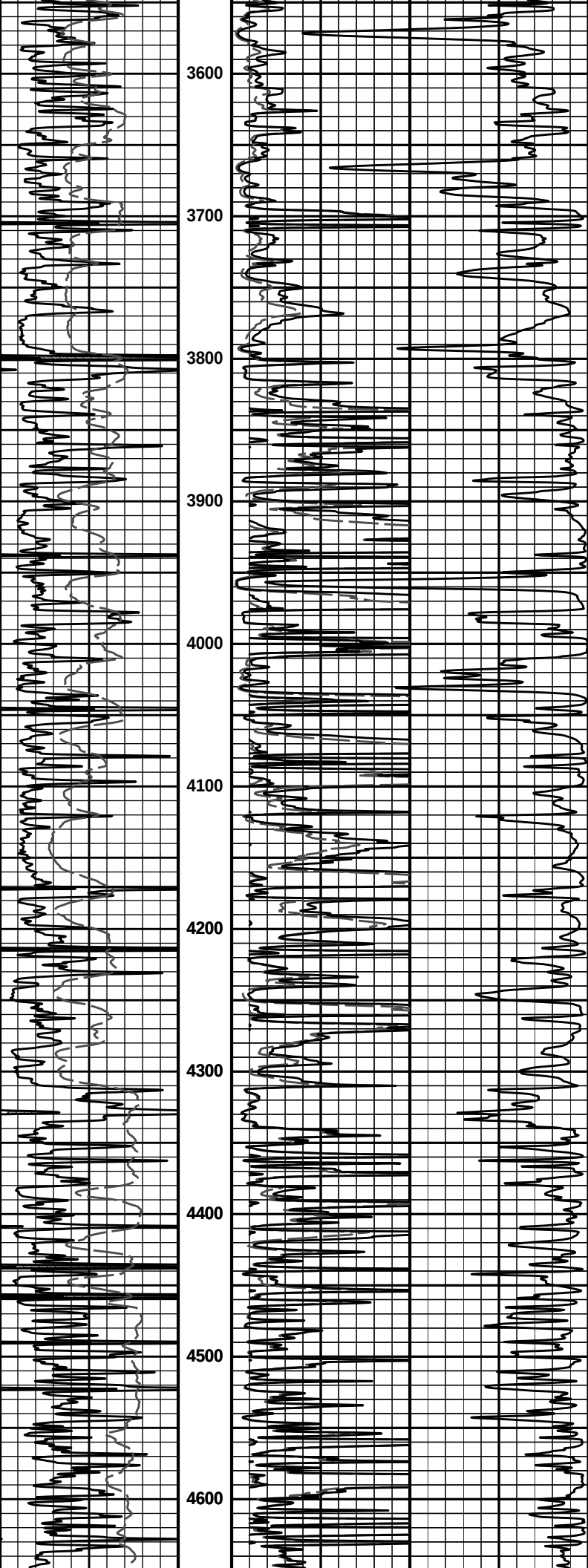
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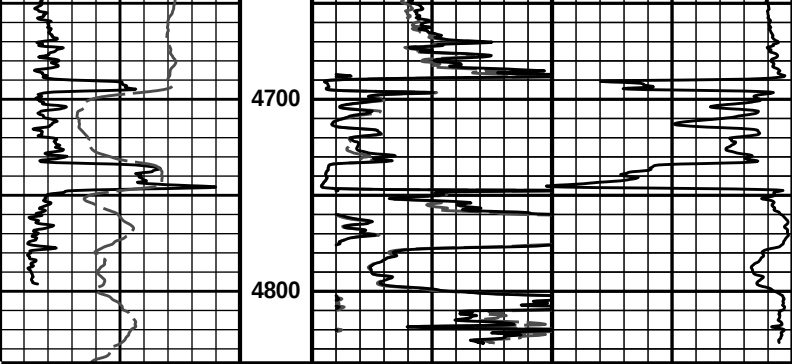
1 INCH MAIN LOG

1 INCH CORRELATION LOG









0	Gamma API	150	1 : 1200	0	RT20	50	
	api		FT		ohm-metre		
	SP				90in Resistivity 2ft Res	50	
	- 20 +				ohm-metre		
				1000	90in Conductivity 2ft Res	0	
					mmho per metre		

HALLIBURTON
Plot Time: 13-Mar-12 19:03:40
Plot Range: 1800 ft to 4837.25 ft
Data: HART_DAMME_46\Well Based\DAQ-0001-0071
Plot File: II-LOCAL-IHART_DAMME_46\0001 BLACK-WBM-GTET-DSN-SDL-ACRT-CBHD\ACRT\ACRT_1_main

1 INCH MAIN LOG

1 INCH CORRELATION LOG