

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY LOG

BEREXCO LLC				COMPANY				BEREXCO LLC			
HARTNETT-HAZEN 2-21				WELL				HARTNETT-HAZEN 2-21			
AMAZON DITCH EAST				FIELD/BLOCK				AMAZON DITCH EAST			
FINNEY				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				STATE			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY				FINNEY			
STATE				COUNTY				FINNEY			
KANSAS				COUNTY							

Location
(SHL) E2 SW NE NW
990' FNL & 1855' FWL

Other Services:
ACRT
SDL-DSN
MICLOG

Fold here

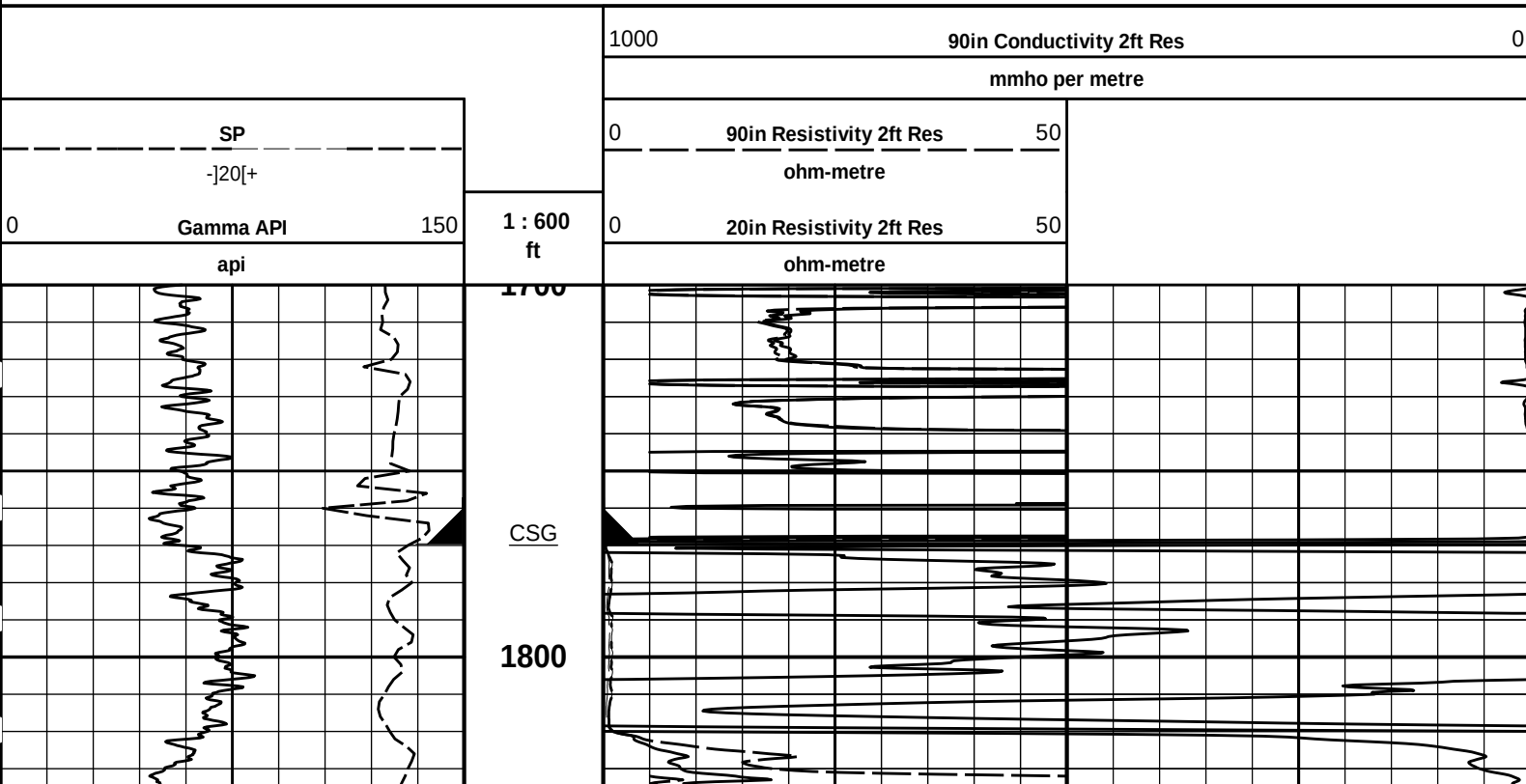
Service Ticket No.: 905282992						API No.: 15-055-22508-00-00						PGM Version: WL INSITE R5.8.9 (Build 6)									
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE										RESISTIVITY SCALE CHANGES											
Date		Sample No.								Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																					
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.				@				@													
Rmc @ Meas. Temp.				@				@													
Source Rmf		Rmc																			
Rm @ BHT				@				@													
Rmf @ BHT				@				@													
Rmc @ BHT				@				@													
EQUIPMENT DATA																					
GAMMA				ACOUSTIC				DENSITY				NEUTRON									
Run No.				Run No.				Run No.				Run No.									
Serial No.				Serial No.				Serial No.				Serial No.									
Model No.				Model No.				Model No.				Model No.									
Diameter				No. of Cent.				Diameter				Diameter									
Detector Model No.				Spacing				Log Type				Log Type									
Type								Source Type				Source Type									
Length				LSA [Y/N]				Serial No.				Serial No.									
Distance to Source				FWDA [Y/N]				Strength				Strength									
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						

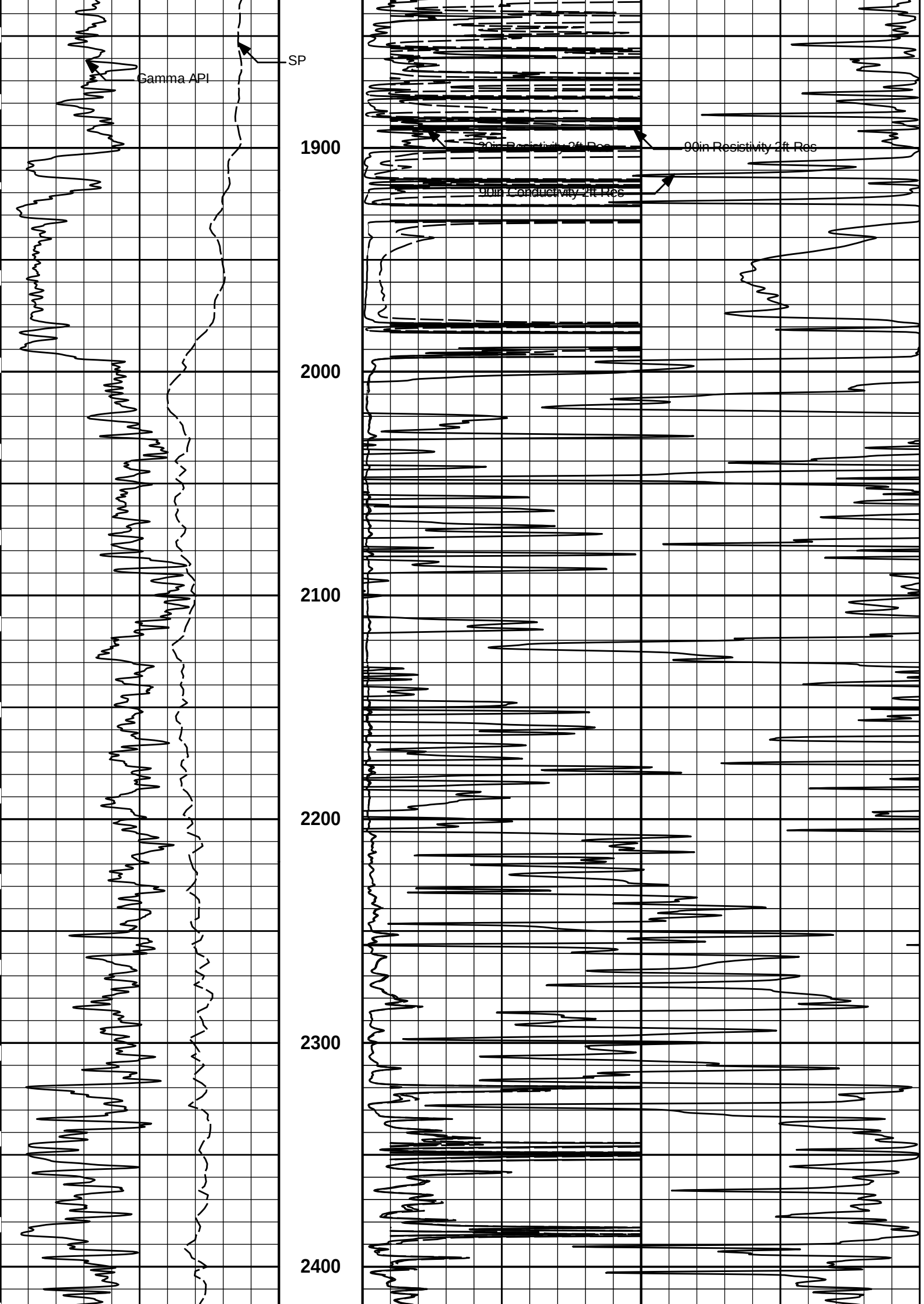
[illegible]**HALLIBURTON**

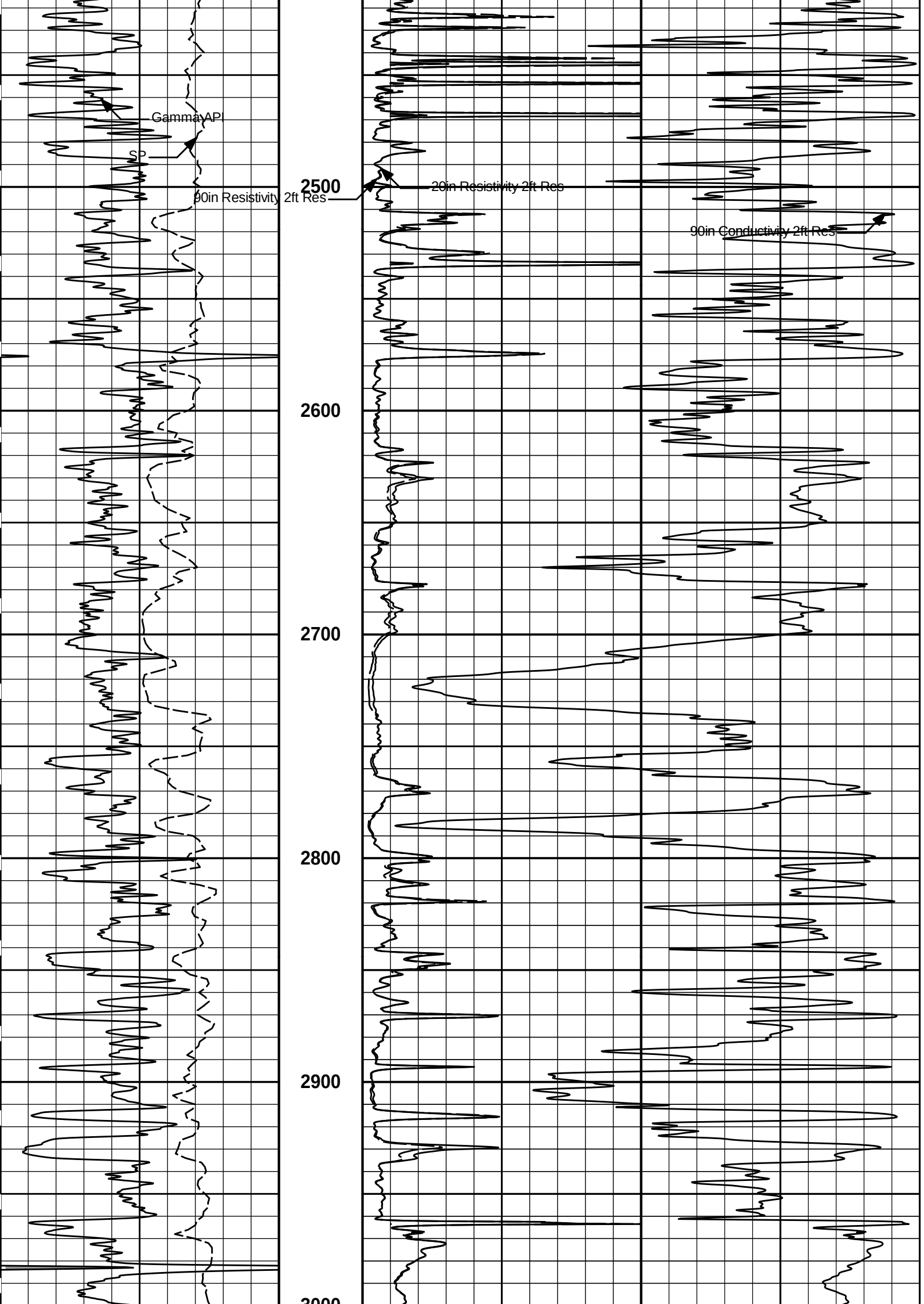
Plot Time: 03-Dec-18 18:34:35
Plot Range: 1700 ft to 4904.5 ft
Data: BEREX_HARTNETT\Well Based\DAQ-0001-002\
Plot File: \\LOCAL-1\BEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\ACRT\ACRT_2_main

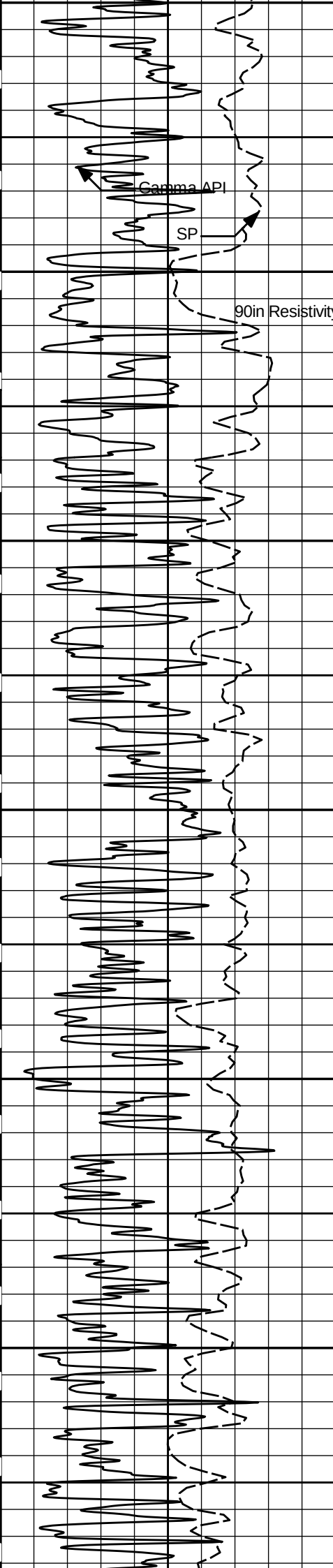
2 INCH MAIN LOG

2 INCH MAIN LOG

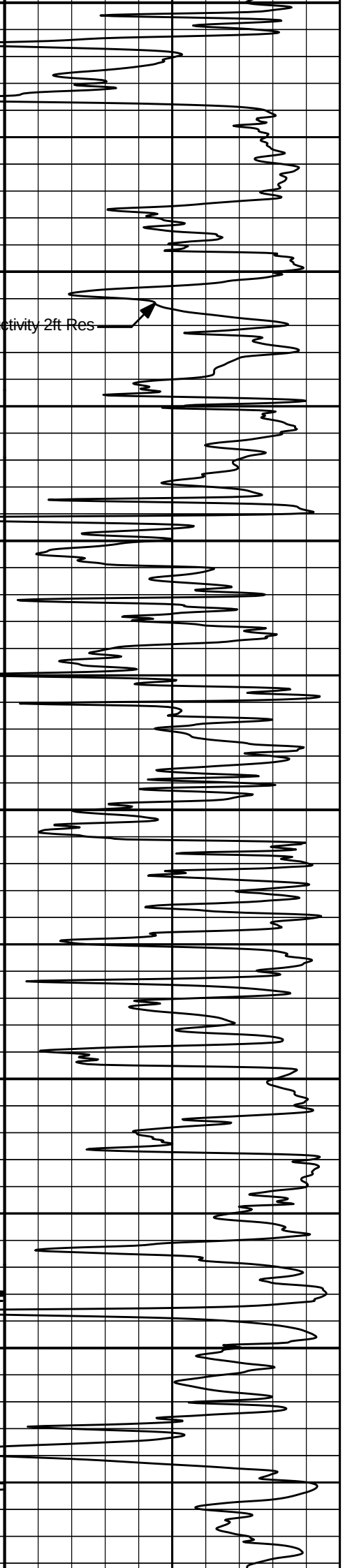
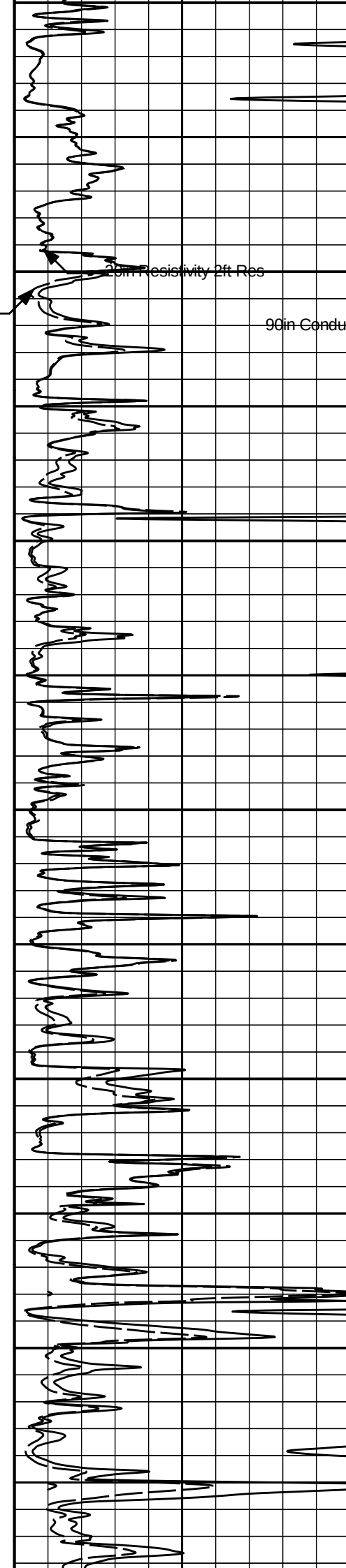


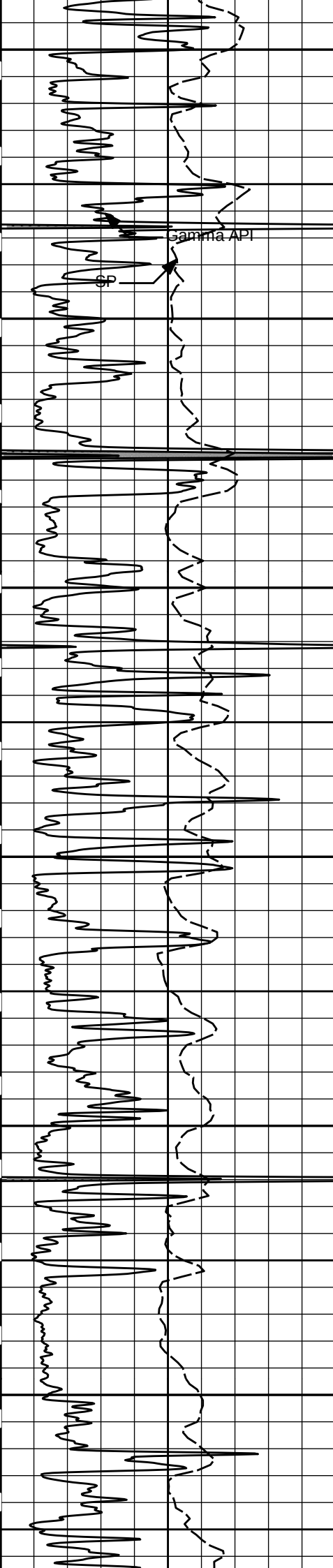






3000
3100
3200
3300
3400
3500





3600

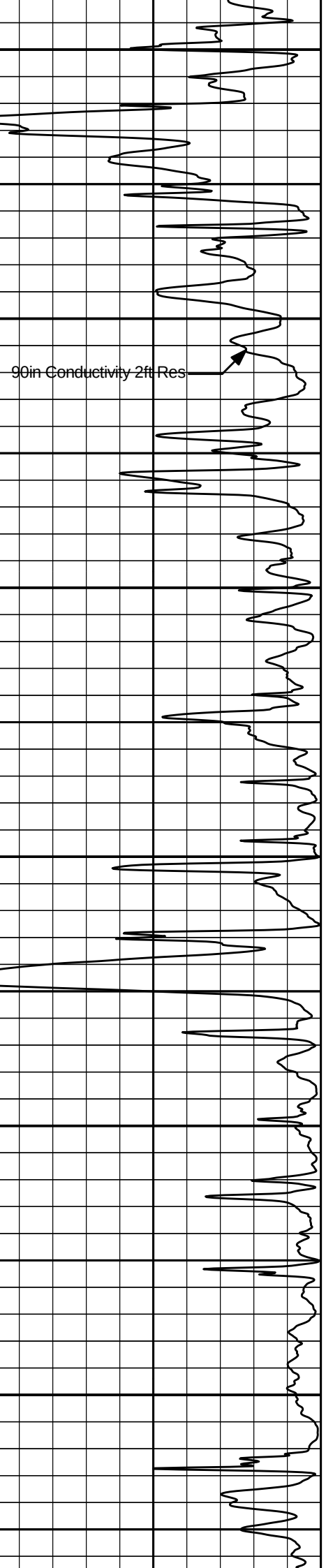
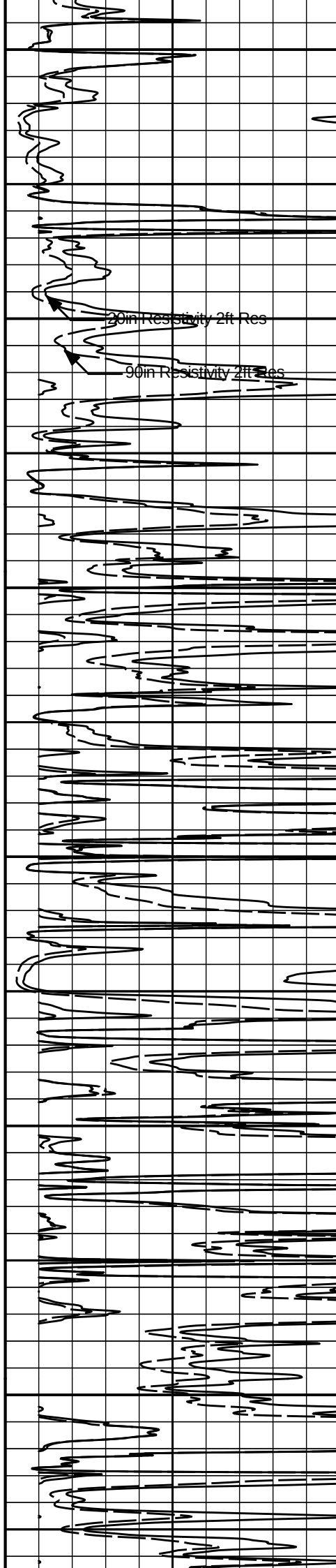
3700

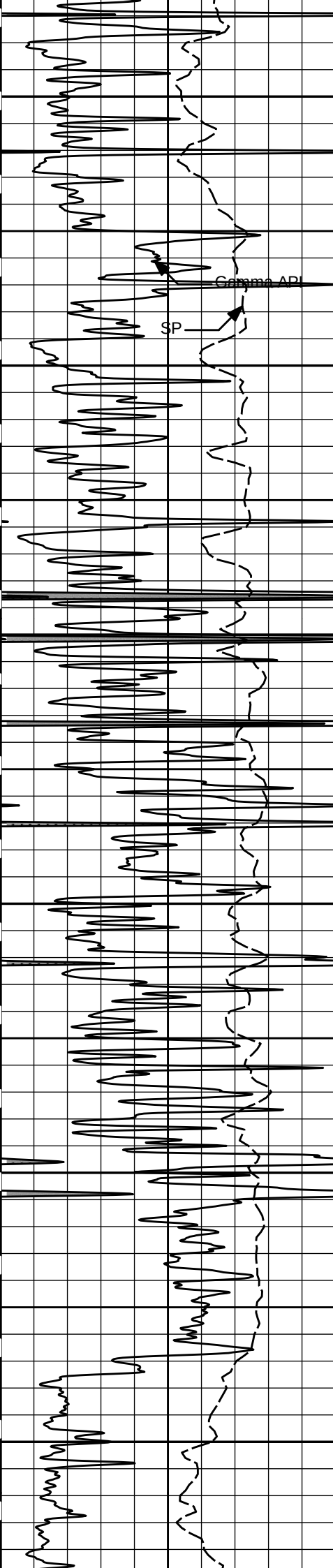
3800

3900

4000

4100





4200

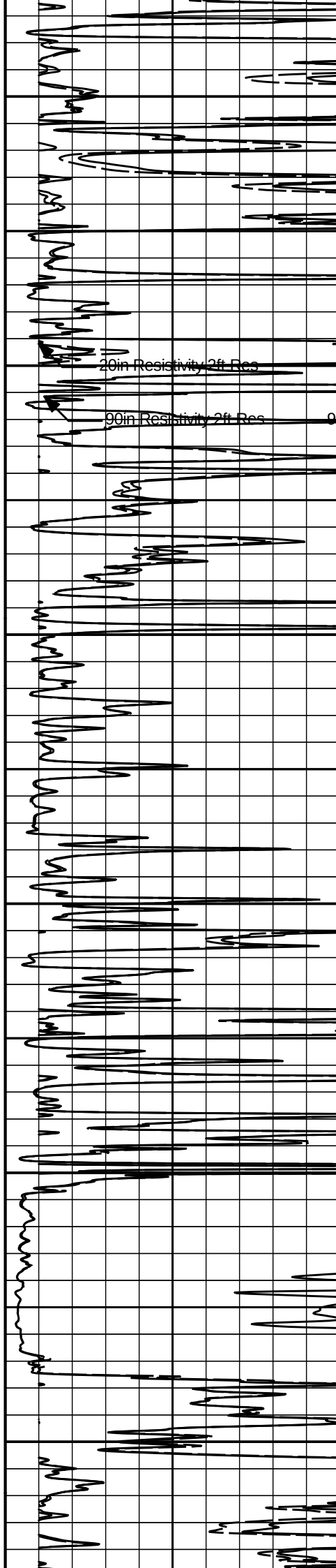
4300

4400

4500

4600

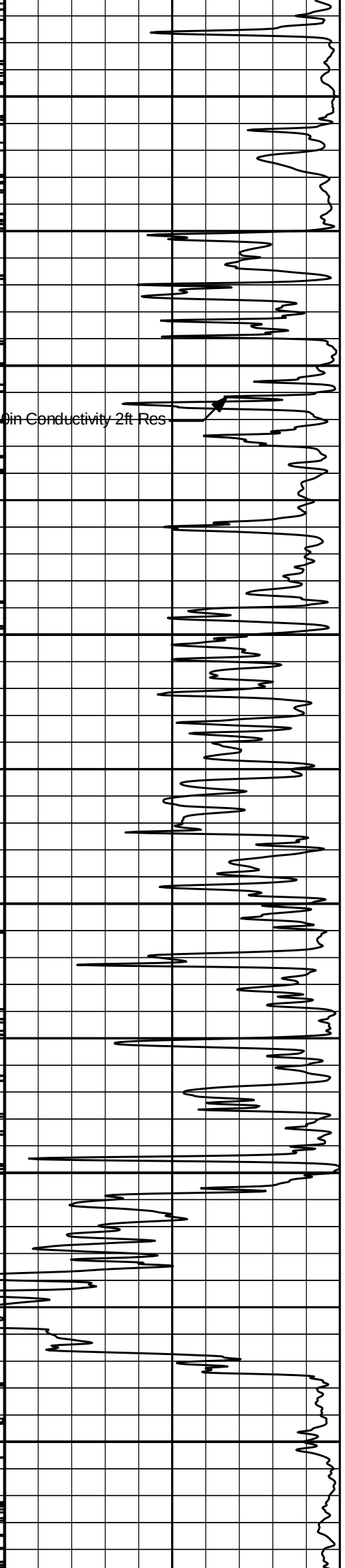
4700

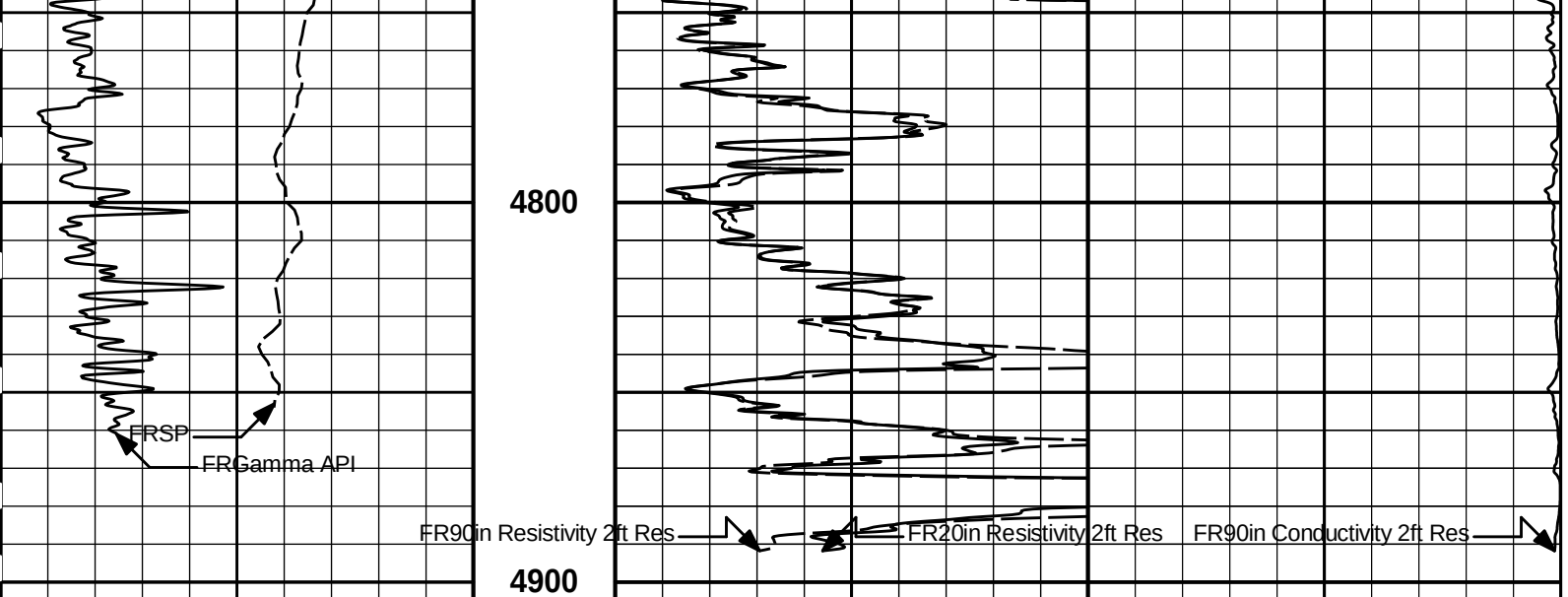


20in Resistivity 2ft Res

90in Resistivity 2ft Res

90in Conductivity 2ft Res





0	Gamma API	150	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: 03-Dec-18 18:34:38
Plot Range: 1700 ft to 4904.5 ft
Data: BEREX_HARTNETT\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\\BEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\ACRT\ACRT_2_main

2 INCH MAIN LOG

2 INCH MAIN LOG

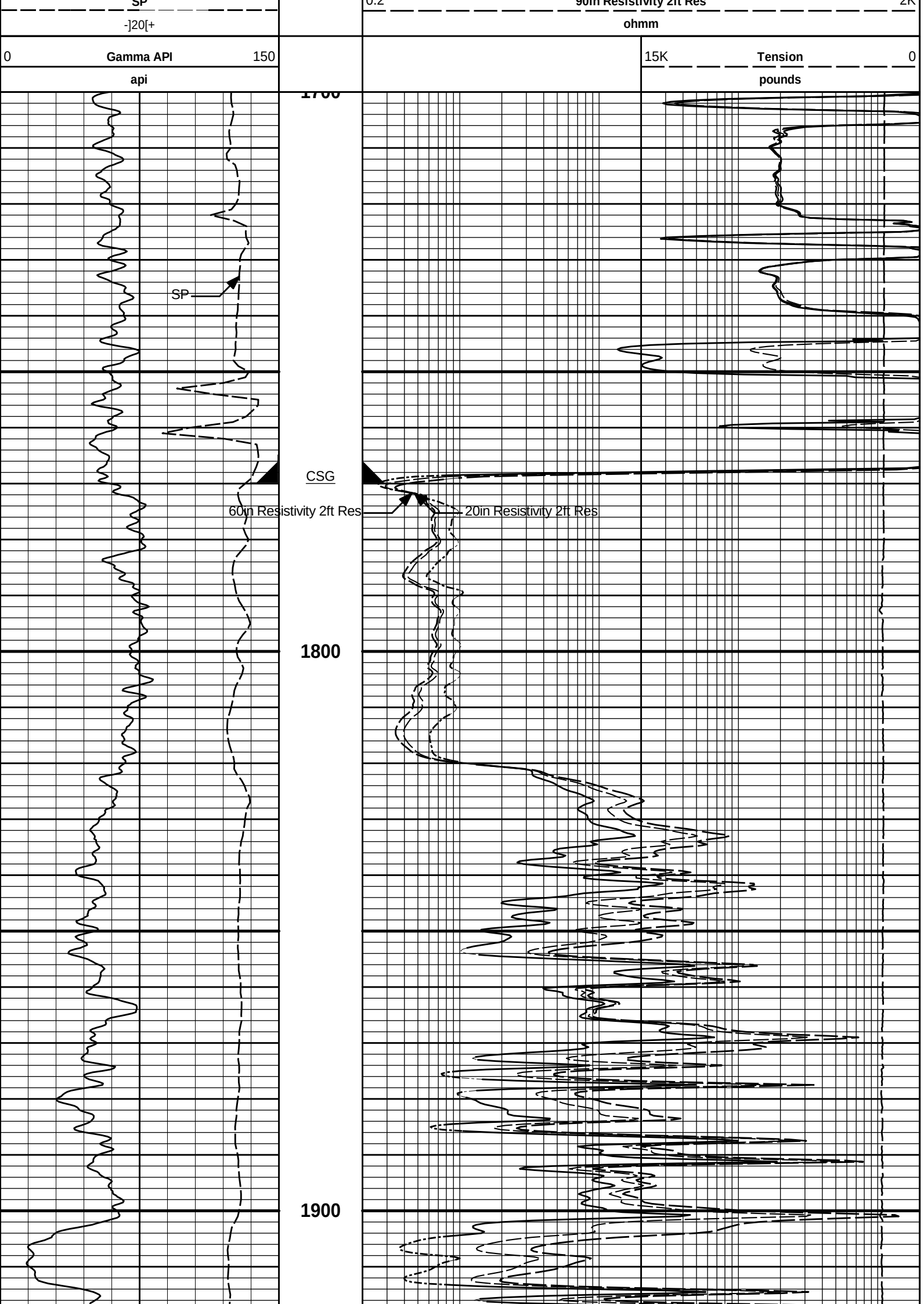
HALLIBURTON

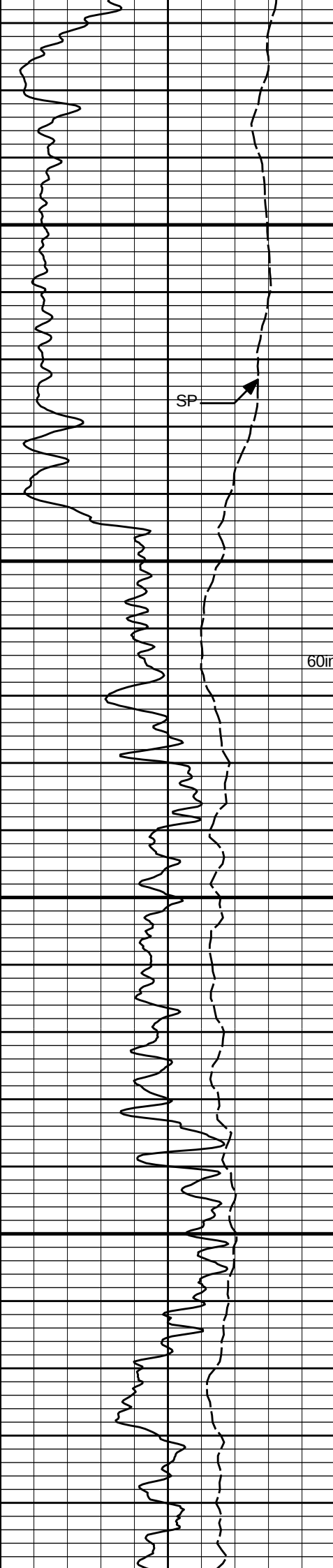
Plot Time: 03-Dec-18 18:34:38
Plot Range: 1700 ft to 4904.5 ft
Data: BEREX_HARTNETT\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\\BEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\ACRT\ACRT_5inch_main

5 INCH MAIN LOG

5 INCH MAIN LOG

	0.2	20in Resistivity 2ft Res	2000
		ohmm	
	0.2	60in Resistivity 2ft Res	2000
		ohmm	
SP	0.2	90in Resistivity 2ft Res	2000

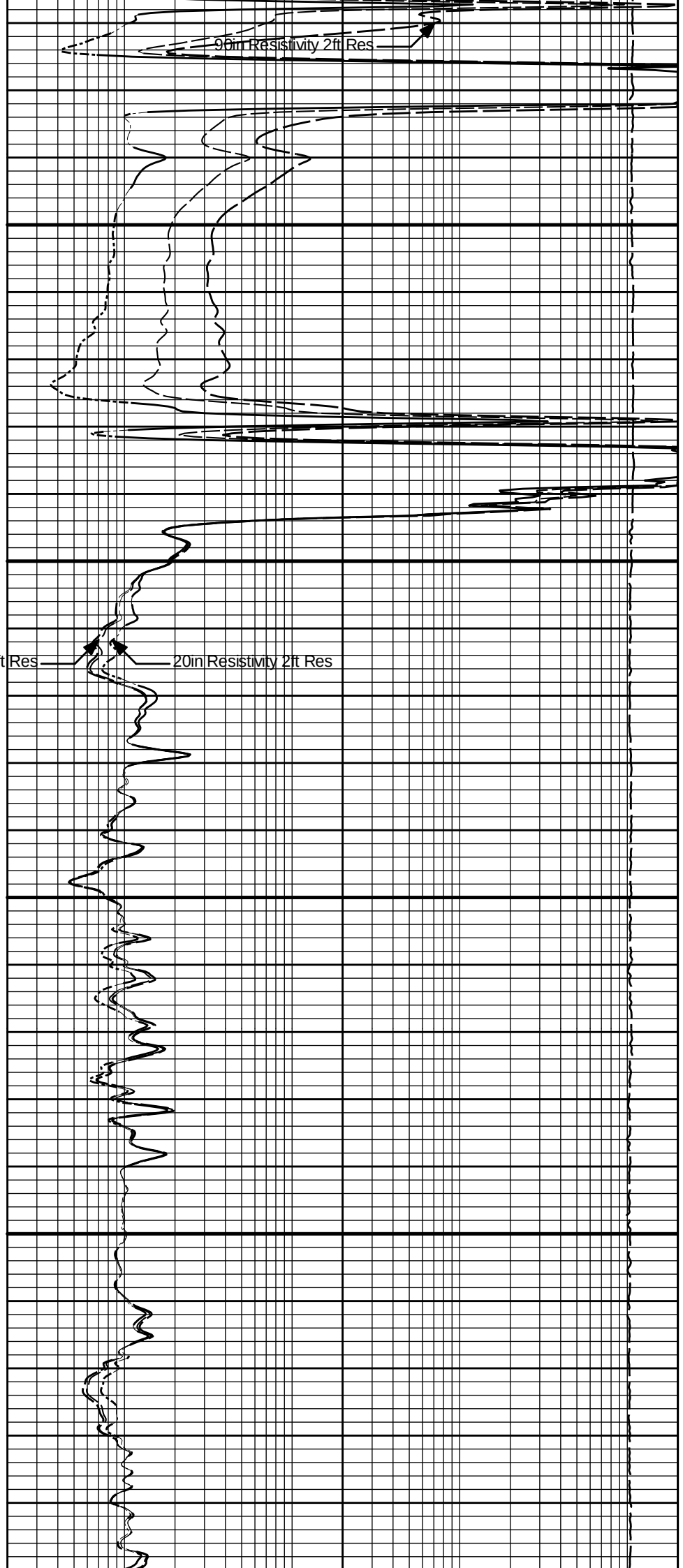




2000

60in Resistivity 2ft Res

2100



90in Resistivity 2ft Res

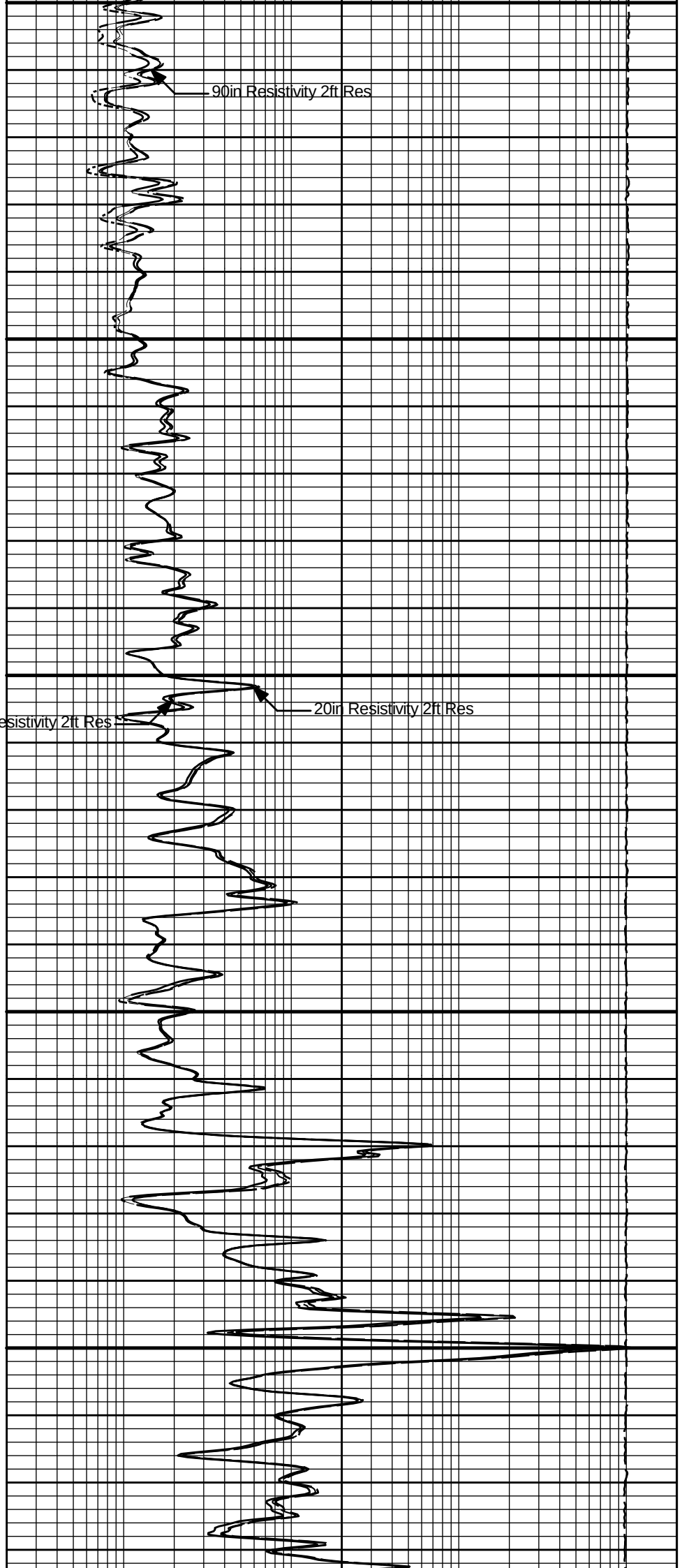
20in Resistivity 2ft Res



2200

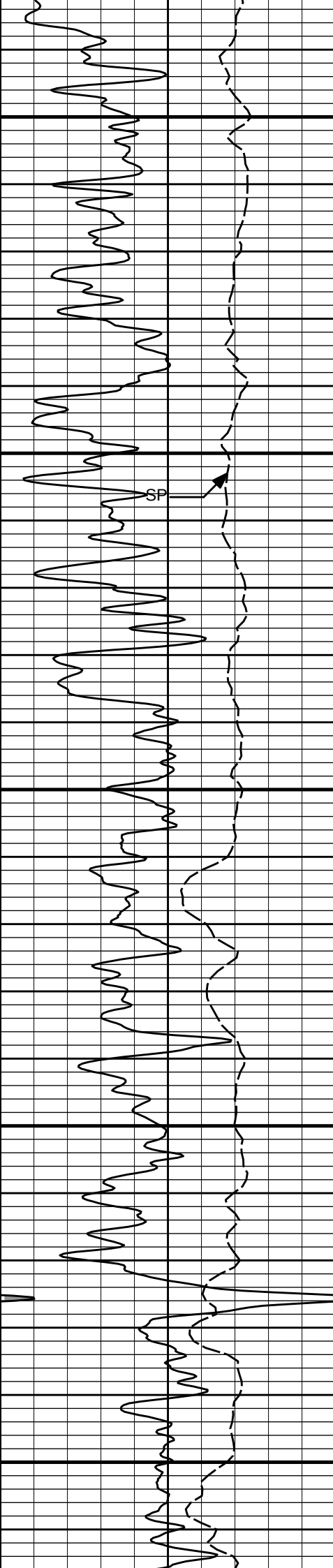
2300

60in Resistivity 2ft Res



90in Resistivity 2ft Res

20in Resistivity 2ft Res

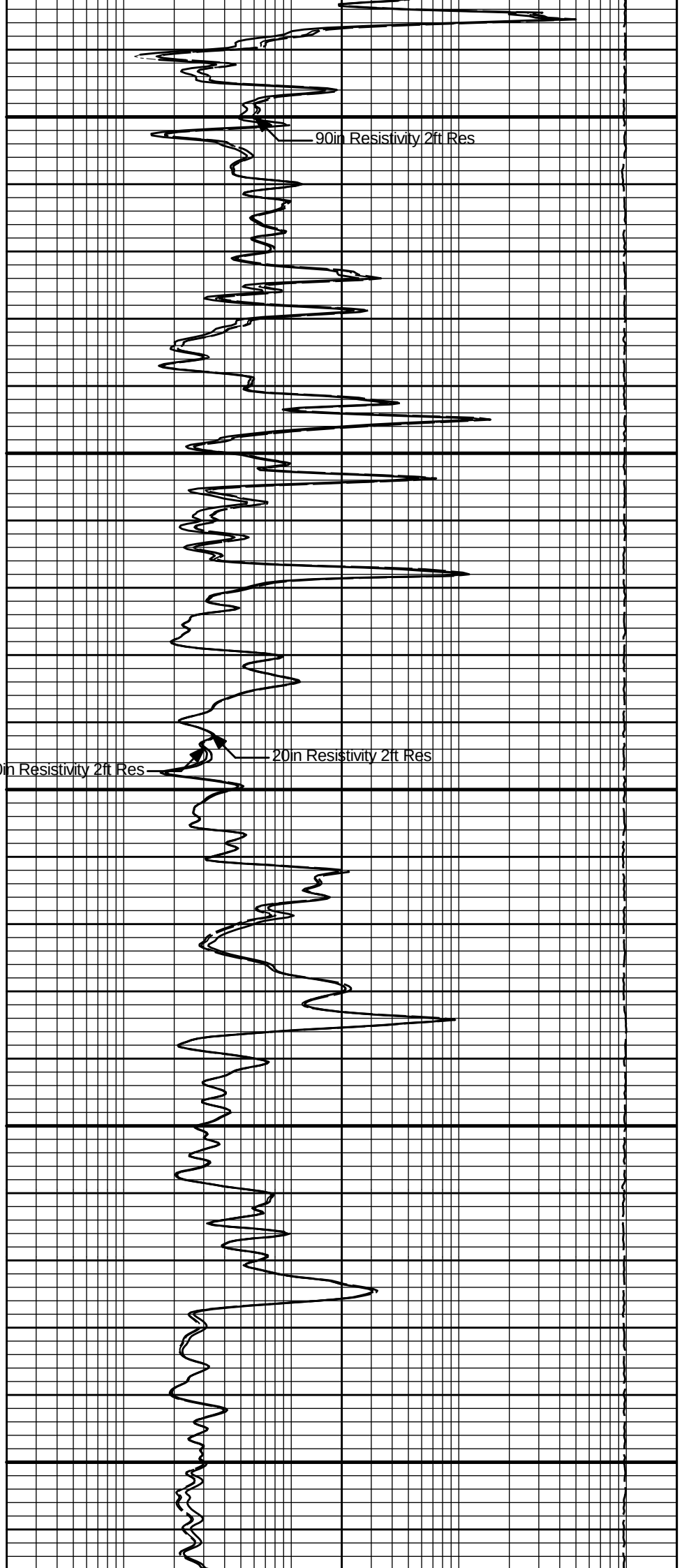


2400

SP

2500

2600



90in Resistivity 2ft Res

60in Resistivity 2ft Res

20in Resistivity 2ft Res



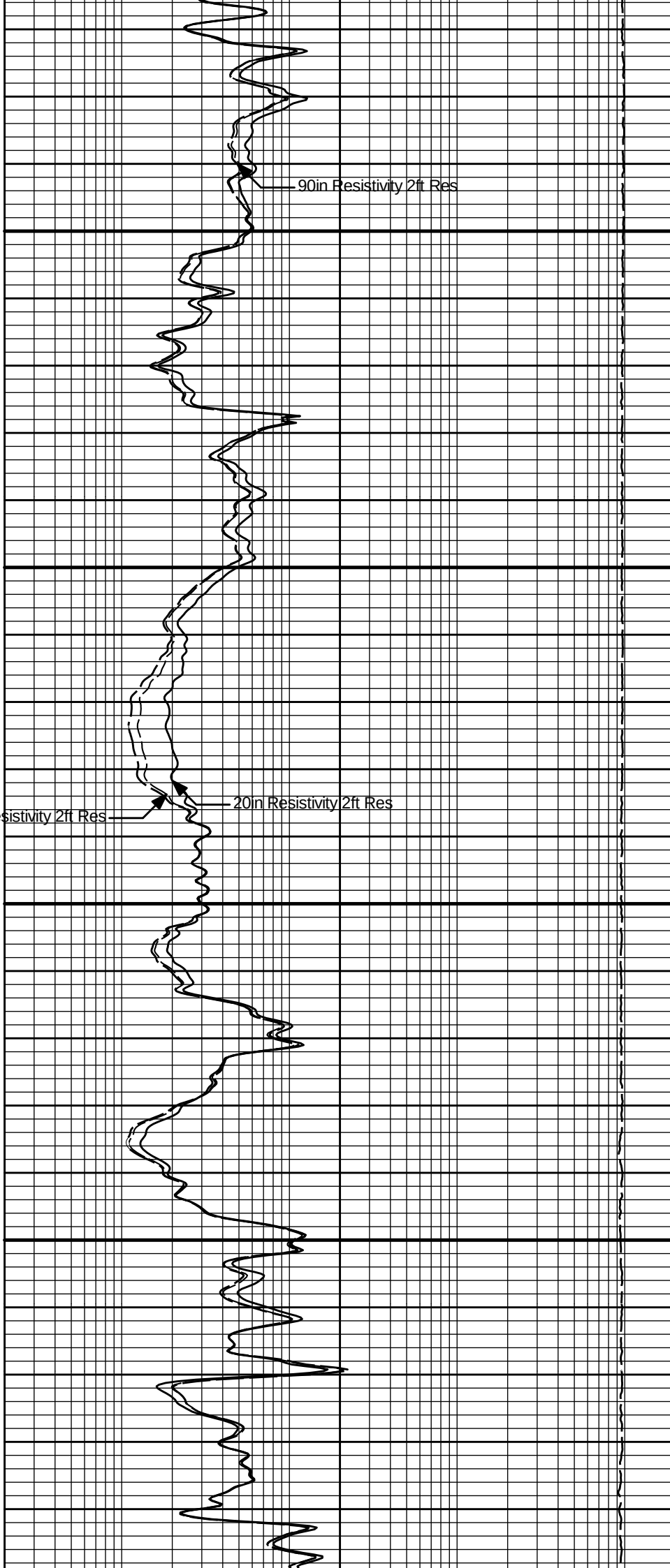
2700

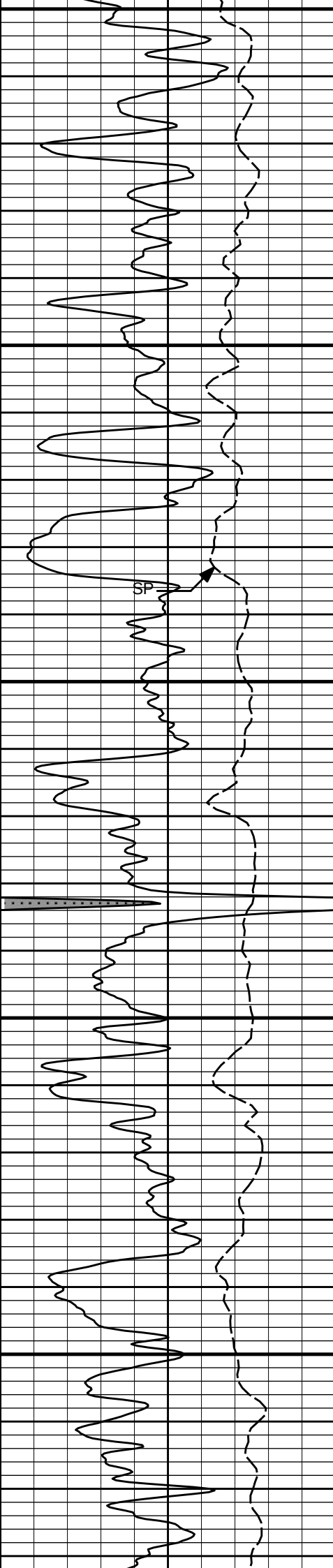
2800

60in Resistivity 2ft Res

90in Resistivity 2ft Res

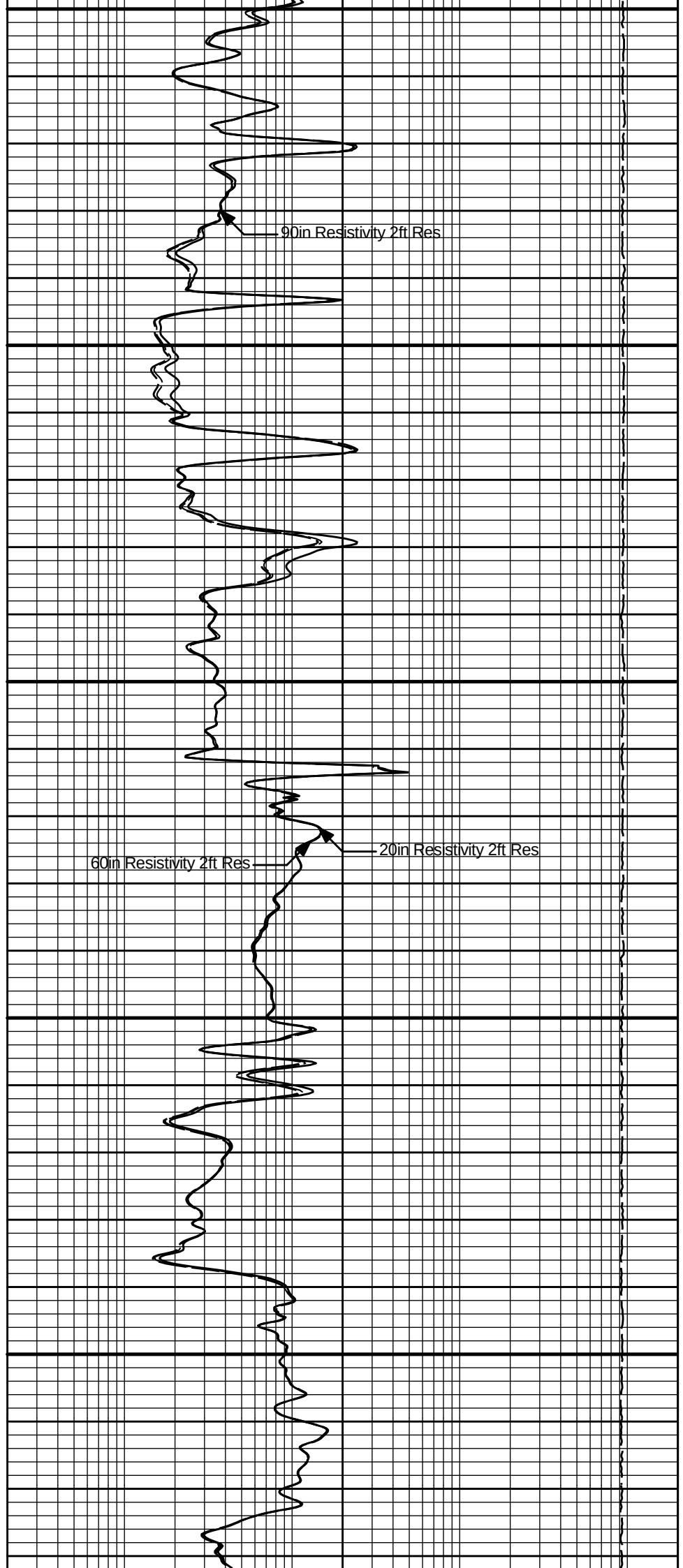
20in Resistivity 2ft Res





2900

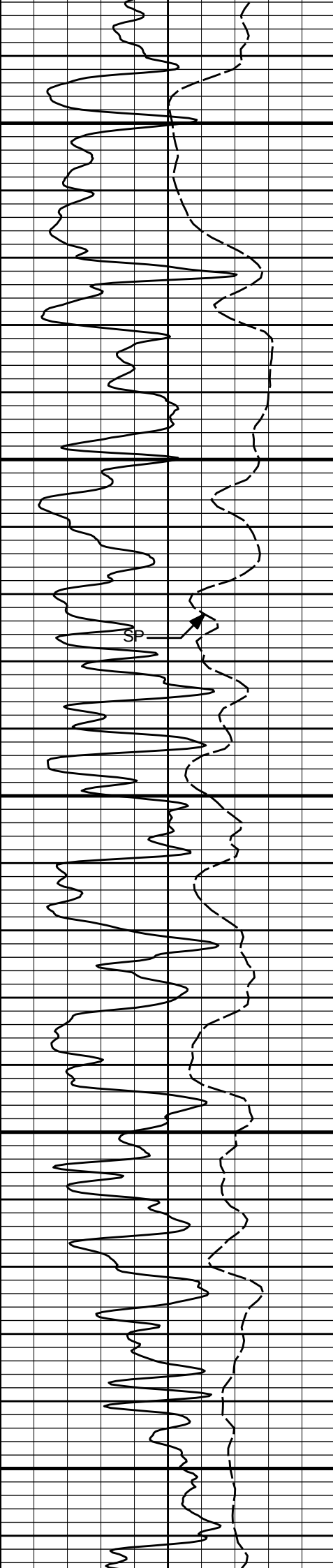
3000



90in Resistivity 2ft Res

60in Resistivity 2ft Res

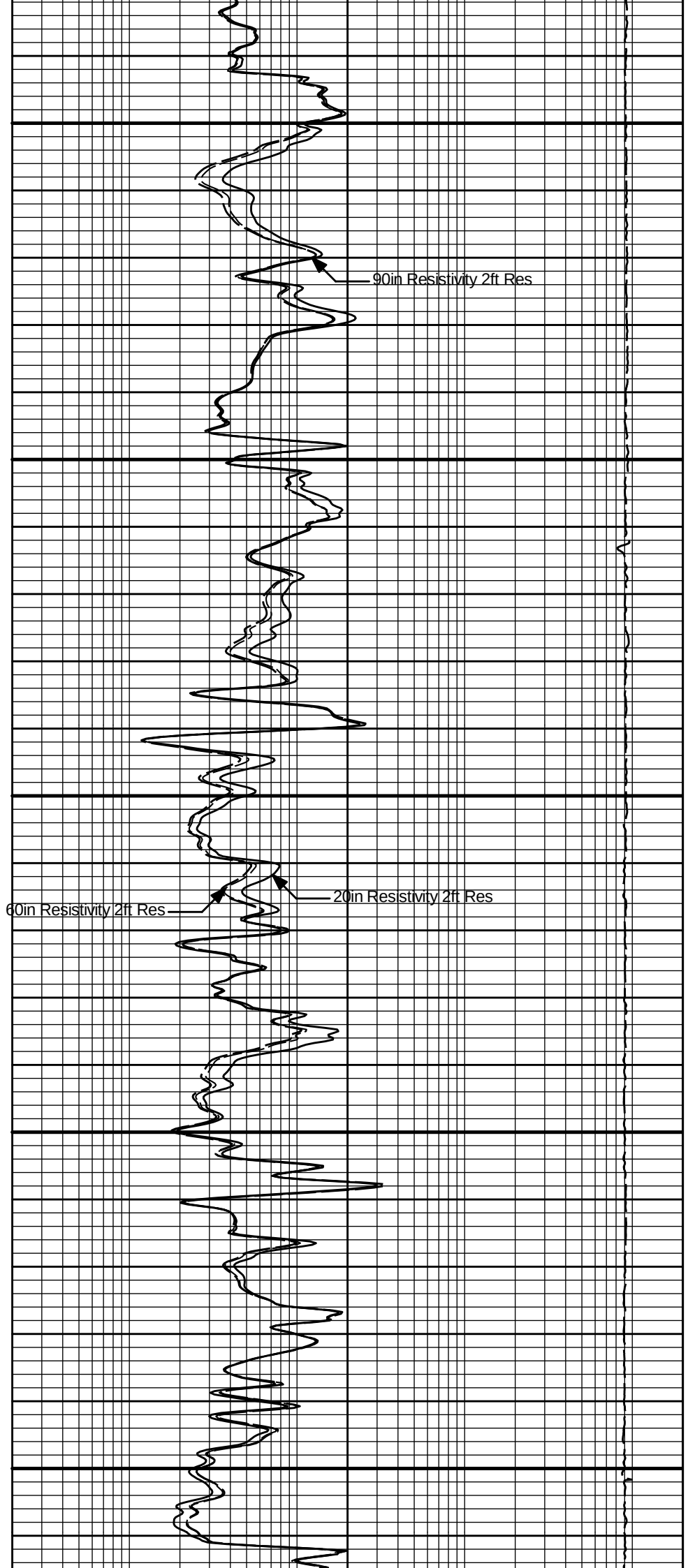
20in Resistivity 2ft Res



3100

3200

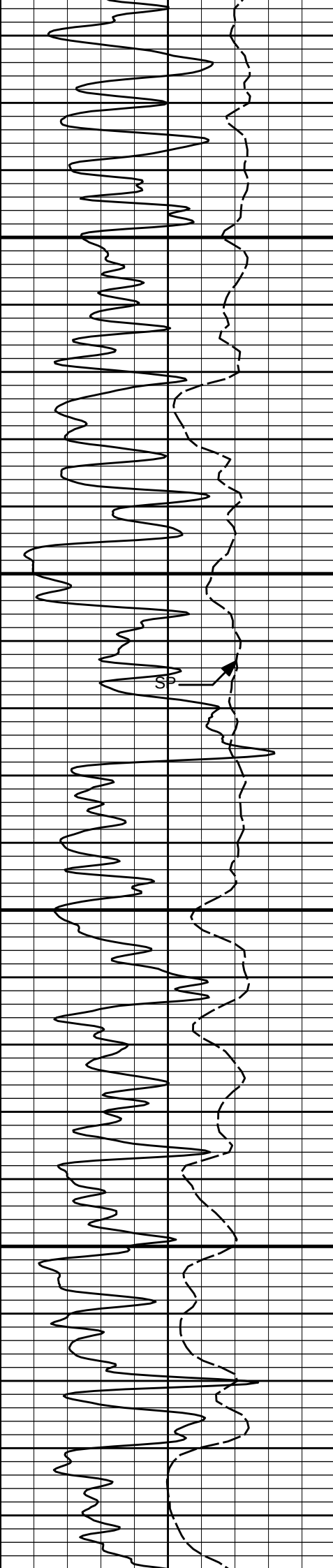
3300



90in Resistivity 2ft Res

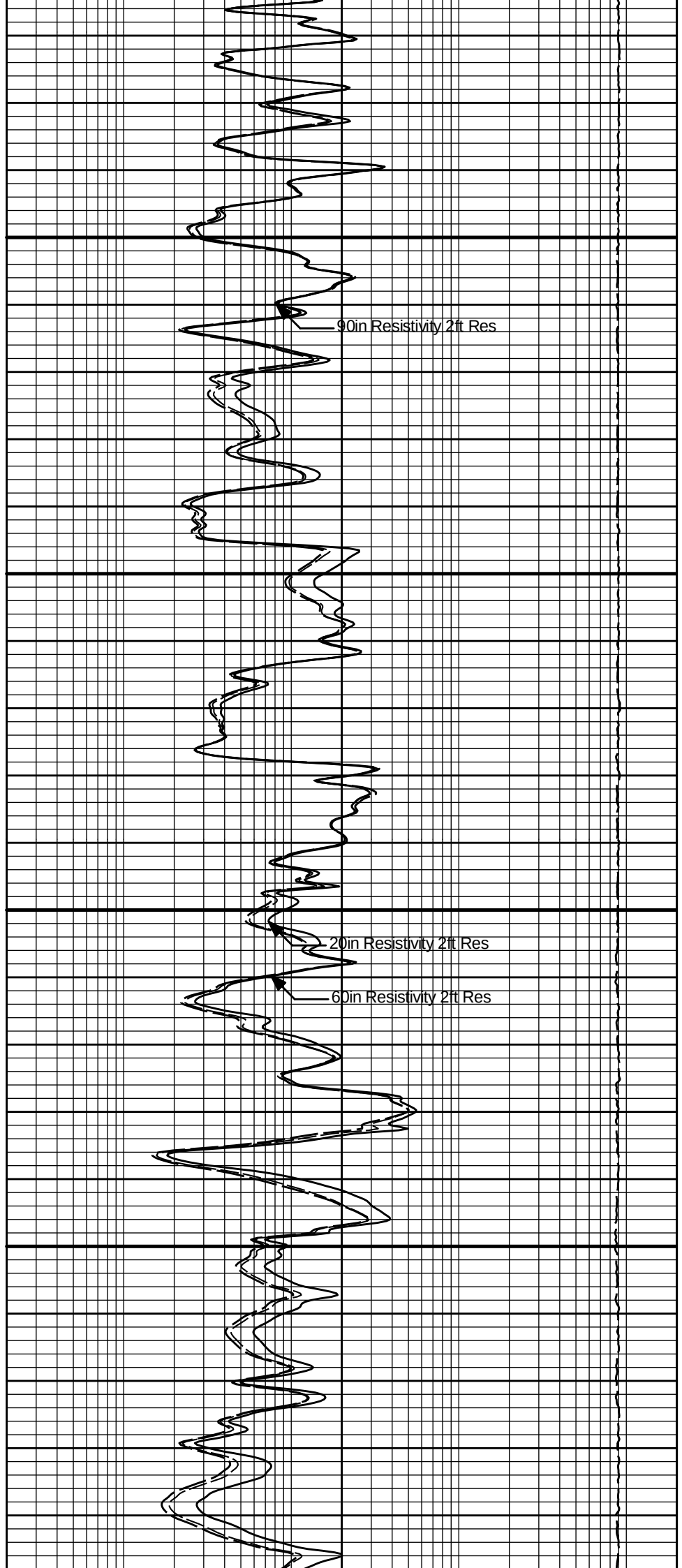
60in Resistivity 2ft Res

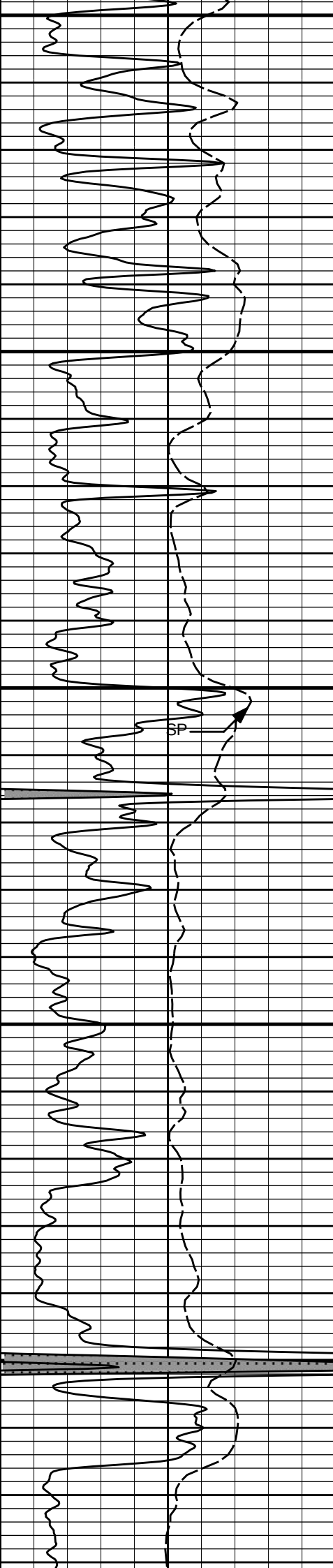
20in Resistivity 2ft Res



3400

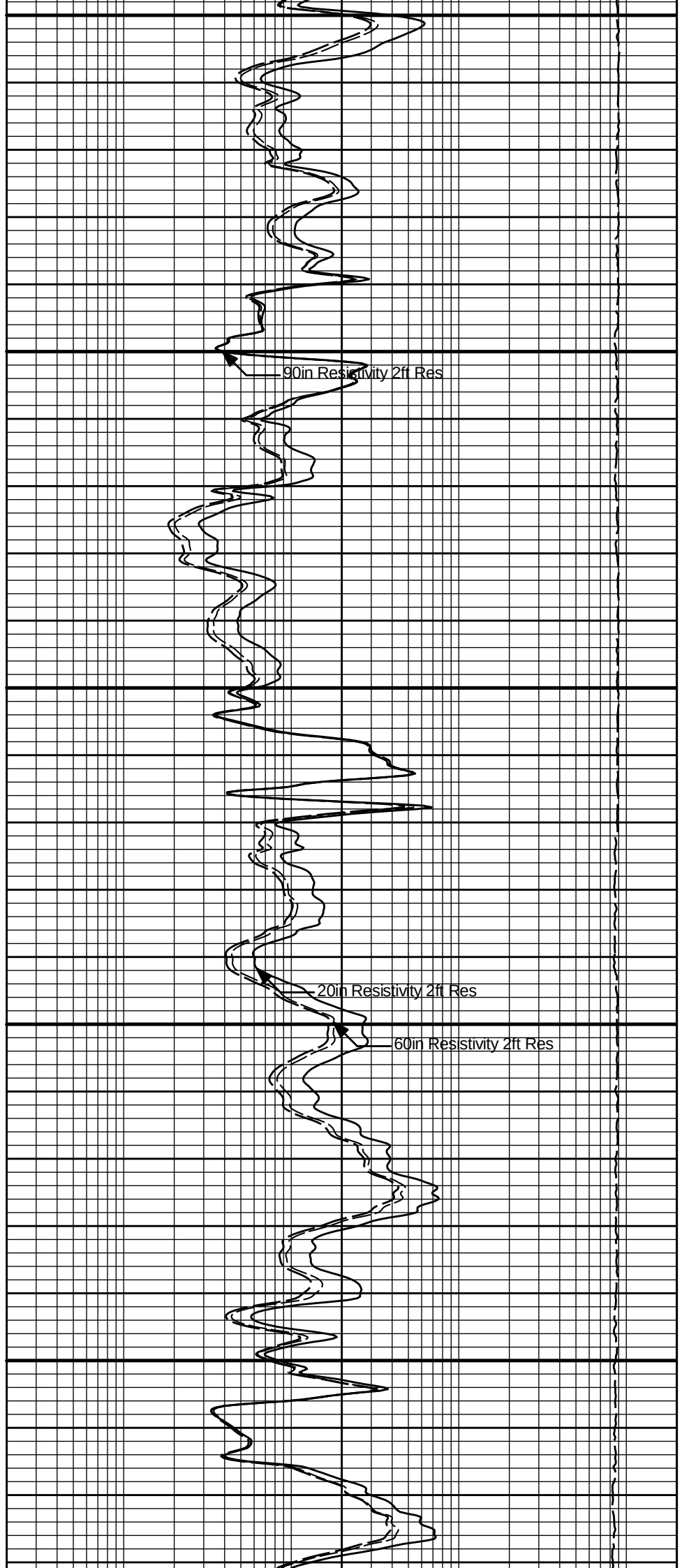
3500

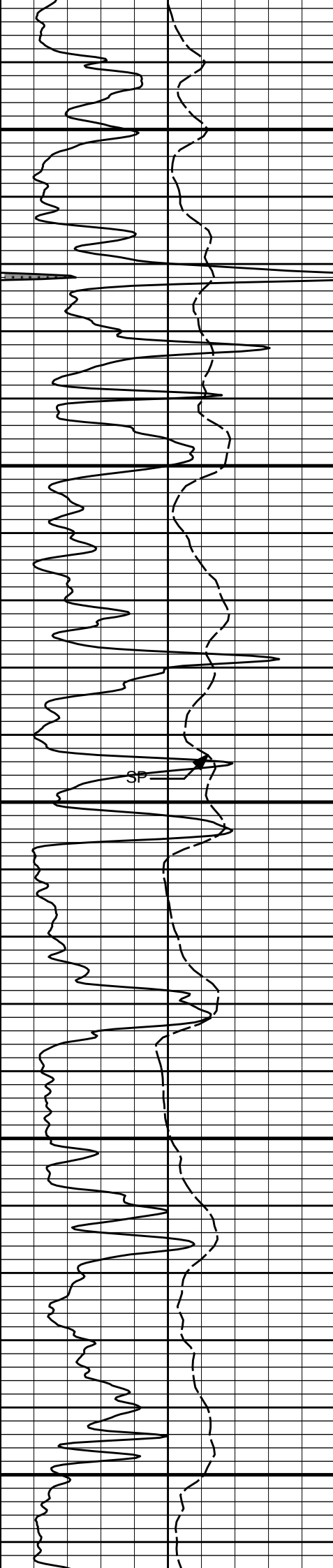




3600

3700

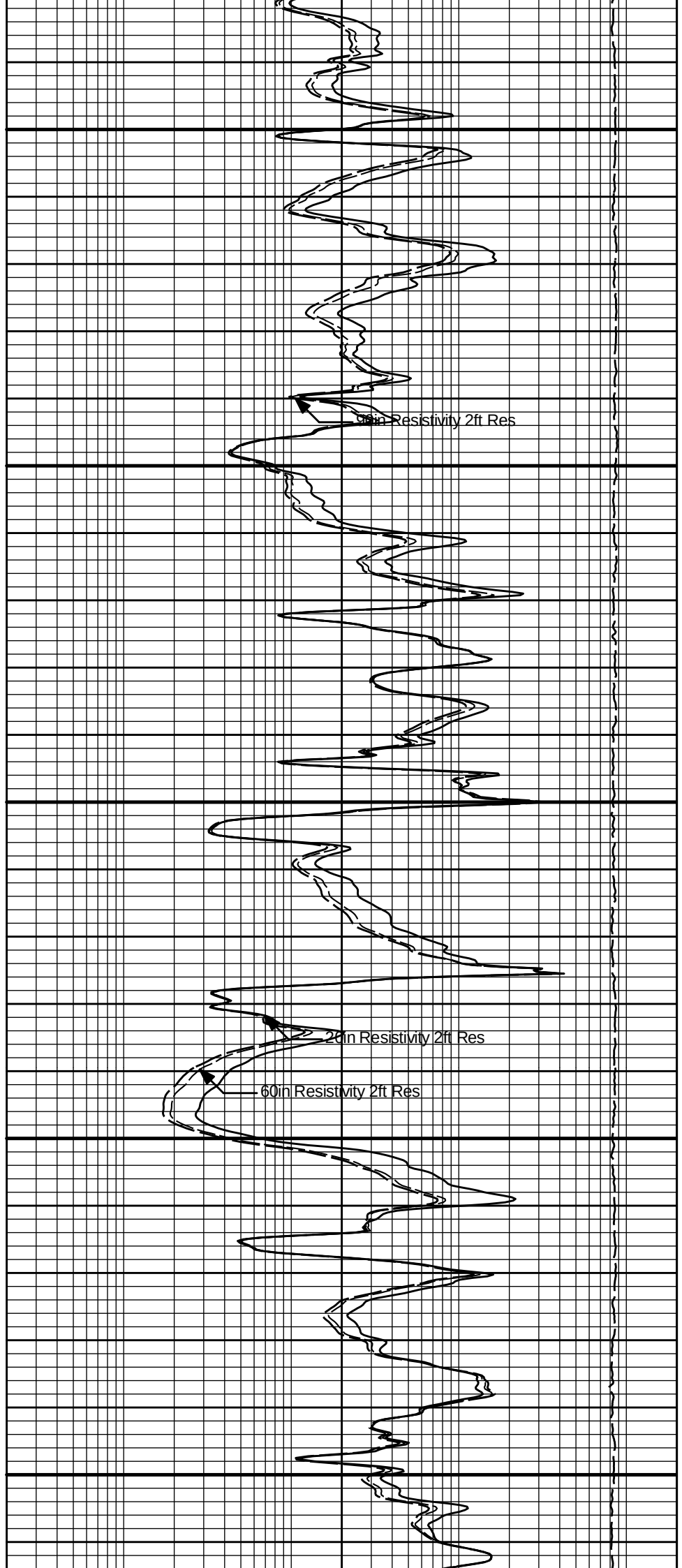




3800

3900

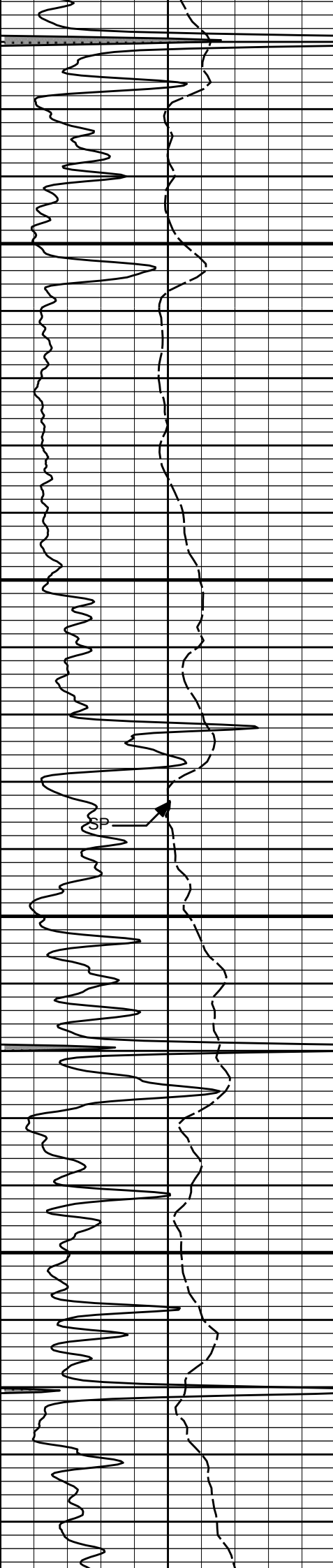
4000



20in Resistivity 2ft Res

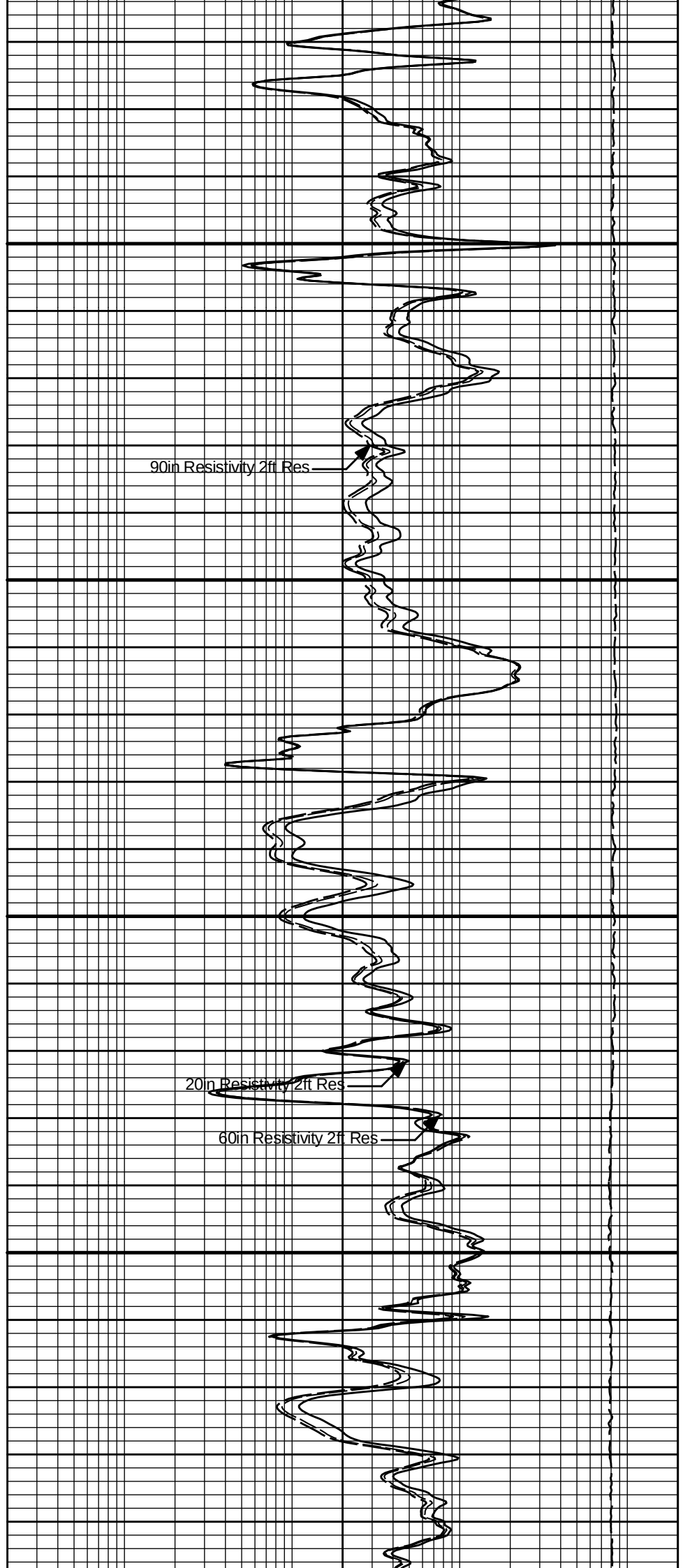
20in Resistivity 2ft Res

60in Resistivity 2ft Res



4100

4200





4300

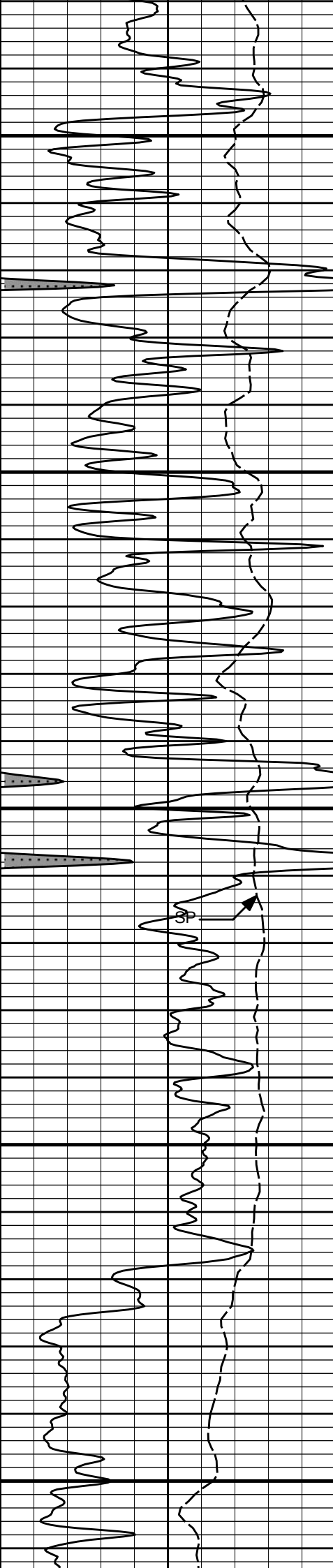
4400

SP

90in Resistivity 2ft Res

20in Resistivity 2ft Res

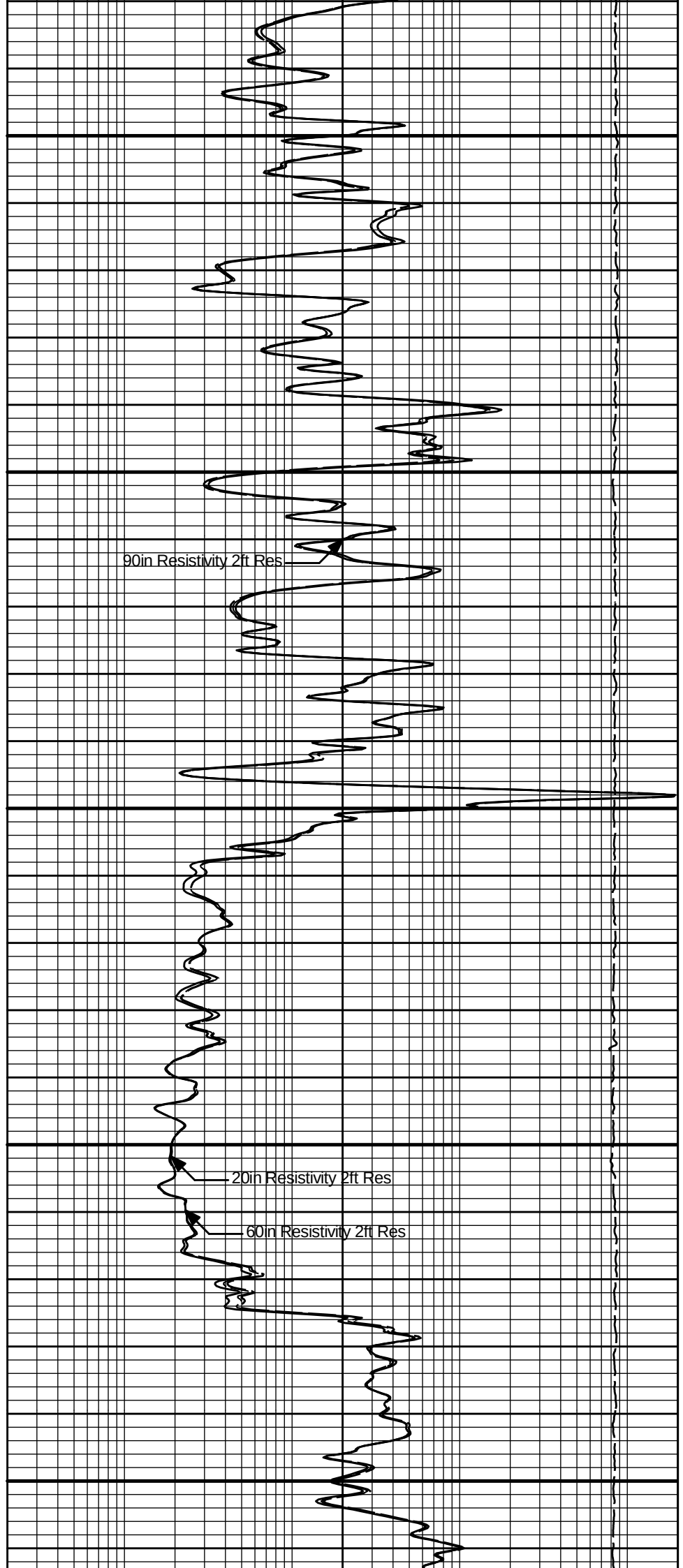
60in Resistivity 2ft Res

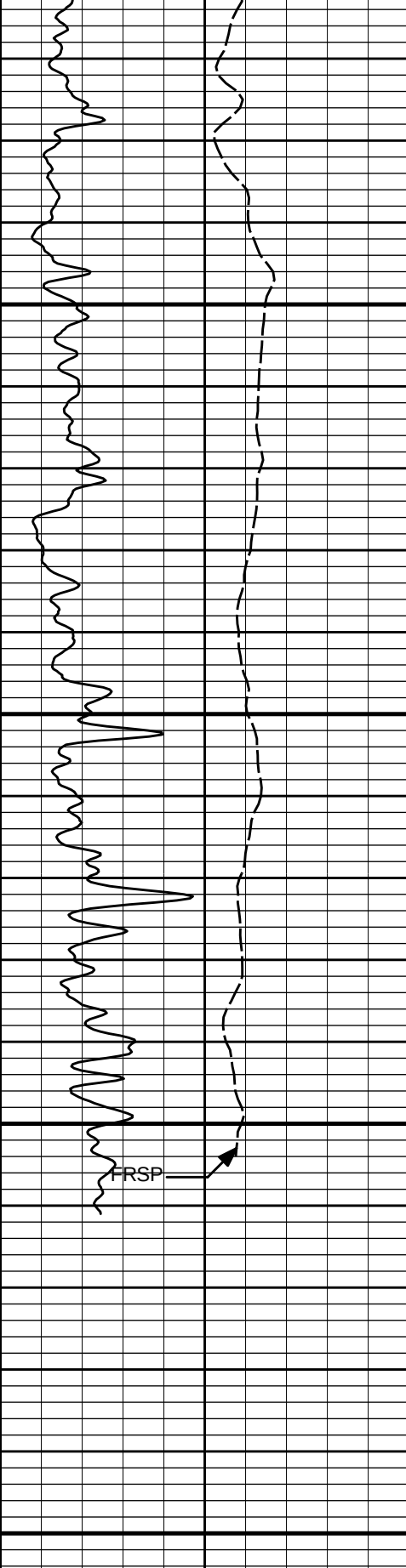


4500

4600

4700

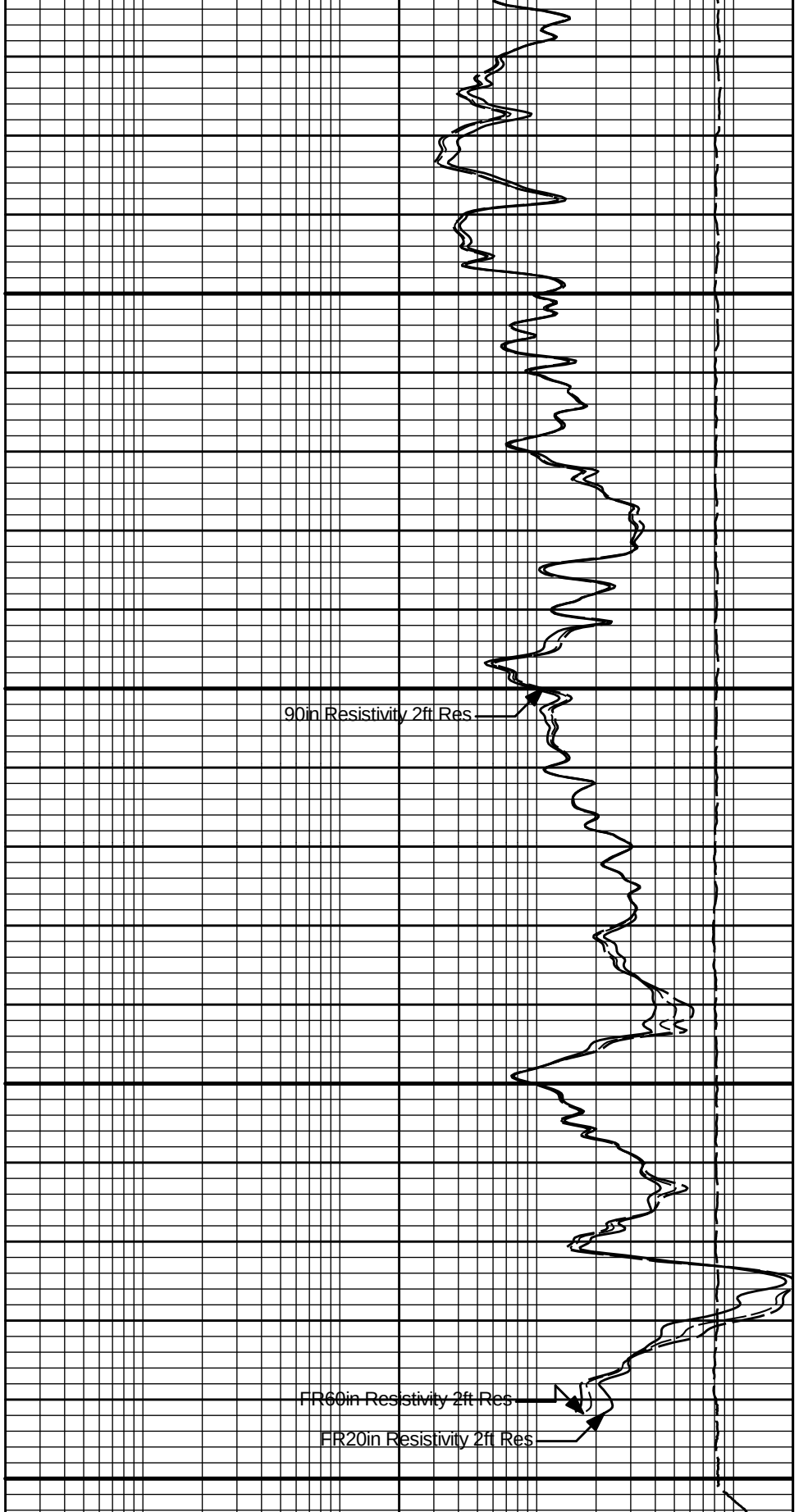




4800

4900
TD

0	Gamma API	150
	api	
	SP	
	-]20[+	



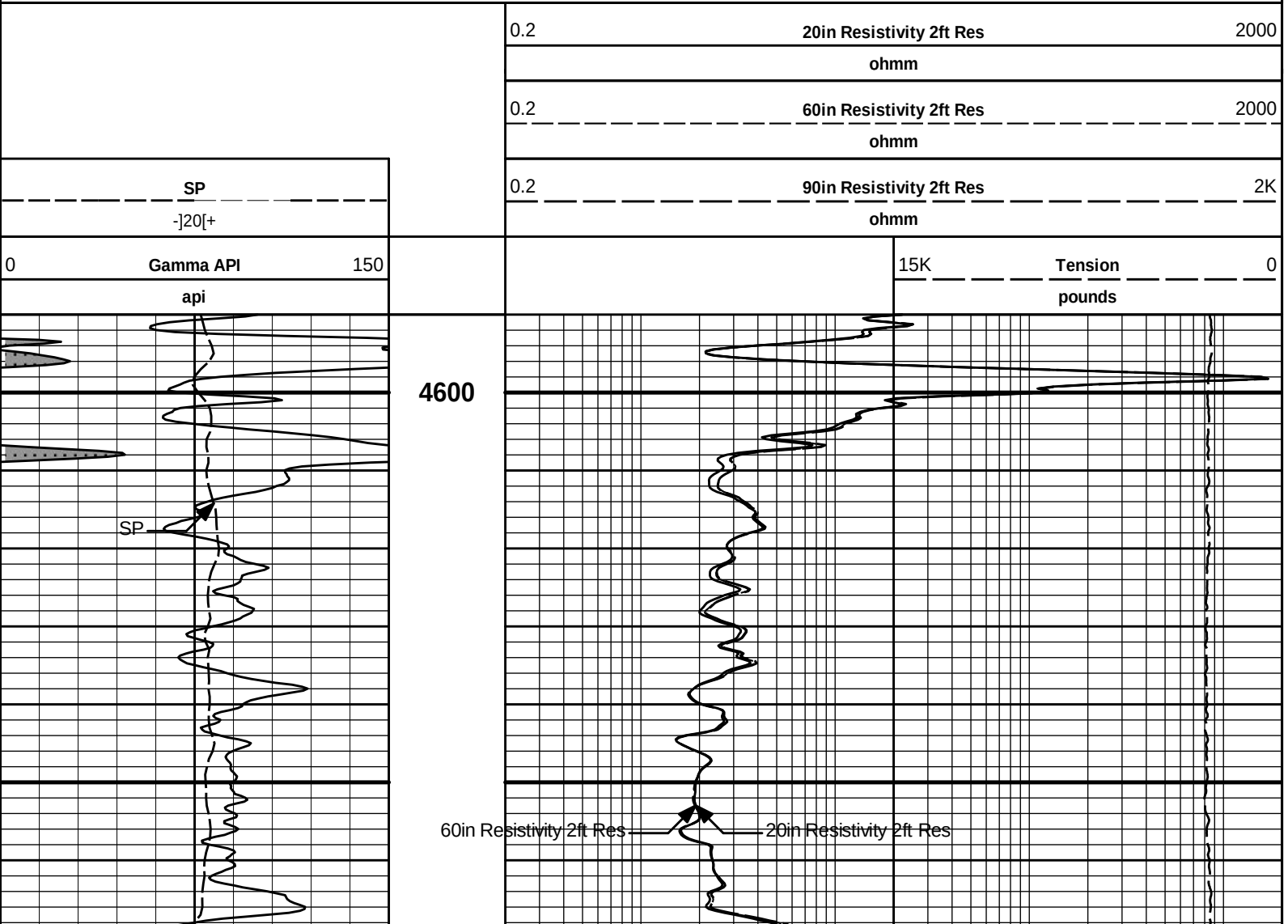
	15K	Tension	0
	pounds		
0.2	90in Resistivity 2ft Res		2K
ohmm			
0.2	60in Resistivity 2ft Res		2000
ohmm			
0.2	20in Resistivity 2ft Res		2000
ohmm			

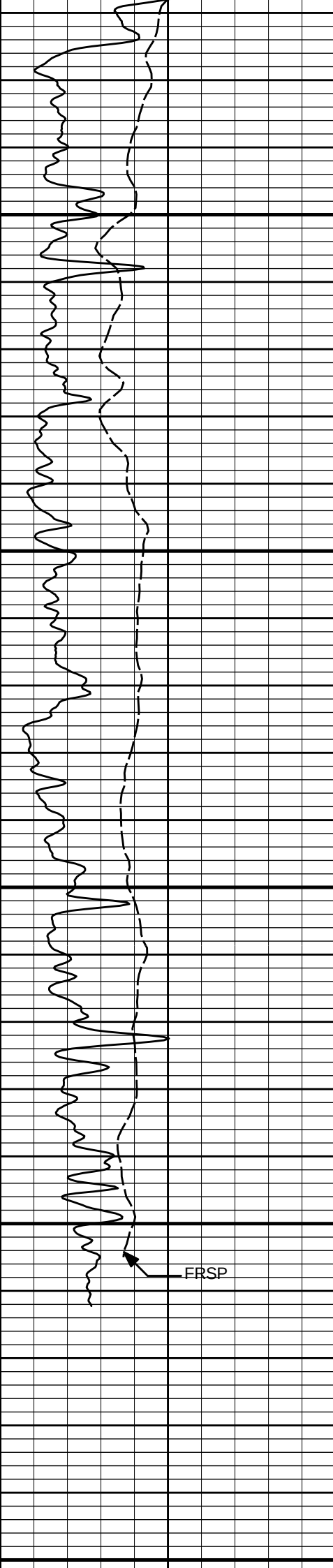
5 INCH MAIN LOG

5 INCH MAIN LOG

REPEAT SECTION

REPEAT SECTION



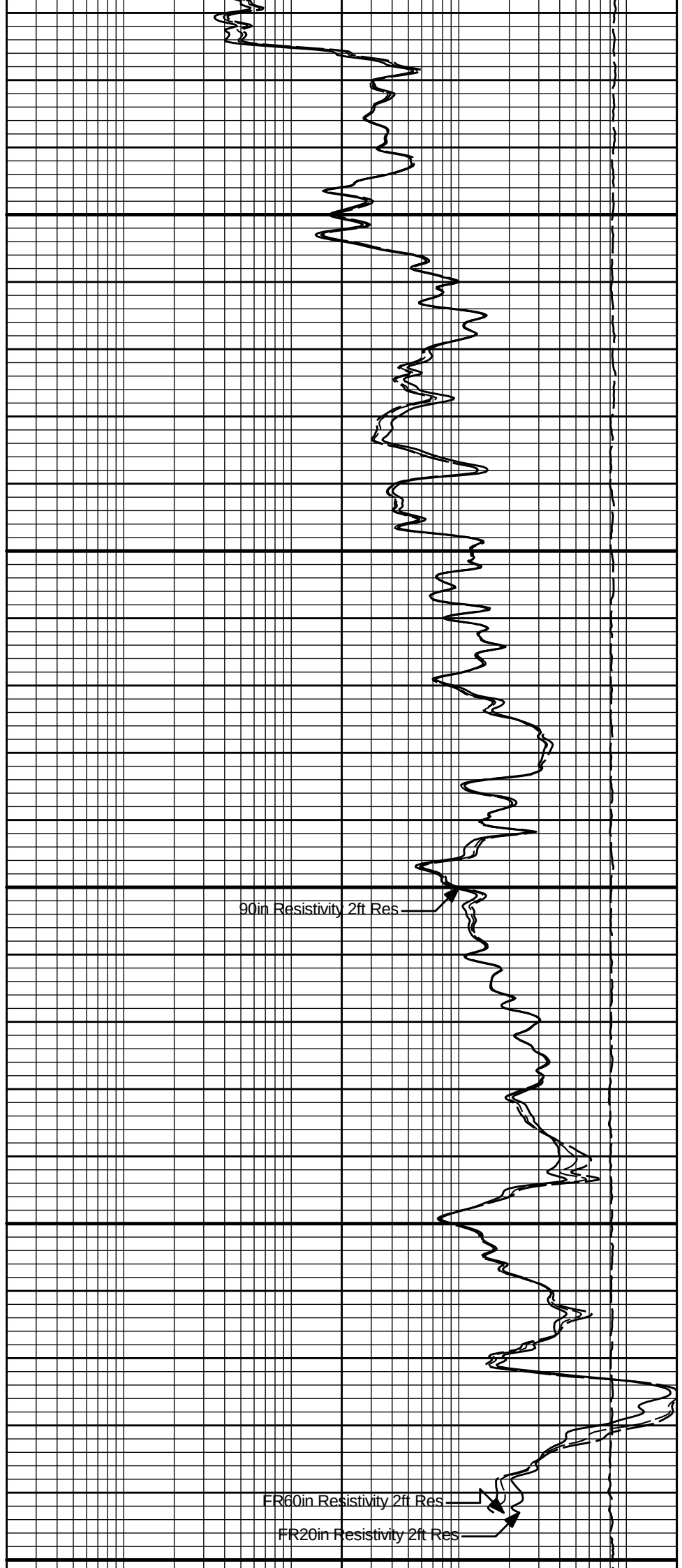


4700

4800

FRSP

4900



90in Resistivity 2ft Res

FR60in Resistivity 2ft Res

FR20in Resistivity 2ft Res

Measurement	Measured	Calibrated	Units
Background	26.6	26.6	api
Background + Calibrator	252.9	252.4	api
Calibrator	226.3	225.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 11013113	Reference Calibration Date:	27-Nov-18 10:49:38
Engineer:	WHITLOCK	Calibration Date:	30-Nov-18 09:52:27
Software Version:	WL INSITE R5.8.9 (Build 6)	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	26.6	26.0	api
Background + Calibrator	252.4	251.0	api
Calibrator	225.9	224.9	api

Shop	Field	Difference	Tolerance
225.9	224.9	1.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 11019641	Reference Calibration Date:	04-Aug-18 12:26:27
Engineer:	SEAN WOLTEMATH	Calibration Date:	07-Nov-18 10:07:09
Software Version:	WL INSITE R5.8.9 (Build 6)	Calibration Version:	1

Logging Source S/N: DSN-436
Tank Serial Number: EL RENO HWT
Reference value assigned to Tank: 56.100
Snow Block S/N: 12156883
Calibration Tank Water Temperature: 66 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.97742	0.98053	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):	0.2348	0.2358	0.0010	+/- 0.0020
Calibrated Ratio:	10.5259	10.5595	0.034	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0724	0.02000 - 0.09000

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

DUAL SPACED NEUTRON FIELD CALIBRATION			
Tool Name:	DSNT - 11019641	Reference Calibration Date:	07-Nov-18 10:07:09
Engineer:	WHITLOCK	Calibration Date:	30-Nov-18 09:37:26
Software Version:	WL INSITE R5.8.9 (Build 6)	Calibration Version:	1

Logging Source S/N: DSN-436

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0724	0.0725	0.0001	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10960494	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	SEAN WOLTEMATH	Calibration Date:	10-Oct-18 14:49:27
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1
Host Tool Name:	DSNT - 11019641		

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3977.11	-3977.11	-7000.00 - -1000.00
Pad Gain	0.0003897	0.0003897	0.0002000 - 0.0006000
Arm Offset	-3073.13	-3073.13	-5000.00 - 3000.00
Arm Gain	0.0005210	0.0005210	0.000300 - 0.000700
Arm Power	-0.000005094	-0.000005094	-0.000010000 - 0.000010000

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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 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 - 10960494	Reference Calibration Date:	10-Oct-18 14:49:27
Engineer:	WHITLOCK	Calibration Date:	30-Nov-18 09:39:30
Software Version:	WL INSITE R5.6.3 (Build 4)	Calibration Version:	1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.79	0.04	+/- 0.10
Ring Diameter	8.25	8.25	-0.00	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

AVERAGES									
	R12KHz			R36KHz			R72KHz		
	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.006	> -0.500	Pass
A2 (50")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.005	> -0.500	Pass
A3 (29")	-0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.003	> -0.500	Pass
A4 (17")	-0.002	> -0.500	Pass	-0.006	> -0.500	Pass	-0.022	> -0.500	Pass
A5 (10")	-0.010	> -0.500	Pass	-0.017	> -0.500	Pass	-0.036	> -0.500	Pass
A6 (6")	0.014	< 0.500	Pass	0.063	< 0.500	Pass	0.138	< 0.500	Pass
GAIN TOLERANCE									
R12KHz									
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail				
A1 (80")	-213173456.000	-213653808.000	480352.000	10682690.400	Pass				
A2 (50")	-205651744.000	-206143280.000	491536.000	10307164.000	Pass				
A3 (29")	-200817664.000	-201197776.000	380112.000	10059888.800	Pass				
A4 (17")	-200193568.000	-200629872.000	436304.000	10031493.600	Pass				
A5 (10")	-200252336.000	-200678960.000	426624.000	10033948.000	Pass				
A6 (6")	-199820688.000	-200219344.000	398656.000	10010967.200	Pass				
R36KHz									
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail				
A1 (80")	48114080.000	48477272.000	363192.000	2423863.600	Pass				
A2 (50")	33966292.000	34324412.000	358120.000	1716220.600	Pass				
A3 (29")	28032378.000	28346680.000	314302.000	1417334.000	Pass				
A4 (17")	27853682.000	28207516.000	353834.000	1410375.800	Pass				
A5 (10")	27373208.000	27716930.000	343722.000	1385846.500	Pass				
A6 (6")	26035236.000	26360300.000	325064.000	1318015.000	Pass				
R72KHz									
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail				
A1 (80")	-92927656.000	-93022904.000	95248.000	4651145.200	Pass				
A2 (50")	-90501024.000	-90617752.000	116728.000	4530887.600	Pass				
A3 (29")	-88192472.000	-88292832.000	100360.000	4414641.600	Pass				
A4 (17")	-88397088.000	-88515880.000	118792.000	4425794.000	Pass				
A5 (10")	-86957704.000	-87076952.000	119248.000	4353847.600	Pass				
A6 (6")	-87976216.000	-88080696.000	104480.000	4404034.800	Pass				
PASS/FAIL SUMMARY									
	Std Deviation Verification			Pass					
	Average Verification			Pass					
	Gain Tolerance Verification			Pass					

MICRO LOG SHOP CALIBRATION			
Tool Name:	Microlog Pad - 10960494	Reference Calibration Date:	08-Jun-18 16:08:54
Engineer:	WHITLOCK	Calibration Date:	30-Sep-18 13:47:51
Software Version:	WL INSITE R5.8.9 (Build 6)	Calibration Version:	1
Host Tool Name:	DSNT - 11019641		

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	

Tool Zero	-0.07	-0.14	-0.00	-0.01	ohmm
Calibration Point #1	0.07	0.00	0.00	0.00	ohmm
Calibration Point #2	20.01	20.00	19.95	20.00	ohmm
Internal Reference	19.84	19.83	19.92	19.97	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	-0.08		0.35		V
Calibration Point #1	37.72		2.09		V
Calibration Point #2	5356.95		6956.77		V
Internal Reference	5312.51		6945.81		V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 10960494		Reference Calibration Date:	30-Sep-18 13:47:51	
Engineer:	WHITLOCK		Calibration Date:	30-Nov-18 09:48:53	
Software Version:	WL INSITE R5.8.9 (Build 6)		Calibration Version:	1	

Measurement	Micro Log Normal		Micro Log Lateral		
	Shop	Field	Shop	Field	Units
Tool Zero	-0.14	-0.14	-0.01	-0.01	ohmm
Internal Reference	19.83	19.82	19.97	19.96	ohmm
Summary					
Signal	Shop	Field	Difference		Tolerance
Microlog Normal	19.83	19.82	0.01		+/- 0.80
Microlog Lateral	19.97	19.96	0.01		+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDLT Pad - 11213308		Reference Calibration Date:	17-Sep-18 12:07:25	
Engineer:	WHITLOCK		Calibration Date:	17-Sep-18 12:30:06	
Software Version:	WL INSITE R5.6.3 (Build 4)		Calibration Version:	1	

Logging Source S/N: 5475GW					
Aluminum Block S/N: EL RENO		Density: 2.581g/cc		Pe: 3.170	
Magnesium Block S/N: EL RENO		Density: 1.687g/cc		Pe: 2.594	

DENSITY CALIBRATION SUMMARY					
Measurement	Previous Value		New Value		Control Limit
Near Bar Gain	1.0089		1.0095		0.90 - 1.10
Near Dens Gain	0.9949		0.9972		0.90 - 1.10
Near Peak Gain	1.0098		1.0259		0.90 - 1.10
Near Lith Gain	1.0052		1.0142		0.90 - 1.10
Far Bar Gain	1.0078		1.0061		0.90 - 1.10
Far Dens Gain	0.9950		0.9953		0.90 - 1.10
Far Peak Gain	0.9901		0.9911		0.90 - 1.10
Far Lith Gain	0.9745		0.9764		0.90 - 1.10
Near Bar Offset	0.0471		0.0438		NONE
Near Dens Offset	0.1758		0.1544		NONE
Near Peak Offset	0.0270		-0.1077		NONE
Near Lith Offset	0.0345		-0.0412		NONE
Far Bar Offset	-0.0195		-0.0036		NONE
Far Dens Offset	0.1103		0.1086		NONE
Far Peak Offset	0.1339		0.1248		NONE
Far Lith Offset	0.2115		0.1964		NONE
Near Bar Background	945.62		947.60		700 - 1450
Near Dens Background	315.82		314.50		230 - 480
Near Peak Background	136.57		137.87		100 - 210

Near Lith Background	168.89	168.30	125 - 260	
Far Bar Background	482.51	480.15	450 - 900	
Far Dens Background	193.40	193.79	175 - 345	
Far Peak Background	78.35	78.65	70 - 140	
Far Lith Background	80.88	79.56	75 - 145	
CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.685	1.687	0.002	+/- 0.015
Pe	2.557	2.563	0.006	+/- 0.150
ALUMINUM				
Density (g/cc)	2.580	2.580	-0.000	+/- 0.01500
Pe	3.115	3.136	0.021	+/- 0.150
TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0003	+/- 0.0110	0.0015	+/- 0.0140
Magnesium Block	0.0001	+/- 0.0110	-0.0007	+/- 0.0140
Aluminum Block	-0.0000	+/- 0.0110	-0.0006	+/- 0.0140
Resolution	9.24	6.00 - 11.50	9.28	6.00 - 11.50
Internal Verifier(B+D+P+L)	1568	1200 - 2700	832	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	
Gains Check:			Passed	
Changes in Calibration Blocks:			Passed	

SPECTRAL DENSITY FIELD CHECK				
Tool Name:	SDLT Pad - 11213308	Reference Calibration Date:	17-Sep-18 12:30:06	
Engineer:	WHITLOCK	Calibration Date:	30-Nov-18 09:59:11	
Software Version:	WL INSITE R5.8.9 (Build 6)	Calibration Version:	1	
Pad Temperature: 71.7 degF				
DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1568.269	1567.878	-0.391	15.935
Far (B+D+P+L) cps	832.156	828.503	-3.653	15.879
Near Resolution	9.24	9.24	0.000	0.50
Far Resolution	9.28	9.27	-0.010	1.00
PASS/FAIL SUMMARY				
Bkg Quality Check:		Passed		
Bkg Resolution Check:		Passed		
Bkg Verification Check:		Passed		

CALIBRATION SUMMARY	
---------------------	--

Sensor	Shop	Field	Post	Difference	Tolerance	Units
Depth Panel-12345678						
Tension Zero	0.00	-----	-----	0.00	-----	lbs
Tension Cal	7830.00	-----	-----	0.00	-----	lbs
RWCH-12345678						
DH Tension Zero	0.00	-----	-----	0.00	-----	lbs
DH Tension Cal	1450.00	-----	-----	0.00	-----	lbs
GTET-11013113						
Gamma Ray Calibrator	225.9	224.9	-----	1.0	+/- 9.00	api
DSNT-11019641						
Snow-Block Porosity	0.0724	0.0725	-----	-0.0001	+/- 0.0150	decp
SDLT-10960494						
Pad Extension	3.75	3.79	-----	-0.04	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in
ACRt Sonde-11830728						
Mud Cell	0.99	-----	-----	0	-----	ohm-m
Microlog Pad-10960494						
MicroLog Normal	19.83	19.82	-----	0.01	+/-0.80	ohmm
MicroLog Lateral	19.97	19.96	-----	0.01	+/-0.80	ohmm
SDLT Pad-11213308						
Near(B+D+P+L)	1568.269	1567.878	-----	0.391	+/-15.935	cps
Far(B+D+P+L)	832.156	828.503	-----	3.653	+/-15.879	cps
Data: BEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\IDLE						
Date: 03-Dec-18 15:11:59						

HALLIBURTON

PARAMETERS REPORT

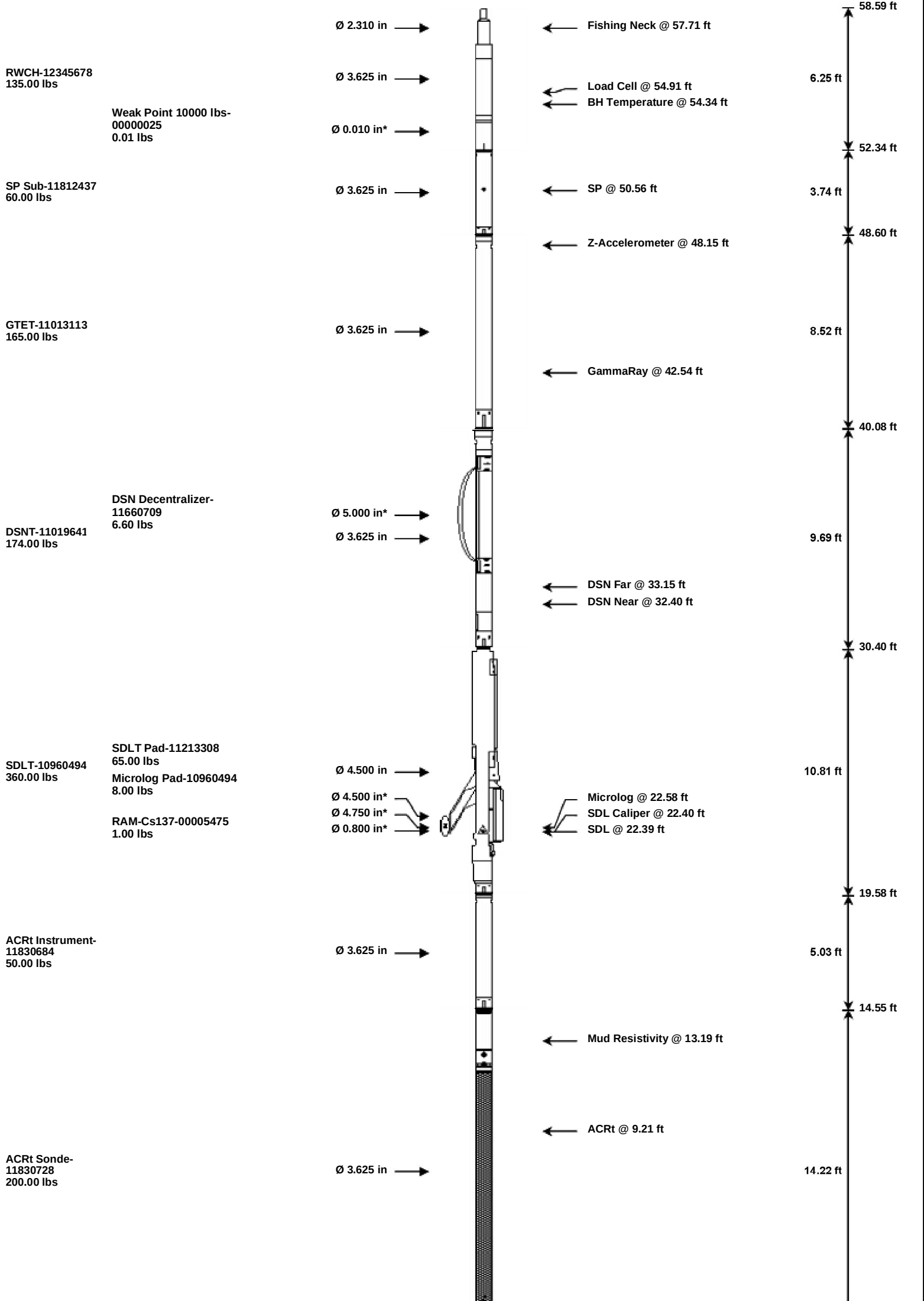
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.100	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	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	0.750	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	CSTR	Compressive Strength	1000.00	psia
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4900.00	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	CBM Temperature Master Tool	GTET	
	SHARED	SOCI	Source of Casing Information	Parameters	
	SHARED	MSAL	Water-base mud filtrate salinity	0.00	ppm
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	

CrossPlot	AFAC	Archie Factor	2.1500	
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	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	SDLT	
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	0.250	in
DSNT	DNTT	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	
DSNT	UCLA	Classic Neutron Parameter utilized?	No	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
Microlog Pad	MLOK	Process MicroLog 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	BHSM	Borehole Size Source Tool	SDLT	
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	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM				
Data: BEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\IDLE			Date: 03-Dec-18 15:13:17	

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
-------------	----------------------	------	---------	------------------	--------	--------------------



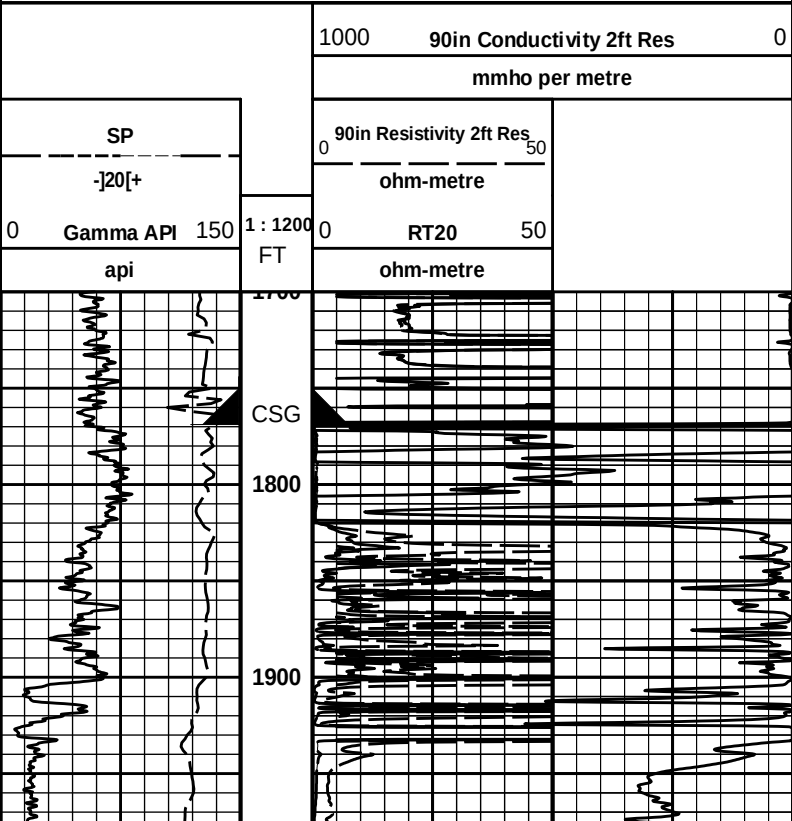
Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		12345678	135.00	6.25	52.34	300.00
WP10K	Weak Point 10000 lbs		00000025	0.01	0.01	* 53.14	300.00
SP	SP Sub		11812437	60.00	3.74	48.60	300.00
GTET	Gamma Telemetry Tool		11013113	165.00	8.52	40.08	60.00
DSNT	Dual Spaced Neutron		11019641	174.00	9.69	30.40	60.00
DCNT	DSN Decentralizer		11660709	6.60	5.13	* 33.73	300.00
SDLT	Spectral Density Tool		10960494	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad		11213308	65.00	2.55	* 21.79	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137		00005475	1.00	0.80	* 22.02	300.00
MICP	Microlog Pad		10960494	8.00	1.00	* 22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section		11830684	50.00	5.03	14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section		11830728	200.00	14.22	0.33	120.00
BLNS	Bull Nose		00000001	5.00	0.33	0.00	300.00
Total				1,229.61	58.59		
* Not included in Total Length and Length Accumulation.							
Data: BEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\IDLE							
Date: 03-Dec-18 15:13:52							

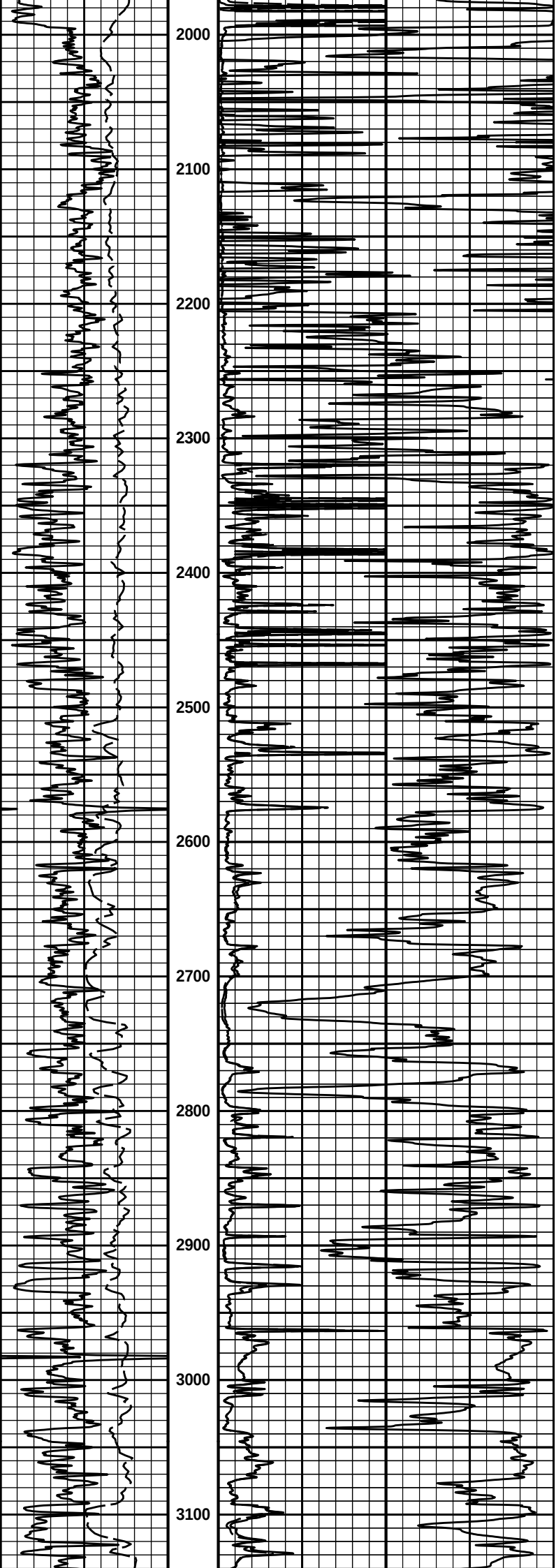
HALLIBURTON

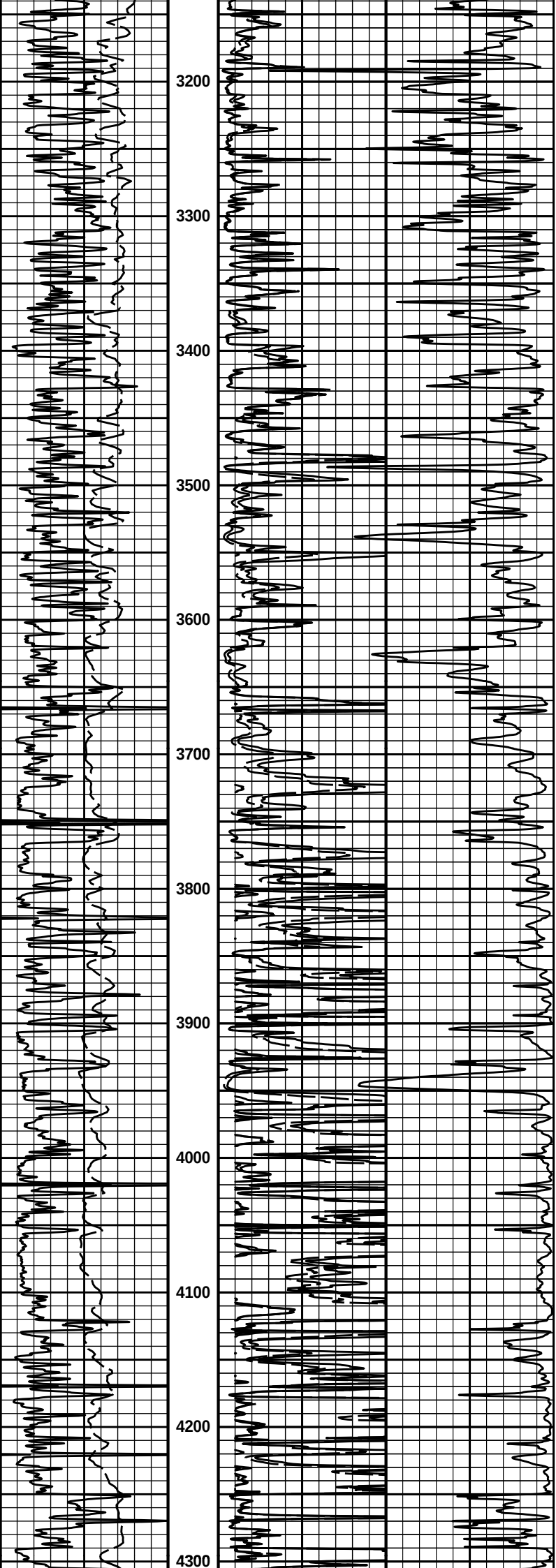
Plot Time: 03-Dec-18 18:34:51
Plot Range: 1700 ft to 4904 ft
Data: BEREX_HARTNETTIWell Based\DAQ-0001-002\
Plot File: \\LOCAL-BEREX_HARTNETTI0001 RWCH-GTET-DSN-SDL-ACRT\ACRT 1 main

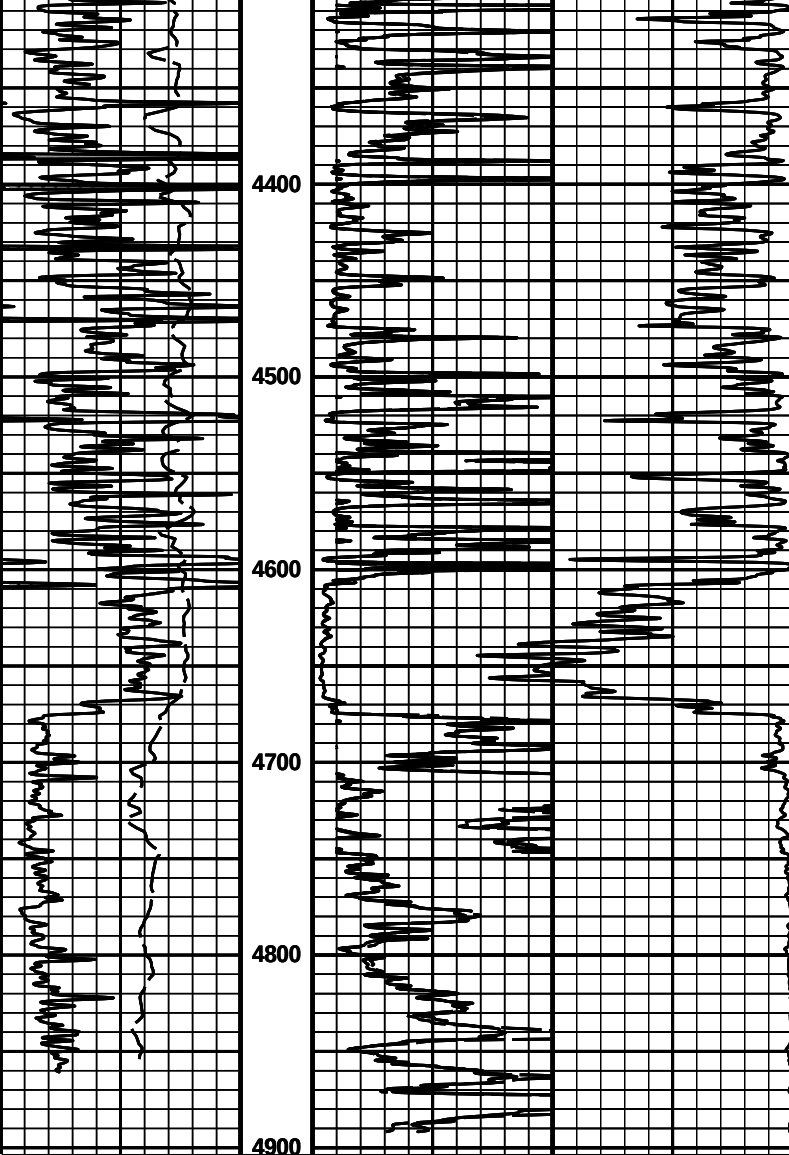
1 INCH MAIN LOG

1 INCH CORRELATION LOG









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

HALLIBURTON

Plot Time: 03-Dec-18 18:34:53
Plot Range: 1700 ft to 4904 ft
Data: BEREX_HARTNETT\Well Based\DAQ-0001-002\
Plot File: \\LOCAL-IBEREX_HARTNETT\0001 RWCH-GTET-DSN-SDL-ACRT\ACRT\ACRT_1_main

1 INCH MAIN LOG

1 INCH CORRELATION LOG