

HALLIBURTON

ARRAY COMPENSATED
RESISTIVITY
LOG

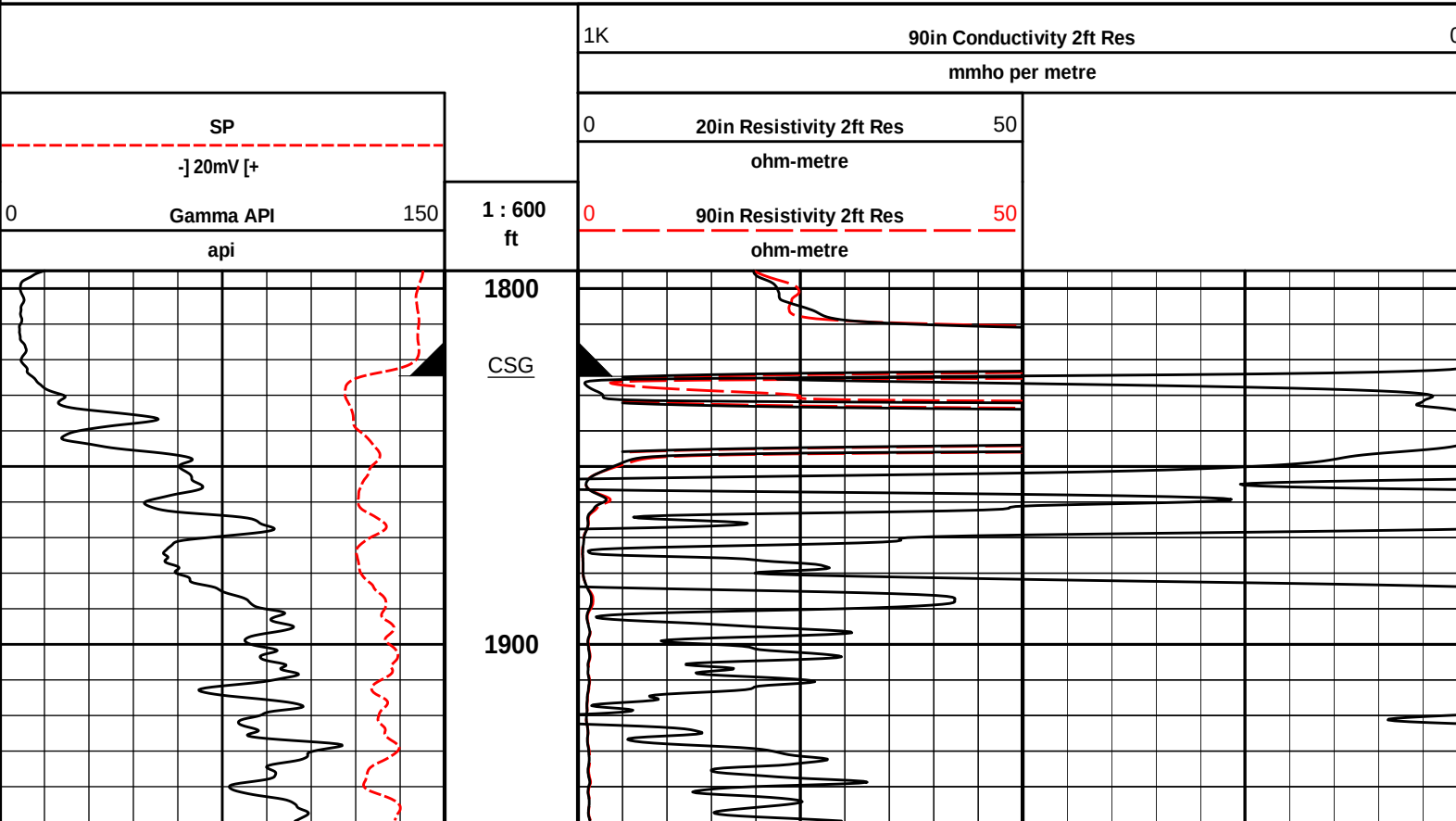
COMPANY				OXY USA INC.									
WELL				CORRELL A-1									
FIELD				LEMON NW									
COUNTY				HASKELL									
STATE				KANSAS									
COMPANY				OXY USA INC.									
WELL				CORRELL A-1									
FIELD				LEMON NW									
COUNTY				HASKELL									
STATE				KANSAS									
APL No.				15-081-21955									
Location				2215' FNL & 1110' FWL									
Sect.				8		Twp.		30S		Rge.		33W	
Elev.				2965.0 ft		Elev.		K.B.		2976.0 ft		2975.0 ft	
D.F.						G.L.				2965.0 ft			
Other Services:				SDLT/DSNT/ML				BSAT					
Permanent Datum				GL				KB					
Log measured from				KB				KB					
Drilling measured from				KB				KB					
Date				19-Jul-11									
Run No.				2									
Depth - Driller				5587.00 ft									
Depth - Logger				4407.0 ft									
Bottom - Logged Interval				5554									
Top - Logged Interval				1825									
Casing - Driller				8.625 in				@					
Casing - Logger				1825.0 ft									
Bit Size				7.875 in				@					
Type Fluid in Hole				WATER BASED MUD									
Density				8.7 ppq		65.00 s/qt							
PH				10.20 pH		7.2 cp/m							
Source of Sample				FLOWLINE									
Rm @ Meas. Temperature				1.900 ohmm		@ 75.00 degF		@					
Rmf @ Meas. Temperature				1.40 ohmm		@ 75.00 degF		@					
Rmc @ Meas. Temperature				2.200 ohmm		@ 75.00 degF		@					
Source Rmf				CALC		CALC							
Rm @ BHT				1.20 ohmm		@ 123.0 degF		@					
Time Since Circulation				7.0 hr									
Time on Bottom				19-Jul-11 05:00									
Max. Rec. Temperature				123.0 degF		@ 4407.0 ft		@					
Equipment				11230660		PV OK							
Recorded By				T. HARRIS									
Witnessed By				A. GARNER				B. KEMP		N. HAILEY			

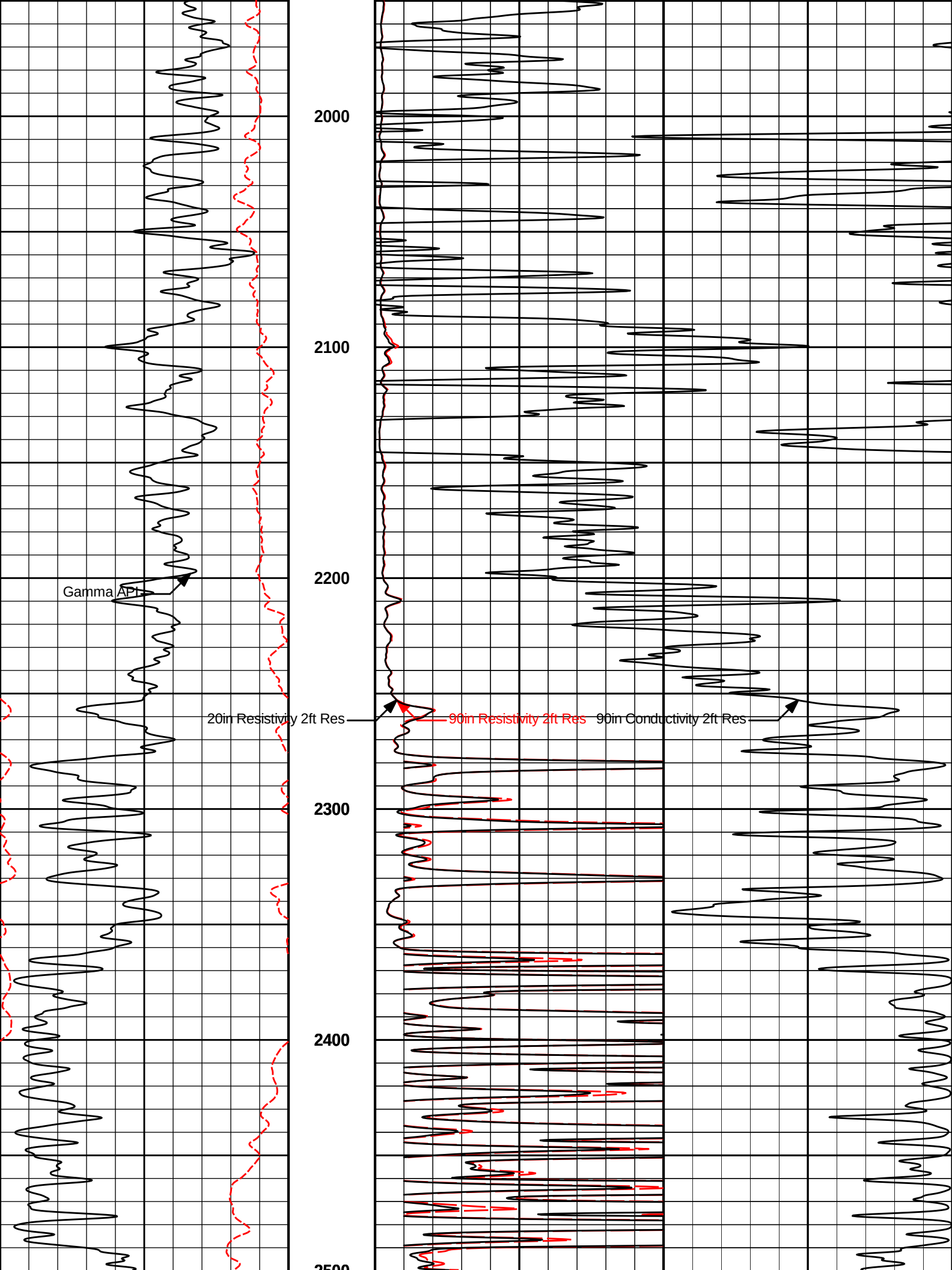
API No. 15-081-21955
Location 2215 FNL & 1110 FWL
Other Services: SDLT/DSNT/MIL
BSAT

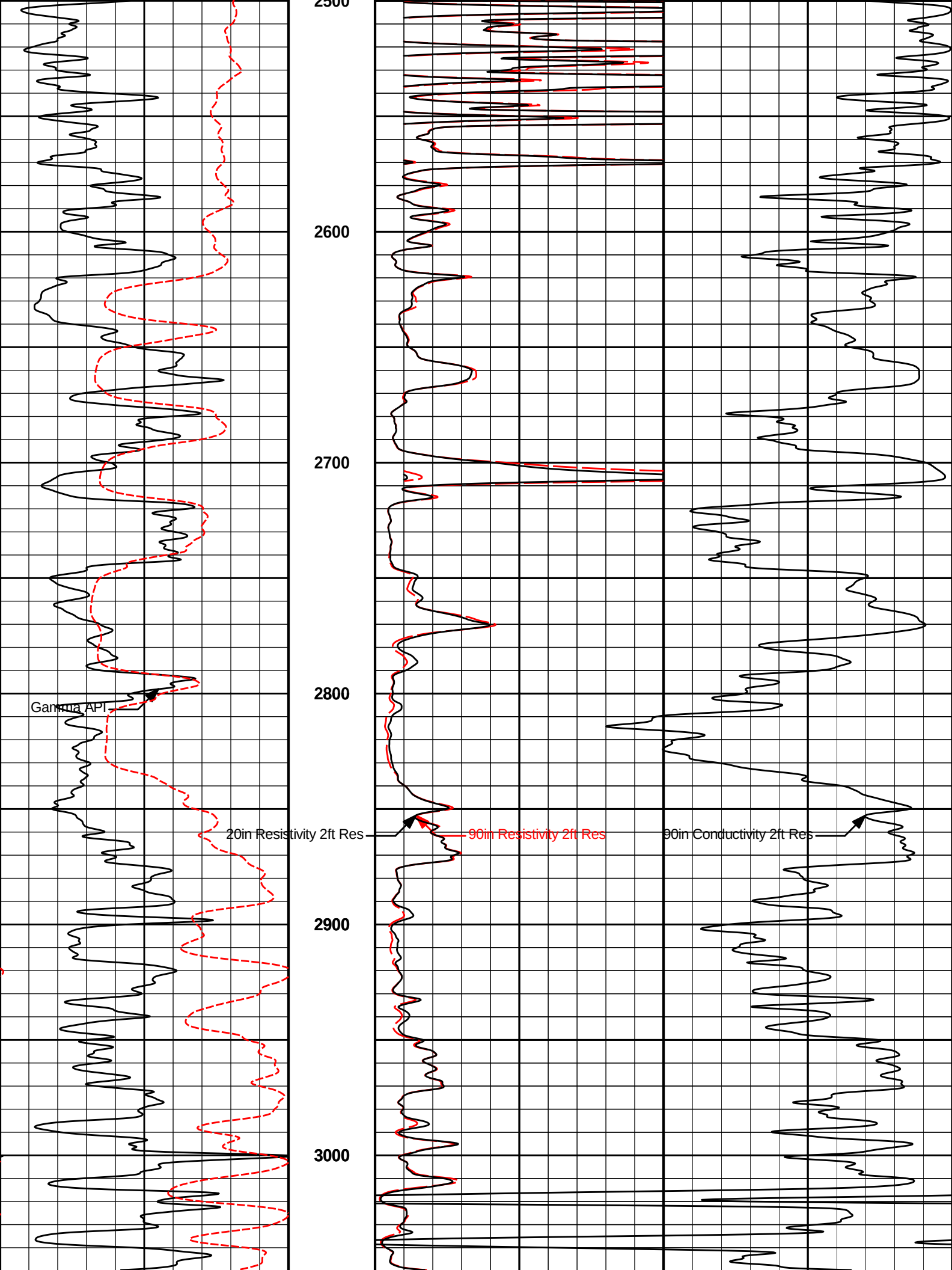
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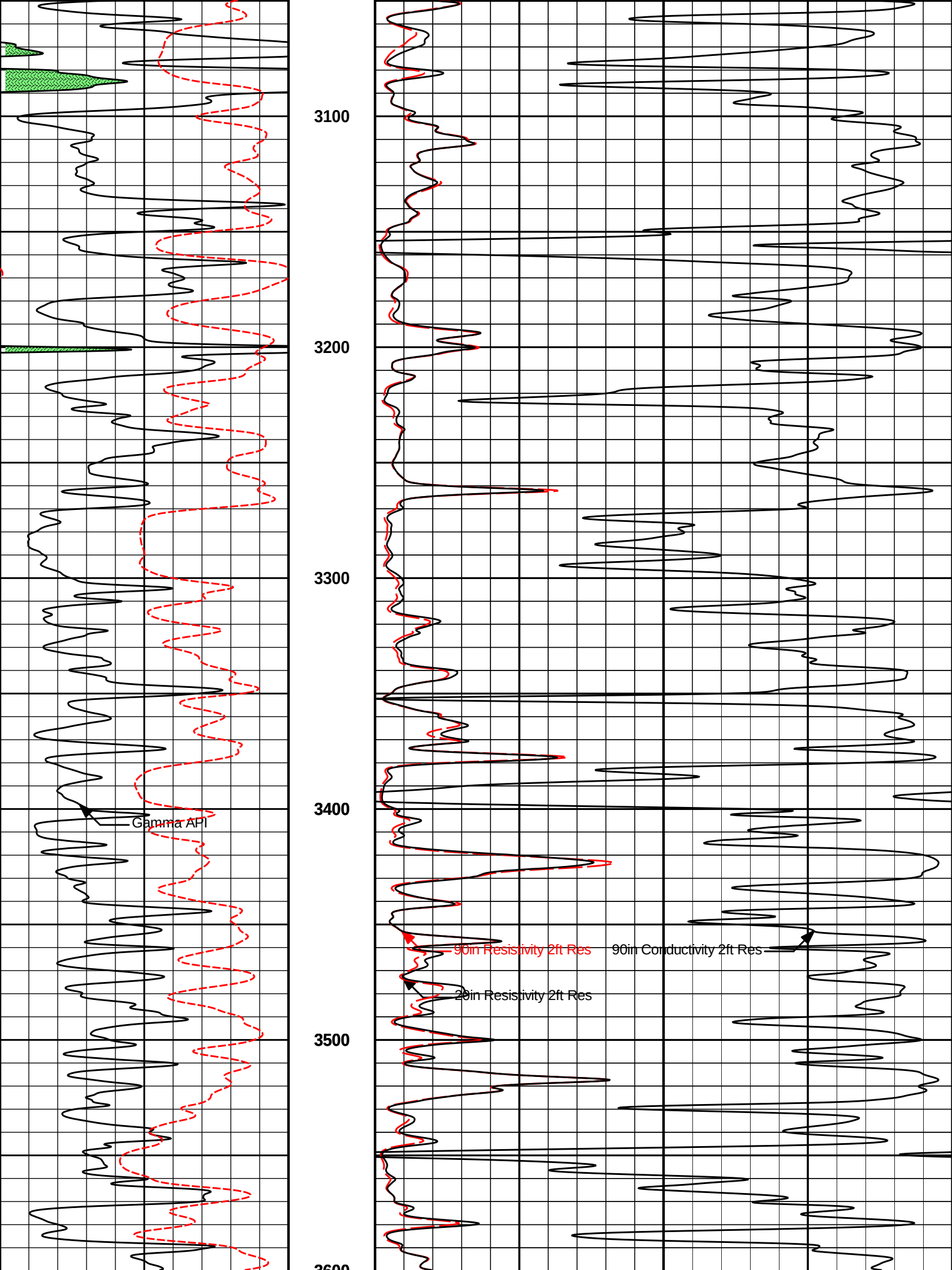
Service Ticket No.: 8334652						API Serial No.: 15-081-21955						PGM Version: WL INSITE R3.2.3 (Build 5)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole				Scale Down Hole									
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-910-987				NA				1.5" S.O.				NA			
Rmc @ Meas. Temp.				@				@				ONE		MICROLOG				SLIM				ADJ.				NA			
Source Rmf		Rmc																											
Rm @ BHT				@				@																					
Rmf @ BHT				@				@																					
Rmc @ BHT				@				@																					
EQUIPMENT DATA																													
GAMMA						ACOUSTIC						DENSITY						NEUTRON											
Run No.		ONE				Run No.		ONE				Run No.		ONE				Run No.		ONE									
Serial No.		11013114				Serial No.		10939049				Serial No.		I15M94P73				Serial No.		10993115									
Model No.		GTET				Model No.		BSAT				Model No.		SDLT				Model No.		DSNT									
Diameter		3.625"				No. of Cent.		2				Diameter		4.75"				Diameter		3.625"									
Detector Model No.		102-A				Spacing		2				Log Type		GAM-GAM				Log Type		NEU-NEU									
Type		SCINT.										Source Type		Cs137				Source Type		Am241Be									
Length		8"				LSA [Y/N]		Y				Serial No.		20791B				Serial No.		382									
Distance to Source		9.4'				FWDA [Y/N]		N				Strength		1.5 Ci				Strength		15 Ci									

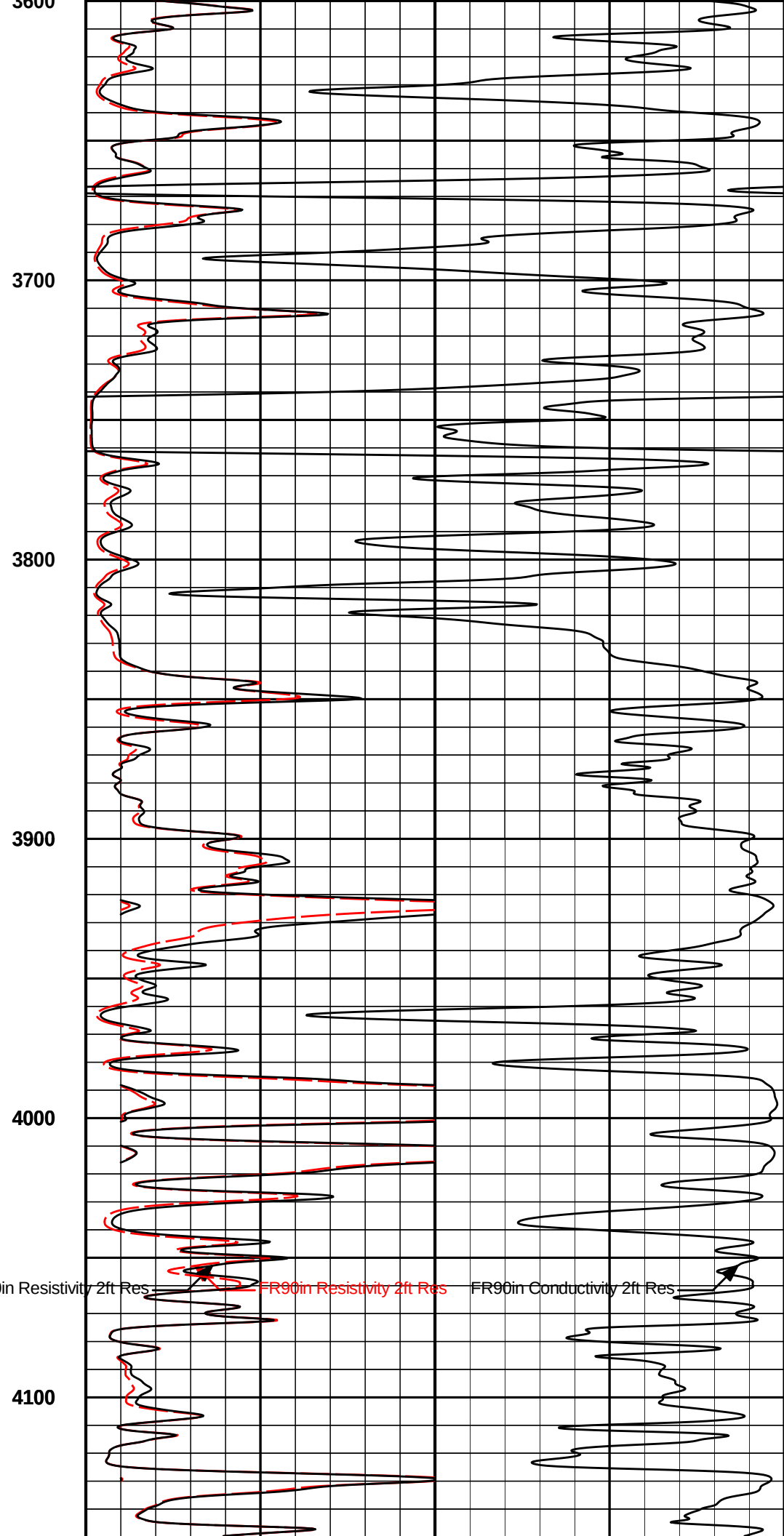
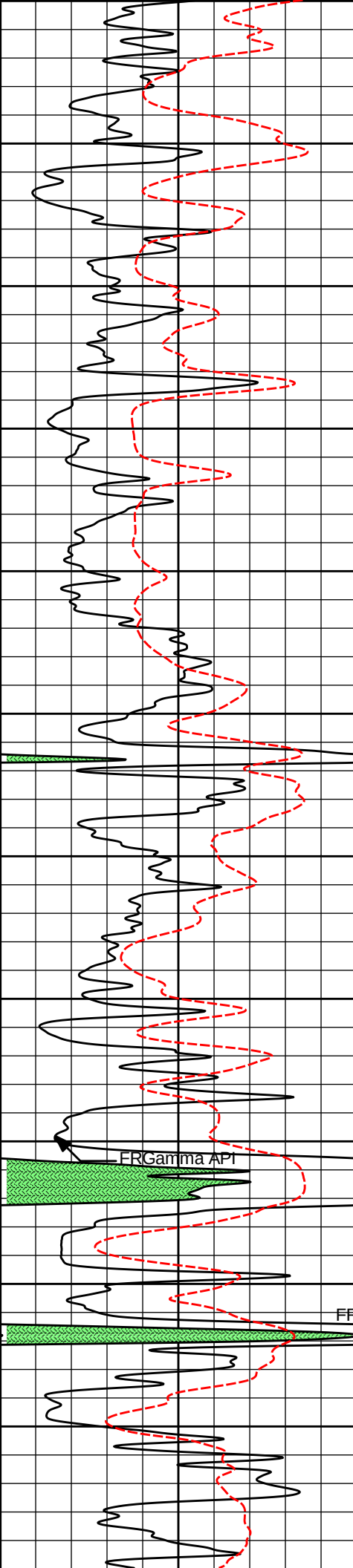
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix					
No.	From	To	ft/min	L	R	L	R		L	R		L	R						
ONE	TD	CSG	REC	0	150	40	140	47.6	30%	-10%	2.71	30%	-10%	LIME					
DIRECTIONAL INFORMATION																			
Maximum Deviation								@	KOP							@			
Remarks:																			
ACRt, BSAT, SDLT/DSNT/ML AND GAMMA ALL RAN IN COMBINATION; THIS IS THE FIRST RUN IN WELL.																			
ALL PRESENTATIONS AND LOG INTERVALS PER CUSTOMER REQUEST.																			
CHLORIDES: 1200 ppm																			
LOG SPLICED WITH FIRST RUN AT 4330'																			
CREW: NETTLES, SUMNER																			
THANK YOU FOR USING HALLIBURTON ENERGY SERVICES.																			
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.																			
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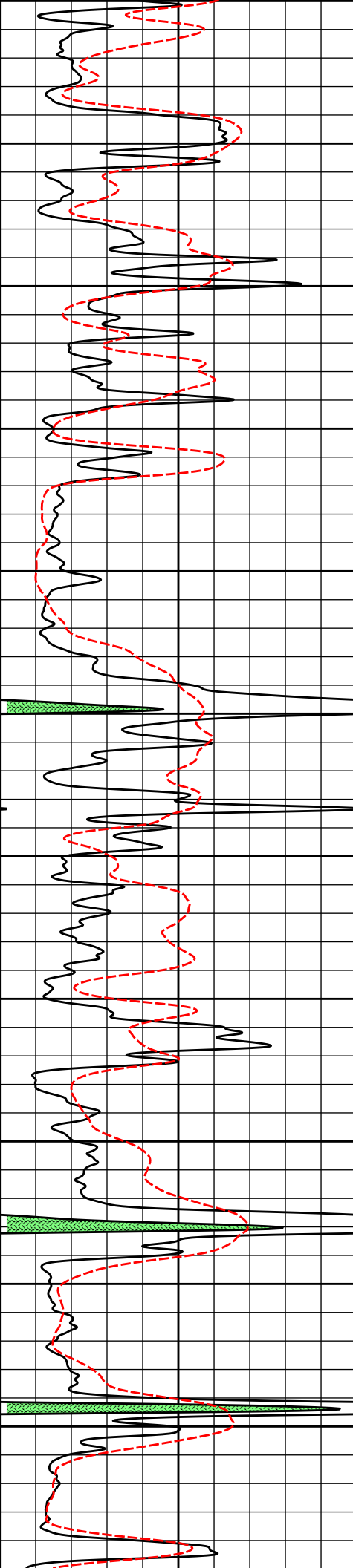












4200

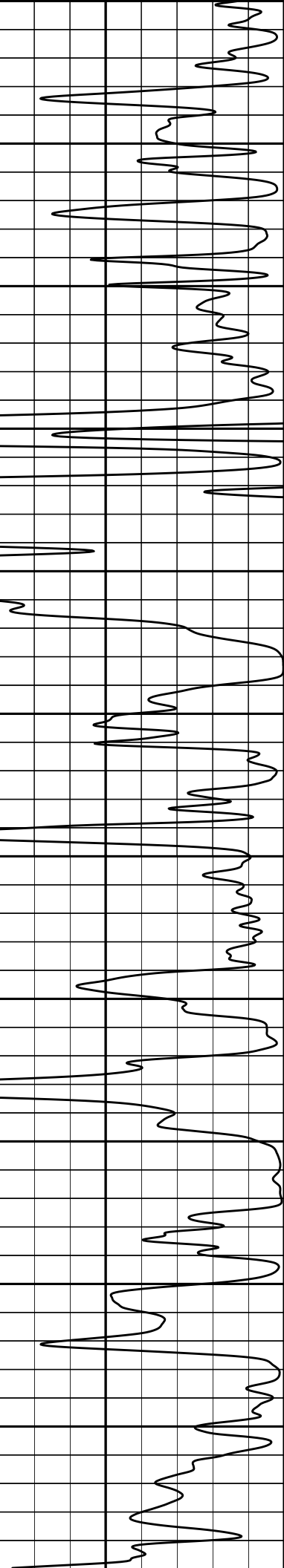
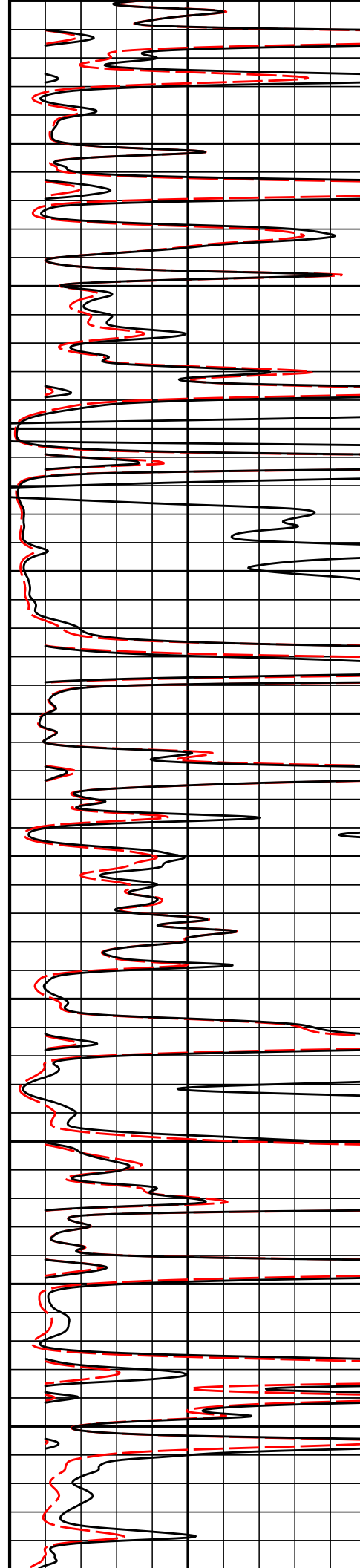
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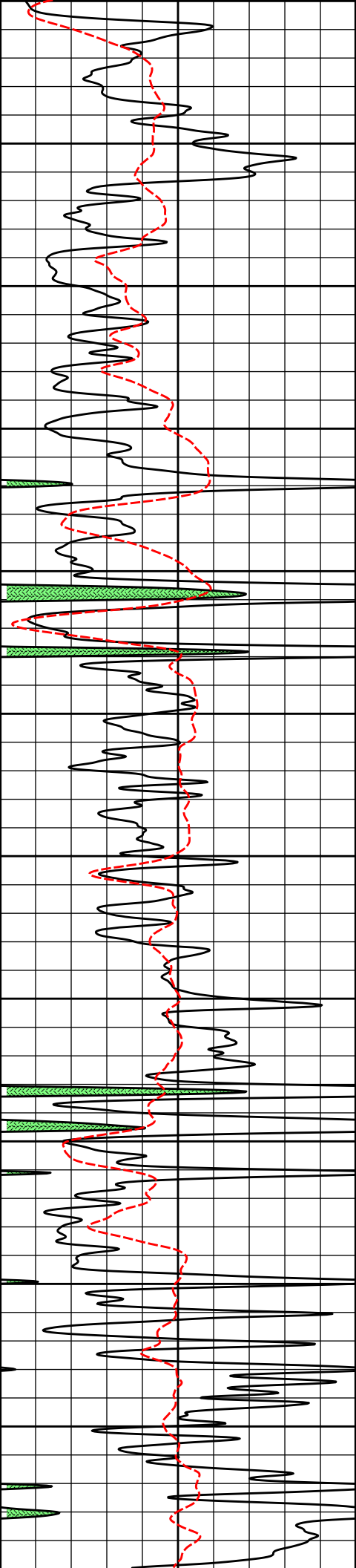
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4500

4600

4700





4700

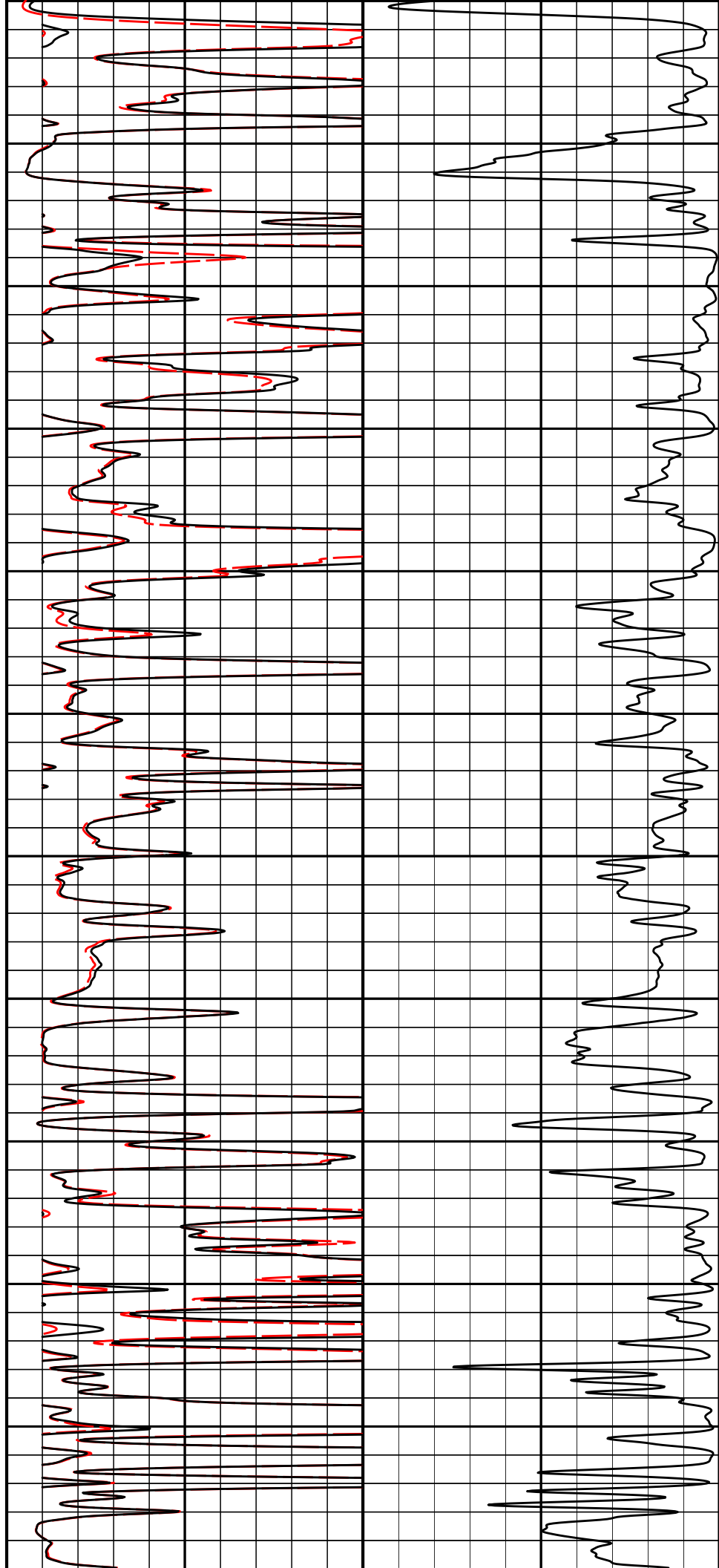
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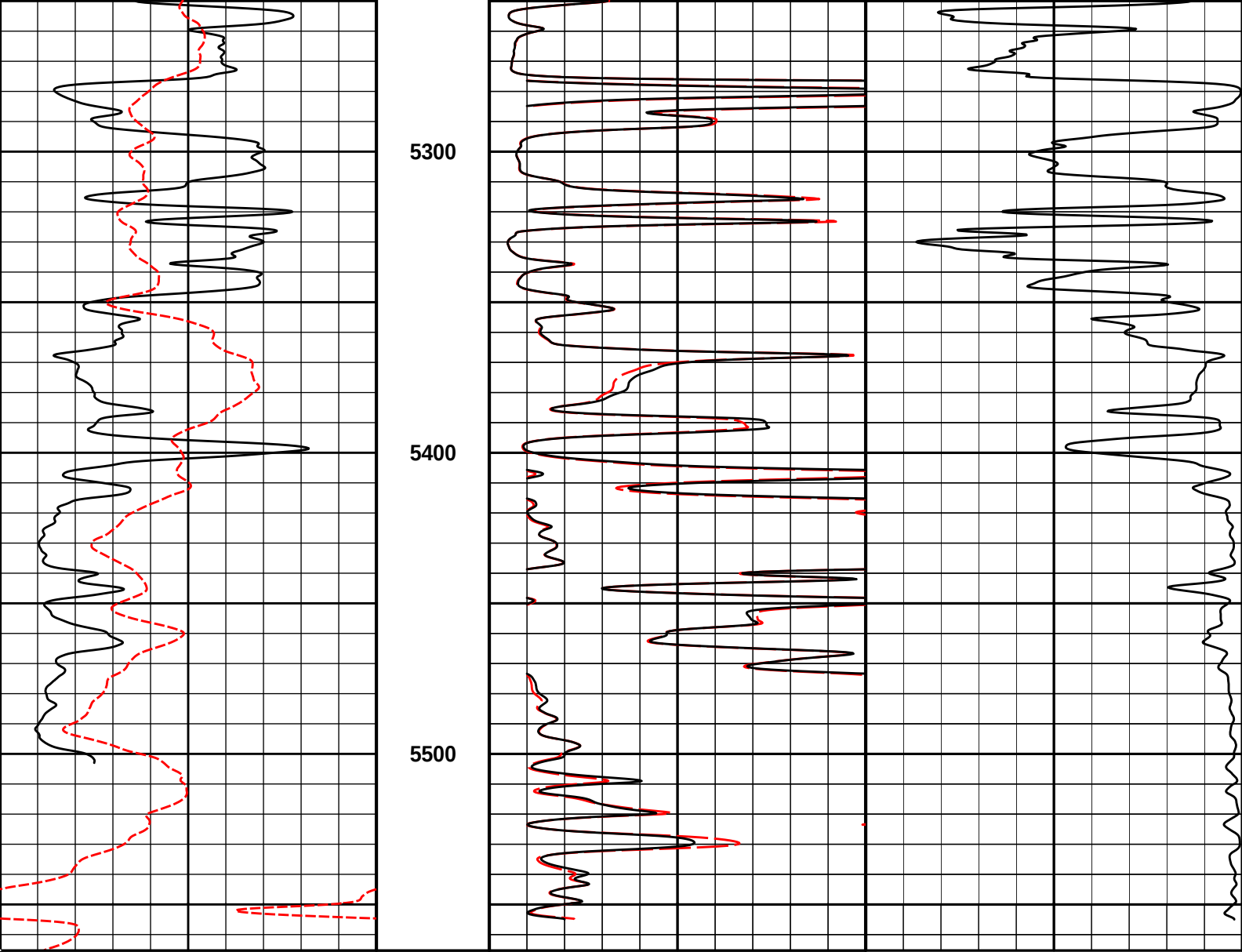
4900

5000

5100

5200





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

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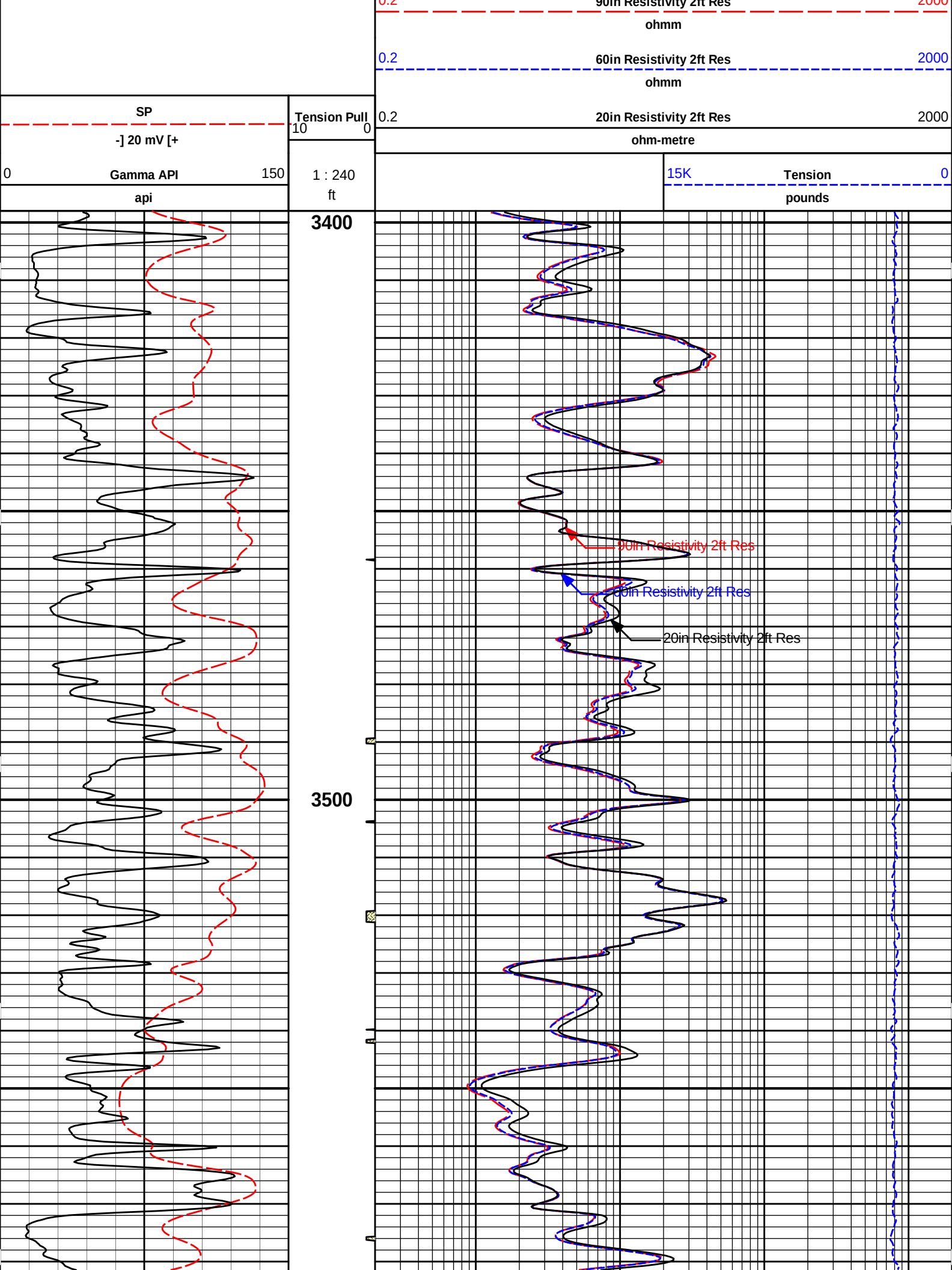
Plot Time: 20-Jul-11 10:27:49
Plot Range: 1795 ft to 5565.25 ft
Data: CORRELL_A_1\Well Based\MAIN_SPLICE\
Plot File: \\LOCAL-CORRELL_A_1\0001 BLACK_QUAD_BSAT\ACRT11_ACRT_2inx

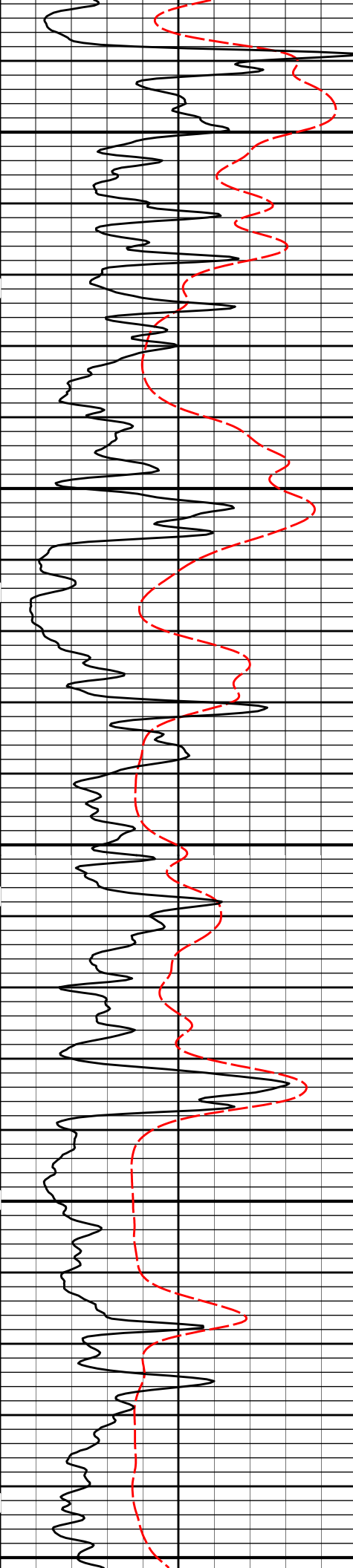
2 INCH MAIN LOG

HALLIBURTON

Plot Time: 20-Jul-11 10:27:49
Plot Range: 3398 ft to 5568 ft
Data: CORRELL_A_1\Well Based\MAIN_SPLICE\
Plot File: \\LOCAL-CORRELL_A_1\0001 BLACK_QUAD_BSAT\ACRT11_ACRT_5_mainx

5 INCH MAIN LOG

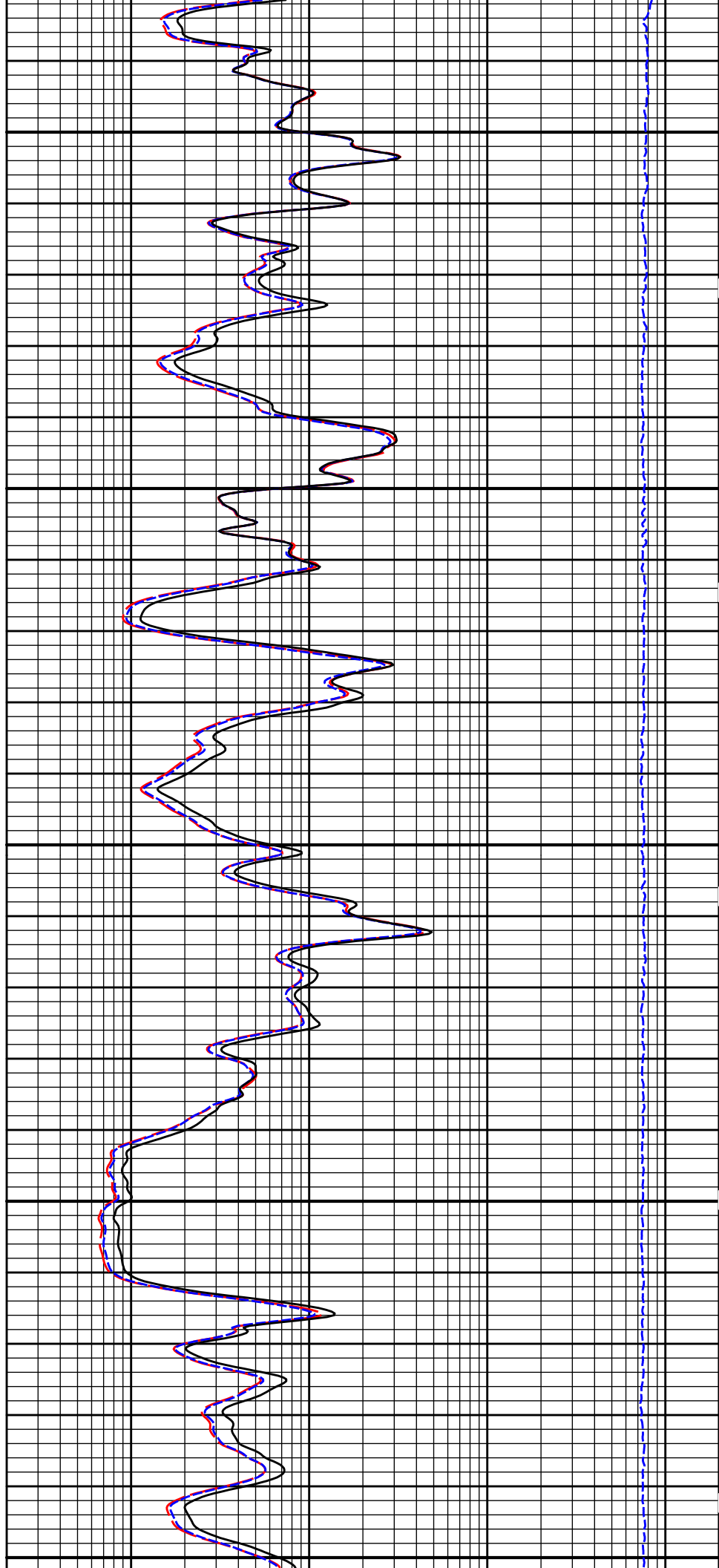


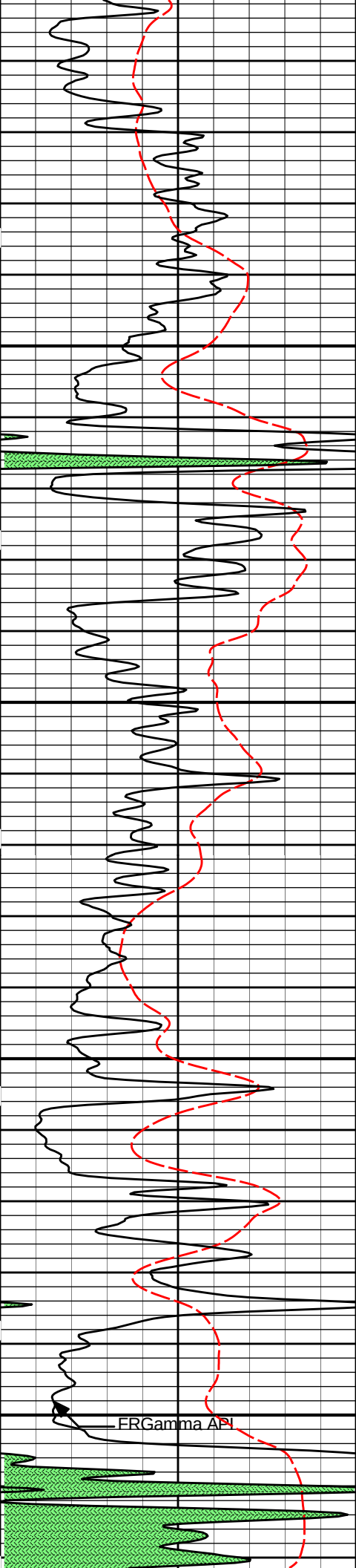


3600

3700

3800

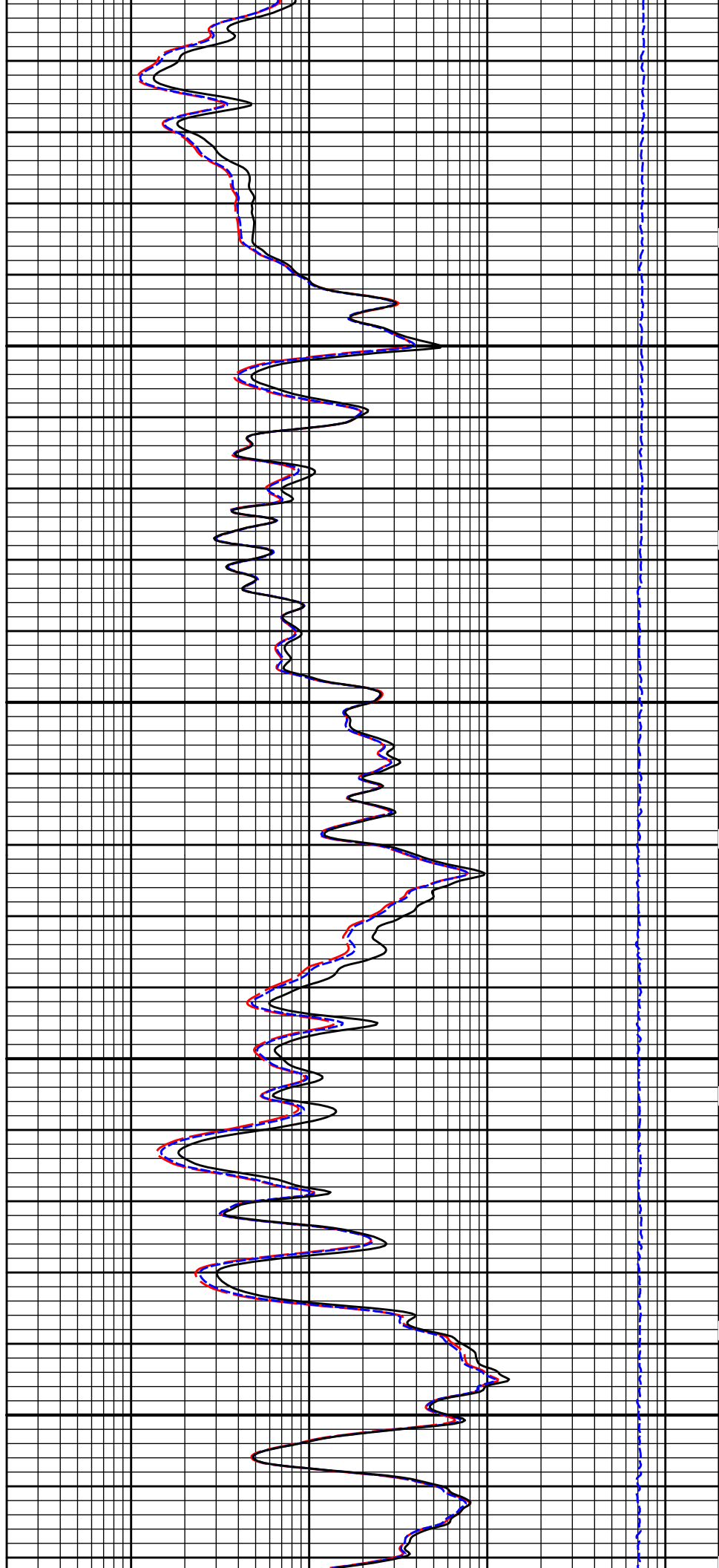


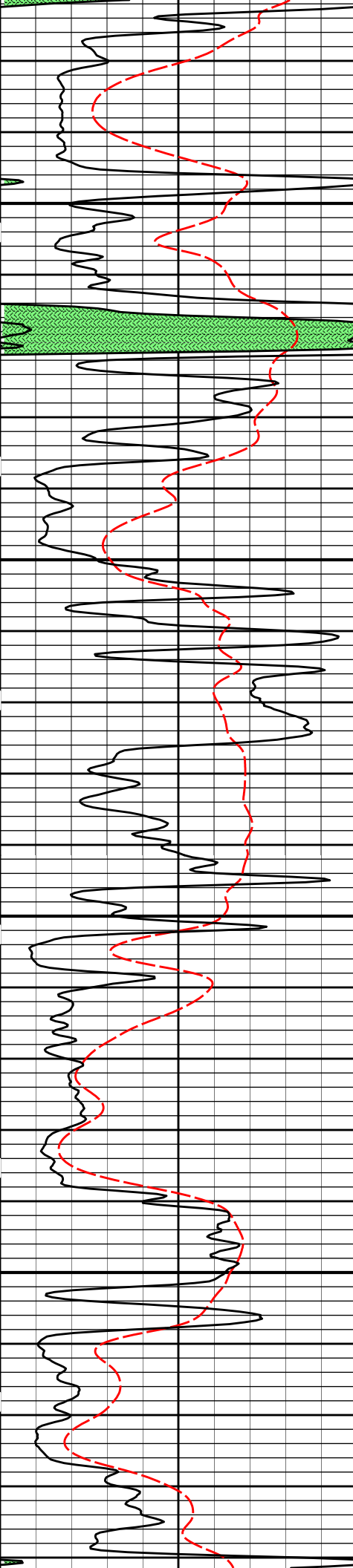


3900

4000

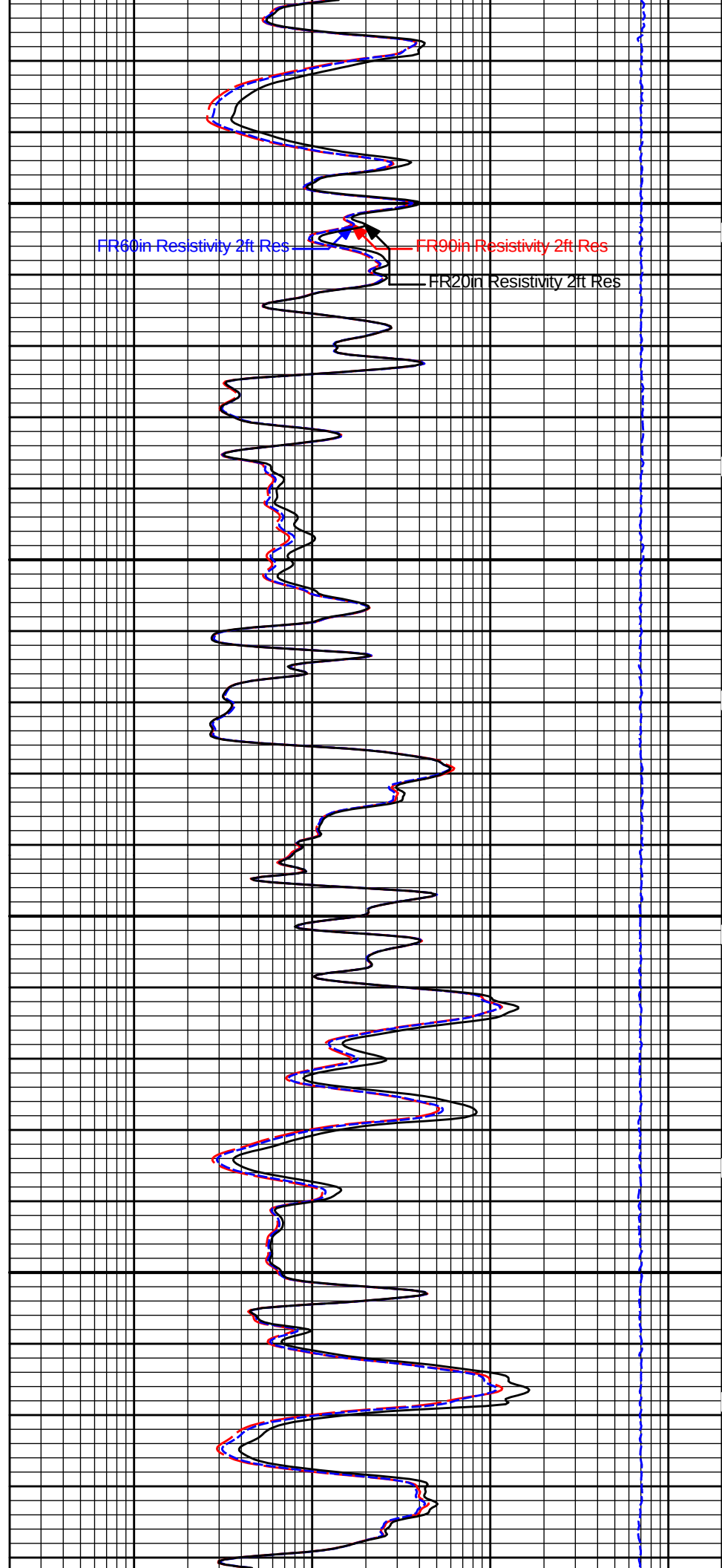
ERGgamma API





4100

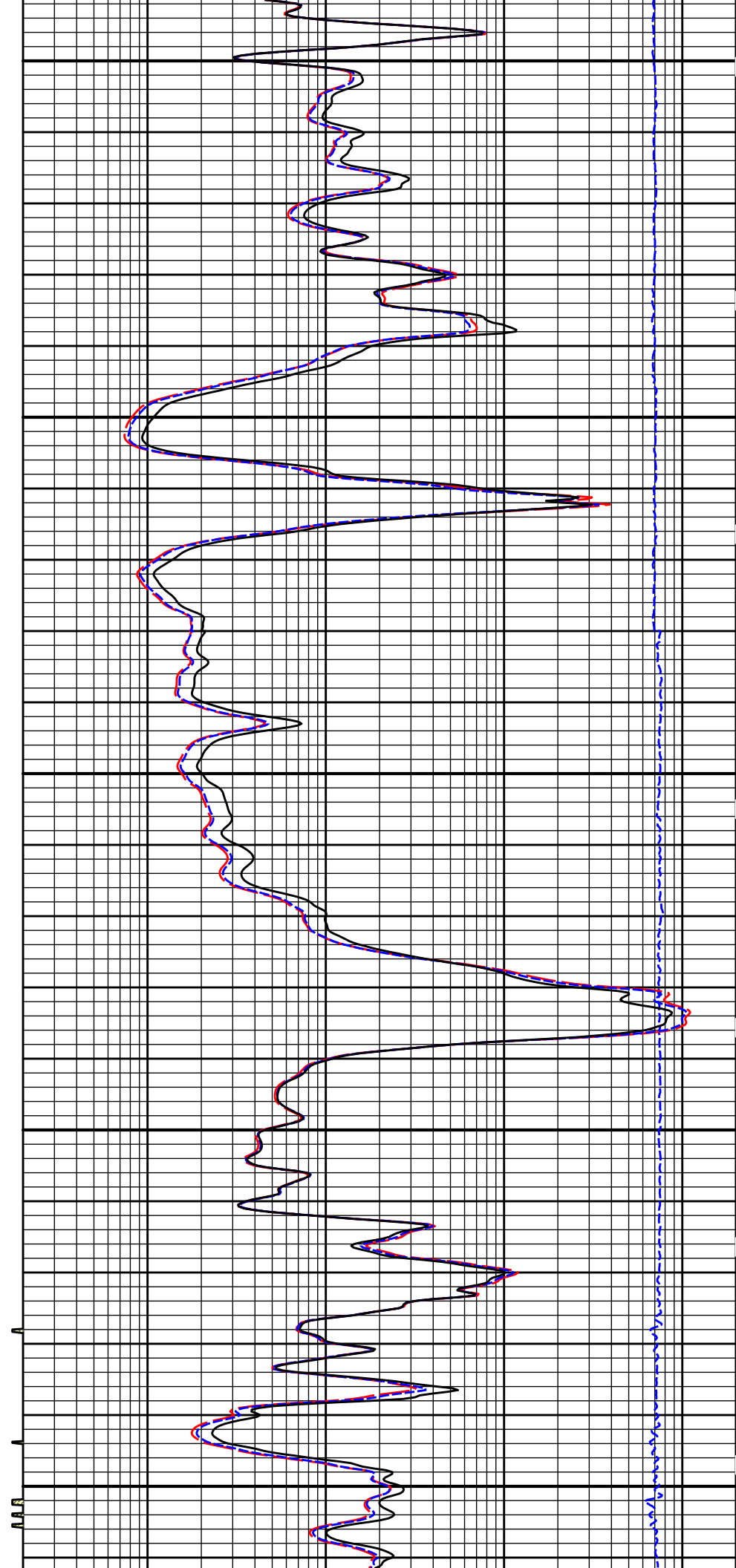
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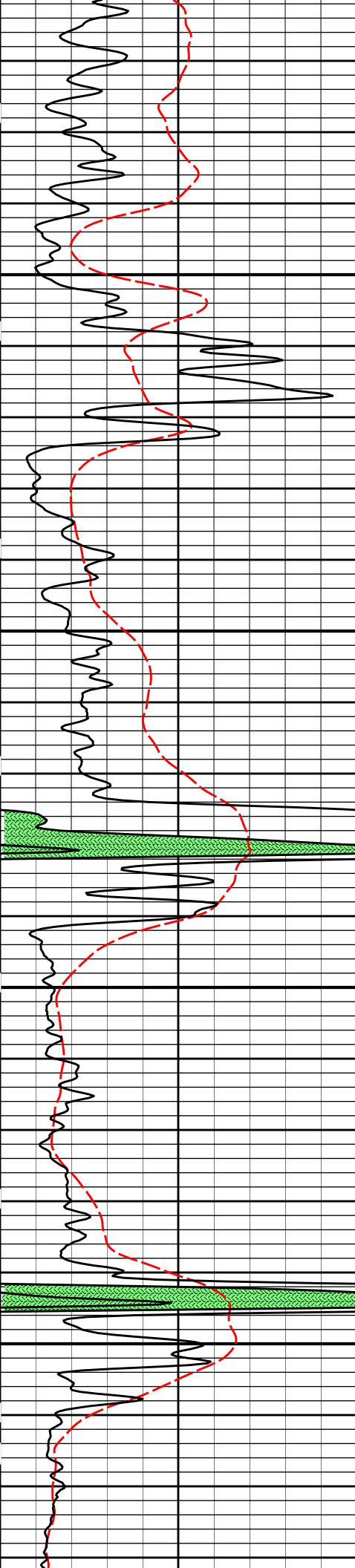




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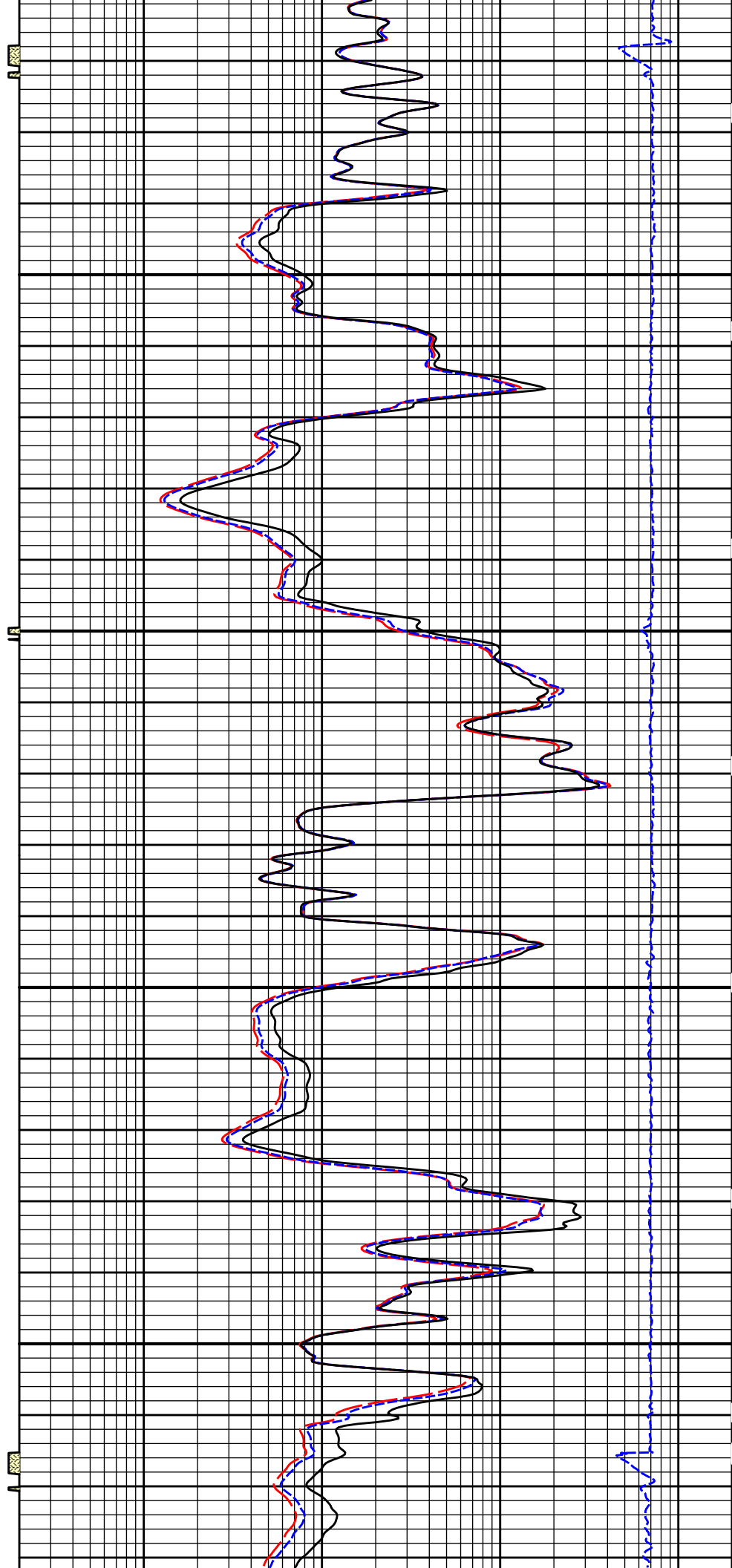
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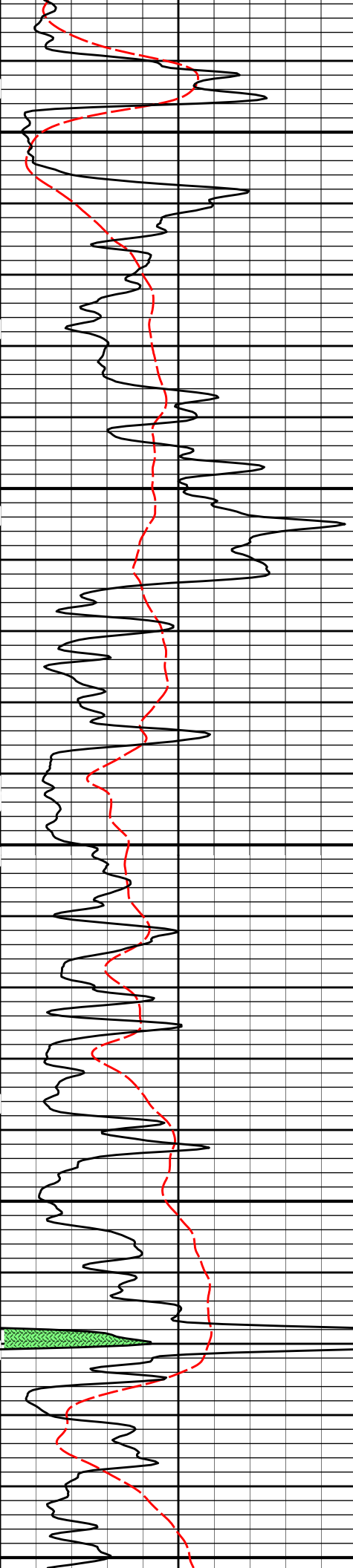




4500

4600

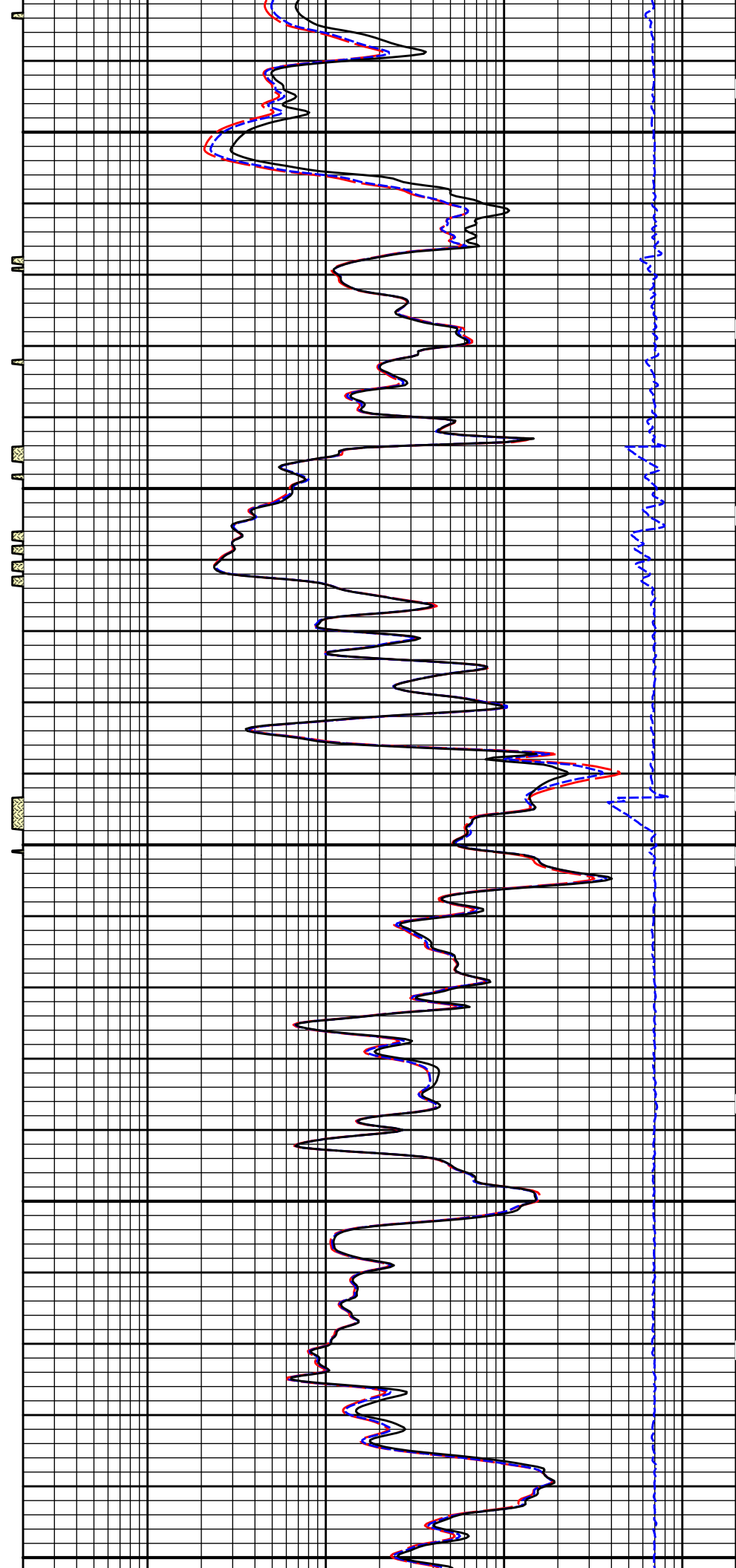


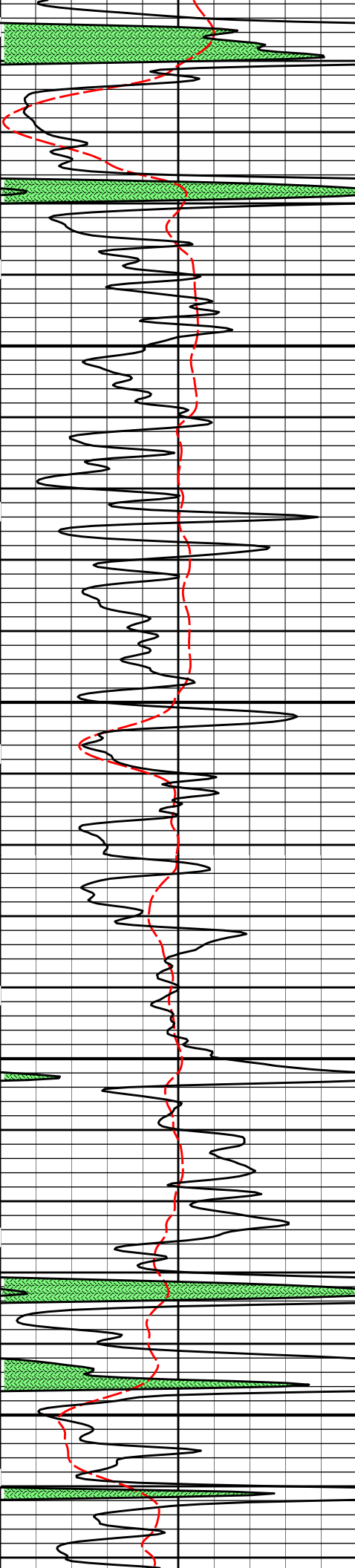


4700

4800

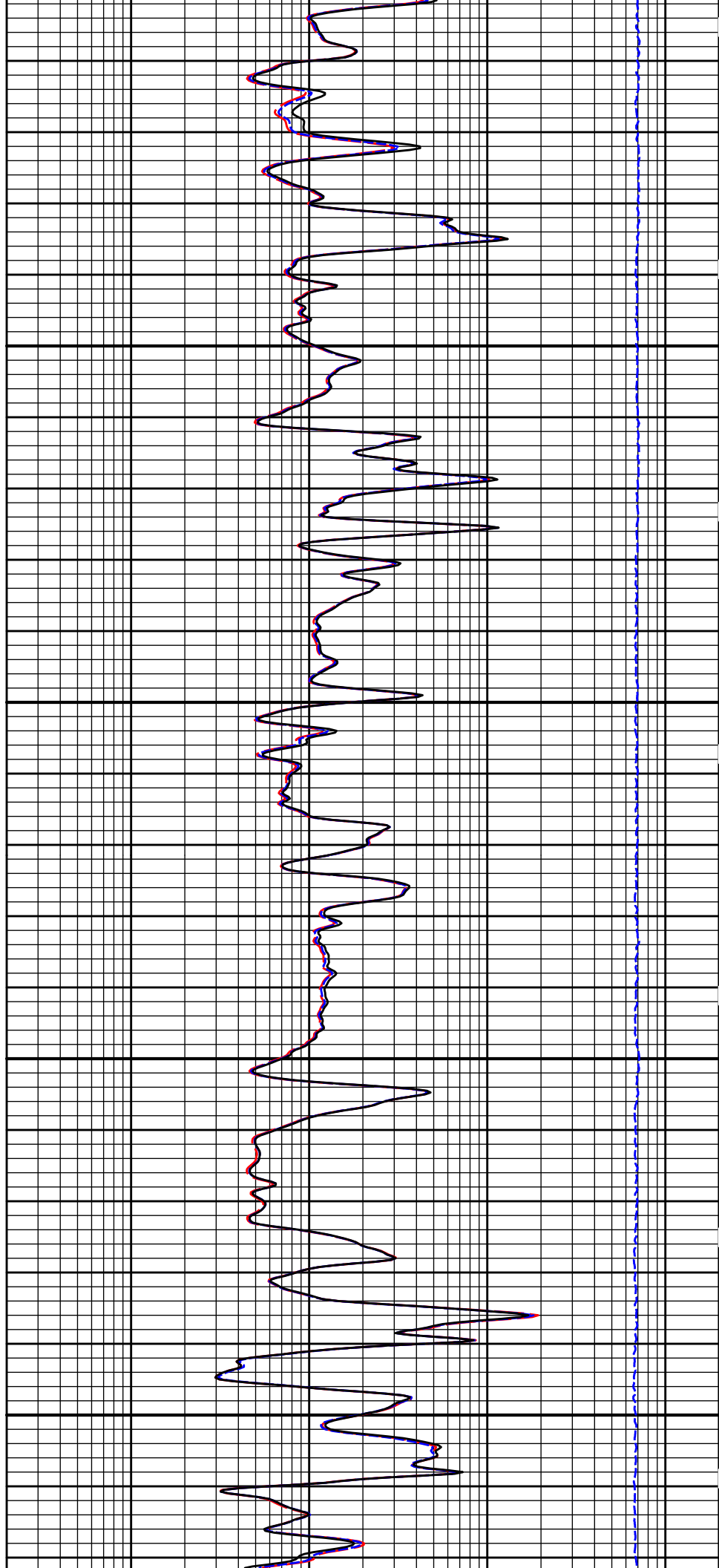
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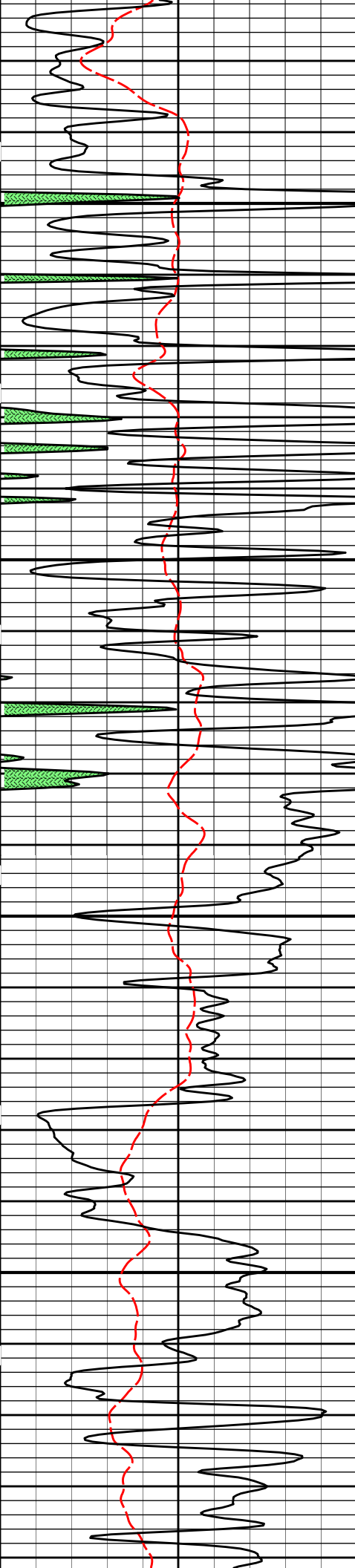




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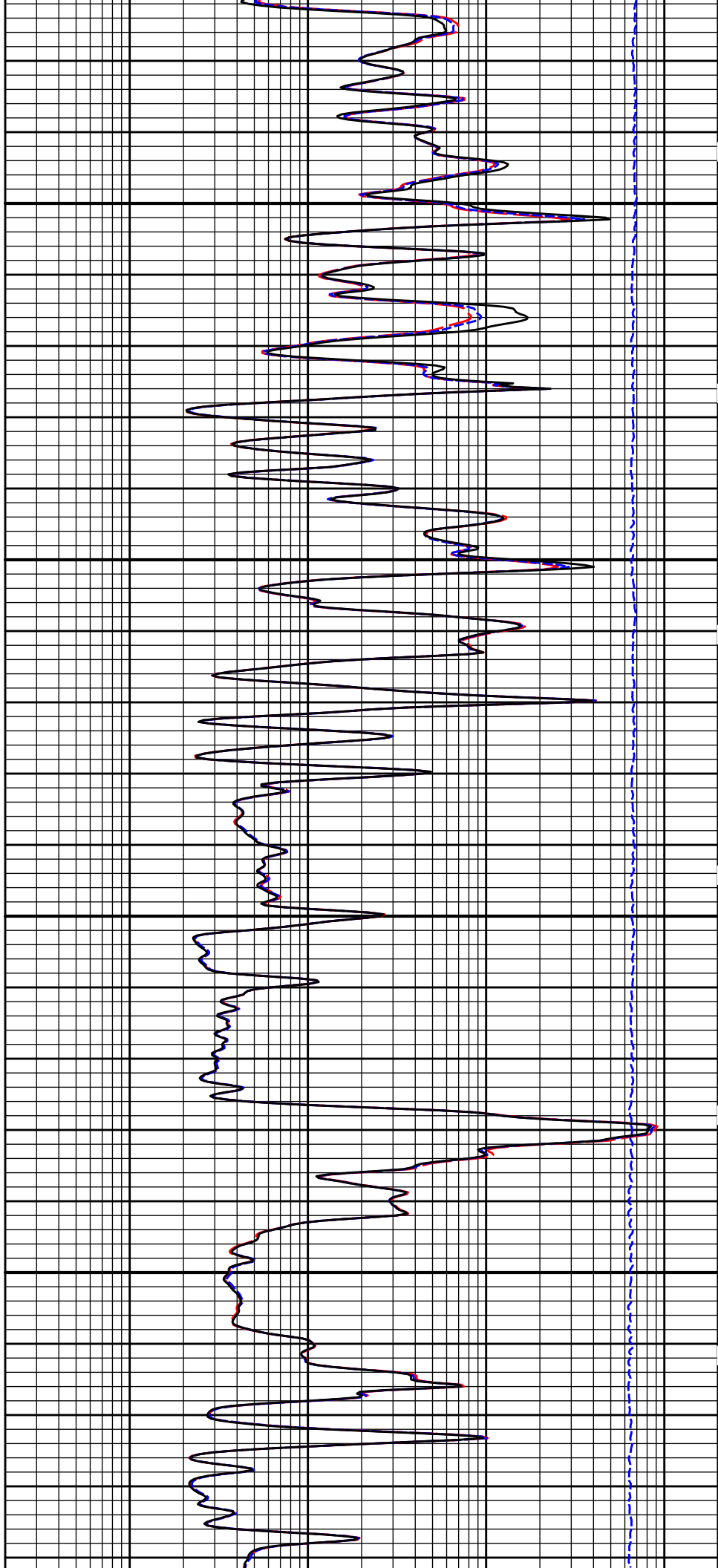
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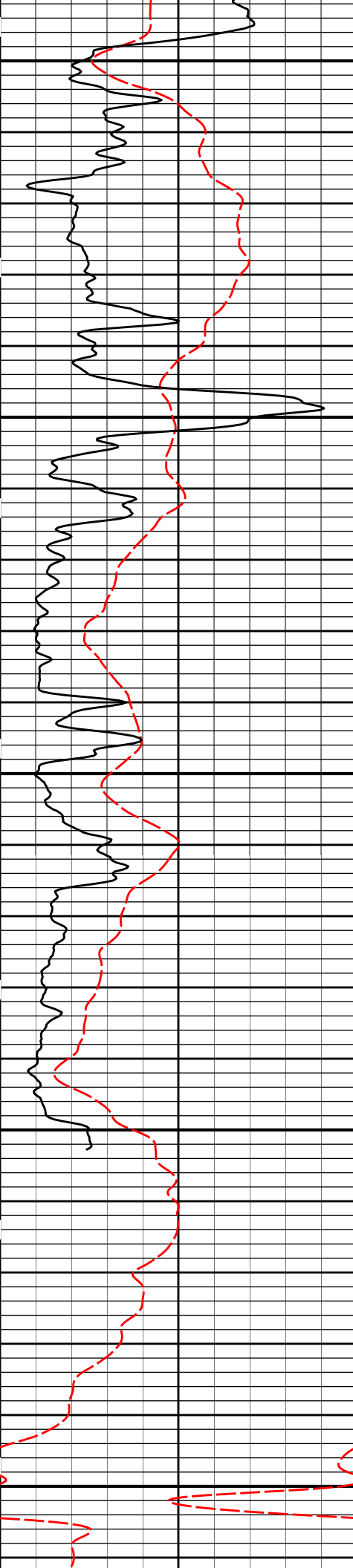




5200

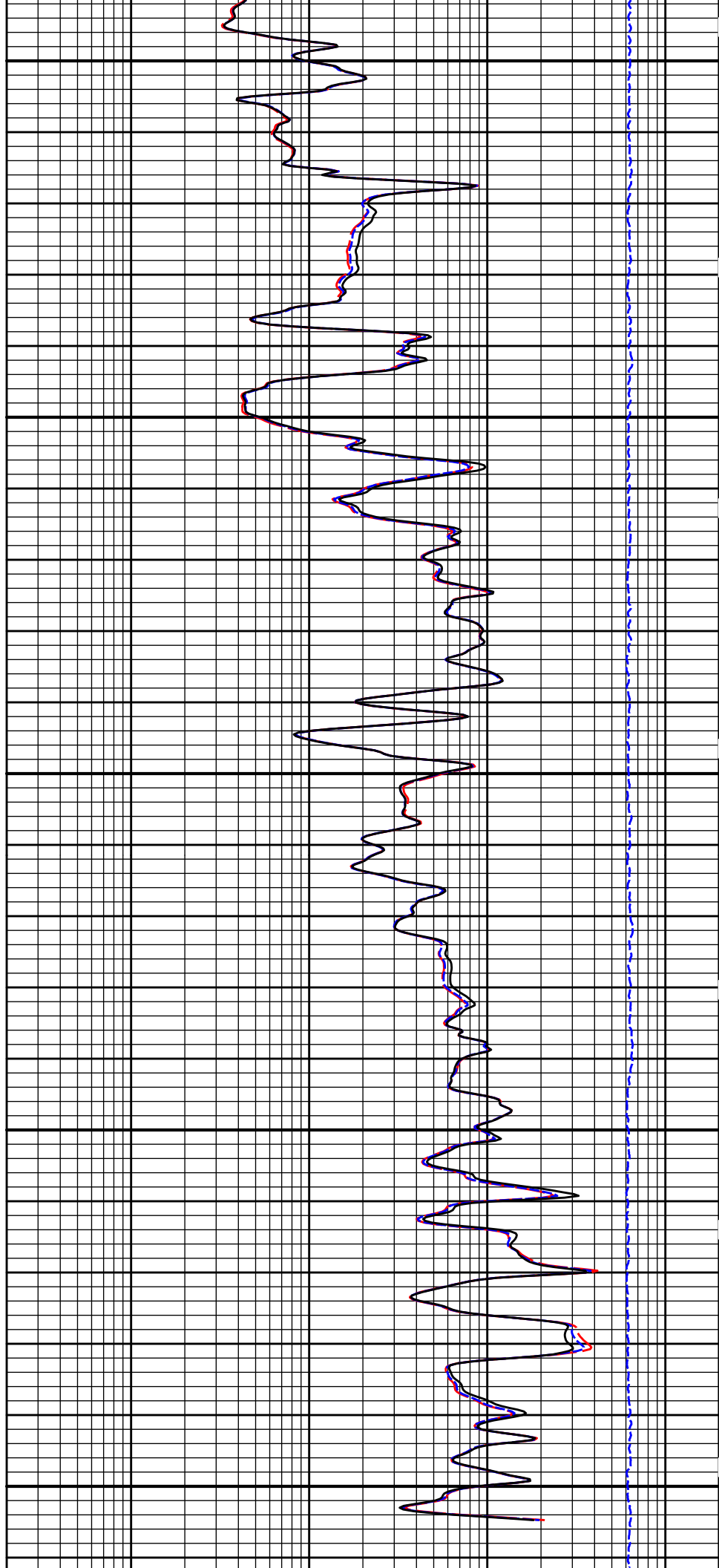
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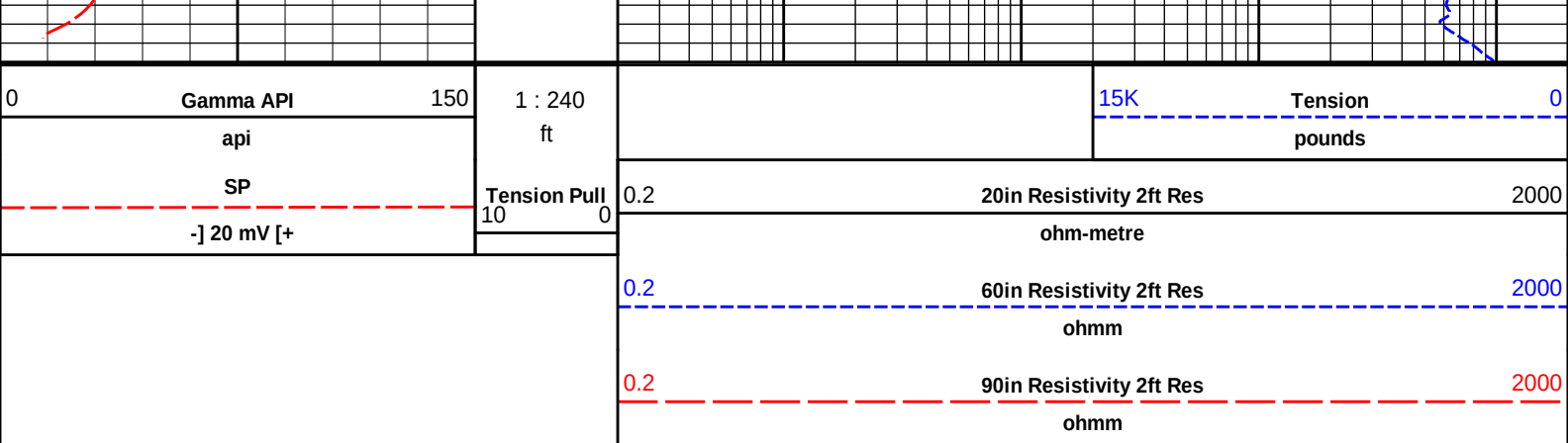




5400

5500



**HALLIBURTON**

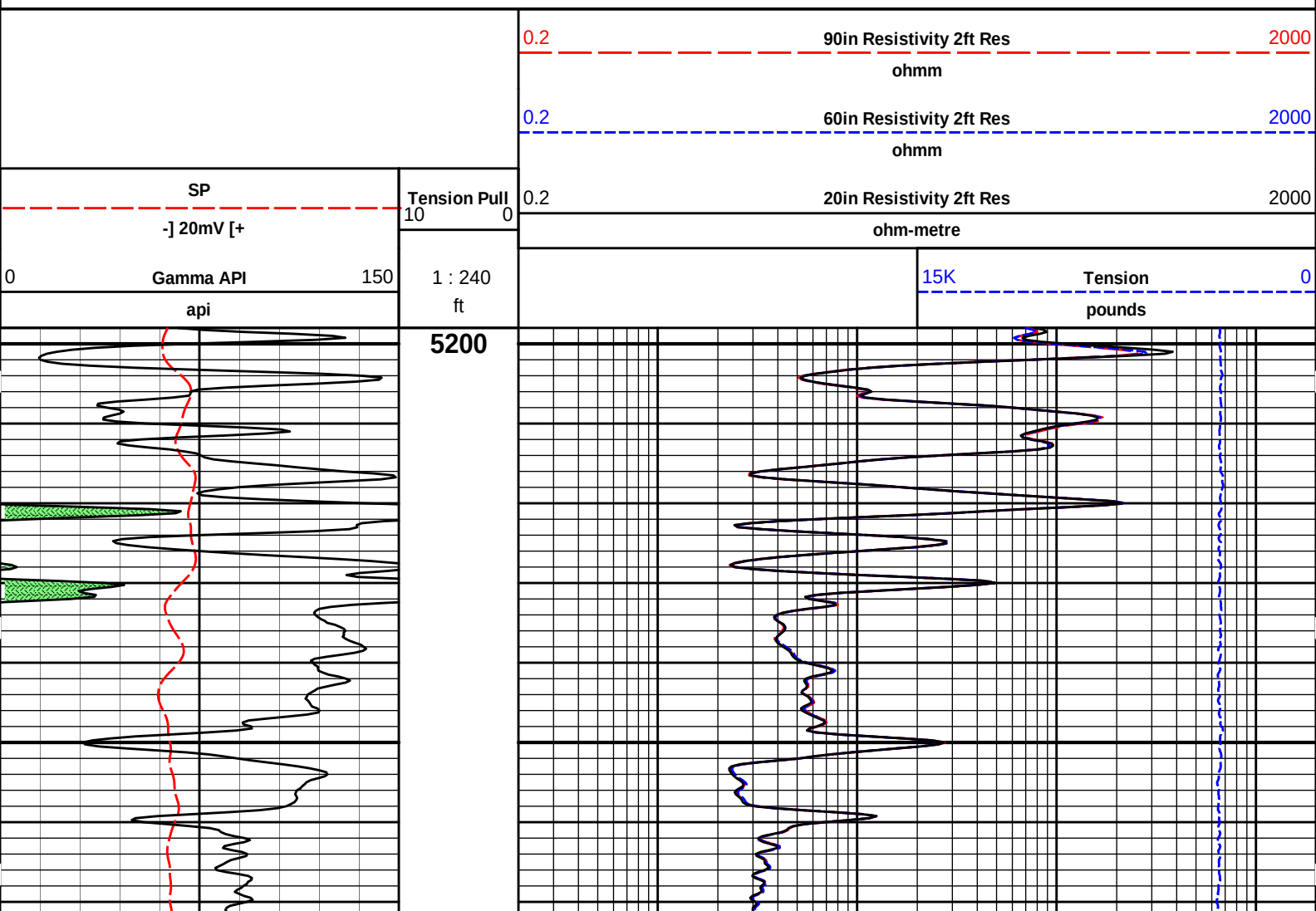
Plot Time: 20-Jul-11 10:27:52
Plot Range: 3398 ft to 5568 ft
Data: CORRELL_A_1\Well Based\MAIN_SPLICE\
Plot File: \\-LOCAL-\\CORRELL_A_1\0001 BLACK_QUAD_BSAT\ACRT1_ ACRT_5_mainx

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 20-Jul-11 10:27:52
Plot Range: 5198 ft to 5569.83 ft
Data: CORRELL_A_1\Well Based\DAQ-0002-003\
Plot File: \\-LOCAL-\\CORRELL_A_1\0001 BLACK_QUAD_BSAT\ACRT1_5_rptx

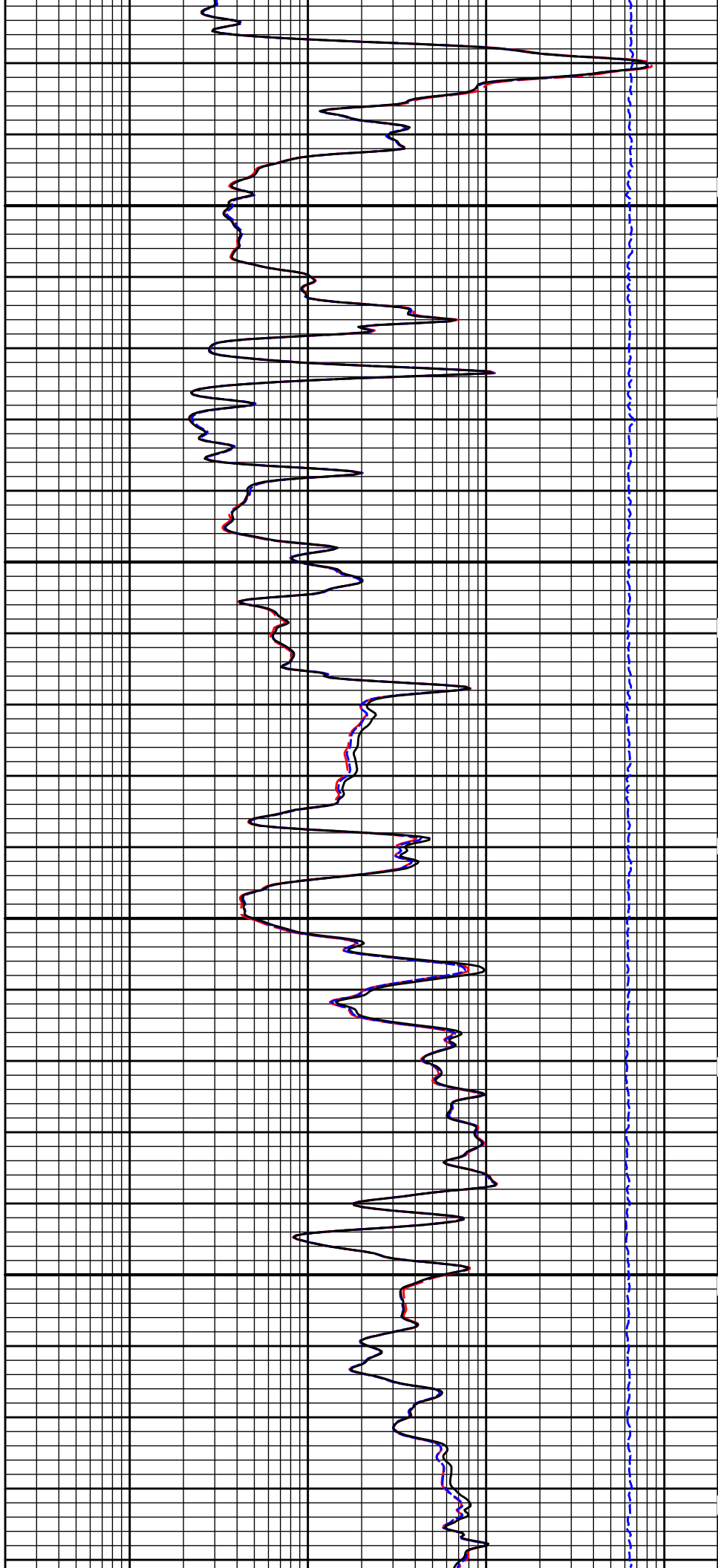
REPEAT SECTION

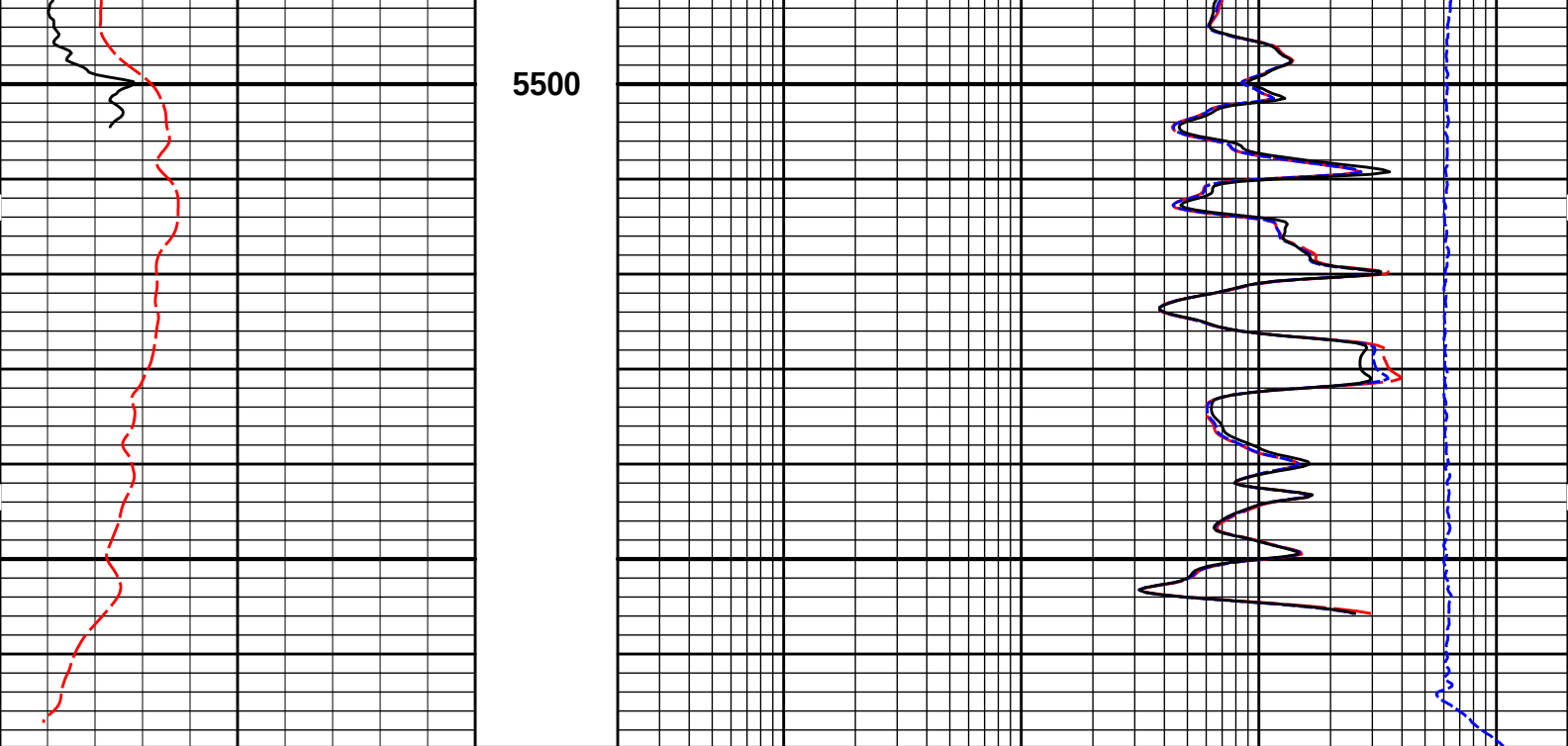




5300

5400





0	Gamma API	150	1 : 240	15K	Tension	0
	api		ft		pounds	
	SP		Tension Pull	0.2	20in Resistivity 2ft Res	2000
	-] 20mV [+]	10 0		ohm-metre		
				0.2	60in Resistivity 2ft Res	2000
				ohmm		
				0.2	90in Resistivity 2ft Res	2000
				ohmm		

HALLIBURTON

Plot Time: 20-Jul-11 10:27:54
Plot Range: 5198 ft to 5569.83 ft
Data: CORRELL_A_1\Well Based\DAQ-0002-003\
Plot File: \\-LOCAL-\\CORRELL_A_1\0001 BLACK_QUAD_BSATICRT1 ACRT_5_rptx

REPEAT SECTION

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	8.700	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	1200.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	

SHARED	CSD	Logging Interval is Cased?		
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5587.00	ft
SHARED	BHT	Bottom Hole Temperature	200.0	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	
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	Centered	
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	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	Limestone 47.5	
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Free Hanging	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm

ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	
BOTTOM				
Data: CORRELL_A_110001 BLACK_QUAD_BSAT1004 19-Jul-11 05:19 Up @4408.5f				Date: 19-Jul-11 06:45:05

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION				
Tool Name:	GTET - 11013114	Reference Calibration Date:	26-Jun-11 01:37:50	
Engineer:	T. HARRIS	Calibration Date:	18-Jul-11 09:18:26	
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1	

Calibrator Source S/N: 150				
Calibrator API Reference:225.00 api				
Equivalent Calibrator API Reference:228.9 api				
Measurement	Measured	Calibrated	Units	
Background	25.2	23.4	api	
Background + Calibrator	268.3	248.4	api	
Calibrator	223.1	225.0	api	

NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name:	GTET - 11013114	Reference Calibration Date:	18-Jul-11 09:18:26	
Engineer:	T. HARRIS	Calibration Date:	20-Jul-11 06:21:55	
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1	

Calibrator Source S/N: 150				
Calibrator API Reference:225.00 api				
Equivalent Calibrator API Reference:228.9 api				
Field Verification	Shop	Field	Units	
Background	23.4	32.1	api	
Background + Calibrator	248.4	248.8	api	
Calibrator	225.0	216.7	api	
Shop	Field	Difference	Tolerance	
225.0	216.7	8.3	+/- 9.00	

DUAL SPACED NEUTRON SHOP CALIBRATION				
Tool Name:	DSNT - 10993115	Reference Calibration Date:	24-May-11 12:45:30	
Engineer:	J.COTHREN	Calibration Date:	22-Jun-11 11:00:54	
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1	

Logging Source S/N: DSN-382				
Tank Serial Number: PVOK				
Reference value assigned to Tank: 56.100				
Snow Block S/N: 592_PV				
Calibration Tank Water Temperature: 85 degF				
Min. Tool Housing Outside Diameter: 3.625 in				

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.993	0.993	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):	0.2355	0.2358	0.0002	+/- 0.0020
Calibrated Ratio:	10.55	10.56	0.008	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0858	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 - 10993115	Reference Calibration Date:	22-Jun-11 11:00:54
Engineer:	T. HARRIS	Calibration Date:	20-Jul-11 06:24:43
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1

Logging Source S/N: DSN-382
Snow Block S/N: 592_PV

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0858	0.0856	-0.0003	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name:	SDLT - I15M94P73	Reference Calibration Date:	12-Apr-11 11:19:08
Engineer:	J.COTHREN	Calibration Date:	22-Jun-11 12:28:40
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1

Logging Source S/N: 20791B
Aluminum Block S/N: 63074 Density: 2.589g/cc Pe: 3.140
Magnesium Block S/N: 632386 Density: 1.683g/cc Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9649	1.0477	0.90 - 1.10
Near Dens Gain	0.9709	1.0254	0.90 - 1.10
Near Peak Gain	0.9616	1.0314	0.90 - 1.10
Near Lith Gain	0.9393	1.0113	0.90 - 1.10
Far Bar Gain	0.9944	1.0070	0.90 - 1.10
Far Dens Gain	0.9865	0.9955	0.90 - 1.10
Far Peak Gain	0.9791	0.9918	0.90 - 1.10
Far Lith Gain	0.9614	0.9640	0.90 - 1.10
Near Bar Offset	0.3736	-0.3920	NONE

Near Dens Offset	0.2975	-0.1869	NONE
Near Peak Offset	0.3459	-0.2439	NONE
Near Lith Offset	0.5102	-0.1117	NONE
Far Bar Offset	0.0467	-0.0661	NONE
Far Dens Offset	0.1134	0.0319	NONE
Far Peak Offset	0.1373	0.0239	NONE
Far Lith Offset	0.2188	0.1792	NONE
Near Bar Background	969.63	966.57	700 - 1450
Near Dens Background	316.89	316.84	230 - 480
Near Peak Background	138.70	138.17	100 - 210
Near Lith Background	170.45	169.50	125 - 260
Far Bar Background	549.43	550.24	450 - 900
Far Dens Background	213.50	215.57	175 - 345
Far Peak Background	85.74	85.76	70 - 140
Far Lith Background	89.13	89.50	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.673	1.683	0.010	+/- 0.015
Pe	2.477	2.562	0.085	+/- 0.150
ALUMINUM				
Density (g/cc)	2.583	2.589	0.006	+/- 0.01500
Pe	3.021	3.107	0.086	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0020	+/- 0.0110	-0.0013	+/- 0.0140
Magnesium Block	0.0005	+/- 0.0110	-0.0021	+/- 0.0140
Aluminum Block	-0.0012	+/- 0.0110	-0.0015	+/- 0.0140
Resolution	10.26	6.00 - 11.50	8.70	6.00 - 11.50
Internal Verifier(B+D+P+L)	1591	1200 - 2700	941	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 - I15M94P73

Reference Calibration Date: 22-Jun-11 12:28:40

Engineer: T. HARRIS

Calibration Date: 20-Jul-11 06:17:01

Software Version: WL INSITE R3.2.3 (Build 5)

Calibration Version: 1

Pad Temperature: 94.1 degF

Density Field Calibration Summary					
Measurement	Shop	Field	Change	Control Limit +/-	
Near (B+D+P+L) cps	1591.080	1585.791	-5.289	16.043	
Far (B+D+P+L) cps	941.070	935.477	-5.593	16.569	
Near Resolution	10.26	10.23	-0.030	0.50	
Far Resolution	8.70	8.92	0.220	1.00	
PASS/FAIL SUMMARY					
Bkg Quality Check:			Passed		
Bkg Resolution Check:			Passed		
Bkg Verification Check:			Passed		

Micro Log Shop Calibration					
Tool Name:	SDLT - I15M94P73		Reference Calibration Date:	16-May-11 23:27:34	
Engineer:	T. HARRIS		Calibration Date:	19-May-11 00:24:47	
Software Version:	WL INSITE R3.2.3 (Build 5)		Calibration Version:	1	

Calibration Coefficient Summary					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.05	-0.09	-0.00	0.00	ohmm
Calibration Point #1	0.04	0.00	-0.01	0.00	ohmm
Calibration Point #2	20.25	20.00	20.22	20.00	ohmm
Internal Reference	20.14	19.90	20.21	19.99	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	1.63		-0.04		V
Calibration Point #1	25.51		-0.60		V
Calibration Point #2	5357.63		6949.54		V
Internal Reference	5329.67		6946.45		V

Micro Log Field Check					
Tool Name:	SDLT - I15M94P73		Reference Calibration Date:	19-May-11 00:24:47	
Engineer:	T. HARRIS		Calibration Date:	20-Jul-11 08:11:15	
Software Version:	WL INSITE R3.2.3 (Build 5)		Calibration Version:	1	

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.09	-0.10	0.00	0.00	ohmm
Internal Reference	19.90	19.84	19.99	19.92	ohmm
Summary					
Signal	Shop	Field	Difference	Tolerance	
Microlog Normal	19.90	19.84	0.06	+/- 0.80	
Microlog Lateral	19.99	19.92	0.07	+/- 0.80	

Density Caliper Shop Calibration					
Tool Name:	SDLT - I15M94P73		Reference Calibration Date:	12-Apr-11 14:06:56	
Engineer:	T. HARRIS		Calibration Date:	16-May-11 23:23:00	
Software Version:	WL INSITE R3.2.3 (Build 5)		Calibration Version:	1	

Calibration Coefficients				
Measurement	Previous Value	New Value	Control Limit On New Value	

	New Value		
Pad Offset	-2321.44	-2473.16	-7000.00 - -1000.00
Pad Gain	0.0003737	0.0003851	0.000200 - 0.000600
Arm Offset	-282.69	-443.16	-5000.00 - 3000.00
Arm Gain	0.0004952	0.0005356	0.000300 - 0.000700
Arm Power	-0.000003633	-0.000006378	-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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.70	3.75	0.05	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.17	8.25	0.08	+/- 0.20
Large Ring (in)	15.05	15.00	-0.05	+/- 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 - I15M94P73	Reference Calibration Date:	16-May-11 23:23:00
Engineer:	T. HARRIS	Calibration Date:	20-Jul-11 06:18:27
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1

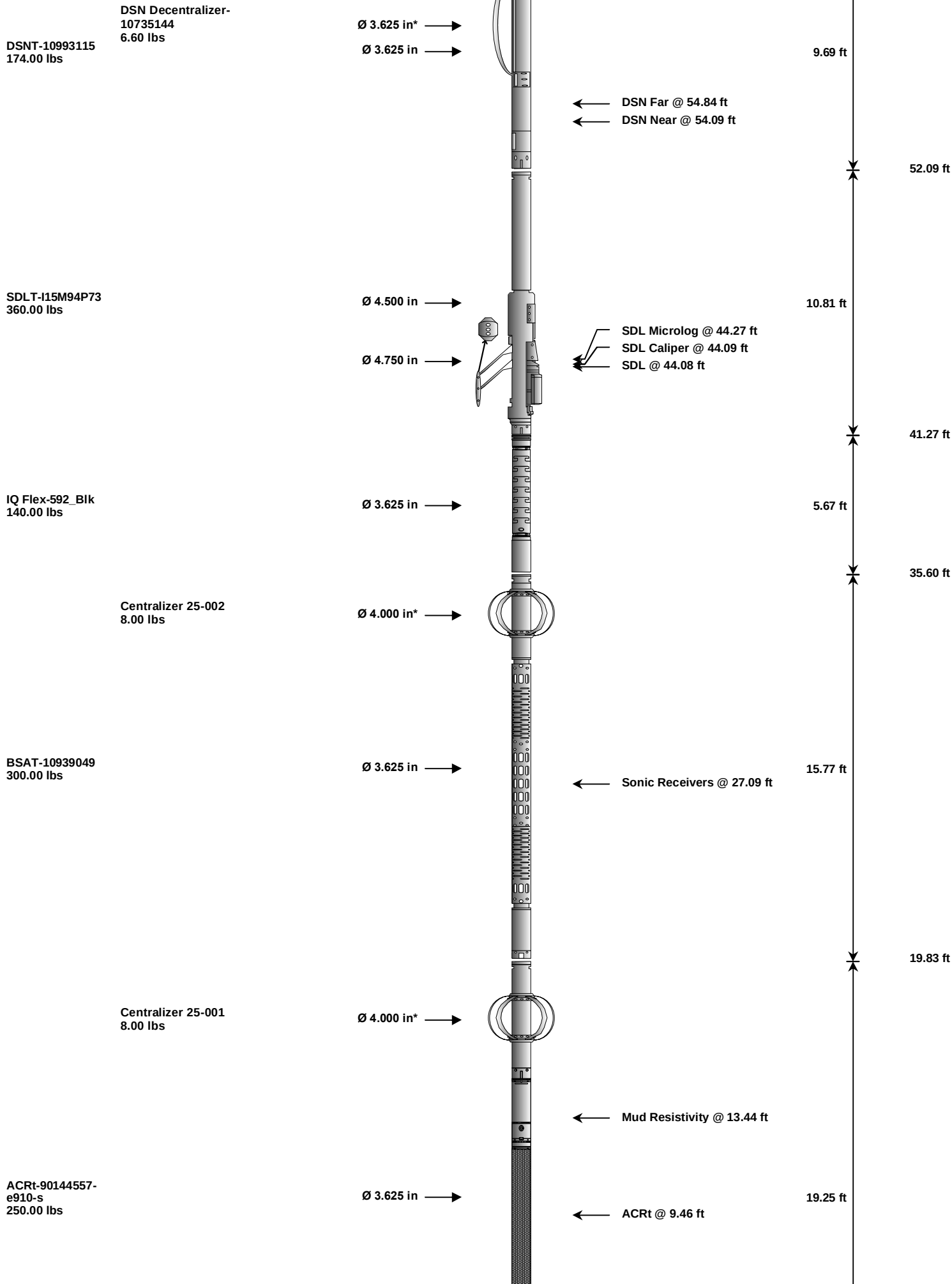
MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.73	-0.02	+/- 0.10
Ring Diameter	8.25	8.14	-0.11	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

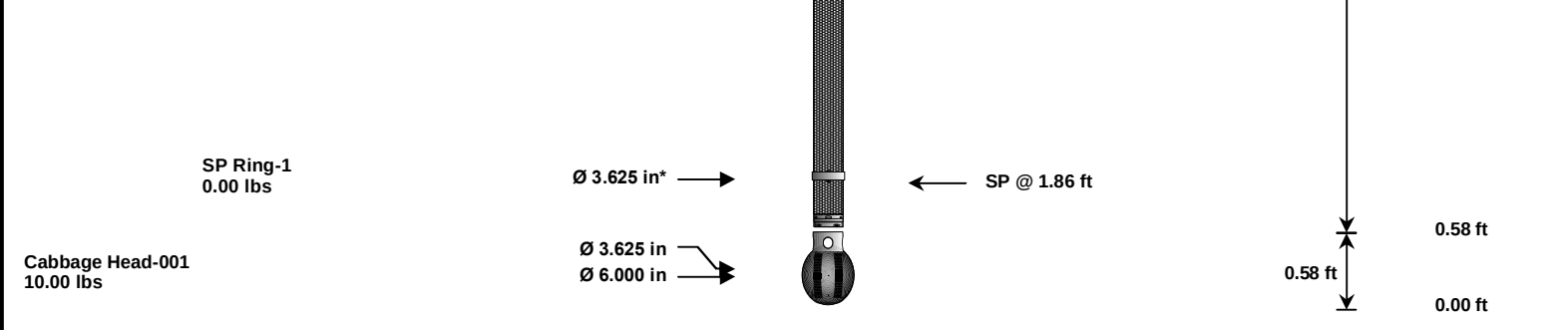
ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION			
Tool Name:	ACRt - 90144557-e910-s	Reference Calibration Date:	15-Feb-11 15:24:31
Engineer:	J.COTHREN	Calibration Date:	12-Apr-11 14:38:06
Software Version:	WL INSITE R3.2.3 (Build 5)	Calibration Version:	1

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0105	1.05	0.95	1.0122	1.05	0.95	1.0090	1.05
A2 (50")	0.95	1.0170	1.05	0.95	1.0211	1.05	0.95	1.0206	1.05
A3 (29")	0.95	1.0060	1.05	0.95	1.0091	1.05	0.95	1.0054	1.05
A4 (17")	0.95	1.0034	1.05	0.95	1.0052	1.05	0.95	1.0037	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9977	1.05	0.95	0.9957	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9840	1.05	0.95	0.9817	1.05

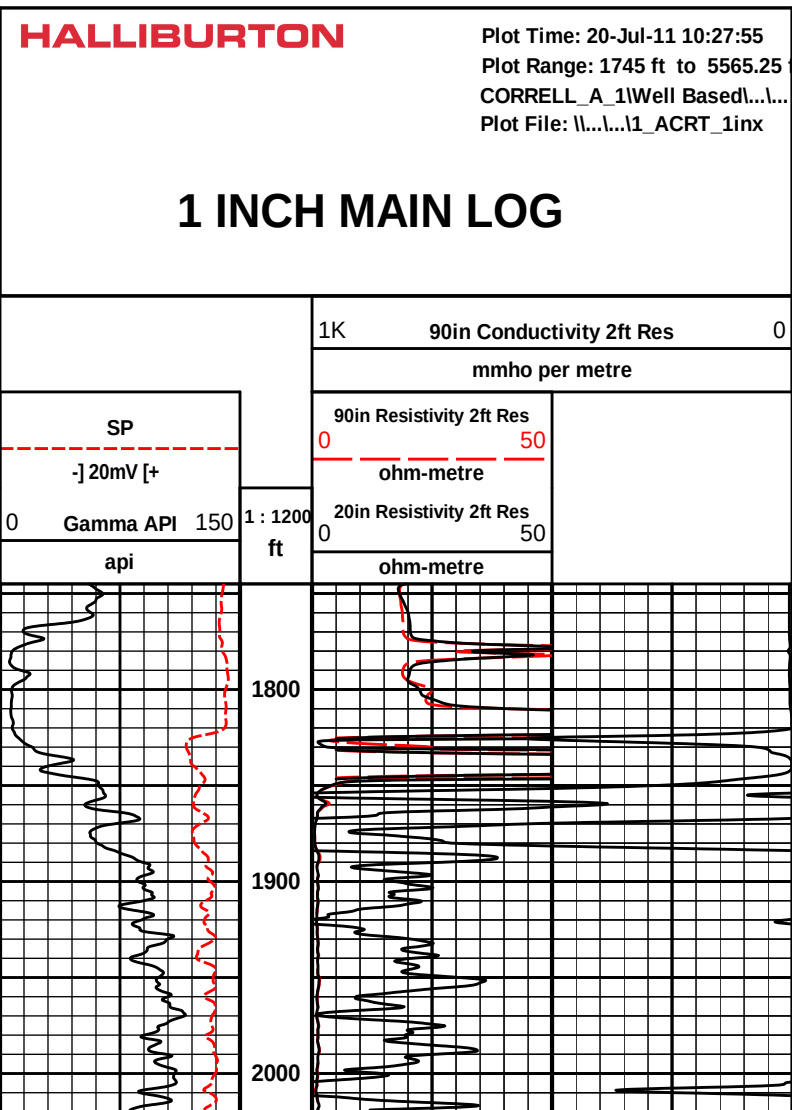
TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	0.435	2	-6	-3.793	-2	-8	-4.886	-2
A2 (50")	-7	-2.867	-1	-6	-4.172	-2	-7	-4.053	-2
A3 (29")	-27	-13.325	-9	-9	-3.953	-3	-7	-2.699	-1
A4 (17")	-180	-100.279	-60	-45	-31.546	-15	-39	-25.059	-13
A5 (10")	N/A	N/A	N/A	-150	-93.202	-50	-80	-42.747	-10
A6 (6")	N/A	N/A	N/A	175	295.400	525	90	149.285	270
TRANSMITTER CURRENT GAIN						R-MUD VERIFICATION			
Signal	Lower		R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K		0.6	0.8622	1.3		Mud Cell	0.95	1.001	1.05
36K		1.0	1.3491	2.0					
72K		1.0	1.5542	2.0					
CALIBRATION SUMMARY									
Sensor		Shop	Field	Post	Difference	Tolerance	Units		
GTET-11013114									
Gamma Ray Calibrator		225.0	216.7	-----	8.3	+/- 9.00	api		
DSNT-10993115									
Snow-Block Porosity		0.0858	0.0856	-----	0.0002	+/- 0.0150	decp		
SDLT-115M94P73									
Near(B+D+P+L)		1591.080	1585.791	-----	5.289	+/-16.043	cps		
Far(B+D+P+L)		941.070	935.477	-----	5.593	+/-16.569	cps		
MicroLog Normal		19.90	19.84	-----	0.06	+/-0.80	ohmm		
MicroLog Lateral		19.99	19.92	-----	0.07	+/-0.80	ohmm		
Pad Extension		3.75	3.73	-----	0.02	+/-0.10	in		
Ring Diameter		8.25	8.14	-----	0.110	+/-0.15	in		
ACRt-90144557-e910-s									
Mud Cell		1.001	-----	-----	0.000	-----	ohm-m		
Data: CORRELL_A_1\0002 BLACK_QUAD_BSAT1004 20-Jul-11 09:10 Up @5568.3f							Date: 20-Jul-11 10:18:05		

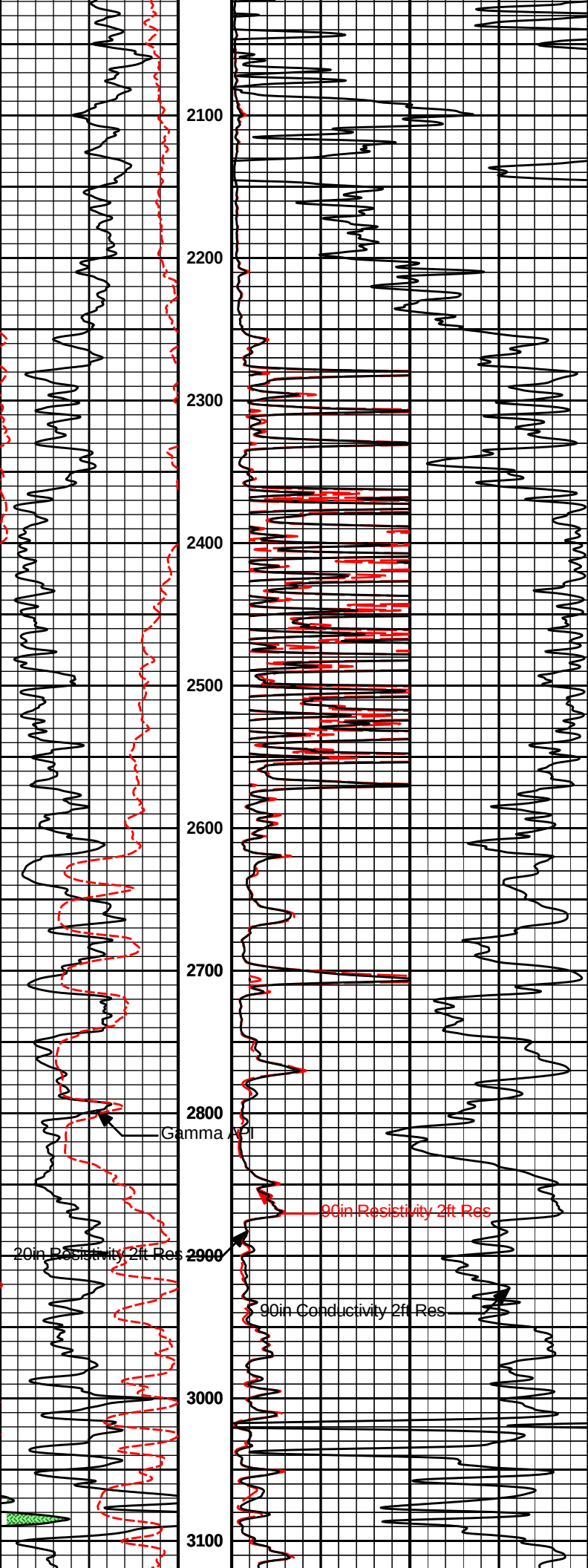
HALLIBURTON							
TOOL STRING DIAGRAM REPORT							
Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length	
CH_HOS-590_BLK 37.50 lbs		Ø 2.750 in →		← Temperature @ 72.30 ft	3.03 ft	73.32 ft	
						70.30 ft	
GTET-11013114 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.23 ft	8.52 ft	61.77 ft	

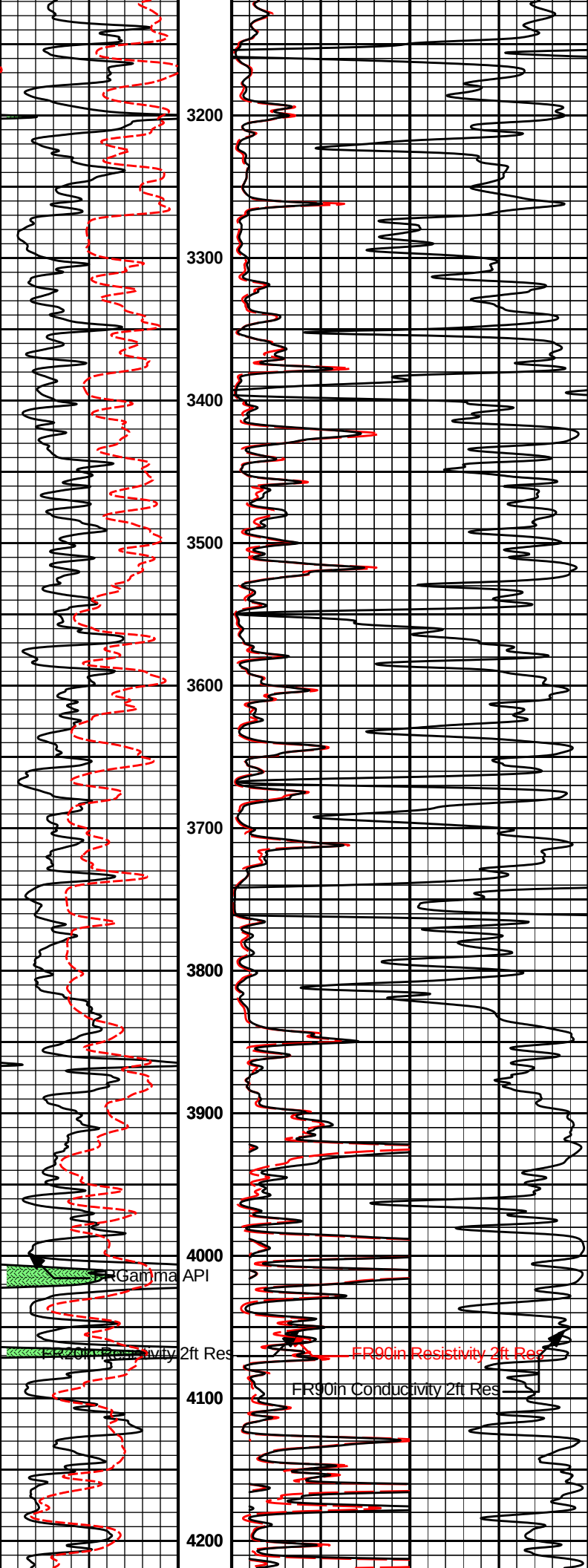


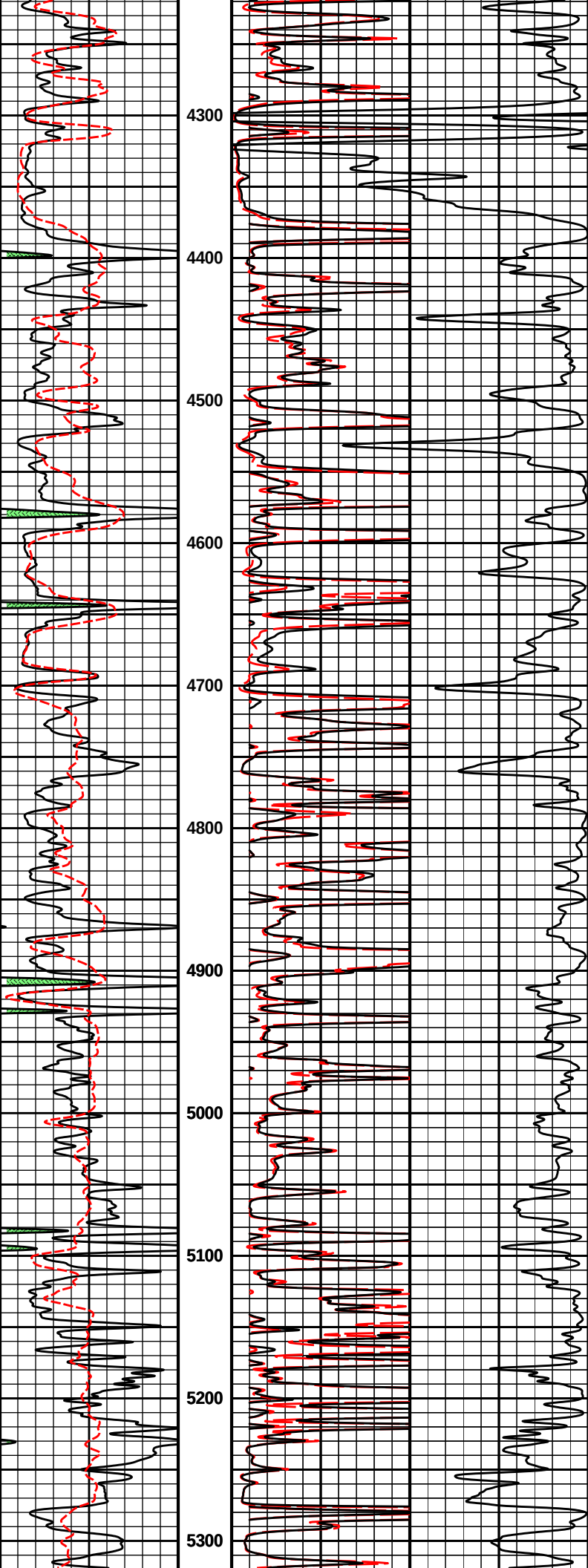


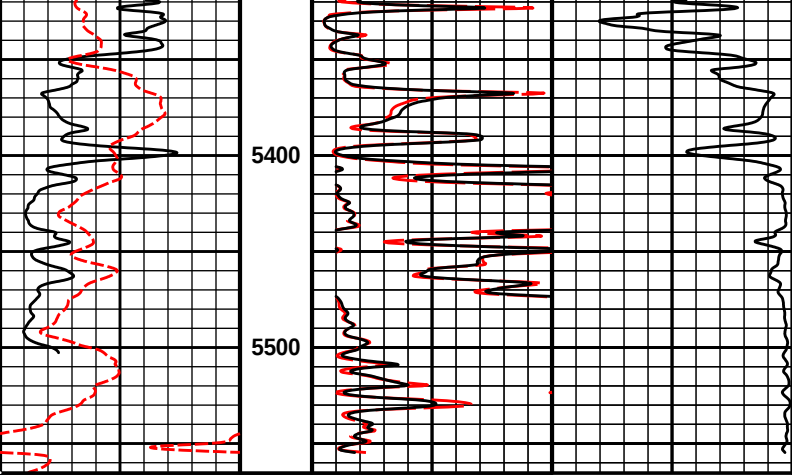
Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH HOS		Hostile Cable Head with Load Cell	590 BLK	37.50	3.03	70.30	300.00
GTET		Gamma Telemetry Tool	11013114	165.00	8.52	61.77	60.00
DSNT		Dual Spaced Neutron	10993115	174.00	9.69	52.09	60.00
DCNT		DSN Decentralizer	10735144	6.60	5.13	* 55.42	300.00
SDLT		Spectral Density Tool	l15M94P73	360.00	10.81	41.27	60.00
IQF		IQ Flex tool	592_BlK	140.00	5.67	35.60	300.00
BSAT		Borehole Sonic Array Tool	10939049	300.00	15.77	19.83	60.00
OBCEN		Centralizer - 25 in. Overbody	002	8.00	2.08	* 32.92	300.00
ACRt		Array Compensated True Resistivity	90144557-e910-s	250.00	19.25	0.58	300.00
SP		SP Ring	1	0.00	0.25	* 1.86	300.00
OBCEN		Centralizer - 25 in. Overbody	001	8.00	2.08	* 16.41	300.00
CBHD		Cabbage Head	001	10.00	0.58	0.00	300.00
Total				1,459.10	73.32		
Data: CORRELL_A_1\0001 BLACK_QUAD_BSAT\004 19-Jul-11 05:19 Up @4408.5f							Date: 19-Jul-11 06:46:04











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

HALLIBURTON

Plot Time: 20-Jul-11 10:27:57
Plot Range: 1745 ft to 5565.25 ft
CORRELL_A_1\Well Based\...\...
Plot File: \\...\...11_ACRT_1inx

1 INCH MAIN LOG

COMPANY	OXY USA INC.		
WELL	CORRELL A-1		
FIELD	LEMON NW		
COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		ARRAY COMPENSATED RESISTIVITY LOG	