

HALLIBURTON

ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

COMPANY		HERMAN L. LOEB, LLC			
WELL		UNRUH # 4-33			
FIELD/BLOCK		EINSEL			
COUNTY		KIOWA			
STATE		KANSAS			
COMPANY		HERMAN L. LOEB, LLC			
WELL		UNRUH # 4-33			
FIELD/BLOCK		EINSEL			
COUNTY		KIOWA			
STATE		KANSAS			
API No.		15-097-21817-00-00			
Location		(SHL) 1660' FSL & 1330' FWL NW-SW-NE-SW			
Other Services:		DSNT/SDLT MICROLOG MRIL			
Sect.	33	Twp.	27S	Rge.	18W
Permanent Datum	GL	Elev. 2197.0 ft		Elev. K.B.	2206.0 ft
Log measured from	KB	9.0 ft above perm. Datum		D.F.	2205.0 ft
Drilling measured from	KB			G.L.	2197.0 ft
Date	06-Mar-15				
Run No.	ONE				
Depth - Driller	4830.00 ft				
Depth - Logger	4826.0 ft				
Bottom - Logged Interval	4817.00 ft				
Top - Logged Interval	632.00 ft				
Casing - Driller	8.625 in @ 635.0 ft				
Casing - Logger	632.0 ft				
Bit Size	7.875 in				
Type Fluid in Hole	Water Based Mud				
Density	9.4 ppg	58.00 s/qt			
PH	10.50 pH				
Source of Sample	MUD PIT				
Rm @ Meas. Temperature	1.800 ohmm @ 60.00 degF				
Rmf @ Meas. Temperature	1.60 ohmm @ 58.00 degF				
Rmc @ Meas. Temperature	1.900 ohmm @ 52.00 degF				
Source Rmf	Rmc				
Rm @ BHT	0.95 ohmm @ 120.0 degF				
Time Since Circulation	4.0000 hr				
Time on Bottom	06-Mar-15 00:45:13.000				
Max. Rec. Temperature	120.0 degF @ 4826.0 ft				
Equipment	Location	11072142	Liberal, KS, US		
Recorded By	SUHAIL BISHTI				
Witnessed By	J.CHRISTENSEN				

Fold here

Service Ticket No.: 902195698				API Serial No.: 15-097-21817-00-00				PGM Version: WL INSITE R4.6.4 (Build 3)						
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	N/A	1.5" S.O	N/A	
Rmc @ Meas. Temp.						@				I962_S909				
Source Rmf	Rmc													
Rm @ BHT						@								
Rmf @ BHT						@								
Rmc @ BHT						@								
EQUIPMENT DATA														
GAMMA				ACOUSTIC				DENSITY				NEUTRON		
Run No.	ONE			Run No.			Run No.			Run No.				
Serial No.	11048627			Serial No.			Serial No.			Serial No.				
Model No.	GTET			Model No.			Model No.			Model No.				
Diameter	3.625"			No. of Cent.			Diameter			Diameter				
Detector Model No.	T-102			Spacing			Log Type			Log Type				
Type	SCINT						Source Type			Source Type				
Length	8"			LSA [Y/N]			Serial No.			Serial No.				
Distance to Source	10"			FWDA [Y/N]			Strength			Strength				
LOGGING DATA														
GENERAL				GAMMA		ACOUSTIC		DENSITY		NEUTRON				
Run	Depth		Speed	Scale		Scale		Scale		Matrix		Scale		Matrix
No.	From	To	ft/min	L	R	L	R	L	R	Matrix	L	R		
ONE	TD	CSG	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation

@

KOP

@

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5" CASING

CHLORIES REPORTED AT 4500 PPM

LCM REPORTED AT 2 PPM

GTET- ACRT RUN IN COMBINATION IN THE FIRST RUN

TODAY'S CREW:F.VILLA & M.GONZALEZ

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL,KS 620-624-8123

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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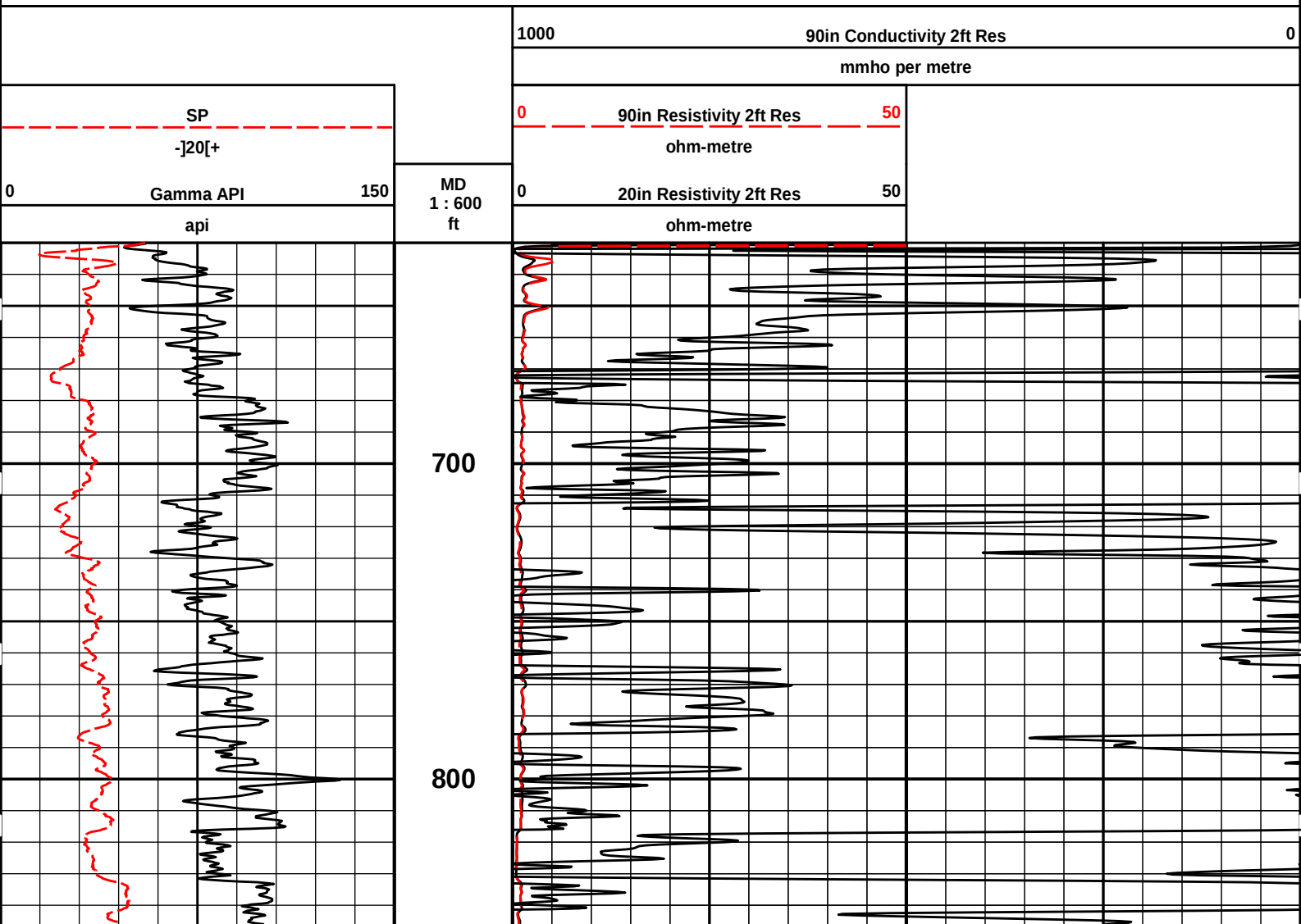
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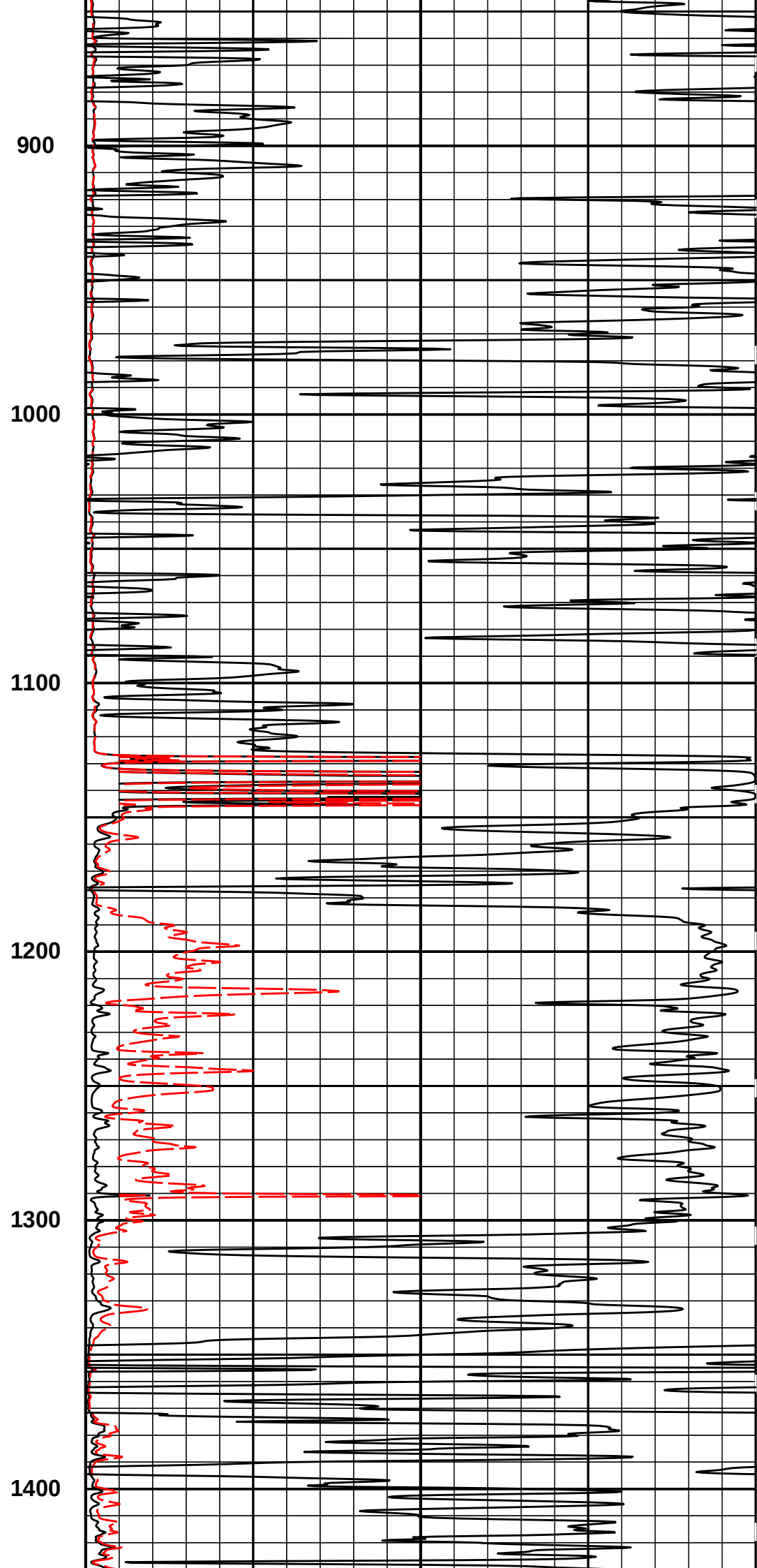
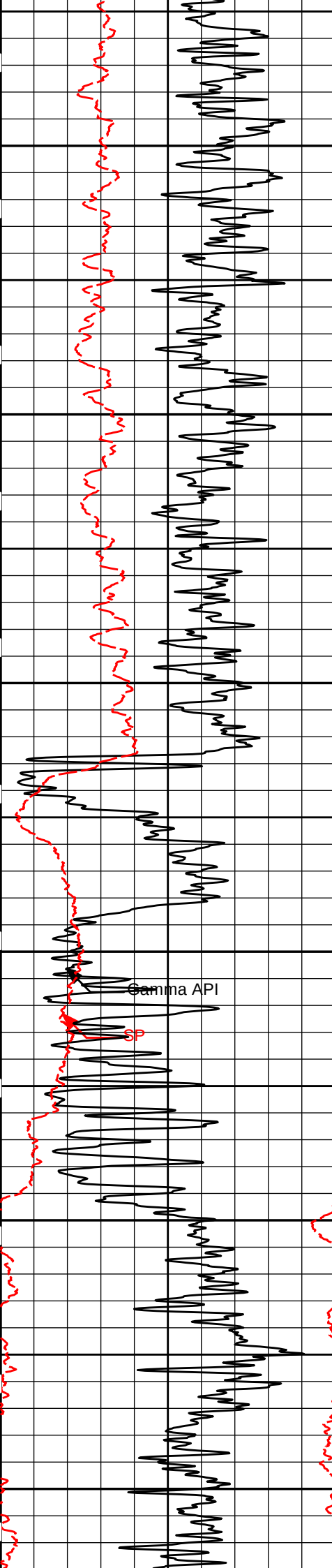
Plot Range: 630 ft to 4829.25 ft

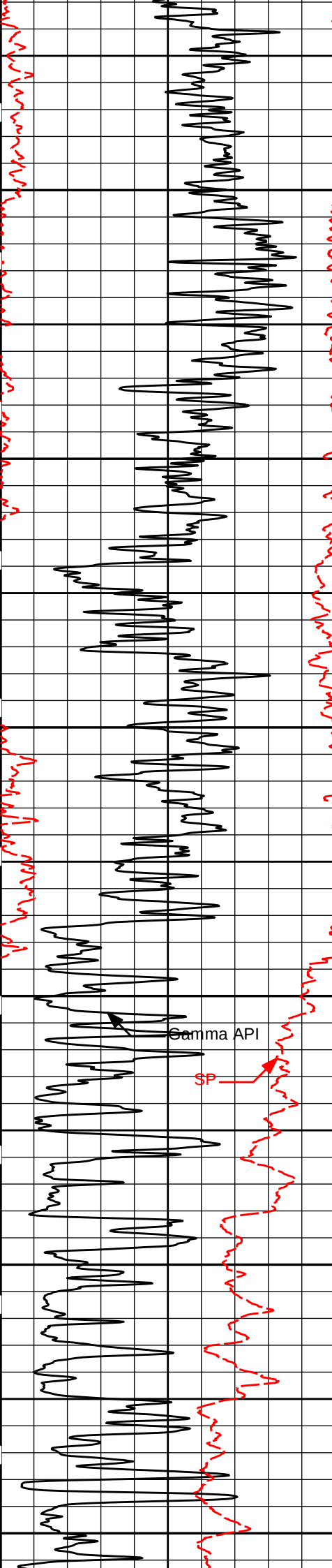
Data: UNRUH # 4-33\Well Based\MAIN ACRT\

Plot File: \\-LOCAL-\\UNRUH # 4-33\\Well Based\\ACRT 5\\ACRT 2 lib

2 INCH MAIN LOG







1500

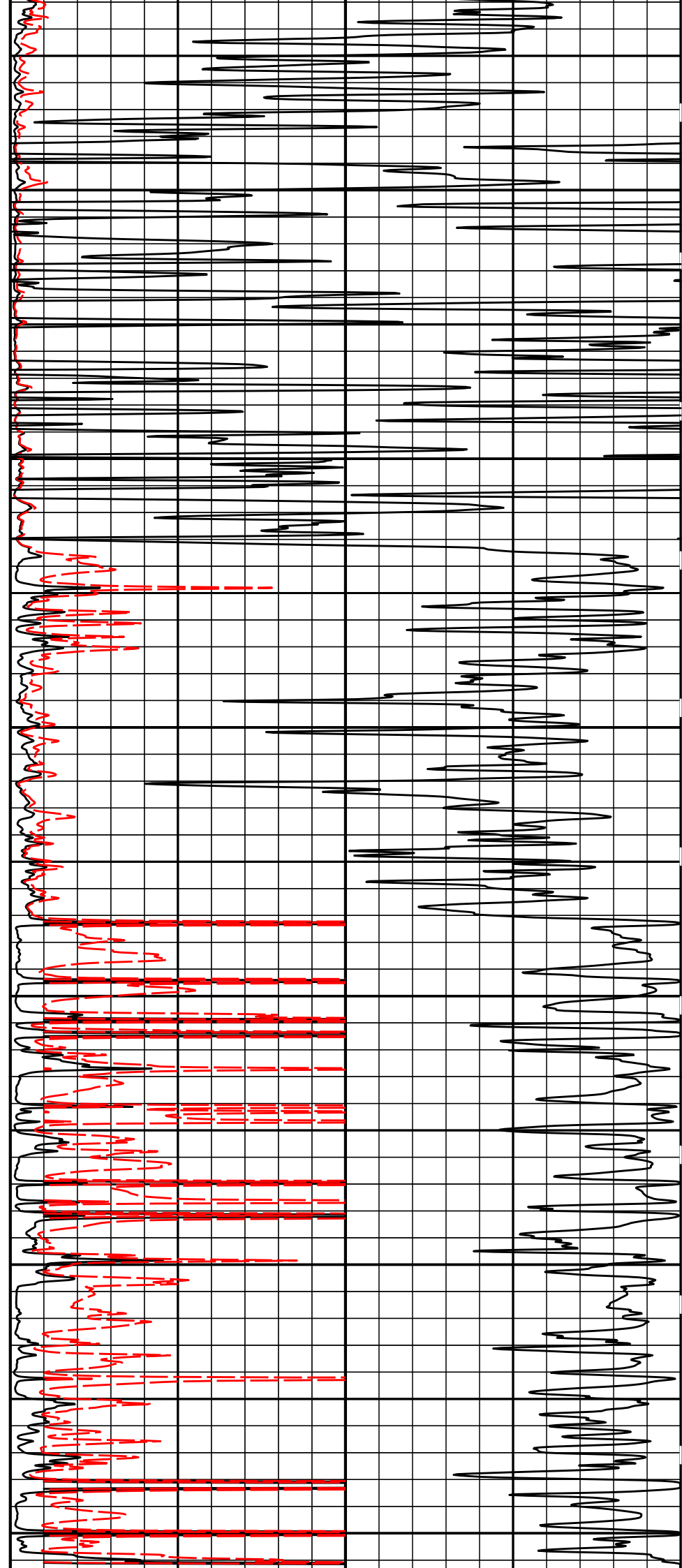
1600

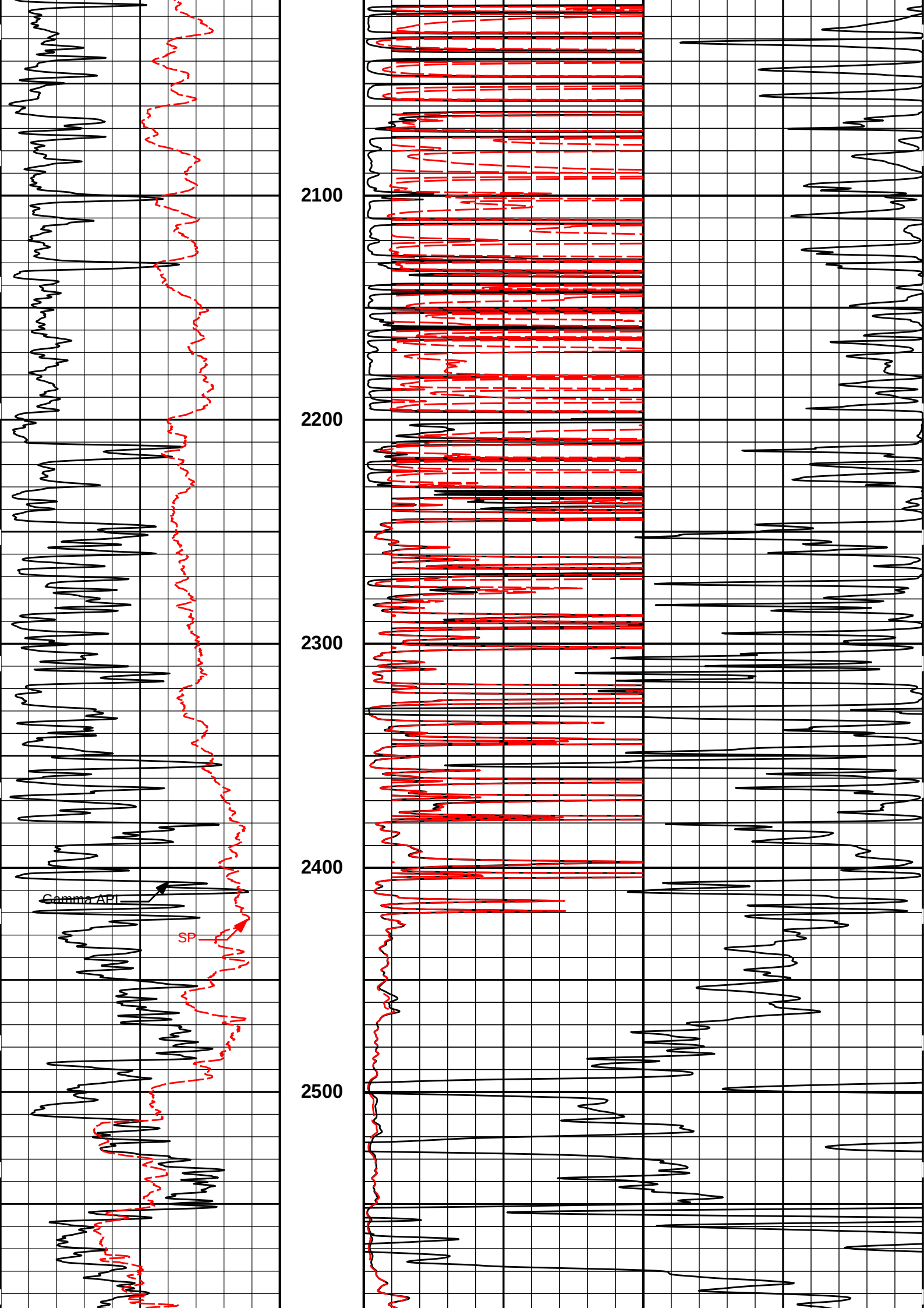
1700

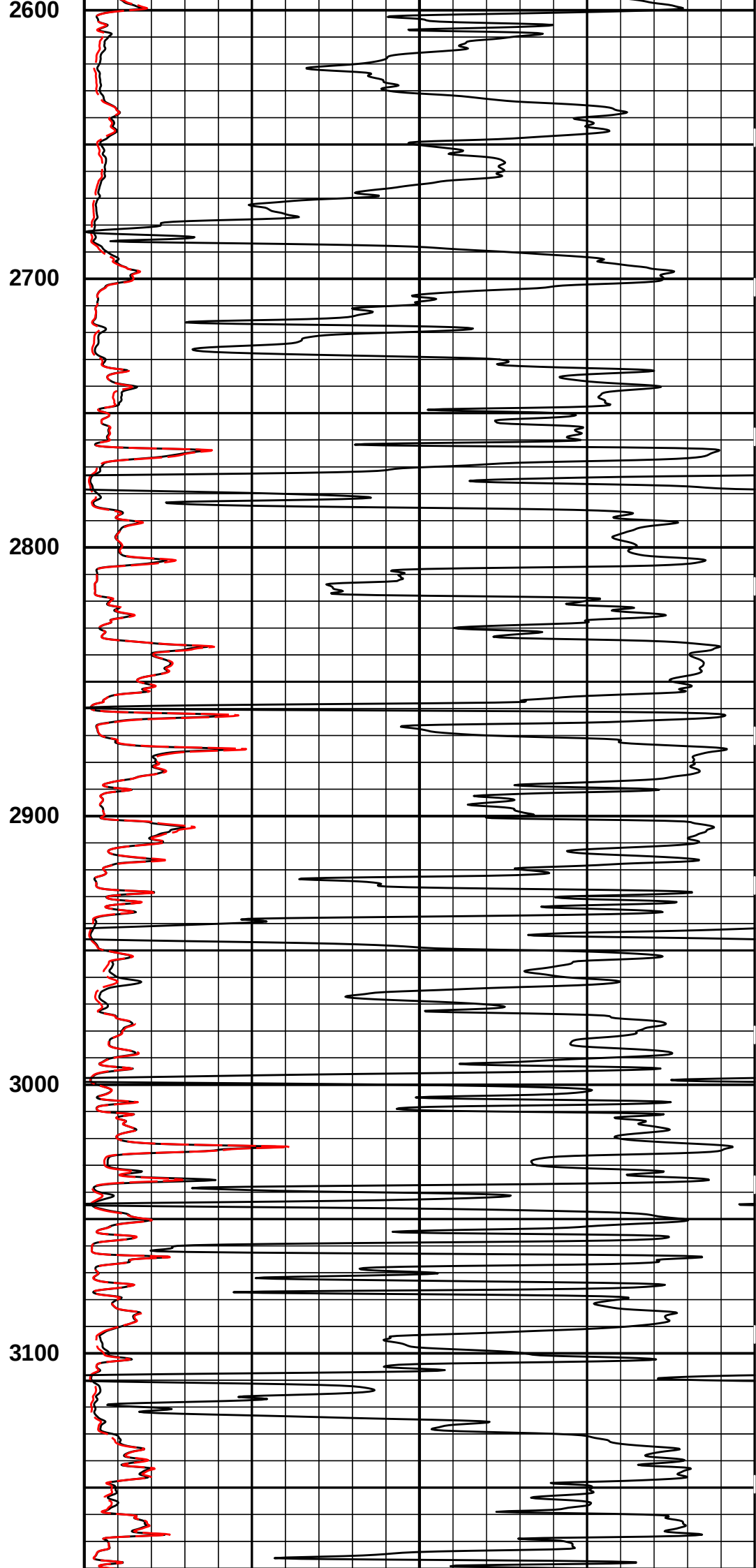
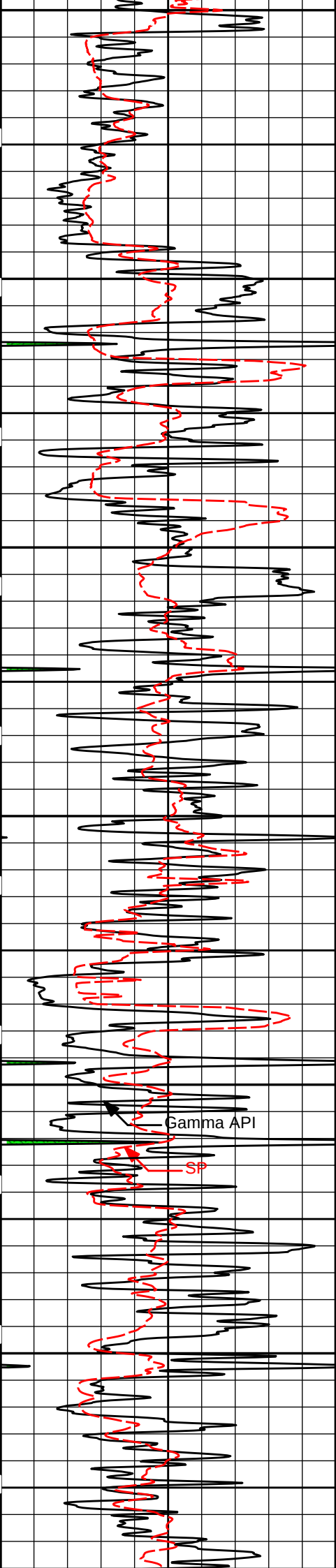
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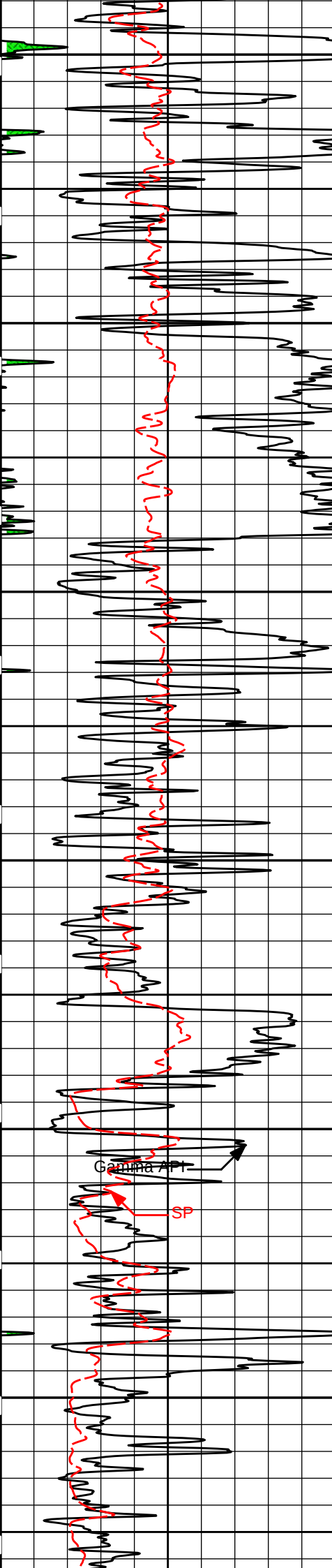
1900

2000









3200

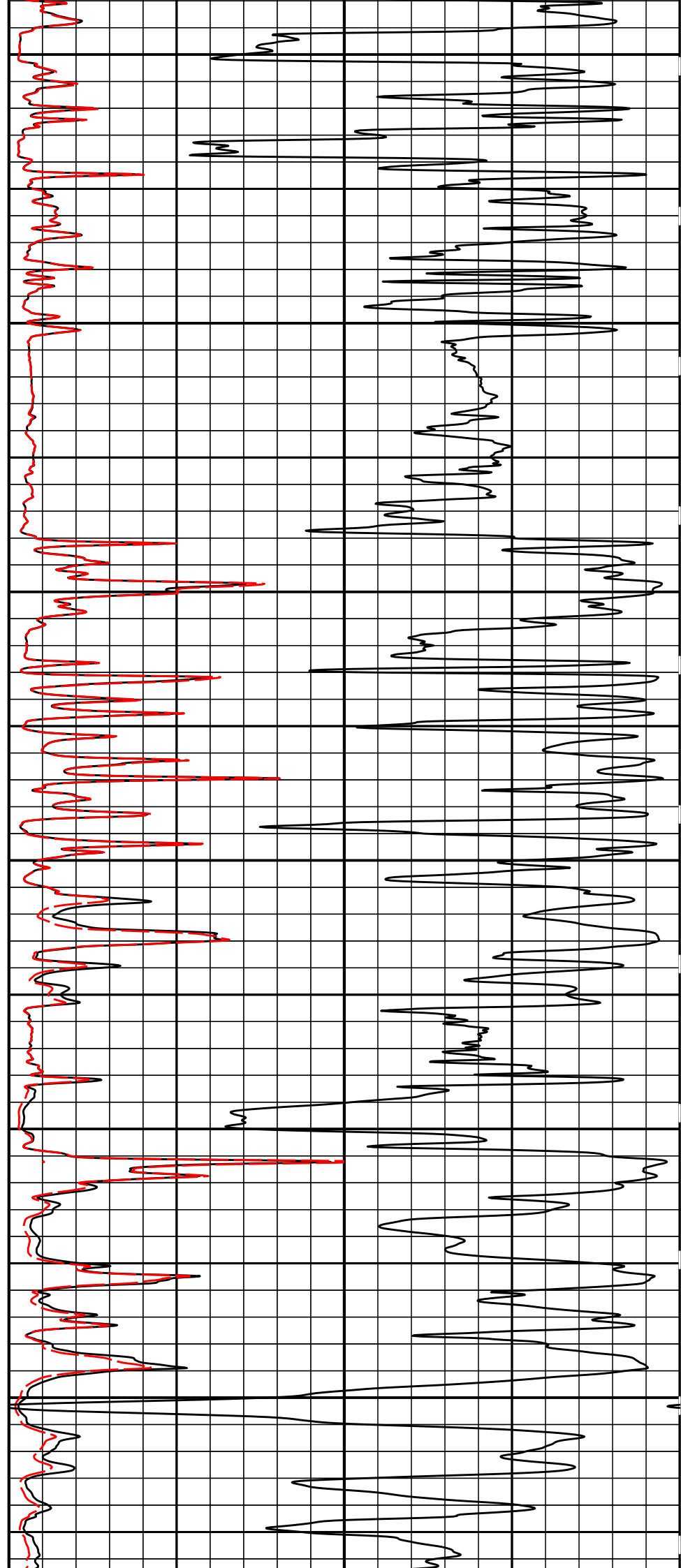
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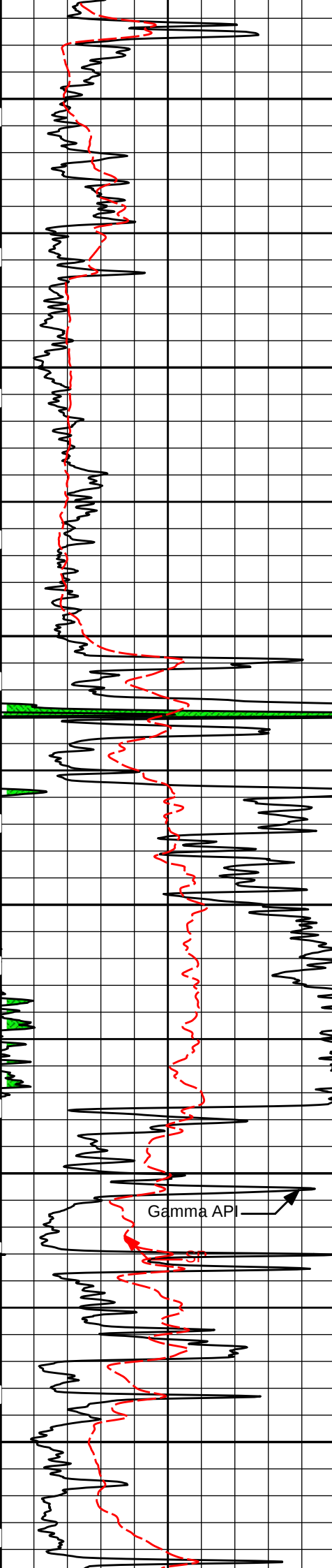
3400

3500

3600

3700





3800

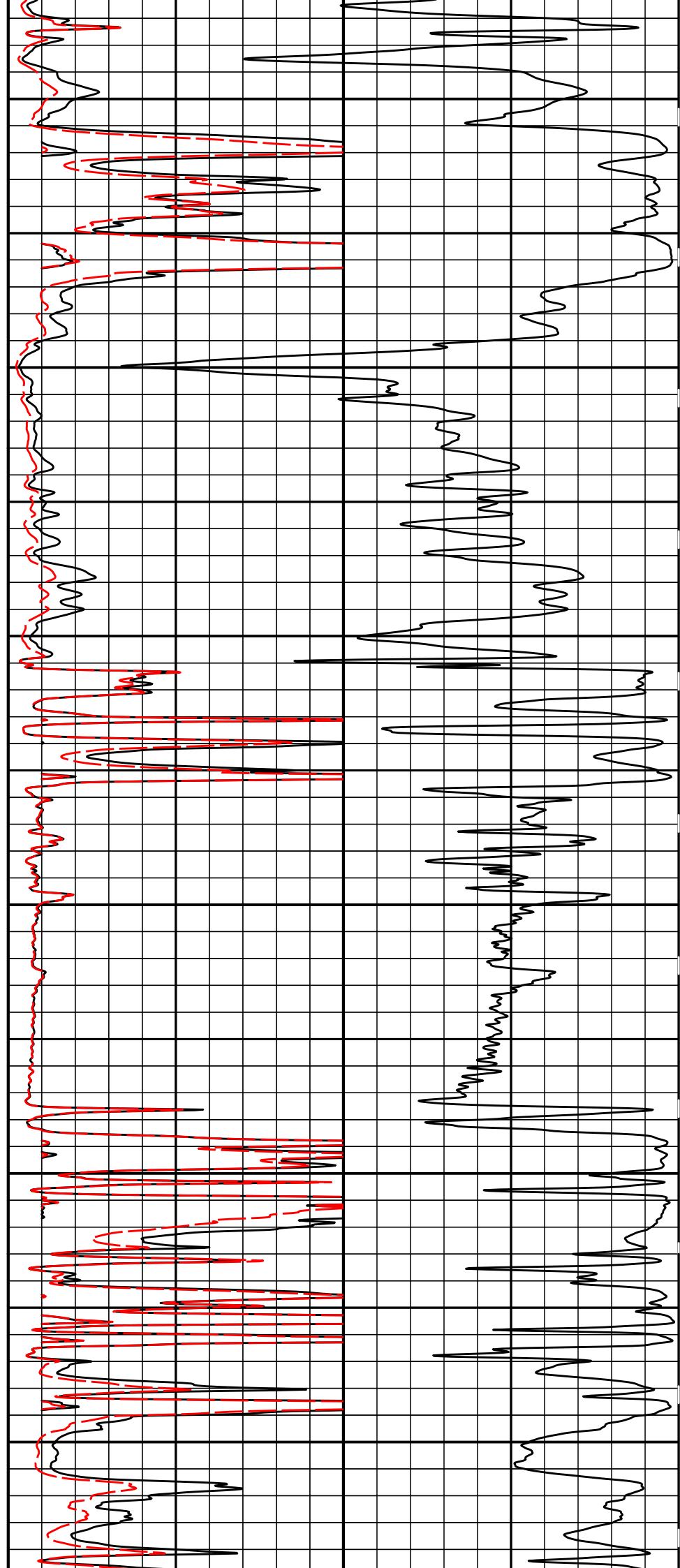
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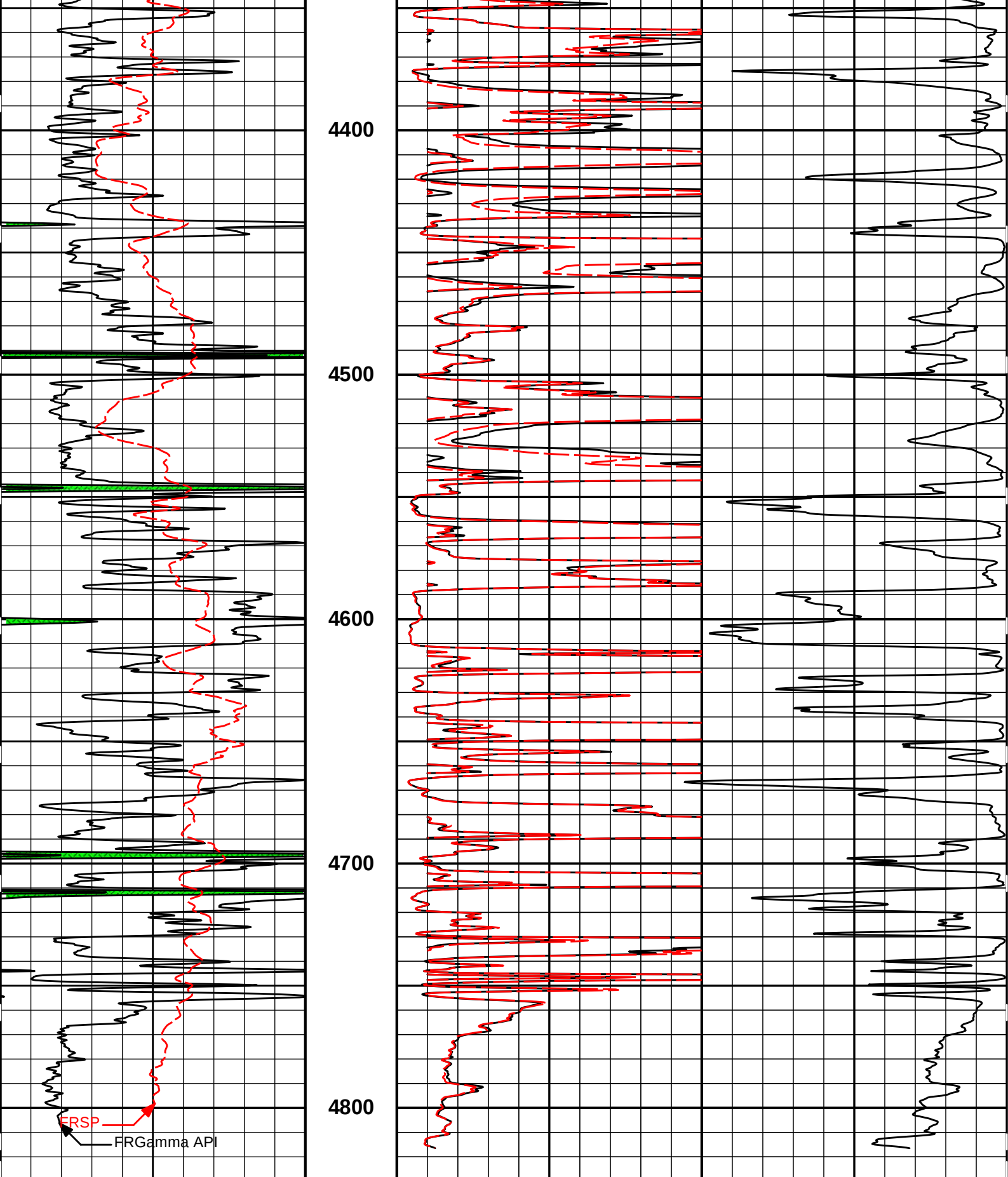
4000

4100

4200

4300





0Gamma API150		MD 1 : 600 ft	020in Resistivity 2ft Res50		
api			ohm-metre		
SP			090in Resistivity 2ft Res50		
-]20[+			ohm-metre		
			100090in Conductivity 2ft Res0		
			mmho per metre		

2 INCH MAIN LOG

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Plot Time: 06-Mar-15 03:03:45

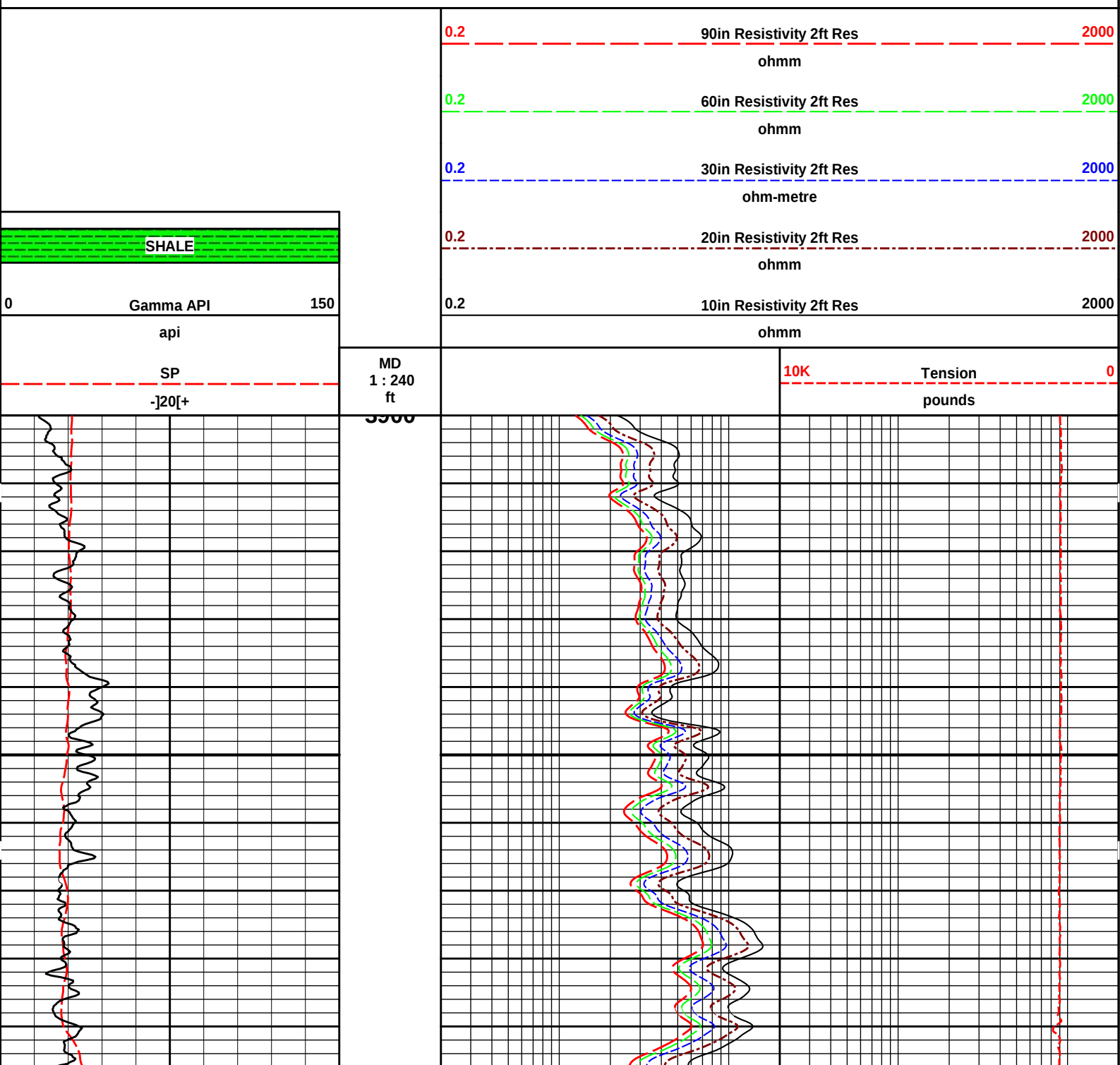
Plot Range: 3900 ft to 4829.25 ft

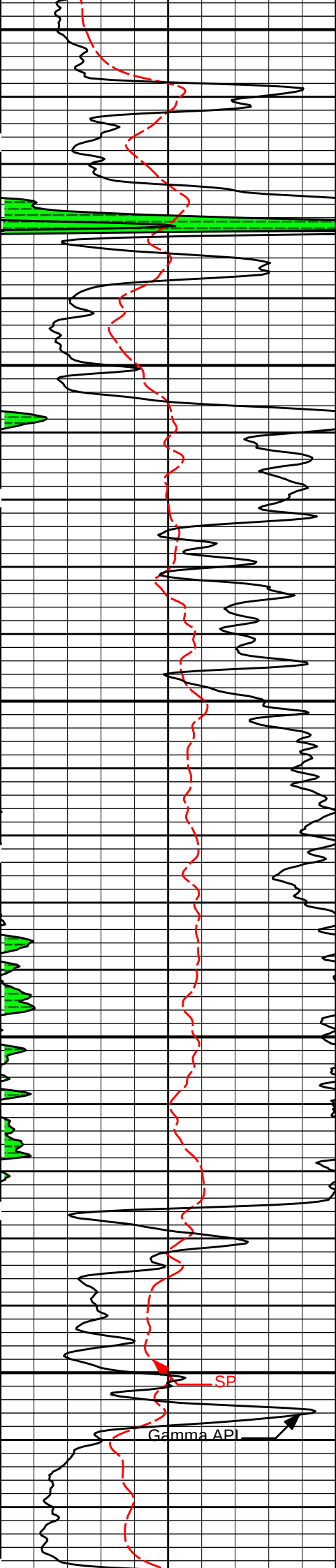
Data: UNRUH # 4-33\\Well Based\\DETAILS ACRT\\

Plot File: \\-LOCAL-\\UNRUH # 4-33\\Well Based\\ACRT 5\\ACRT_5_main_lib

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'



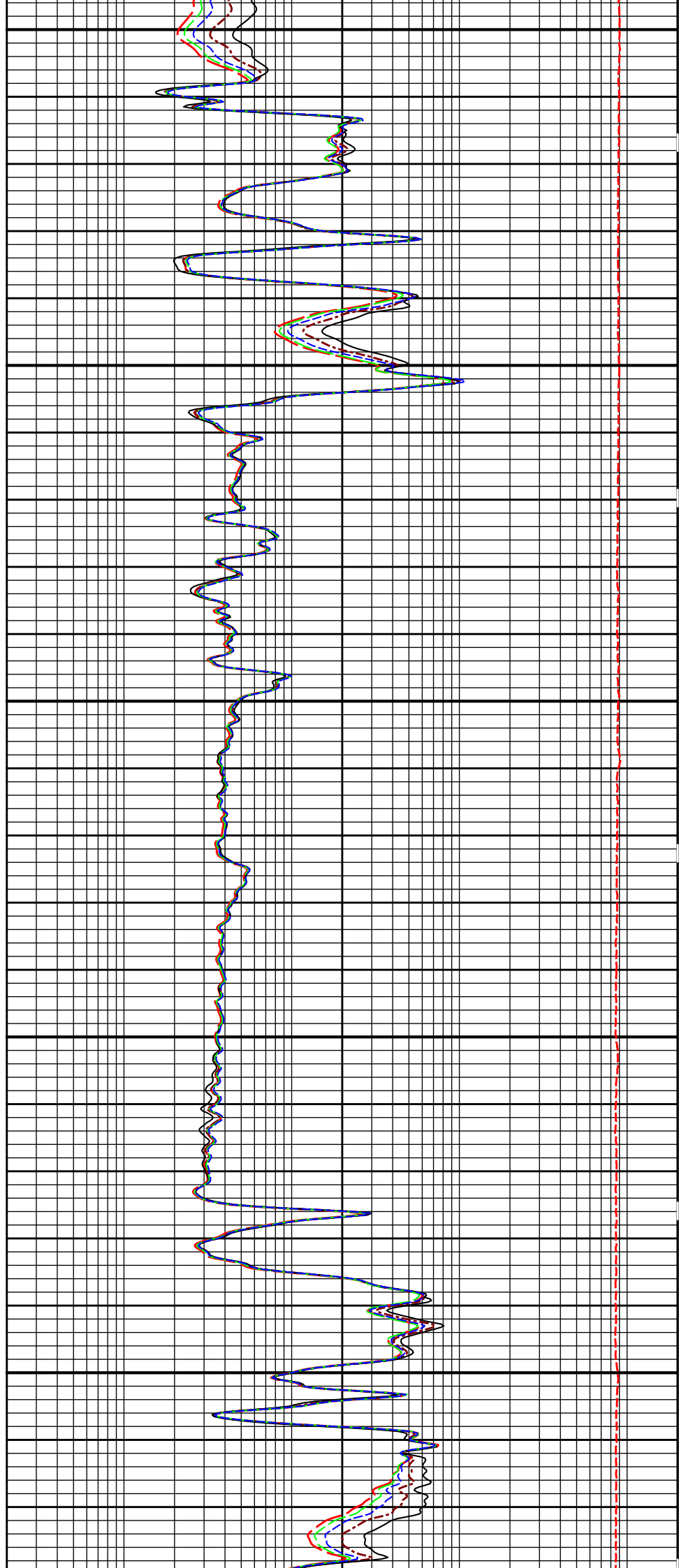


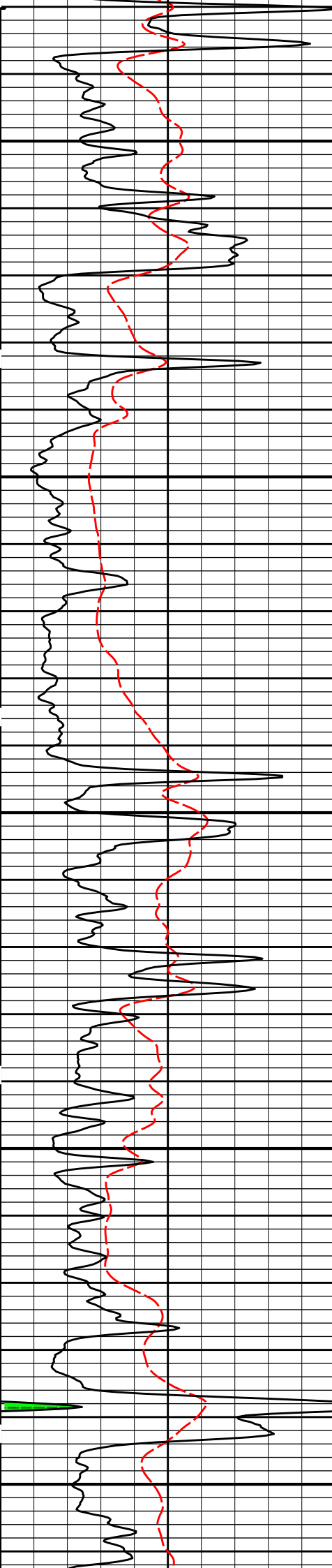
4000

4100

4200

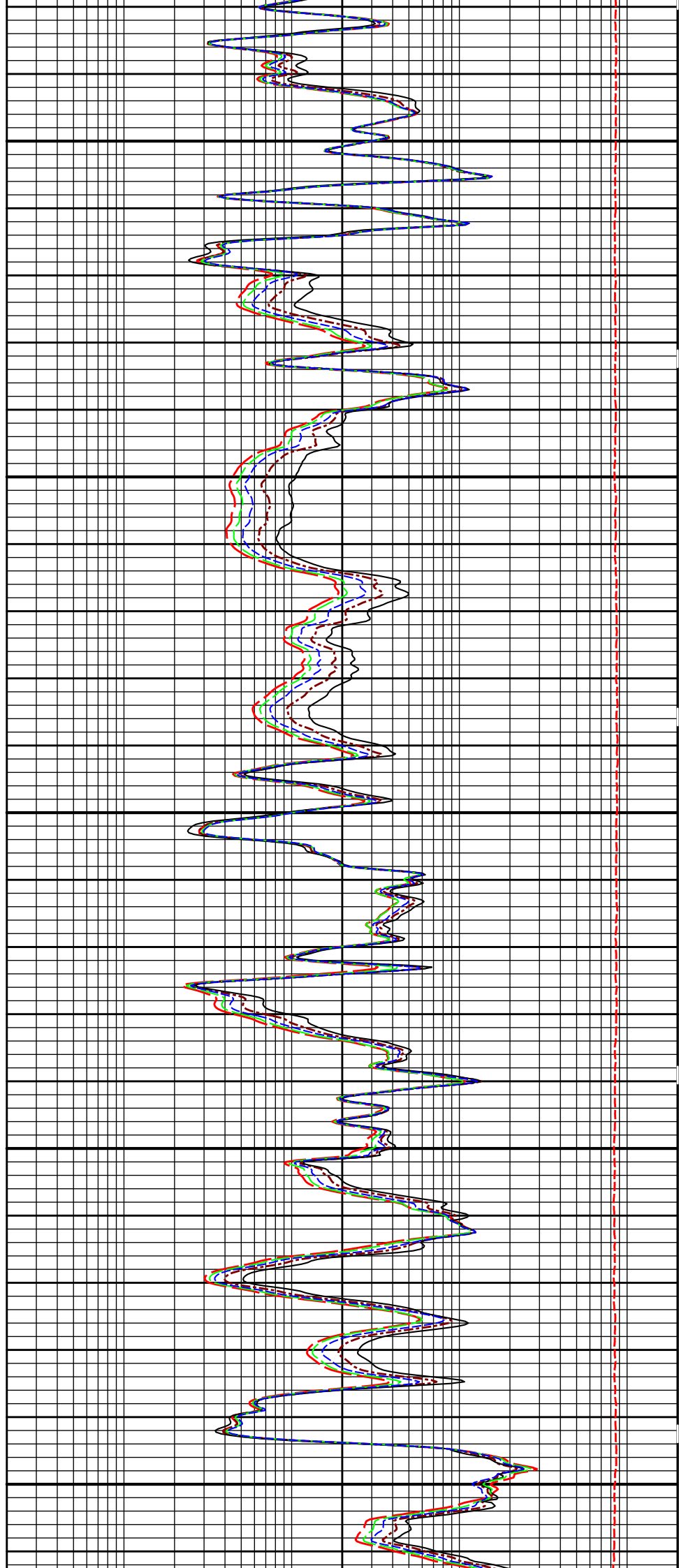
SP
Gamma API

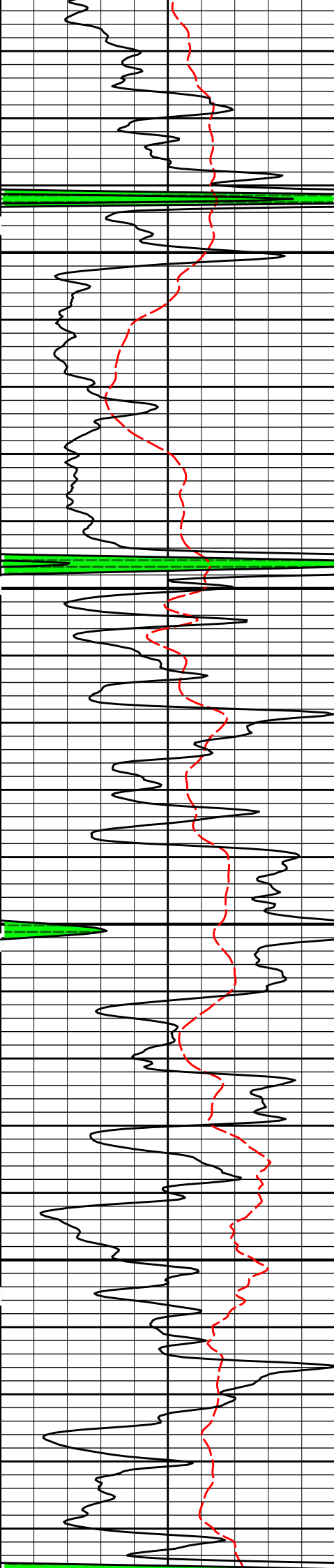




4300

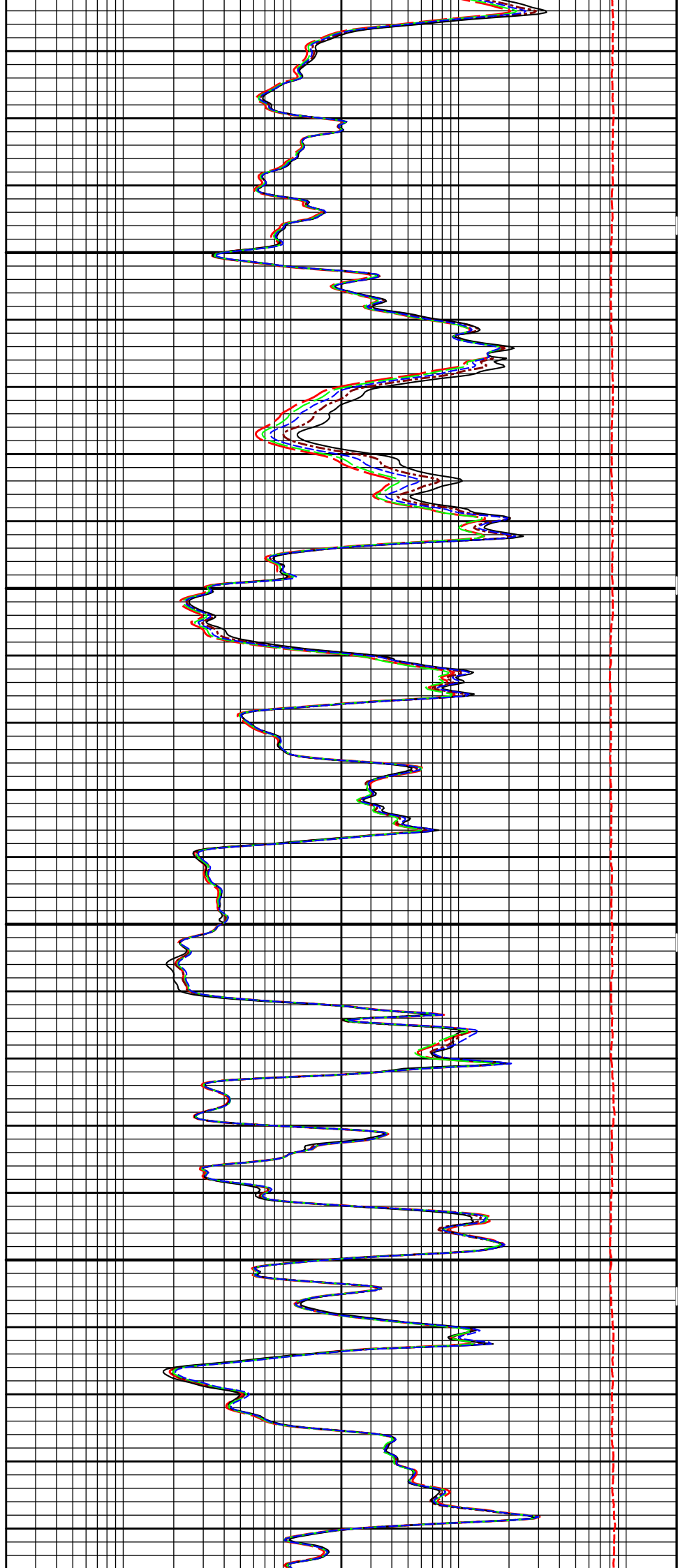
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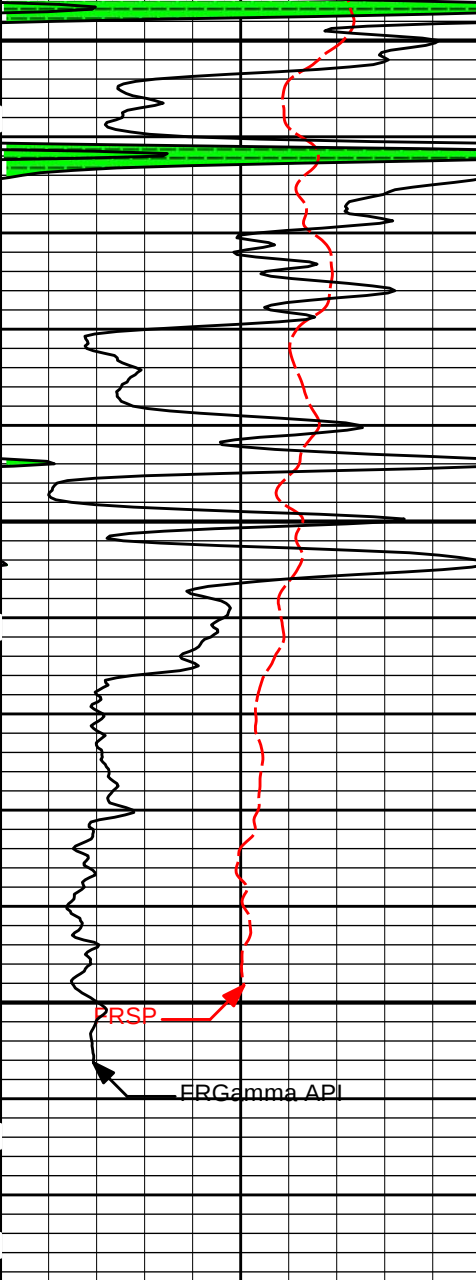




4500

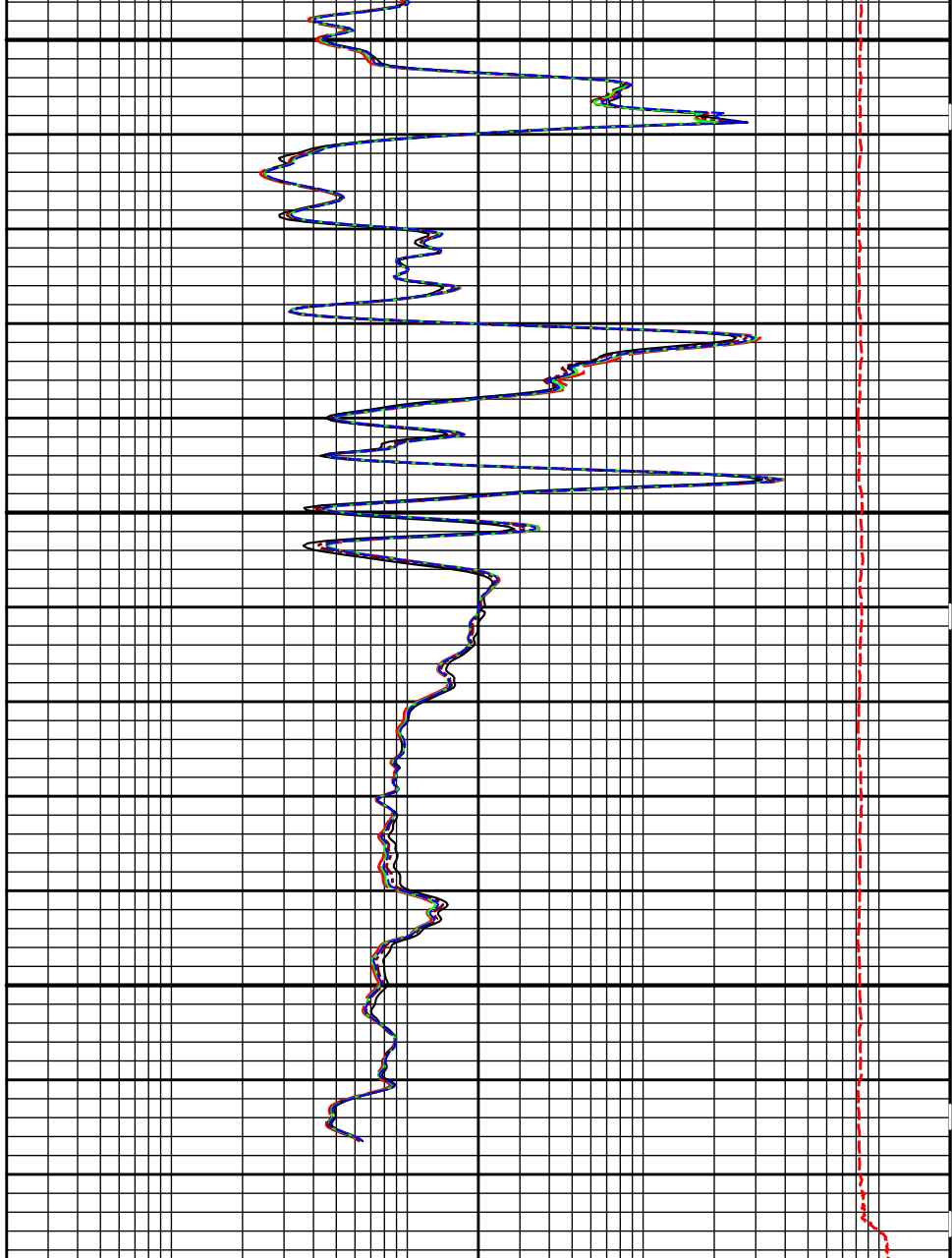
4600





4700

4800



SP		
-]20[+		
0	Gamma API	150
api		
SHALE		

MD
1 : 240
ft

	10K	Tension	0
		pounds	
0.2	10in Resistivity 2ft Res		2000
	ohmm		
0.2	20in Resistivity 2ft Res		2000
	ohmm		
0.2	30in Resistivity 2ft Res		2000
	ohm-metre		
0.2	60in Resistivity 2ft Res		2000
	ohmm		
0.2	90in Resistivity 2ft Res		2000
	ohmm		

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Plot Time: 06-Mar-15 03:03:46
Plot Range: 3900 ft to 4829.25 ft
Data: UNRUH # 4-33\Well Based\DETAILS ACRT\
Plot File: \\-LOCAL-\\UNRUH # 4-33\Well Based\ACRT 5\ACRT_5_main_lib

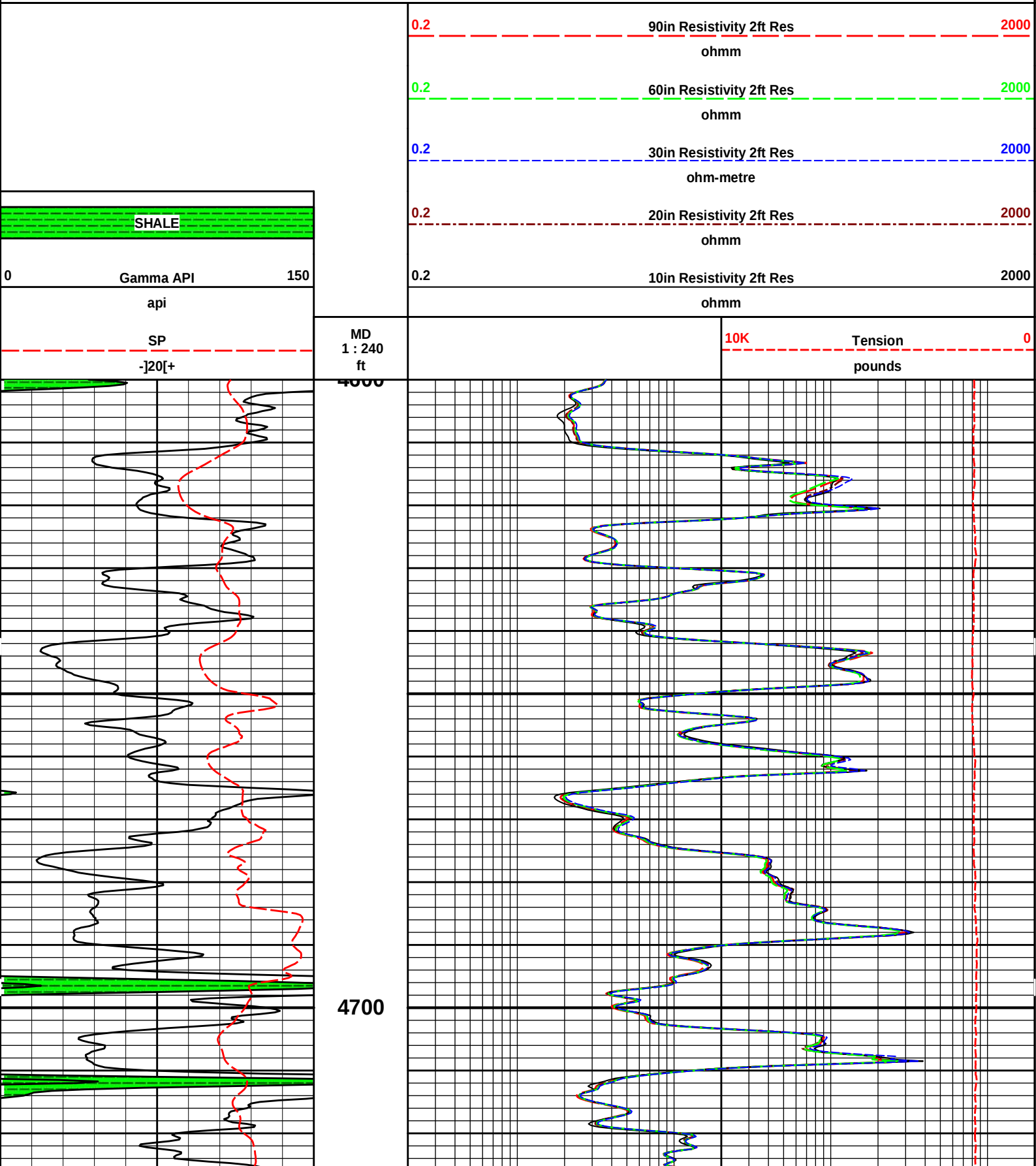
5 INCH MAIN LOG

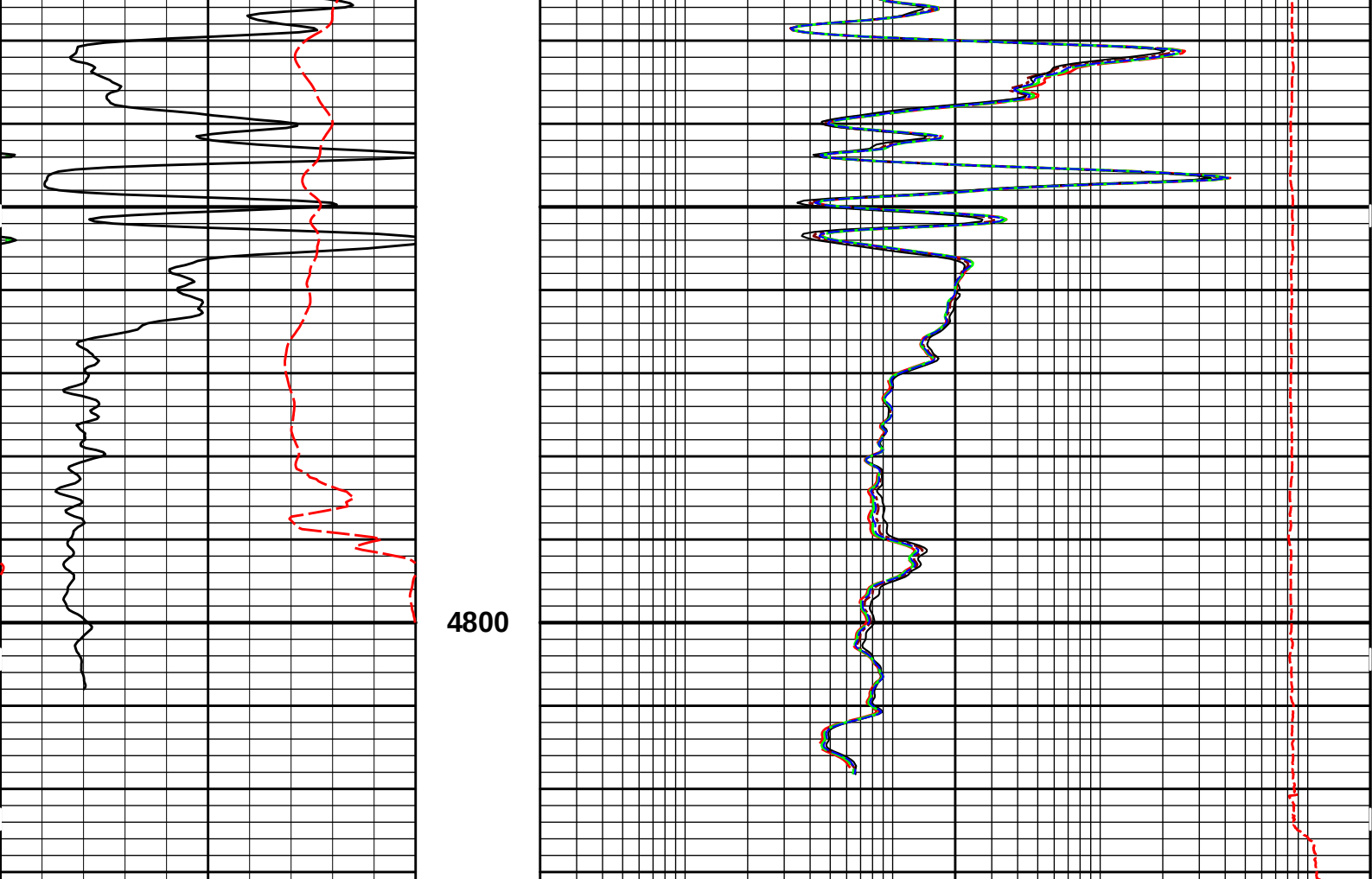
MEASURED DEPTH
MAIN SECTION 5" PER 100'

HALLIBURTON

Plot Time: 06-Mar-15 03:03:47
Plot Range: 4600 ft to 4831.08 ft
Data: UNRUH # 4-33\Well Based\ACRT REPEAT\
Plot File: \\-LOCAL-UNRUH # 4-33\Well Based\ACRT 5\ACRT_5_repeat.lib

REPEAT SECTION





SP -]20[+			MD 1 : 240 ft		10K	Tension	0
						pounds	
0	Gamma API	150		0.2	10in Resistivity 2ft Res2000		
api					ohmm		
SHALE				0.2	20in Resistivity 2ft Res2000		
					ohmm		
				0.2	30in Resistivity 2ft Res2000		
					ohm-metre		
				0.2	60in Resistivity 2ft Res2000		
					ohmm		
			0.2	90in Resistivity 2ft Res2000			
				ohmm			

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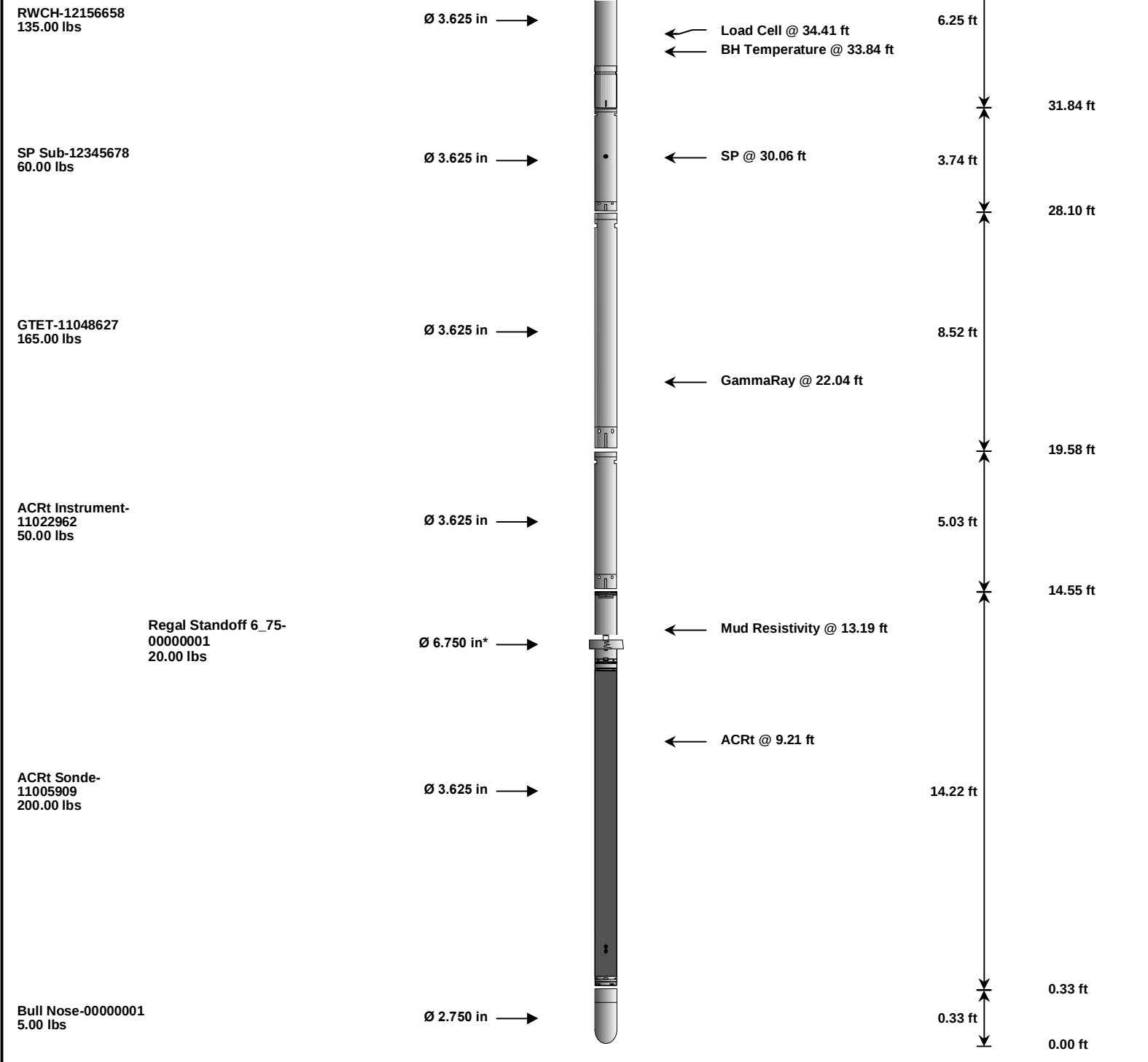
Plot Time: 06-Mar-15 03:03:48
Plot Range: 4600 ft to 4831.08 ft
Data: UNRUH # 4-33\Well Based\ACRT REPEAT\
Plot File: \\-LOCAL-\\UNRUH # 4-33\Well Based\ACRT 5\ACRT_5_repeat_lib

REPEAT SECTION

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						38.09 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25	31.84	300.00
SP	SP Sub	12345678	60.00	3.74	28.10	300.00
GTET	Gamma Telemetry Tool	11048627	165.00	8.52	19.58	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11022962	50.00	5.03	14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11005909	200.00	14.22	0.33	120.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52 *	12.42	300.00
BLNS	Bull Nose	00000001	5.00	0.33	0.00	300.00
Total			635.00	38.09		

* Not included in Total Length and Length Accumulation.

Data: UNRUH # 4-33\0001 GTET-ACRT\IDLE Date: 06-Mar-15 00:01:38

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11048627	Reference Calibration Date:	06-Jan-15 09:40:45
Engineer:	SUNIL BISHTA	Calibration Date:	27-Jan-15 10:50:27

Engineer: SUHAIL BISHTI		Calibration Date: 27-Jan-15 10:59:27		
Software Version: WL INSITE R4.4.3 (Build 6)		Calibration Version: 1		
Calibrator Source S/N: Error				
Calibrator API Reference:265.00 api				
Equivalent Calibrator API Reference:269.6 api				
	Measurement	Measured	Calibrated	Units
	Background	54.4	54.7	api
	Background + Calibrator	322.3	324.4	api
	Calibrator	267.9	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name: GTET - 11048627		Reference Calibration Date: 27-Jan-15 10:59:27		
Engineer: J. BOLLLOM		Calibration Date: 05-Mar-15 19:56:32		
Software Version: WL INSITE R4.6.4 (Build 3)		Calibration Version: 1		
Calibrator Source S/N: Error				
Calibrator API Reference:265.00 api				
Equivalent Calibrator API Reference:269.6 api				
	Field Verification	Shop	Field	Units
	Background	54.7	50.7	api
	Background + Calibrator	324.4	322.9	api
	Calibrator	269.6	272.2	api
	Shop	Field	Difference	Tolerance
	269.6	272.2	-2.6	+/- 9.00

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION			
Tool Name: ACRt Sonde - 11005909		Reference Calibration Date: 29-Dec-14 10:31:07	
Engineer: J. BOLLLOM		Calibration Date: 18-Feb-15 09:38:01	
Software Version: WL INSITE R4.6.4 (Build 3)		Calibration Version: 1	
Host Tool Name: ACRt Instrument - 11022962			

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0335	1.05	0.95	1.0347	1.05	0.95	1.0301	1.05
A2 (50")	0.95	1.0208	1.05	0.95	1.0224	1.05	0.95	1.0199	1.05
A3 (29")	0.95	1.0209	1.05	0.95	1.0226	1.05	0.95	1.0184	1.05
A4 (17")	0.95	1.0226	1.05	0.95	1.0210	1.05	0.95	1.0182	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0245	1.05	0.95	1.0188	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9939	1.05	0.95	0.9899	1.05

SONDE OFFSET									
Subarray	R12KHz			R36KHz			R72KHz		
	(mmho/m)			(mmho/m)			(mmho/m)		
A1 (80")	-0.341			-3.614			-5.292		
A2 (50")	-1.566			-3.514			-4.651		
A3 (29")	-14.315			-4.432			-2.846		
A4 (17")	-103.295			-30.860			-26.404		
A5 (10")	N/A			-102.126			-46.126		
A6 (6")	N/A			286.597			151.999		

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.87	1.3	Mud Cell	0.95	1.00	1.05
36K	1.0	1.34	2.0				

72K	1.0	1.58	2.0
PASS/FAIL SUMMARY			
GAIN RANGE CHK			PASS
SONDE OFFSET CHK			PASS
TOOL OK TO LOG			

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11048627						
Gamma Ray Calibrator	269.6	272.2	-----	-2.6	+/- 9.00	api
ACRt Sonde-11005909						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m
Data: UNRUH # 4-3310001 GTET-ACRTIDLE					Date: 06-Mar-15 00:03:14	

HALLIBURTON PARAMETERS REPORT						
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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	9.400	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	2.000	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	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4830.00	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	
	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	
	Rwa / CrossPlot	BHSM	Borehole Size Source Tool	Depth Panel	
	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	
GTET	BHSM	Borehole Size Source Tool	Depth Panel	
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	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	Depth Panel	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM				
Data: UNRUH # 4-3310001 GTET-ACRTIDLE			Date: 06-Mar-15 00:02:20	

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic		Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel					
TENS		Tension	0.00	NO	
Rwa / CrossPlot					
TPUL		Tension Pull	38.09	NO	
BS		Bit Size	38.09	NO	
HDIA		Measured Hole Diameter	0.00	NO	
RWCH					
DHTN		DownholeTension	0.00	BLK	0.000
SP Sub					
PLTC		Plot Control Mask	30.06	NO	
SP		Spontaneous Potential	30.06	BLK	1.250
SPR		Raw Spontaneous Potential	30.06	NO	
SPO		Spontaneous Potential Offset	30.06	NO	
GTET					
TPUL		Tension Pull	22.04	NO	
GR		Natural Gamma Ray API	22.04	TRI	1.750
GRU		Unfiltered Natural Gamma Ray API	22.04	NO	
EGR		Natural Gamma Ray API with Enhanced Vertical Resolution	22.04	W	1.416 , 0.750
HDIA		Measured Hole Diameter	0.00	NO	
ACCZ		Accelerometer Z	0.00	BLK	0.083
DEVI		Inclination	0.00	NO	
ACRt Sonde					
TPUL		Tension Pull	2.73	NO	
F1R1		ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1		ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2		ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2		ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3		ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3		ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4		ACRT 12KHz - 17in R value	3.98	BLK	0.000

F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	
HDIA	Measured Hole Diameter	0.00	NO	

Data: UNRUH # 4-33\0001 GTET-ACRTIDLE

Date: 06-Mar-15 00:02:40

HALLIBURTON

Plot Time: 06-Mar-15 03:03:51

Plot Range: 630 ft to 4816.5 ft

Data: UNRUH # 4-33\Well Based\MAIN ACRT\

Plot File: \\-LOCAL-UNRUH # 4-33\Well Based\ACRT 5\ACRT_1_lib

1 INCH MAIN LOG

SP

1000

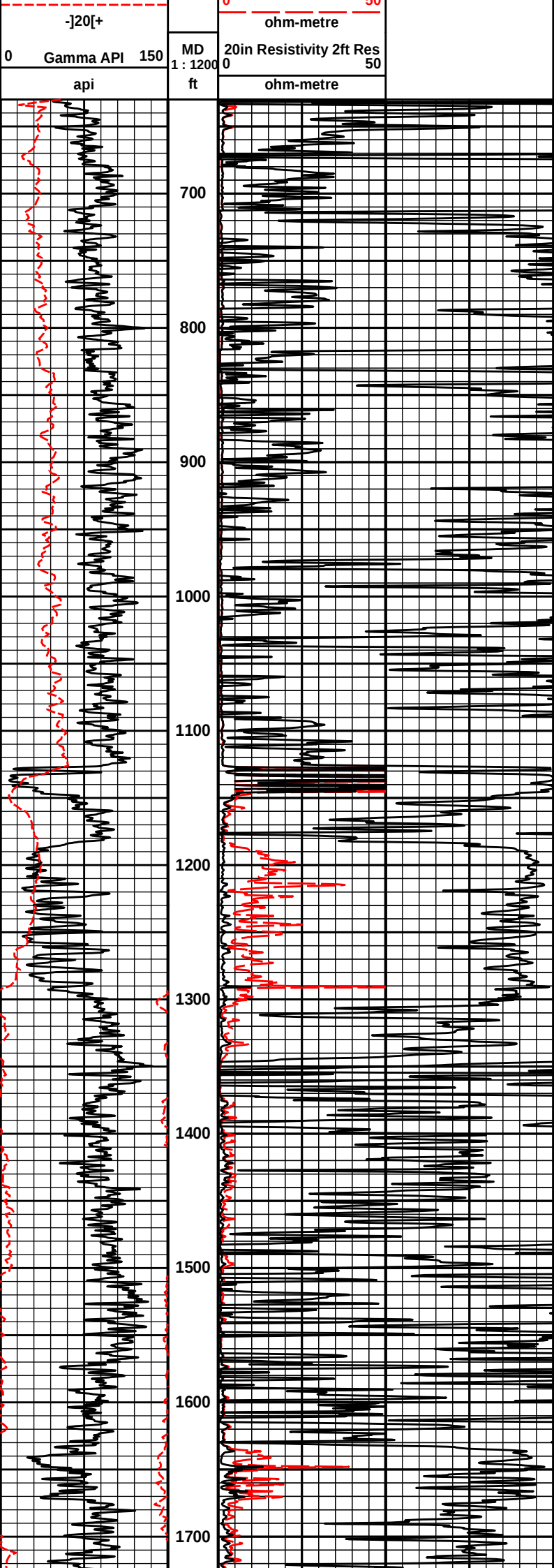
90in Resistivity 2ft Res

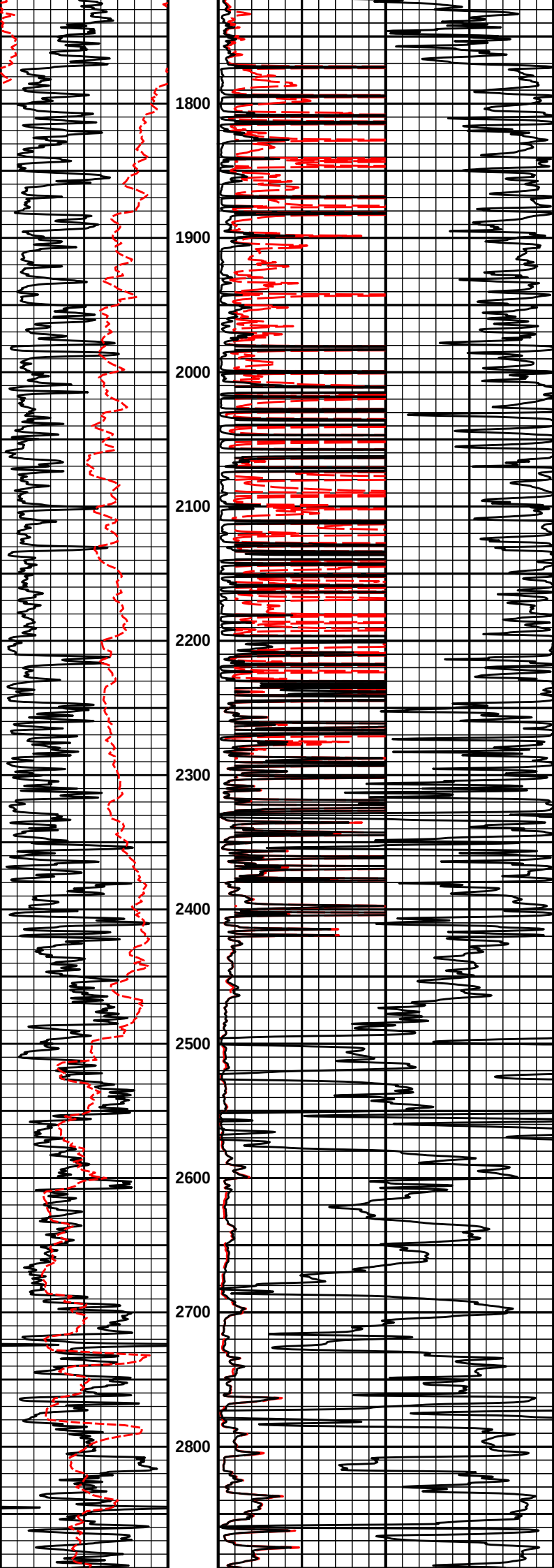
90in Conductivity 2ft Res

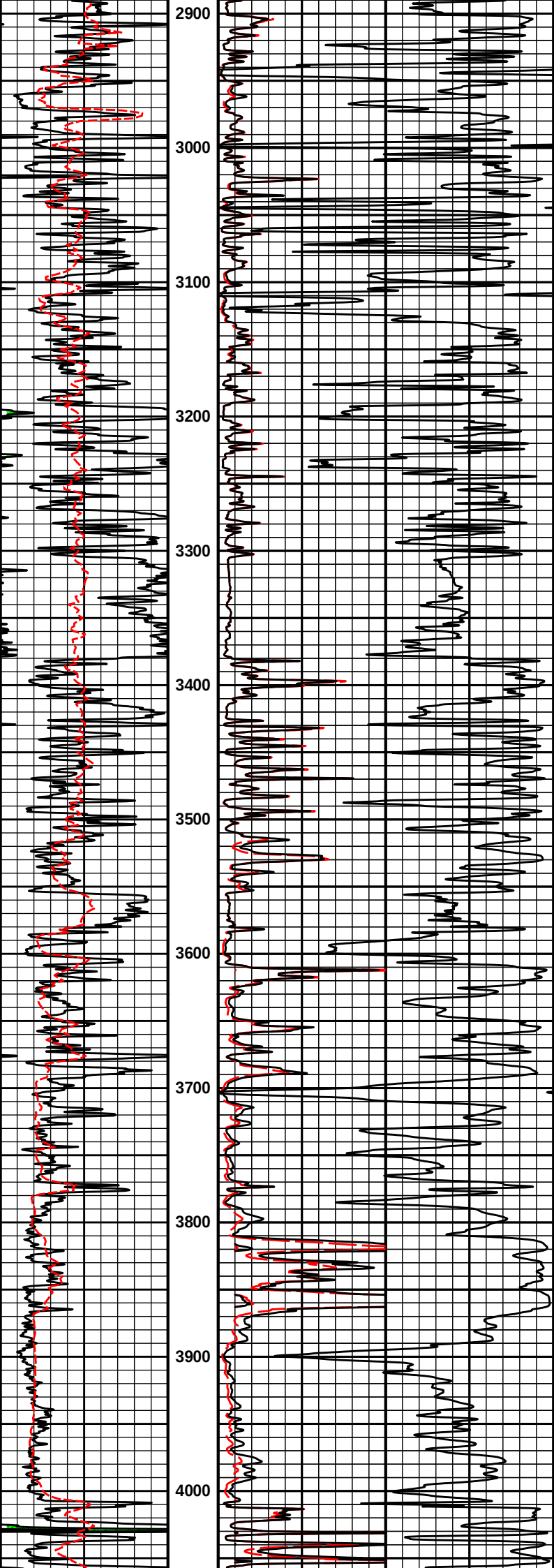
mmho per metre

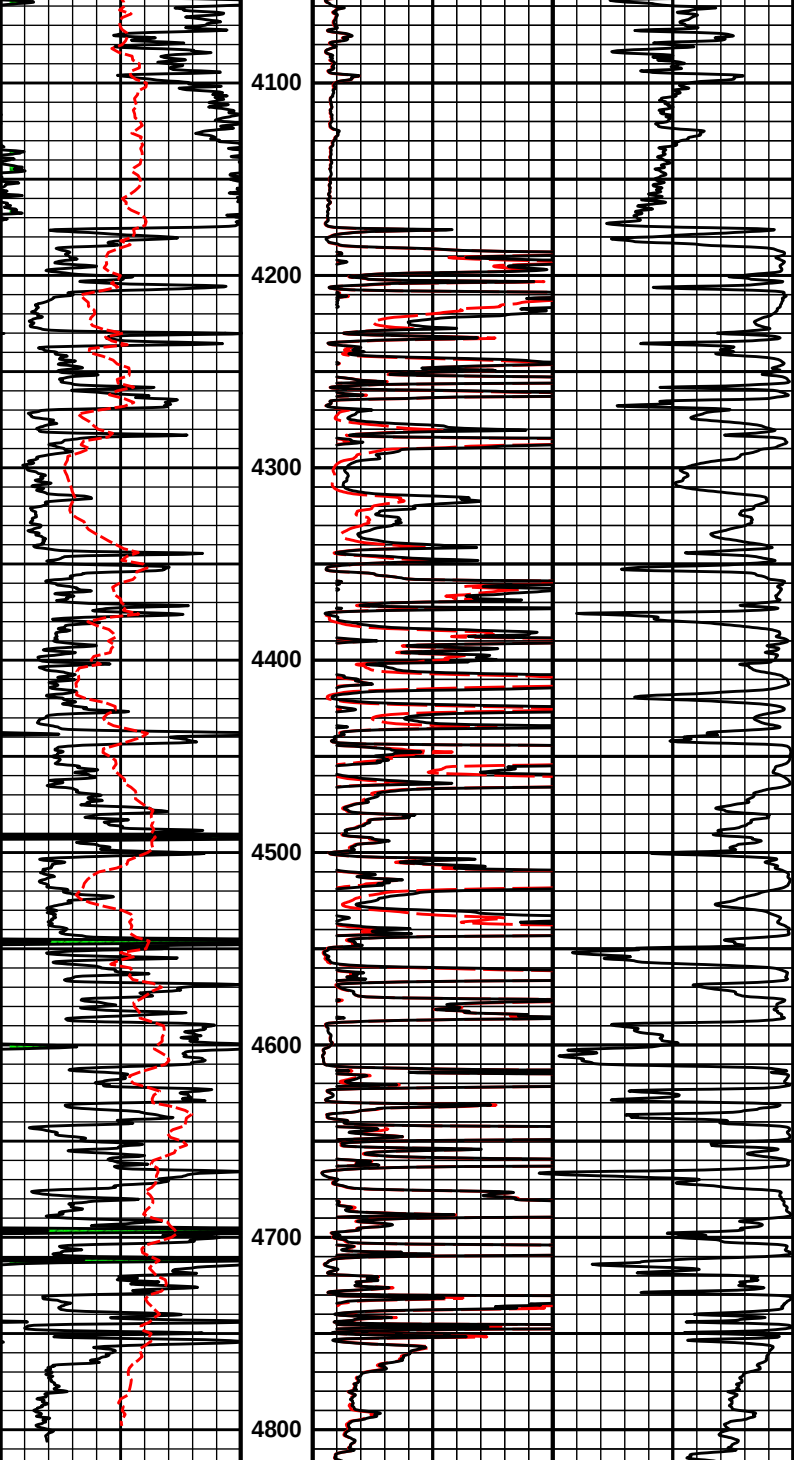
0

50









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

HALLIBURTON

Plot Time: 06-Mar-15 03:03:52
Plot Range: 630 ft to 4816.5 ft
Data: UNRUH # 4-33\Well Based\MAIN ACRT\
Plot File: \\-LOCAL-UNRUH # 4-33\Well Based\ACRT 5\ACRT_1.lib

1 INCH MAIN LOG

COMPANY	HERMAN L. LOEB, LLC
WELL	UNRUH # 4-33
FIELD	EINSEL

COUNTY	KIOWA	STATE	KANSAS
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY LOG	