HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY

COMPANY **LARAMIE ENERGY**

WELL **BRUTON 30-06-B**

FIELD **BRUSH CREEK**

COUNTY **GARFIELD** STATE **CO**

LARAMIE ENERGY / BRUTON 30-06-B / BRUSH CREEK / GARFIELD / CO
COMPANY / WELL / FIELD / COUNTY / STATE

API No. 05077101040000

Location SURFACE HOLE LOCATION:
2535' FSL & 1807' FEL

BOTTOM HOLE LOCATION:
1833' FNL & 2021' FWL

Sect. 30 Twp. 9S Rge. 93W

Other Services:
RWCH
DSNT/ SDLT

Permanent Datum	GL	Elev. 7650.0 ft	Elev.: K.B. 7671.0 ft
Log measured from	KB	, 21.0 ft above perm. Datum	D.F. 7670.0 ft
Drilling measured from	KB		G.L. 7650.0 ft

Date		12-Feb-12					
Run No.		ONE					
Depth - Driller		7975.00 ft					
Depth - Logger		7978.0 ft					
Bottom - Logged Interval		7975.0 ft					
Top - Logged Interval		1556.0 ft					
Casing - Driller		8.625 in	@ 1560.0 ft	@		@	
Casing - Logger		1556.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WBM					
Density	Viscosity	9.7 ppg	58.00 s/qt				
PH	Fluid Loss	9.20 pH	6.8 cptm				
Source of Sample		MUD TANK					
Rm @ Meas. Temperature		1.350 ohmm	@ 59.30 degF	@		@	
Rmf @ Meas. Temperature		0.93 ohmm	@ 75.00 degF	@		@	
Rmc @ Meas. Temperature		0.980 ohmm	@ 75.00 degF	@		@	
Source Rmf	Rmc	CHART	CHART				
Rm @ BHT		0.54 ohmm	@ 185.0 degF	@		@	
Time Since Circulation		12.8 hr					
Time on Bottom		12-Feb-12 22:19					
Max. Rec. Temperature		185.0 degF	@ 7978.0 ft	@		@	
Equipment	Location	11362840	ROCK SPRINC				
Recorded By		B. PEDERSEN					
Witnessed By		K. CLAUSEN					

Fold here

Service Ticket No.: 9254976 API Serial No.: 05077101040000 PGM Version: WL INSITE R3.4.2 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Rm @ Meas. Temp	@				
Rmf @ Meas. Temp.	ONE	ACRT	N/A	0" S.O.	N/A
Rmc @ Meas. Temp.		E171_S970			
Rm @ BHT	@				
Rmf @ BHT	@				
Rmc @ BHT	@				

Date / Sample No. / Depth-Driller / Type Fluid in Hole / Density / Viscosity / Ph / Fluid Loss / Source of Sample

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11016182	Serial No.		Serial No.	10948155	Serial No.	11004663
Model No.	GTET	Model No.		Model No.	SDLT-I	Model No.	DSNT-I
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	102-A	Spacing		Log Type	GAM-GAM	Log Type	THERM-THERM
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]		Serial No.	5116GW	Serial No.	DSN-431
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

GAMMA RAY / CALIPER / ACOUSTIC / RESISTIVITY / DENSITY / NEUTRON

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	7978'	1556'	REC	0	150				30%	-10%	2.68 g/cc	30%	-10%	SAND

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: RWCH-GTET-DSNT-SDLT-ACRT RAN IN COMBINATION

BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY AFFECT TOOL RESPONSE

ANNULAR HOLE VOLUME CALCULATED FOR 4.5-INCH PRODUCTION CASING

BOWSPRING AND STANDOFF REMOVED AT CUSTOMER'S REQUEST

LATITUDE: 39.247822

LONGITUDE: -107.808671

TODAY'S CREW: J. DAVIS, K. TUELLER, P. MACLEOD RIG: PRECISION 706

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY (307) 352-8600

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	9.700	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	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	7975.00	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	

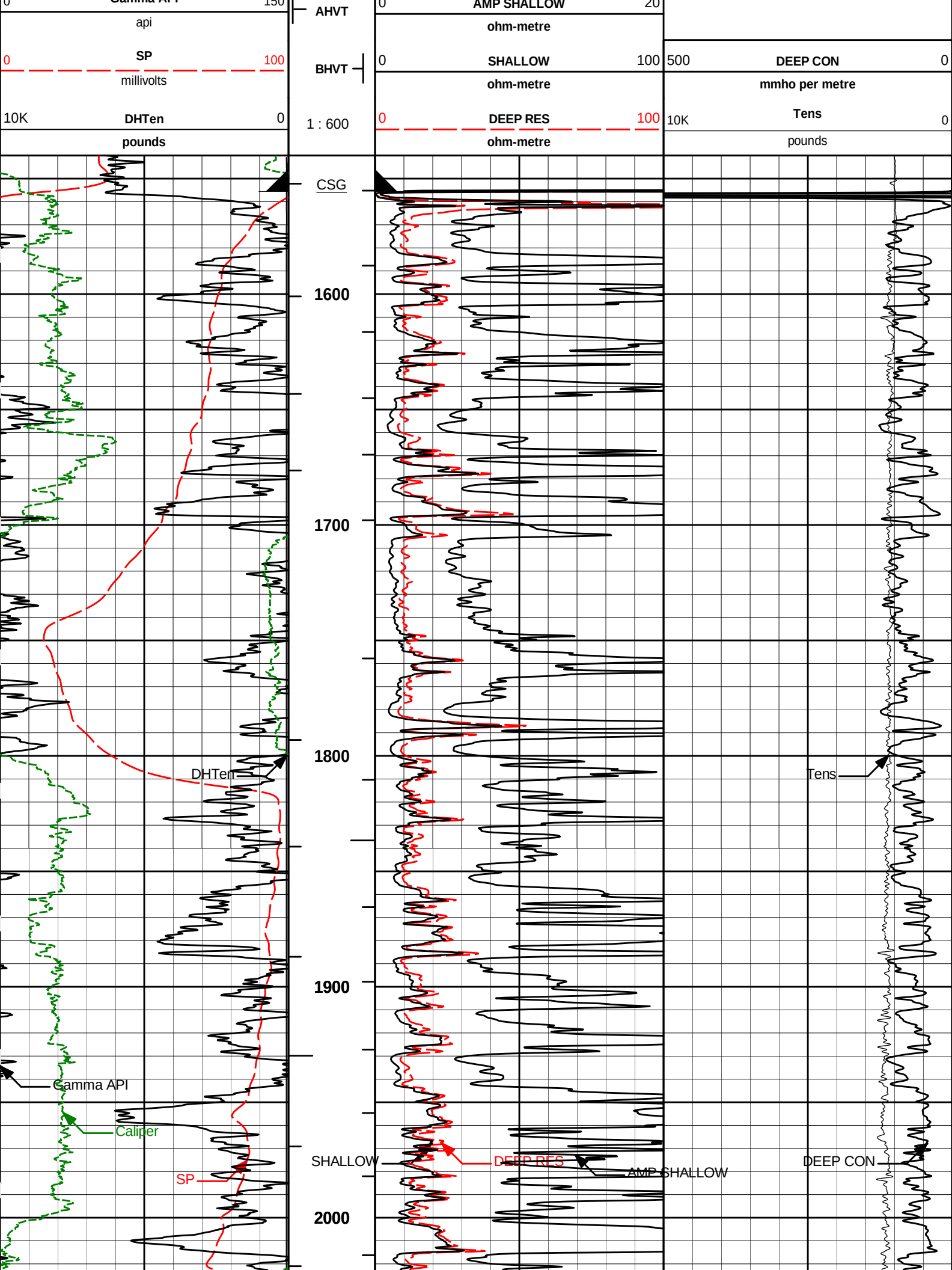
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Sandstone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.000	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	2.680	g/cc
	SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
	ACRt Sonde	RTOK	Process ACRt?	Yes	
	ACRt Sonde	MNSO	Minimum Tool Standoff	0.00	in
	ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
	ACRt Sonde	TPOS	Tool Position	Free Hanging	
	ACRt Sonde	RMOP	Rmud Source	Mud Cell	
	ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt Sonde	THQY	Threshold Quality	0.50	
BOTTOM					

Data: BRUTON_30_06_B\0001 LOGIQ_TRIPLE\006 12-Feb-12 22:19 Up @7988.0f **Date: 12-Feb-12 23:08:58**

HALLIBURTON

Plot Time: 13-Feb-12 00:28:26
Plot Range: 1540 ft to 7986.5 ft
Data: {ActiveWell}\Well Based\MAIN*
Plot File: \\ACRT\IQ_BP_ACRt_2IN_DHT

MAIN PASS 2" = 100'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api
SP
0
100
millivolts
10K
DHTen
0
pounds
AHVT
BHVT
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0
AMP SHALLOW
20
ohm-metre
0
SHALLOW
100
ohm-metre
0
DEEP RES
100
ohm-metre
500
DEEP CON
0
mmho per metre
10K
Tens
0
pounds
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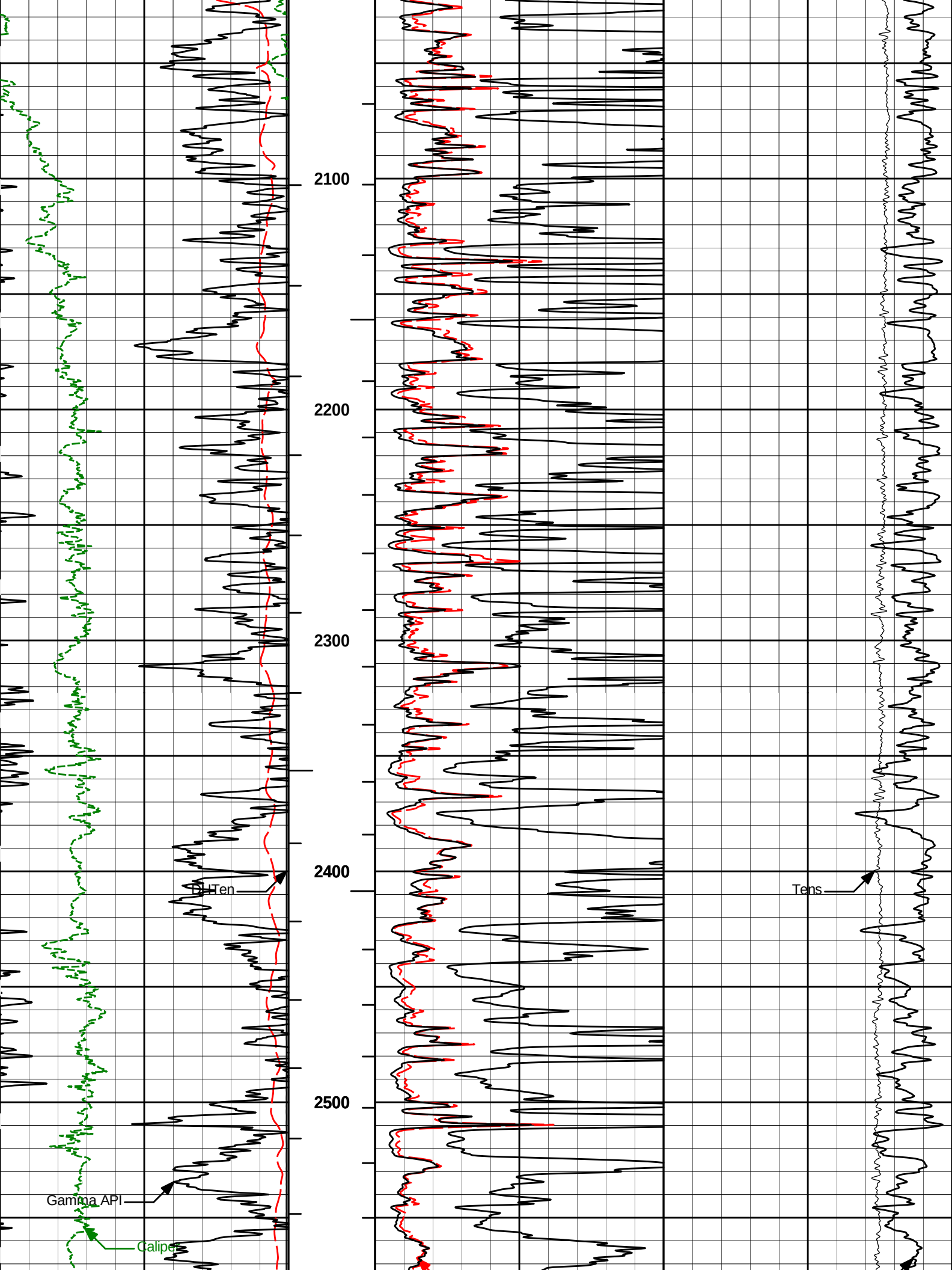
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DLTen
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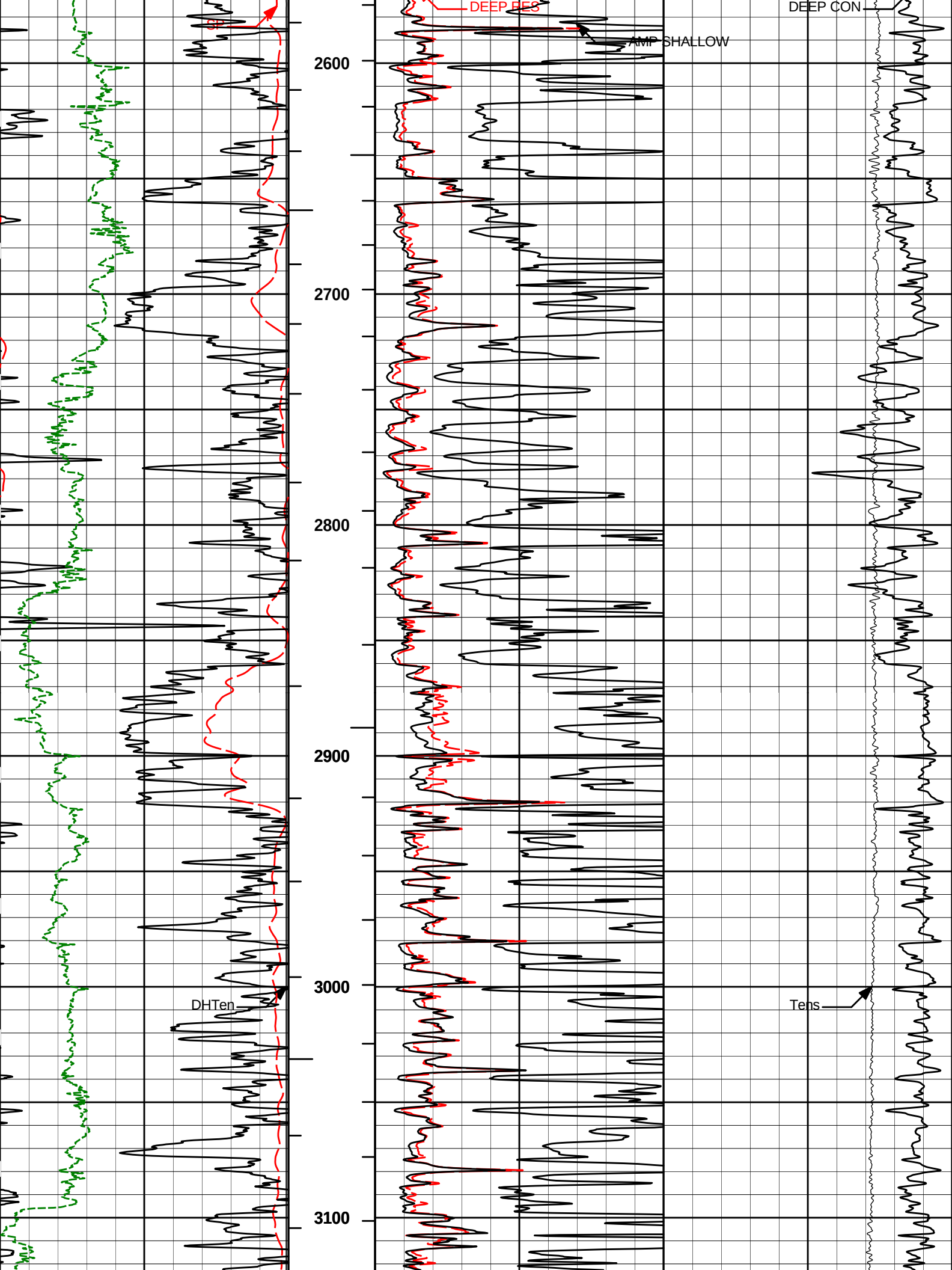
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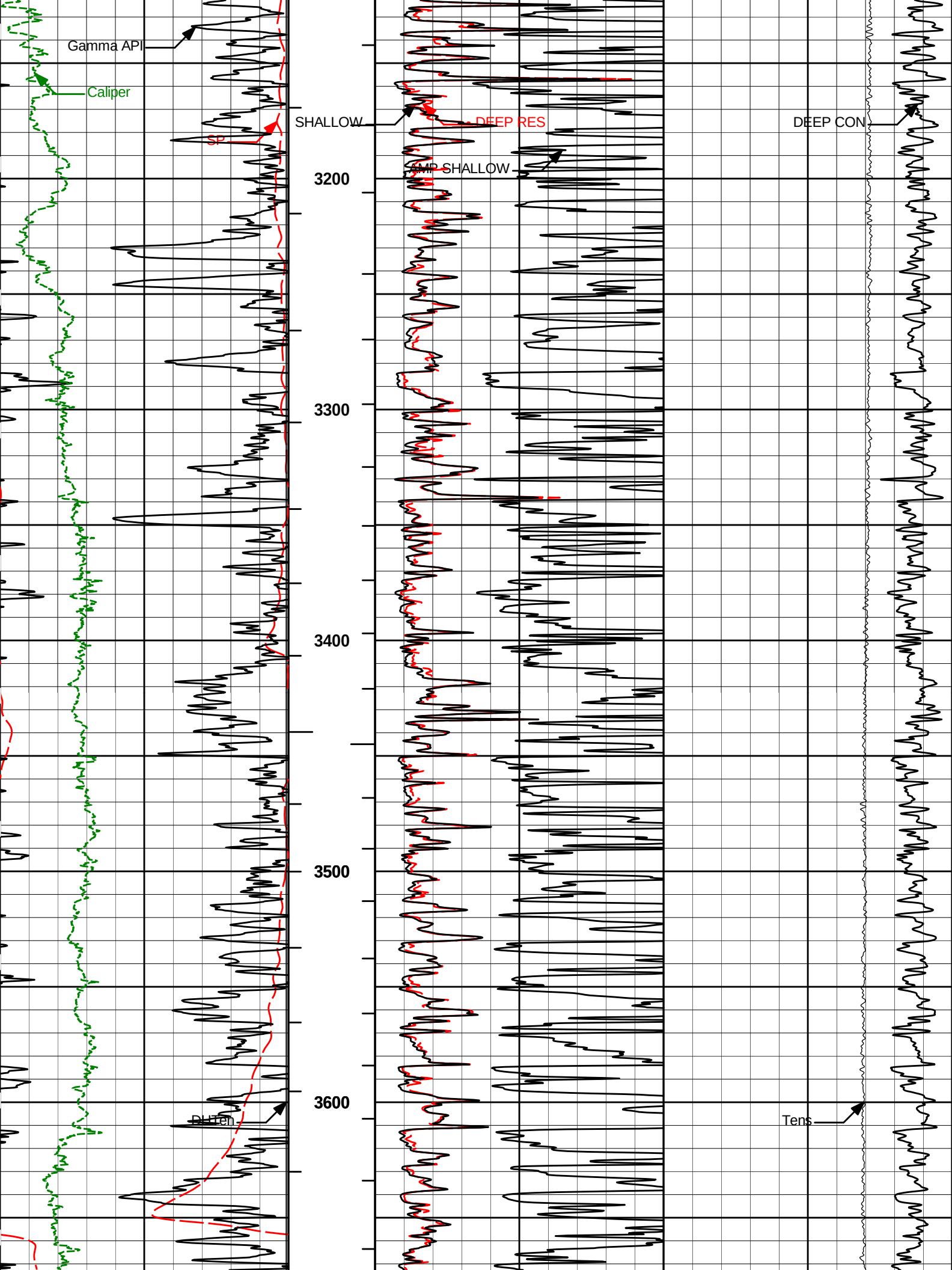
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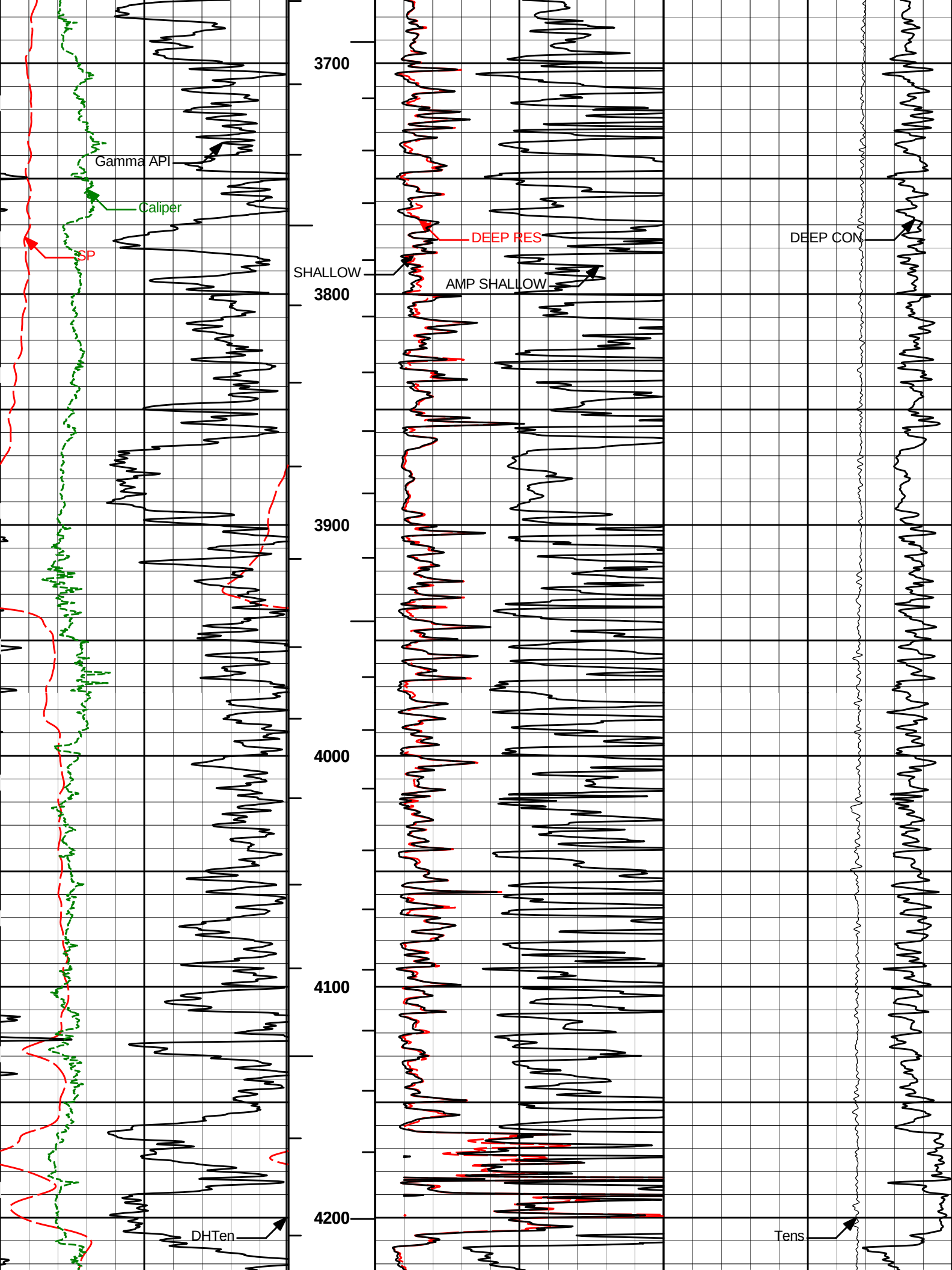
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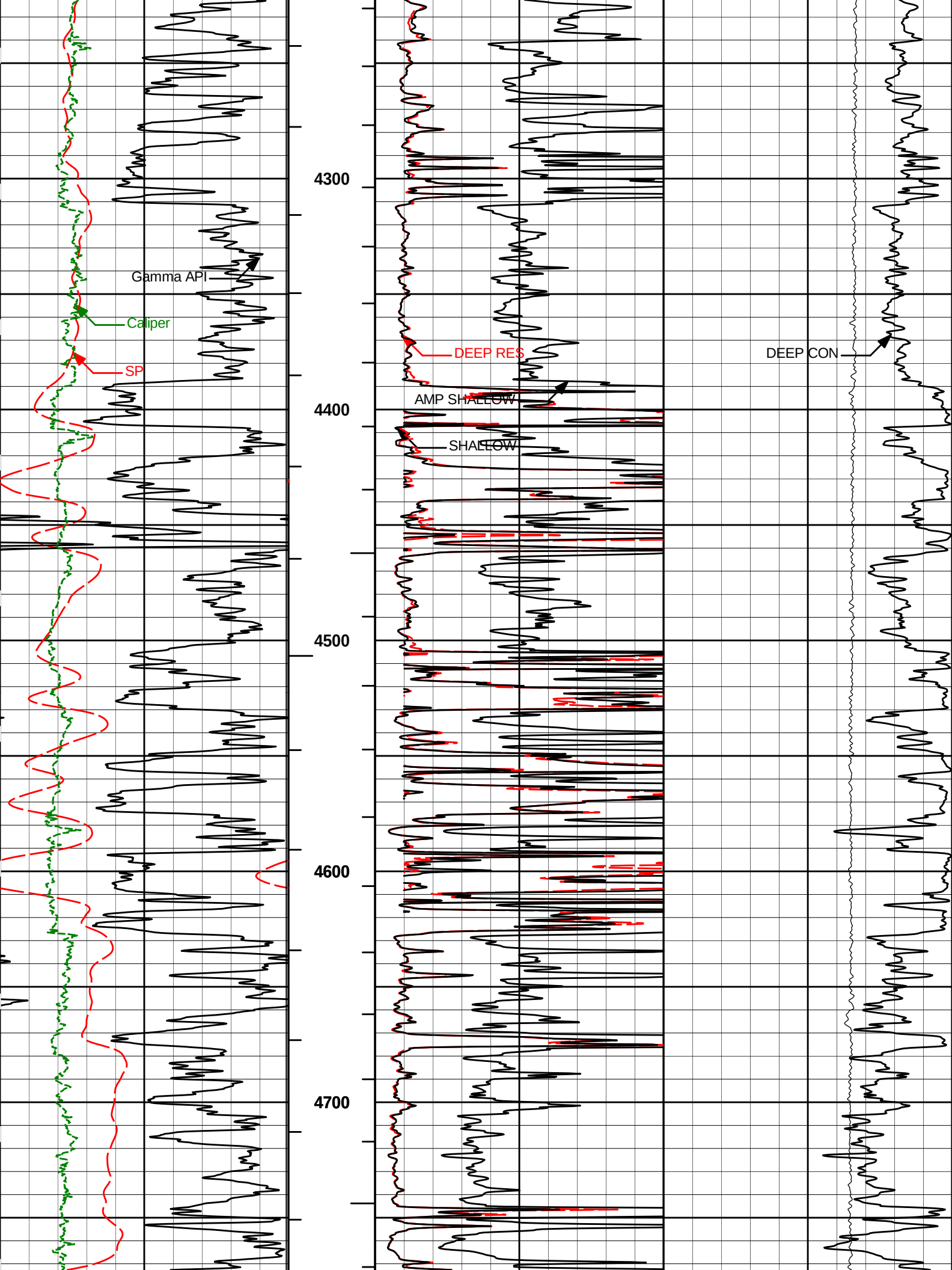
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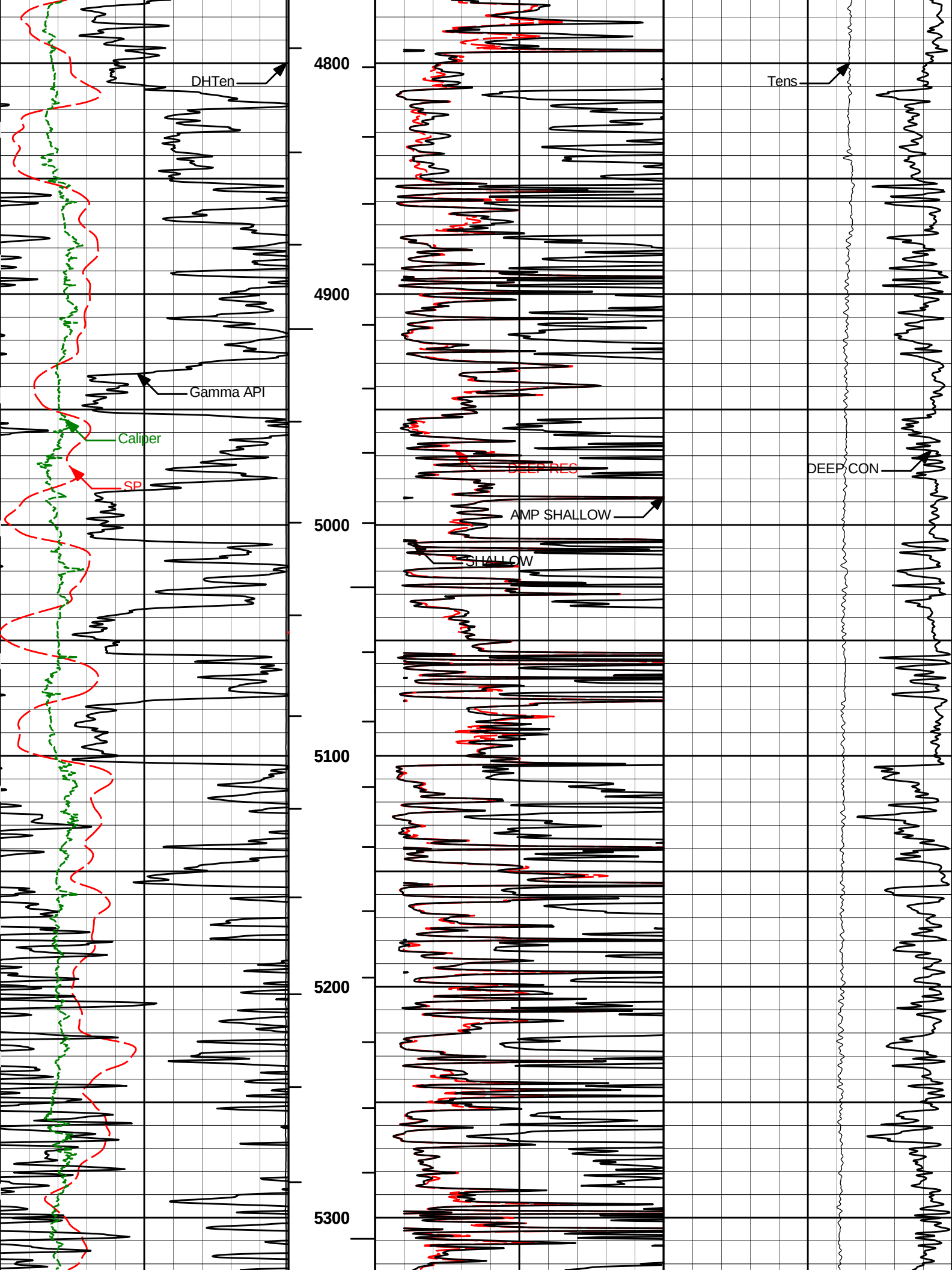
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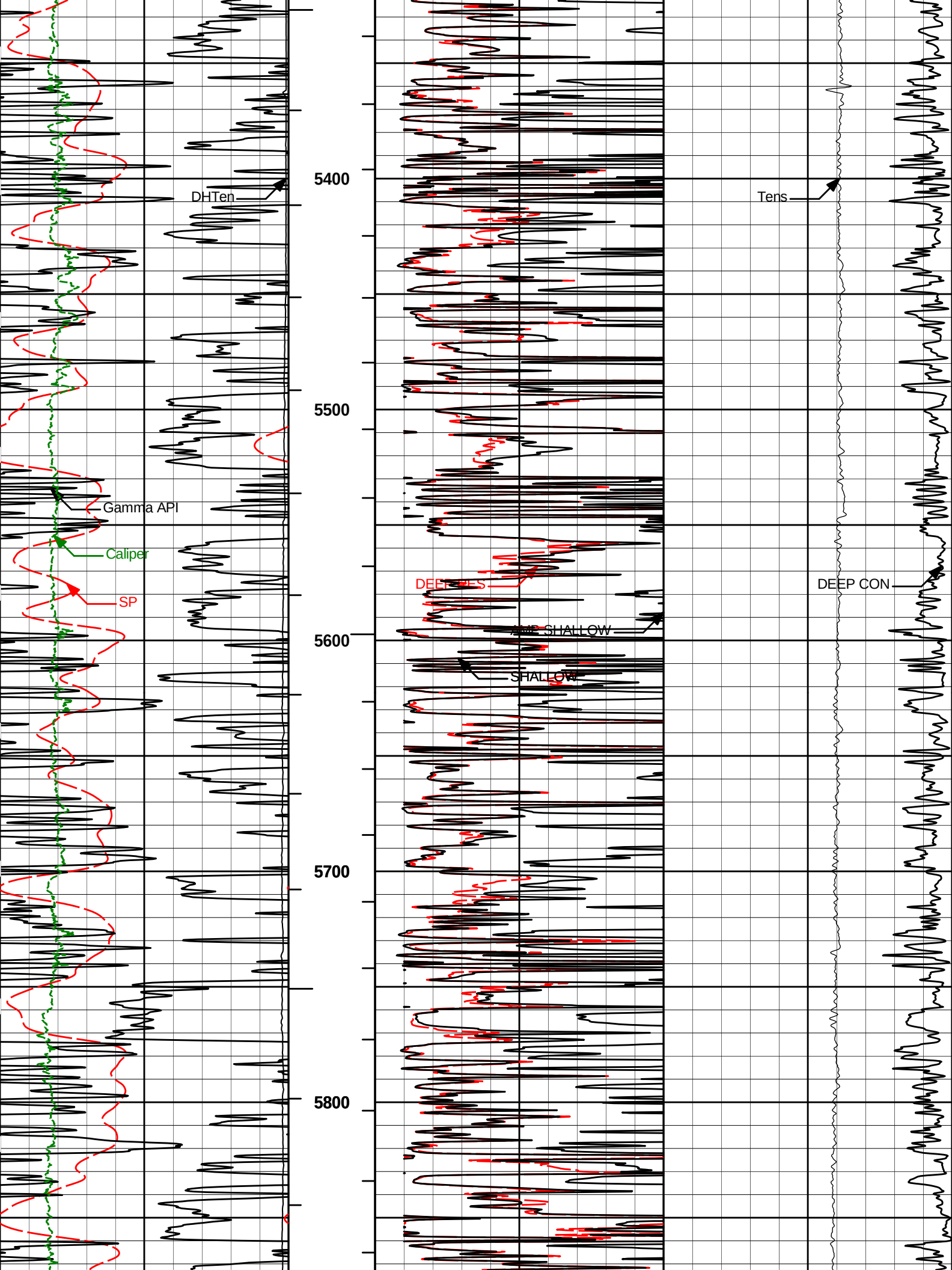
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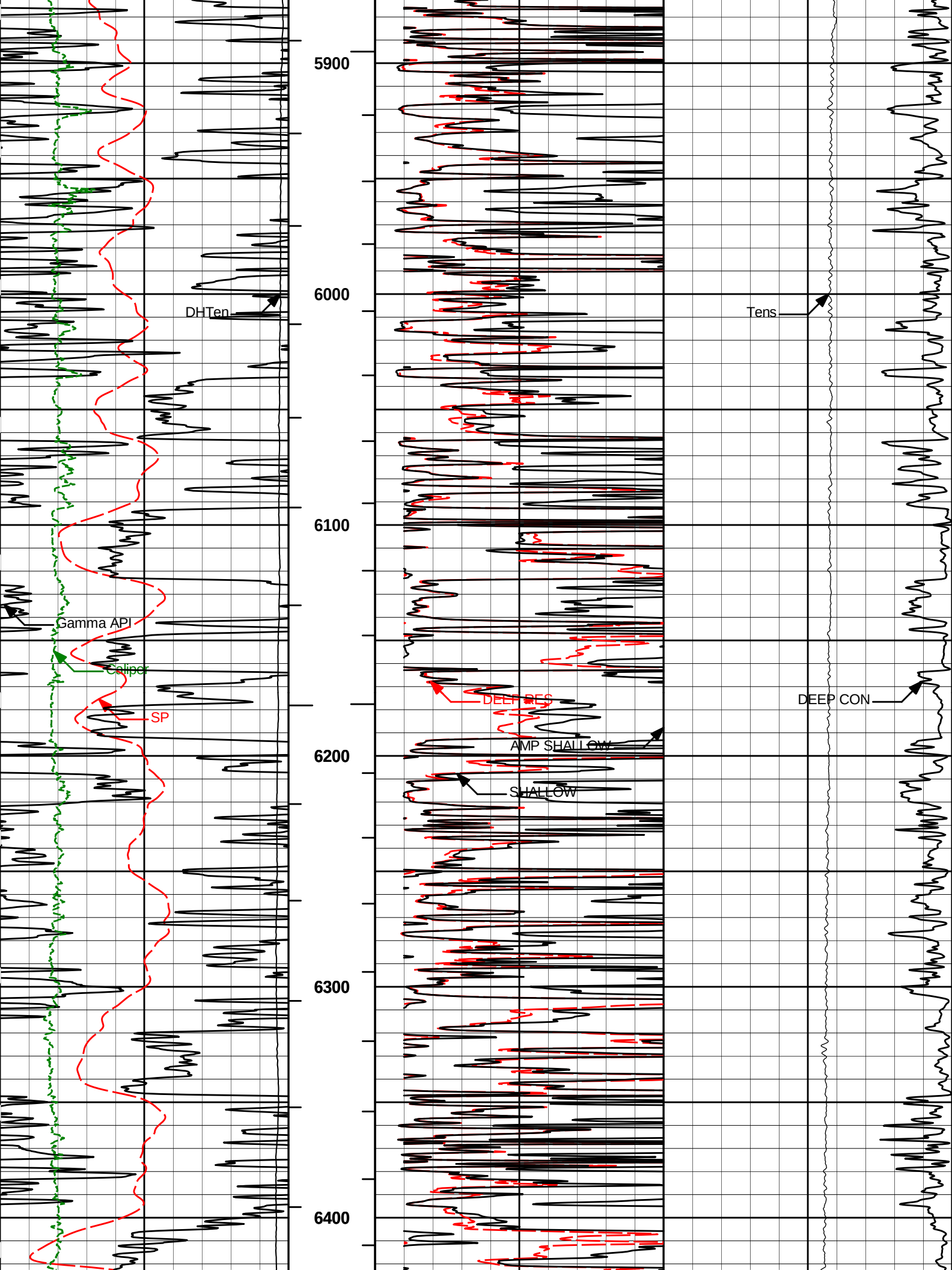
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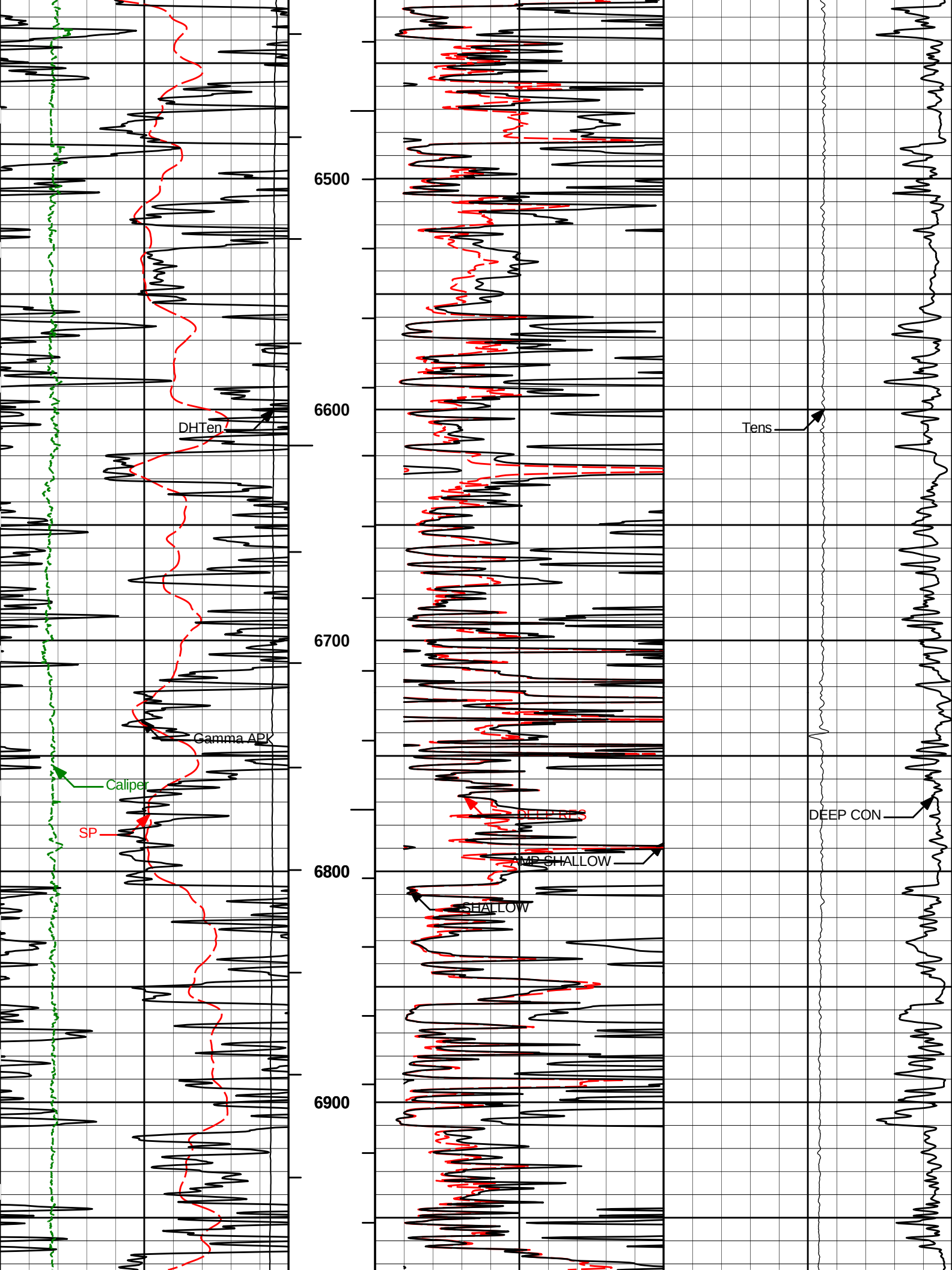
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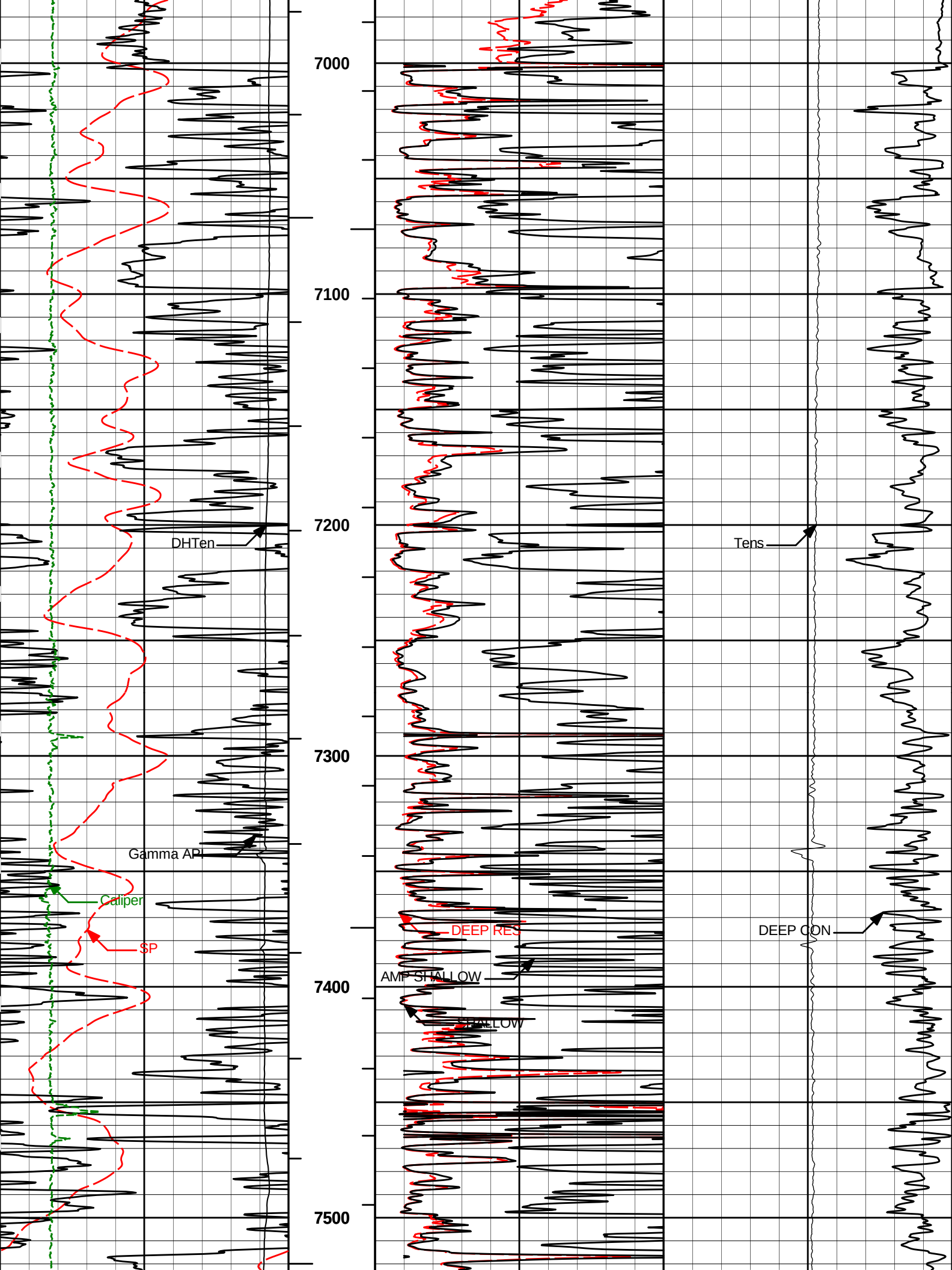
DEEP CON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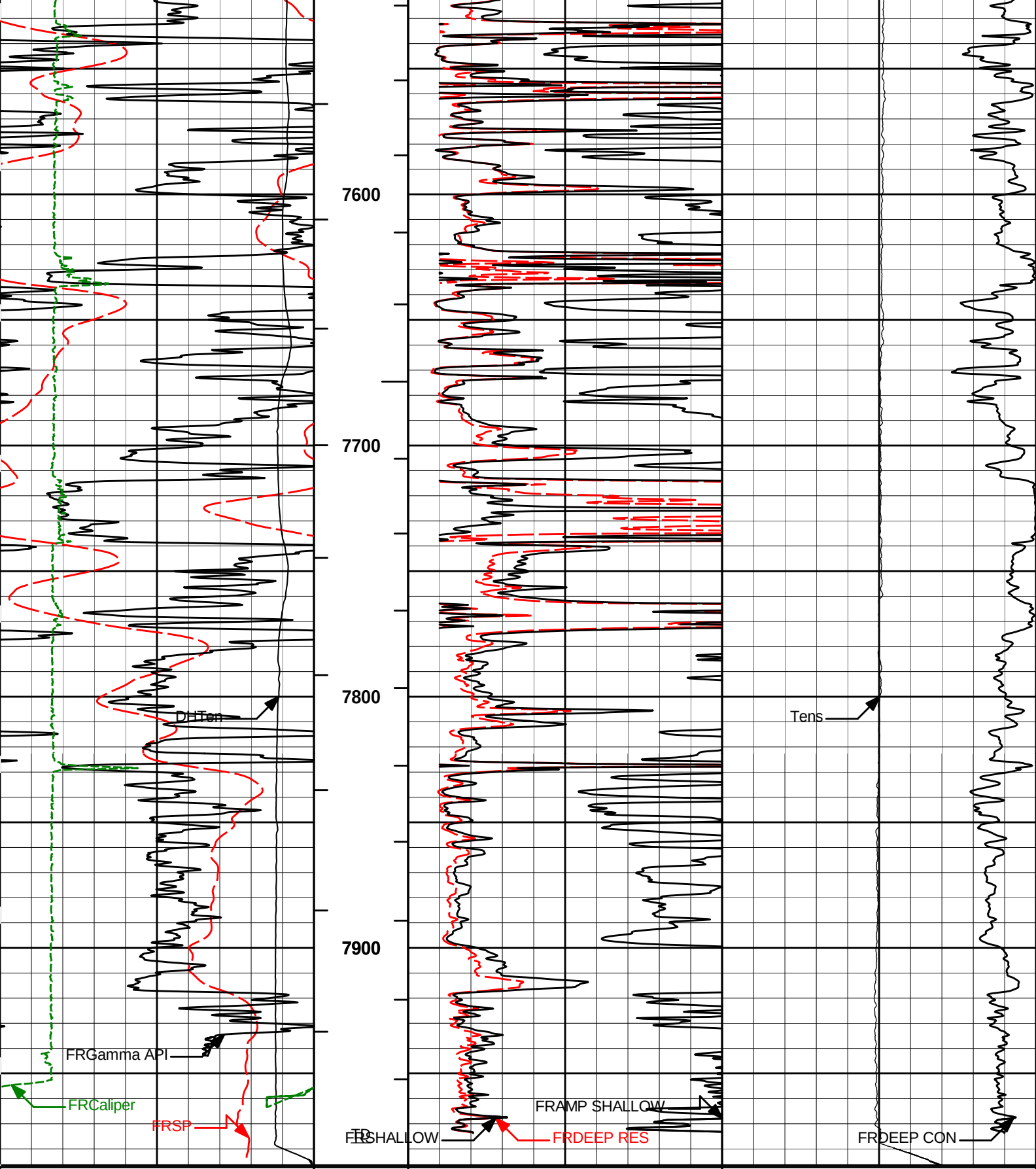
SHALLOW
DEEP CON



10K DHTen 0	1 : 600	0 DEEP RES 100
pounds		ohm-metre
0 SP 100	BHVT	0 SHALLOW 100
millivolts		ohm-metre
0 Gamma API 150	AHVT	0 AMP SHALLOW 20
api		ohm-metre
6 Caliper 16		

10K Tens 0
pounds
500 DEEP CON 0
mmho per metre

inches

HALLIBURTON

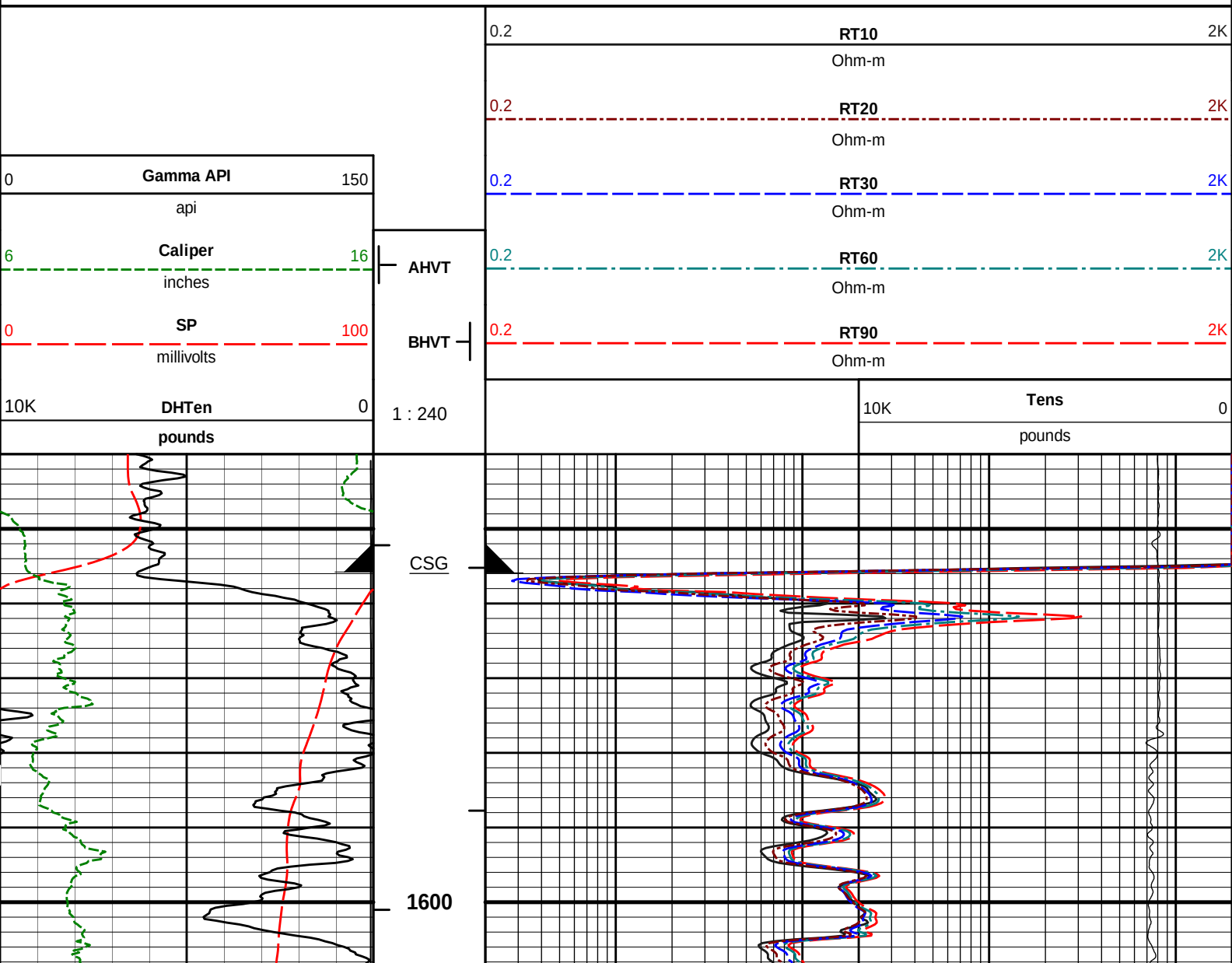
Plot Time: 13-Feb-12 00:28:33
Plot Range: 1540 ft to 7986.5 ft
Data: {ActiveWell}\Well Based\MAIN*
Plot File: \\ACRT\IQ_BP_ACRt_2IN_DHT

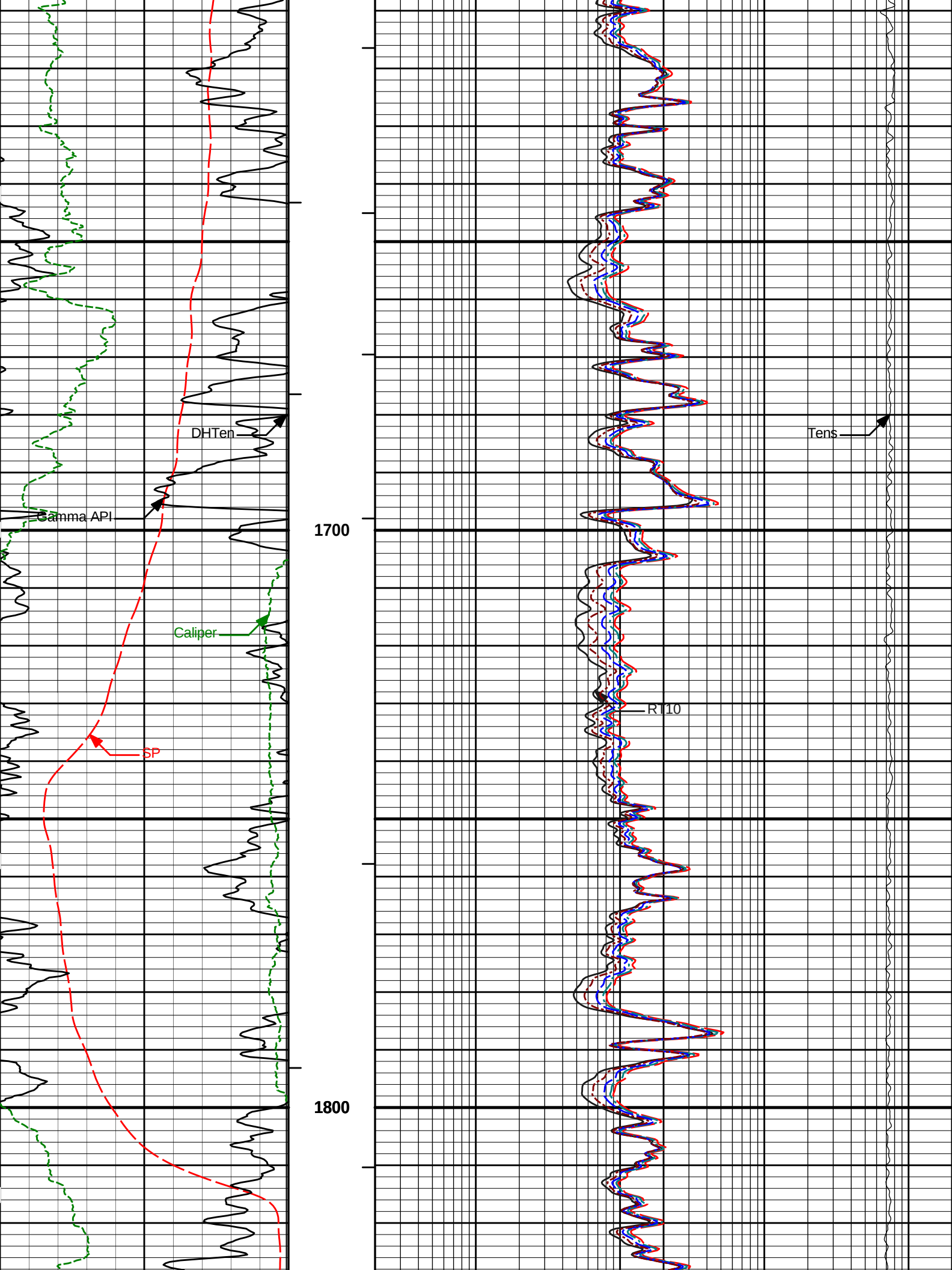
MAIN PASS 2" = 100'

HALLIBURTON

Plot Time: 13-Feb-12 00:28:34
Plot Range: 1540 ft to 7986.5 ft
Data: {ActiveWell}\Well Based\MAIN\
Plot File: \\ACRT\IQ_BP_ACRt_5IN_DHT

MAIN PASS 5" = 100'

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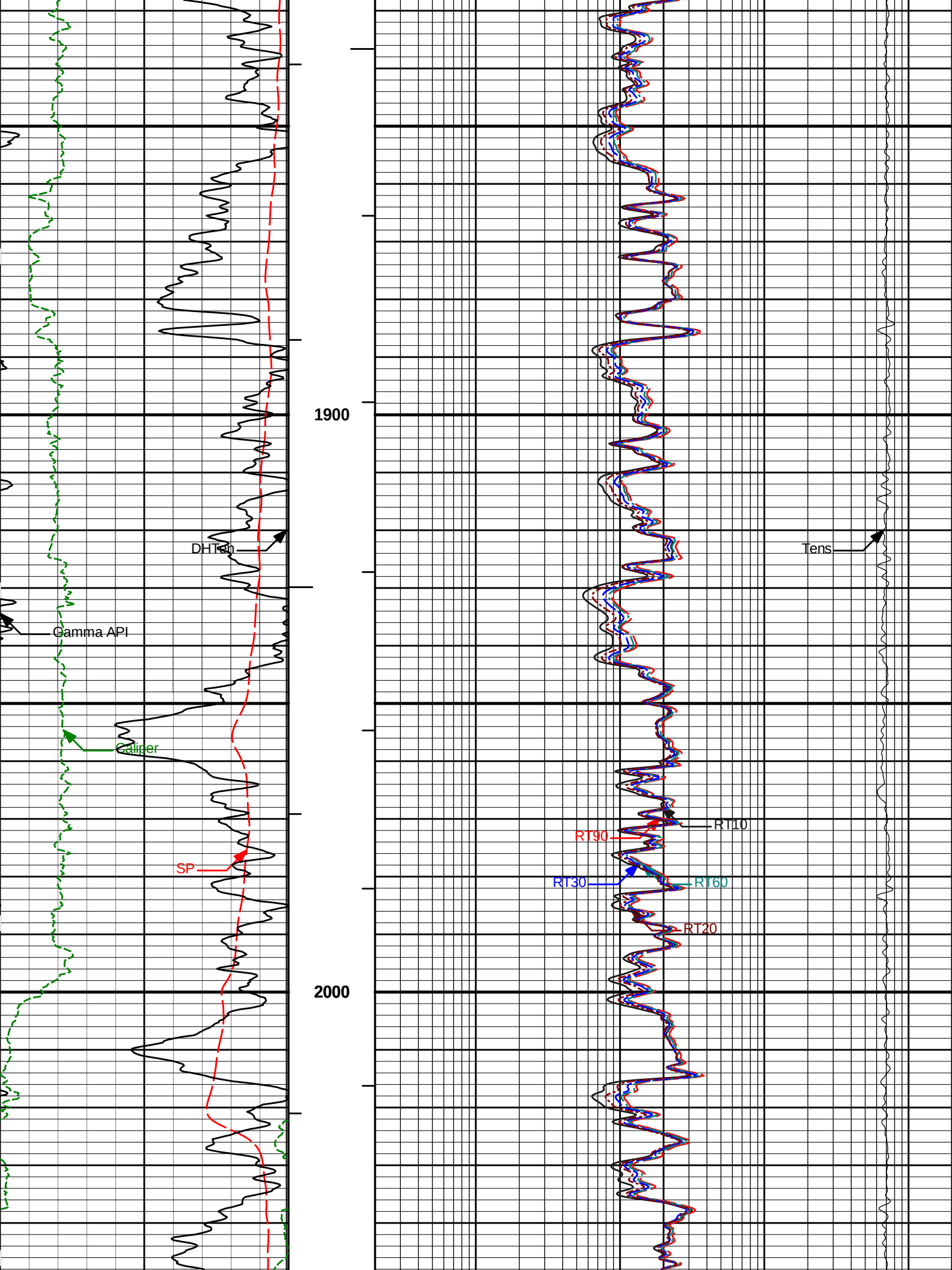
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RT60
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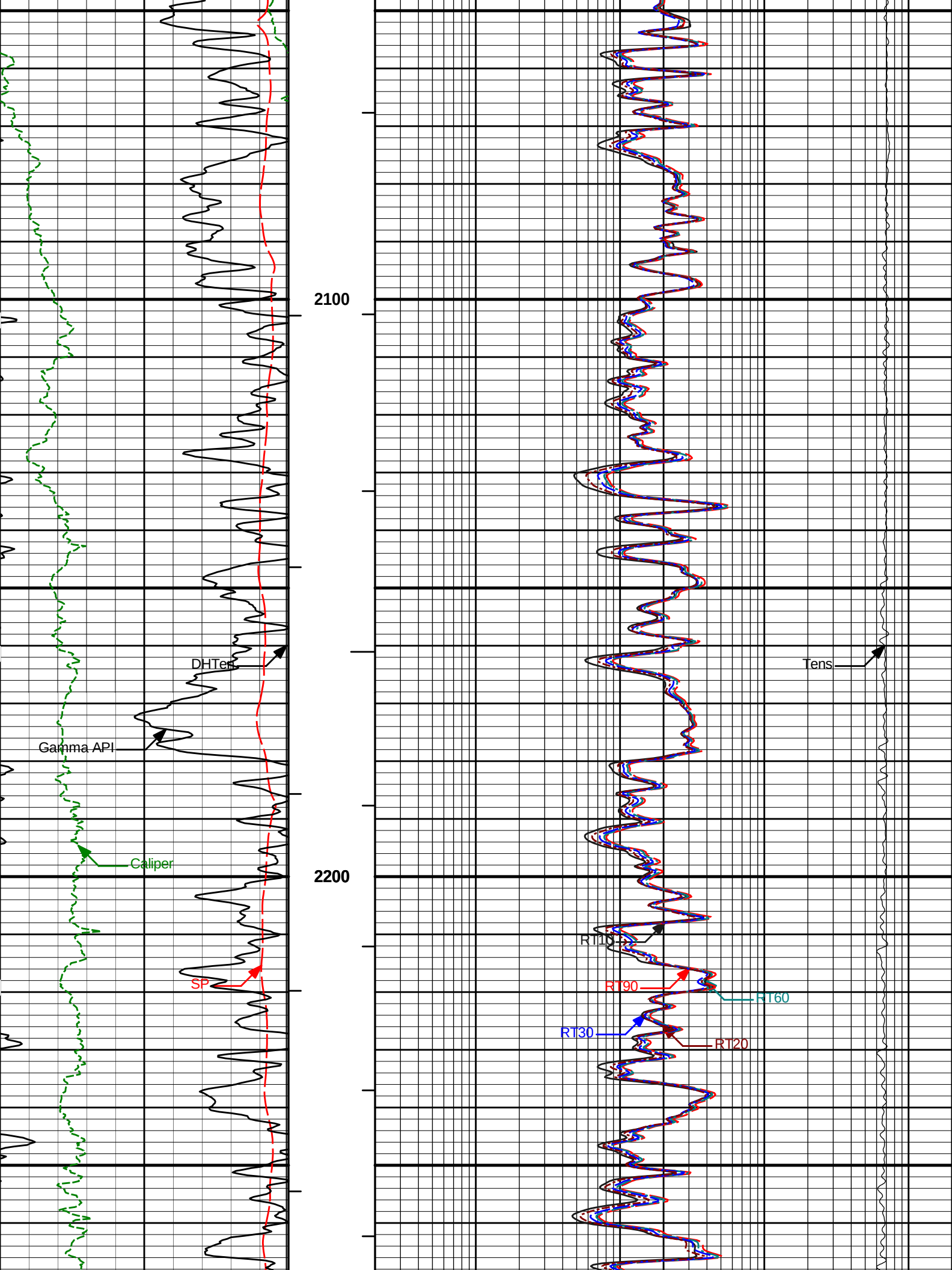
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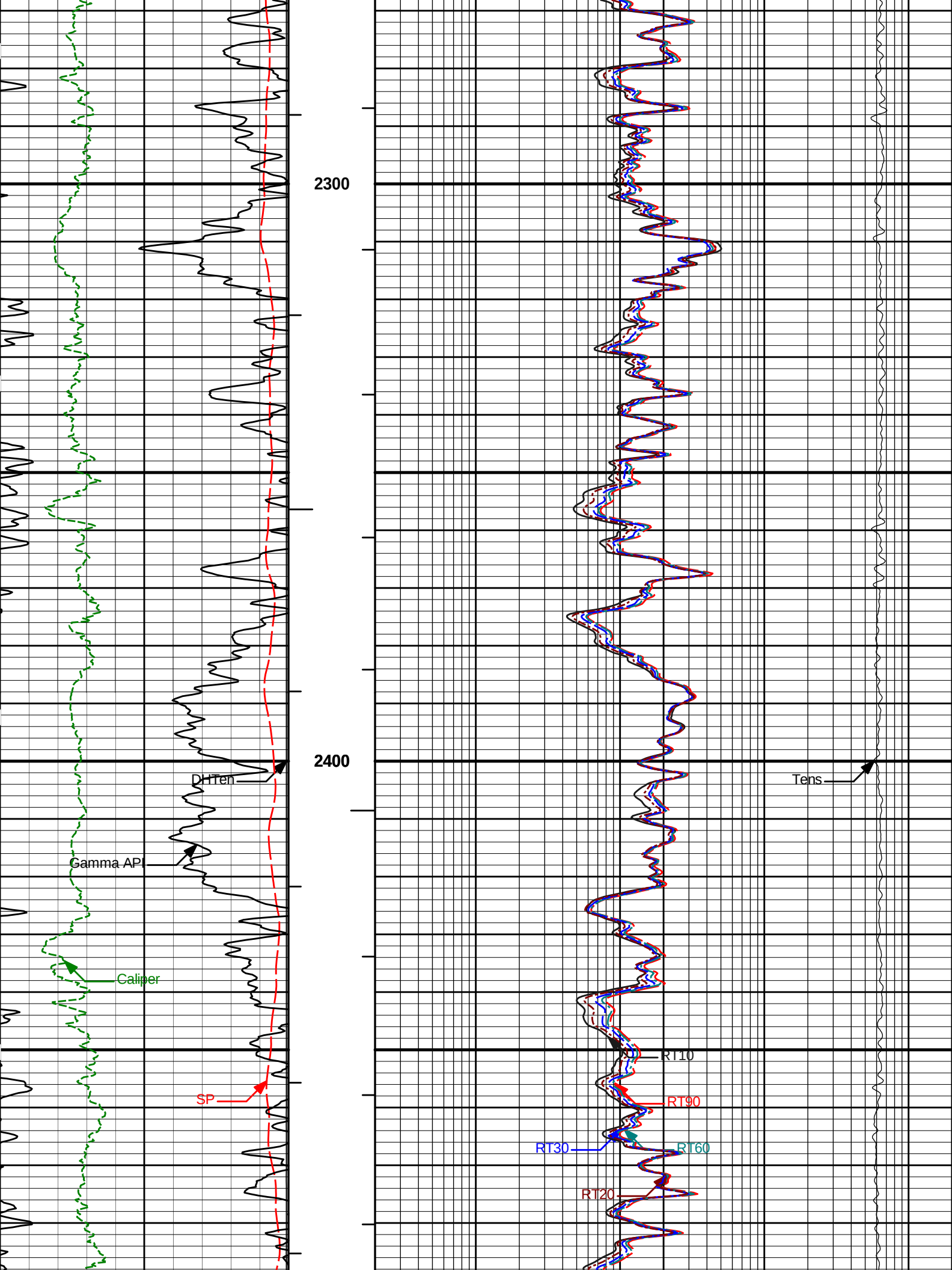
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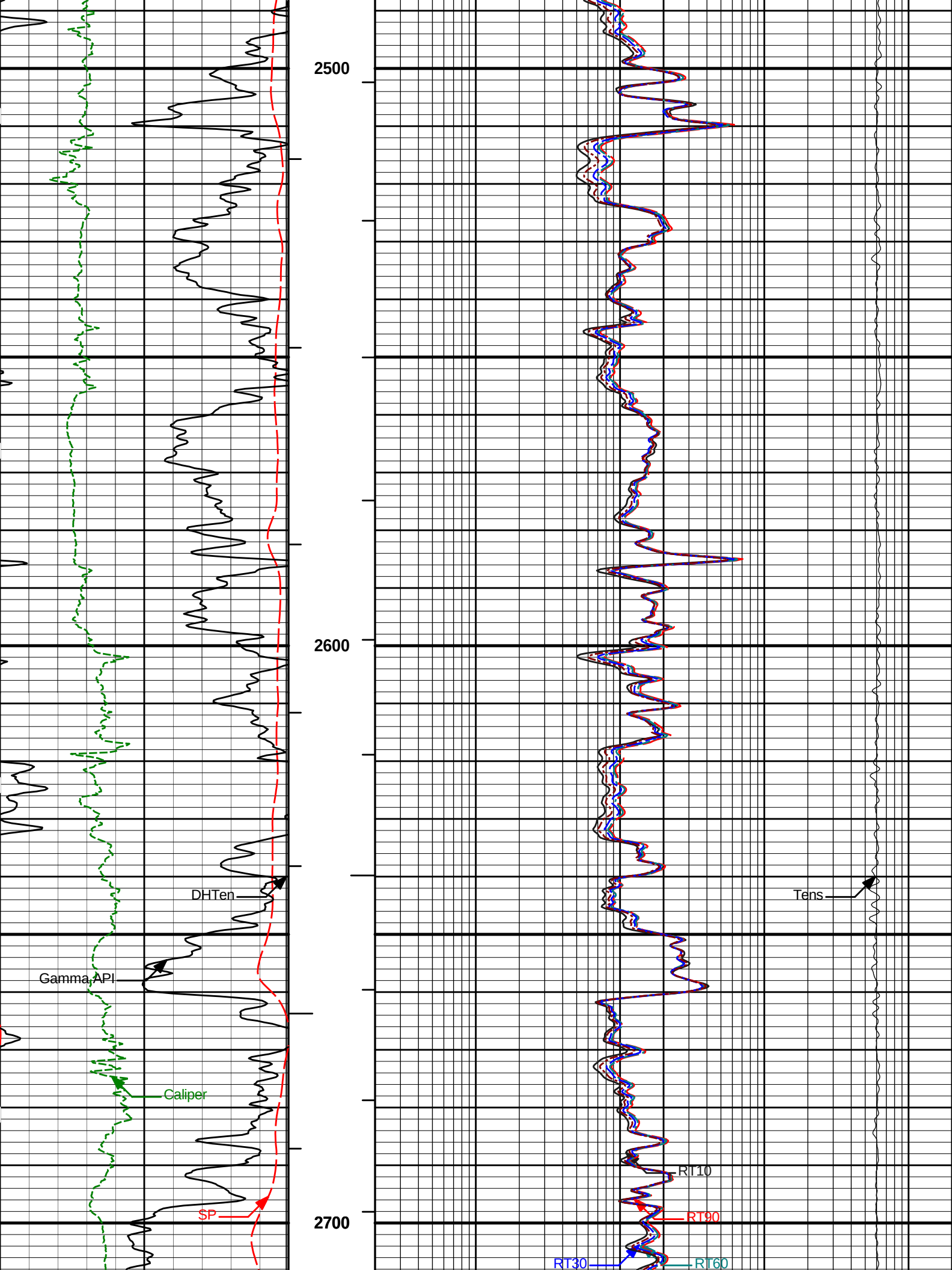
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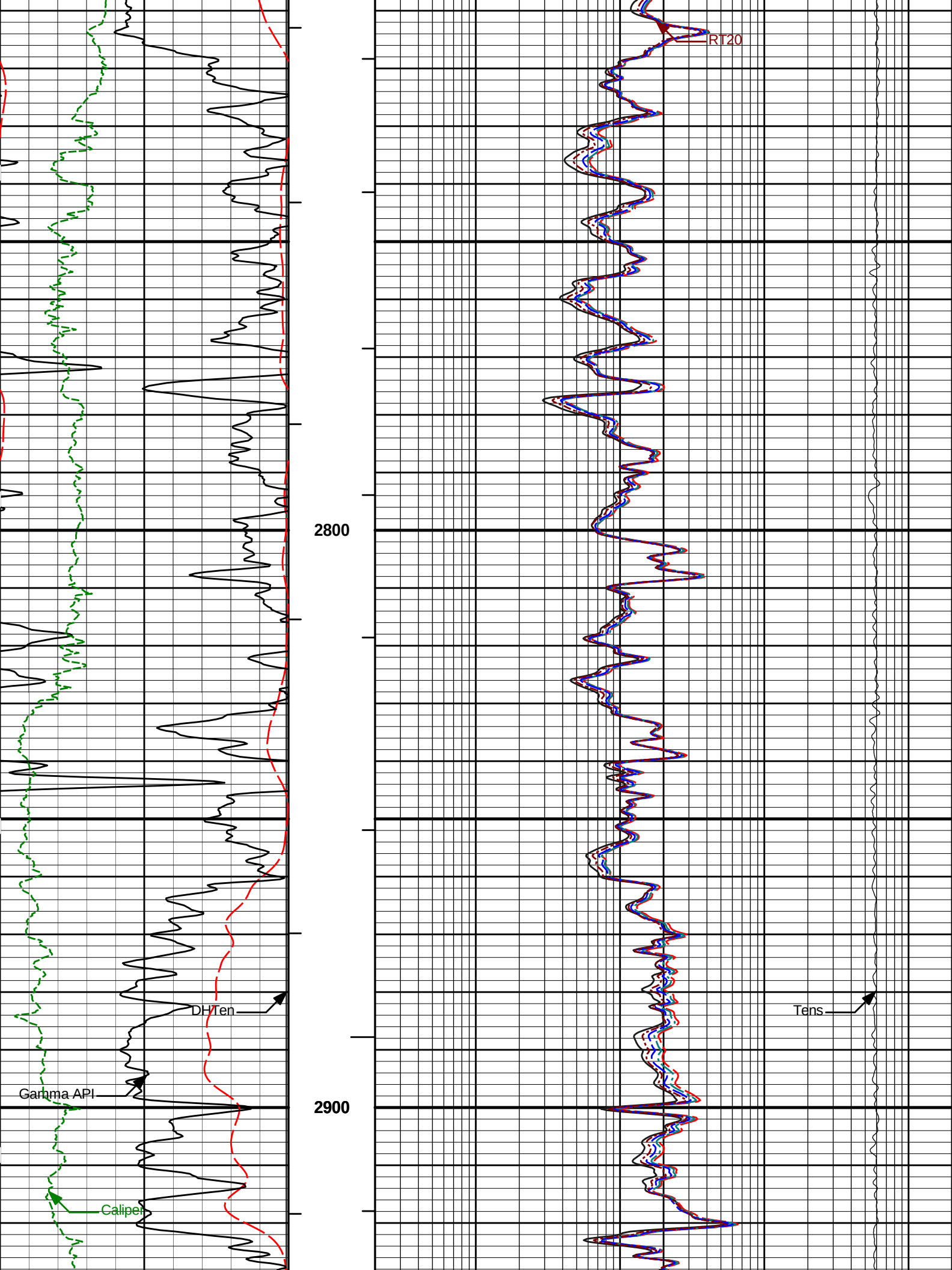
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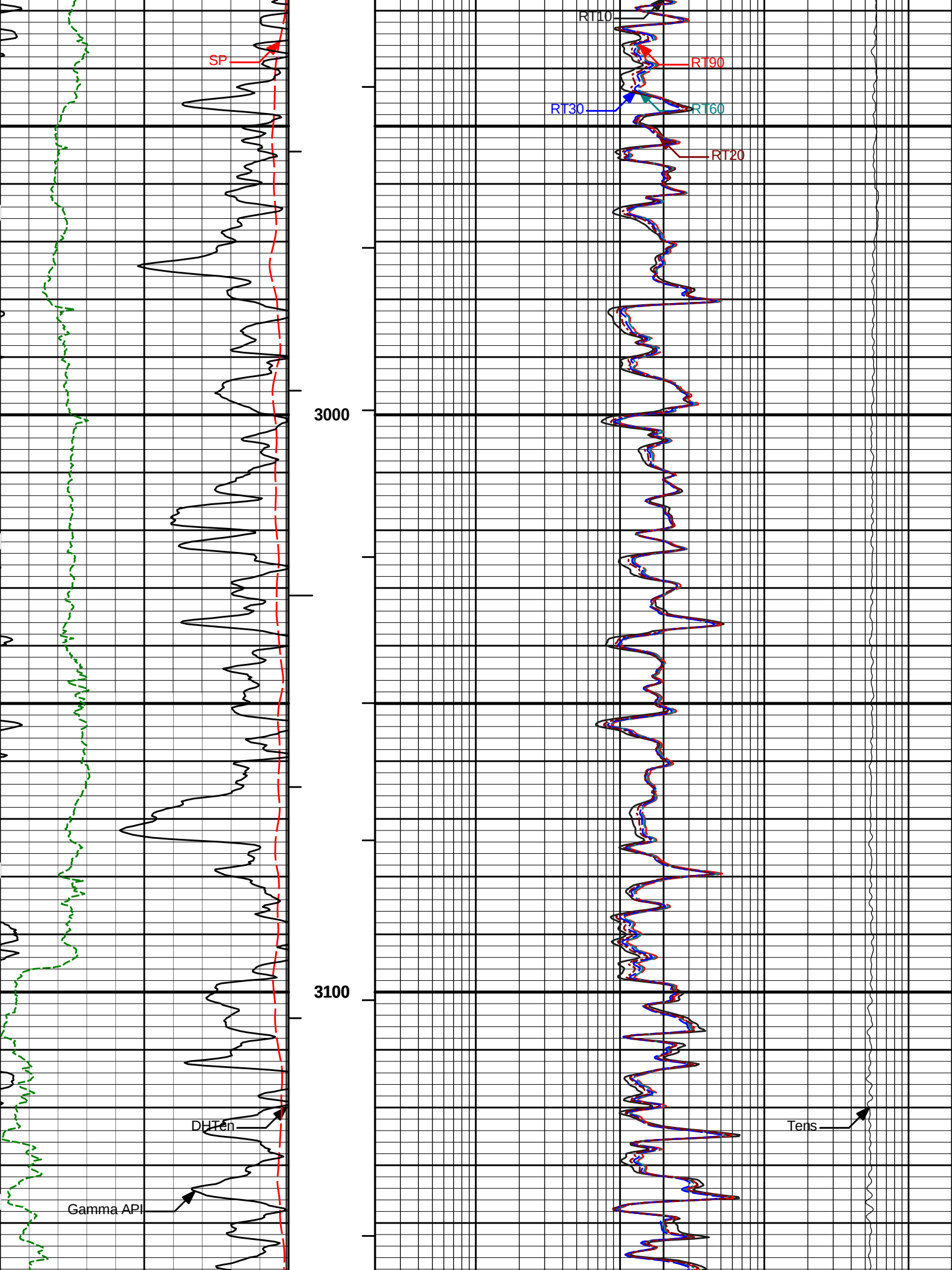
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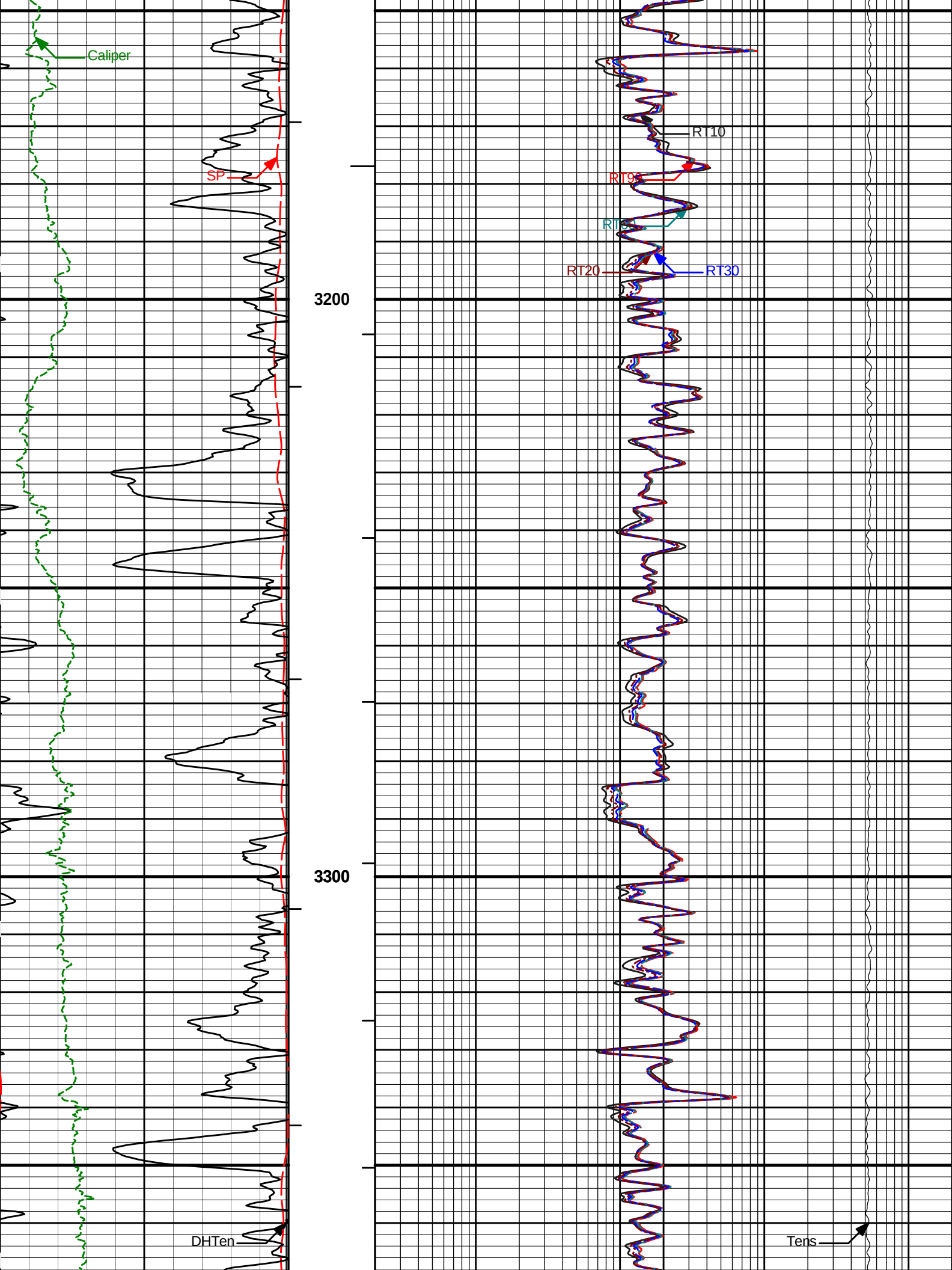
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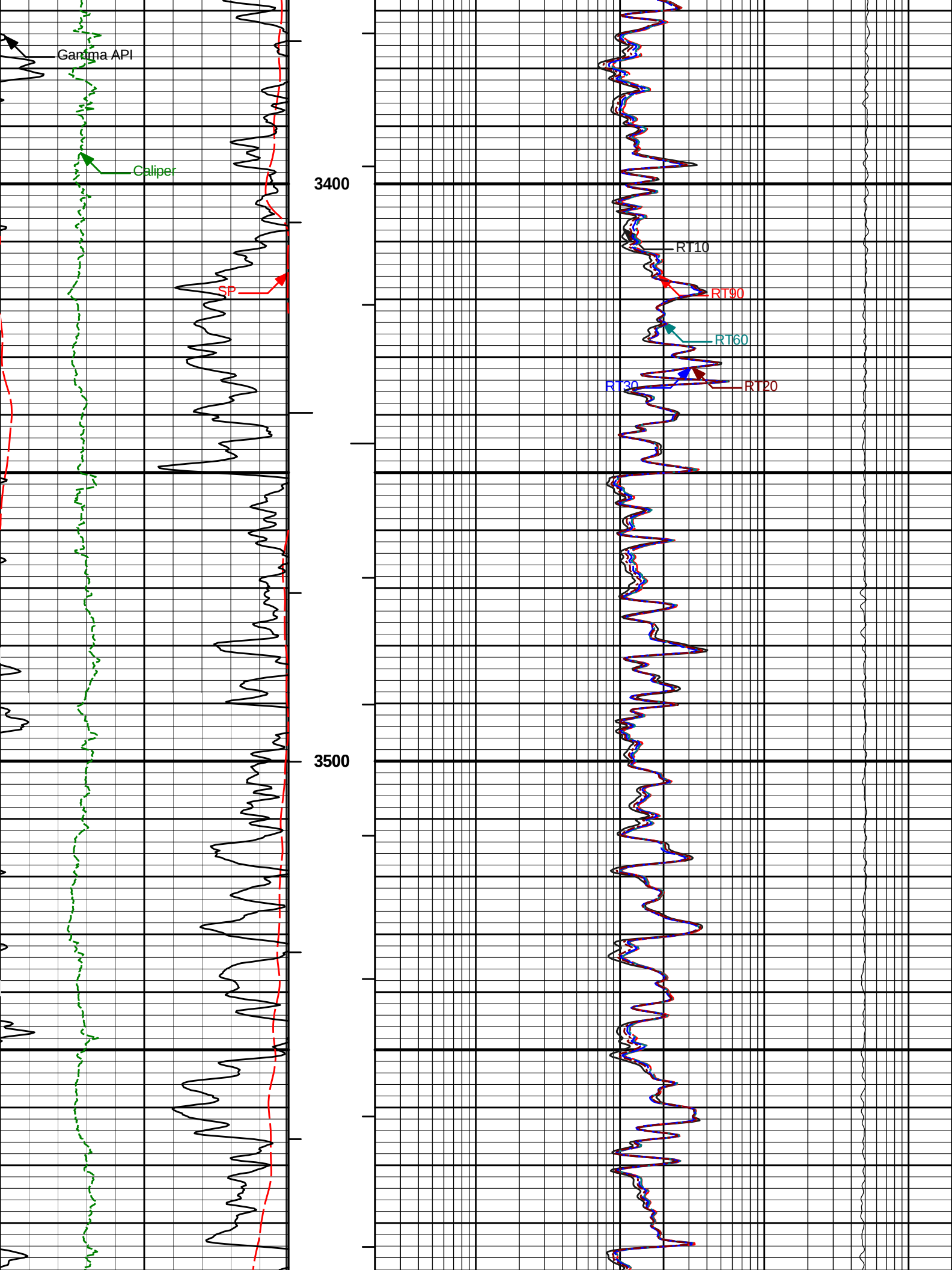
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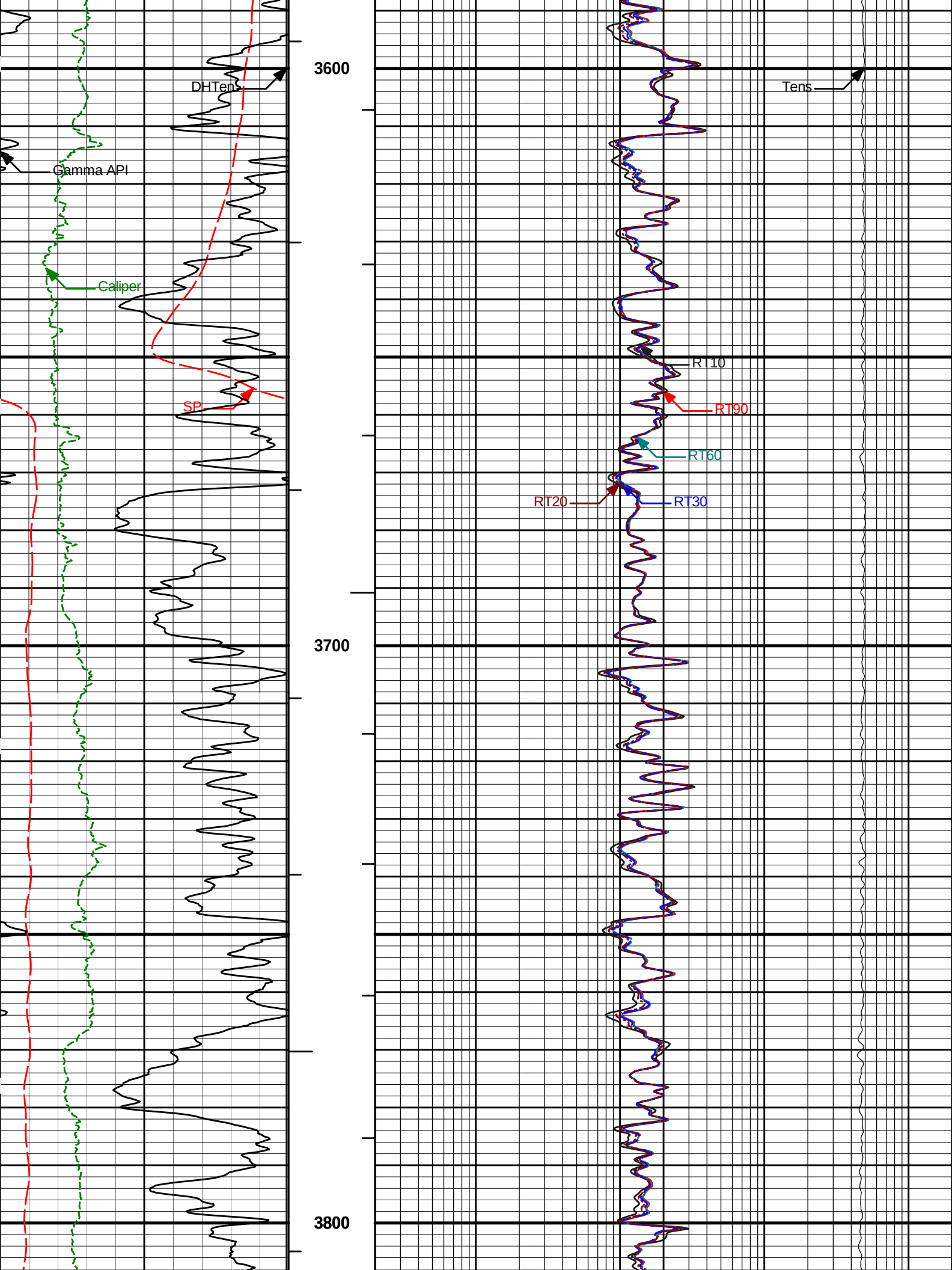
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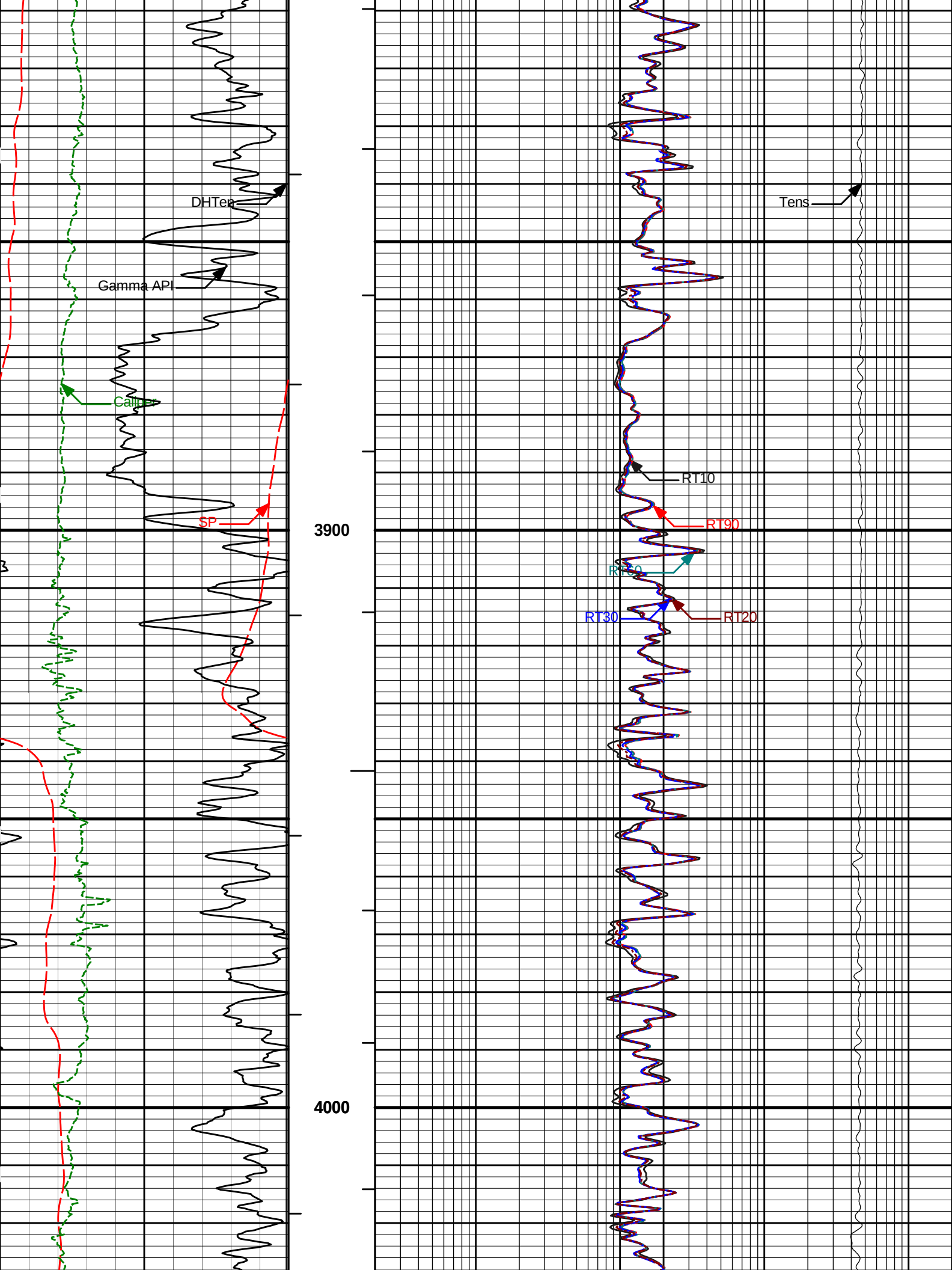
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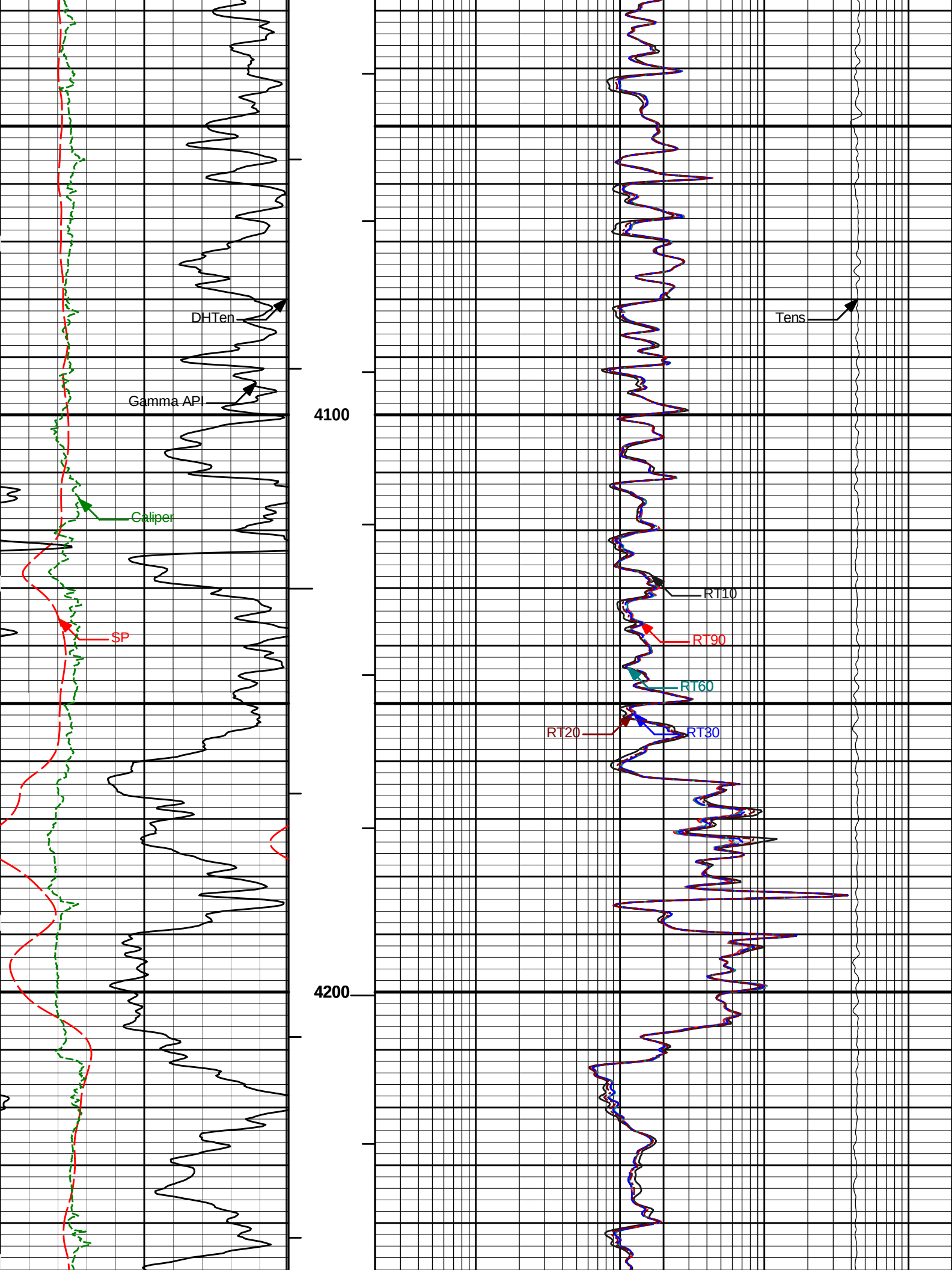
DHTen
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Caliper
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Tens
RT10
RT90
RT60
RT20
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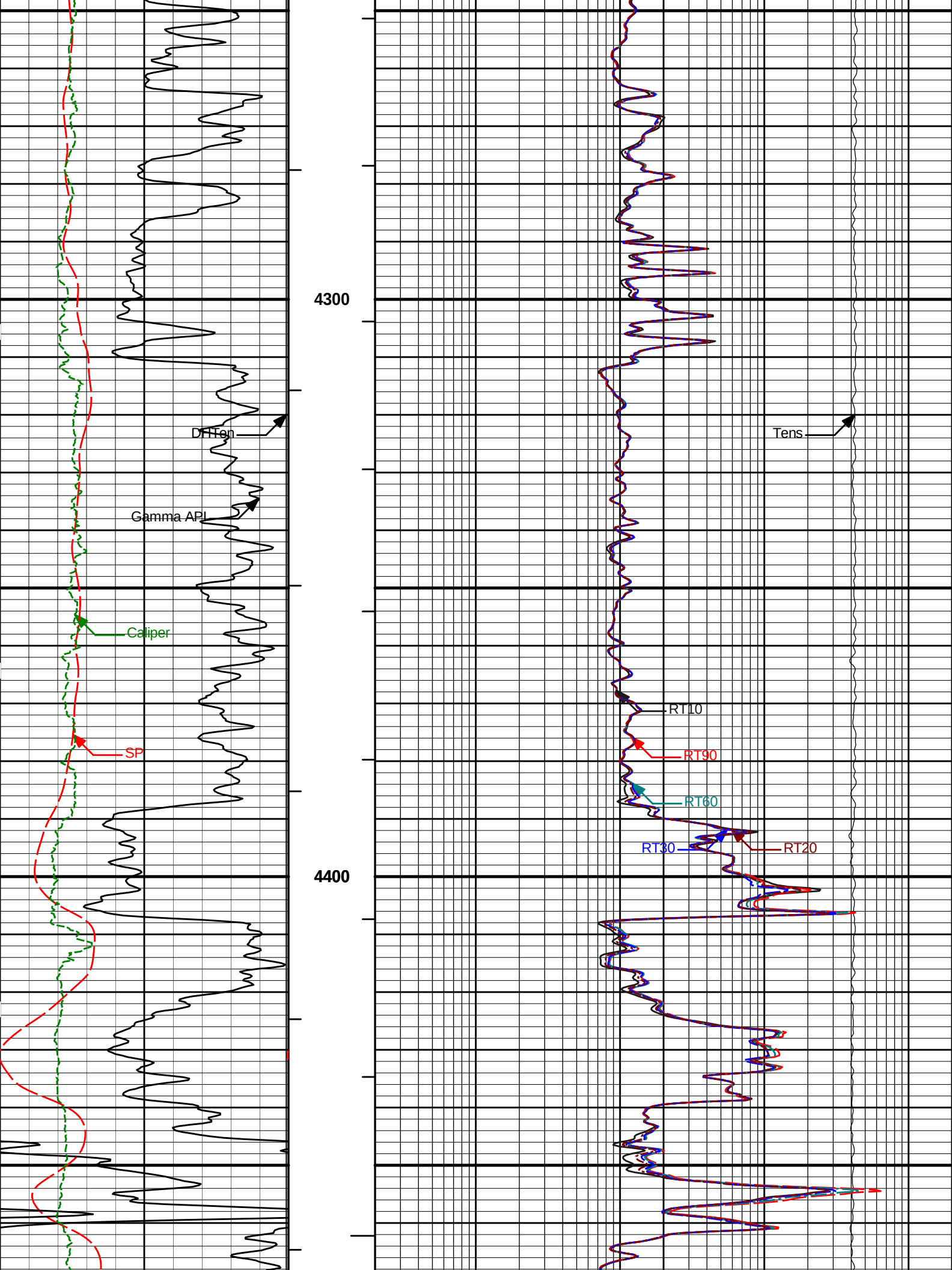
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DHTen
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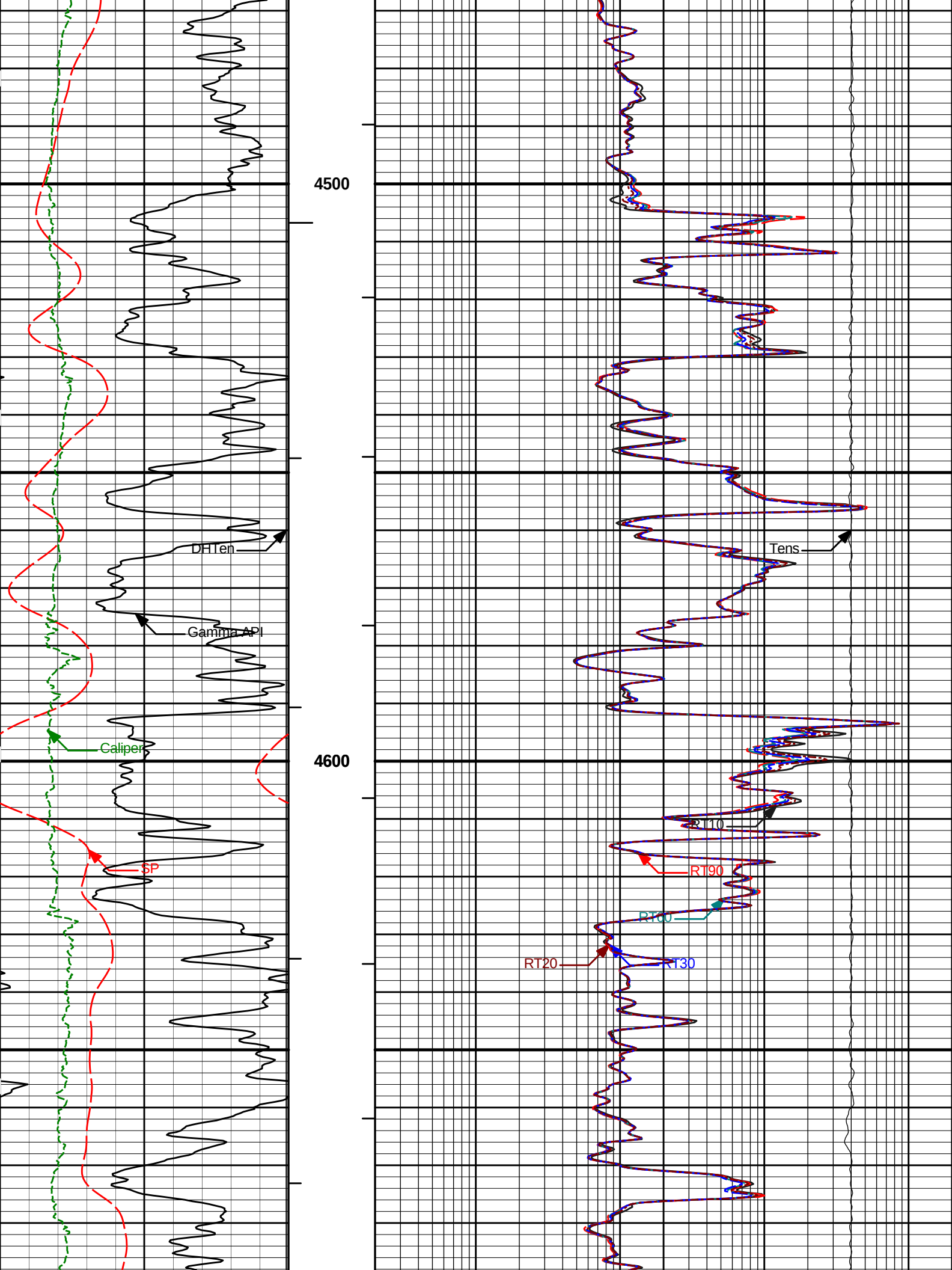
SP
Tens
RT10
RT90
RT60
RT30
RT20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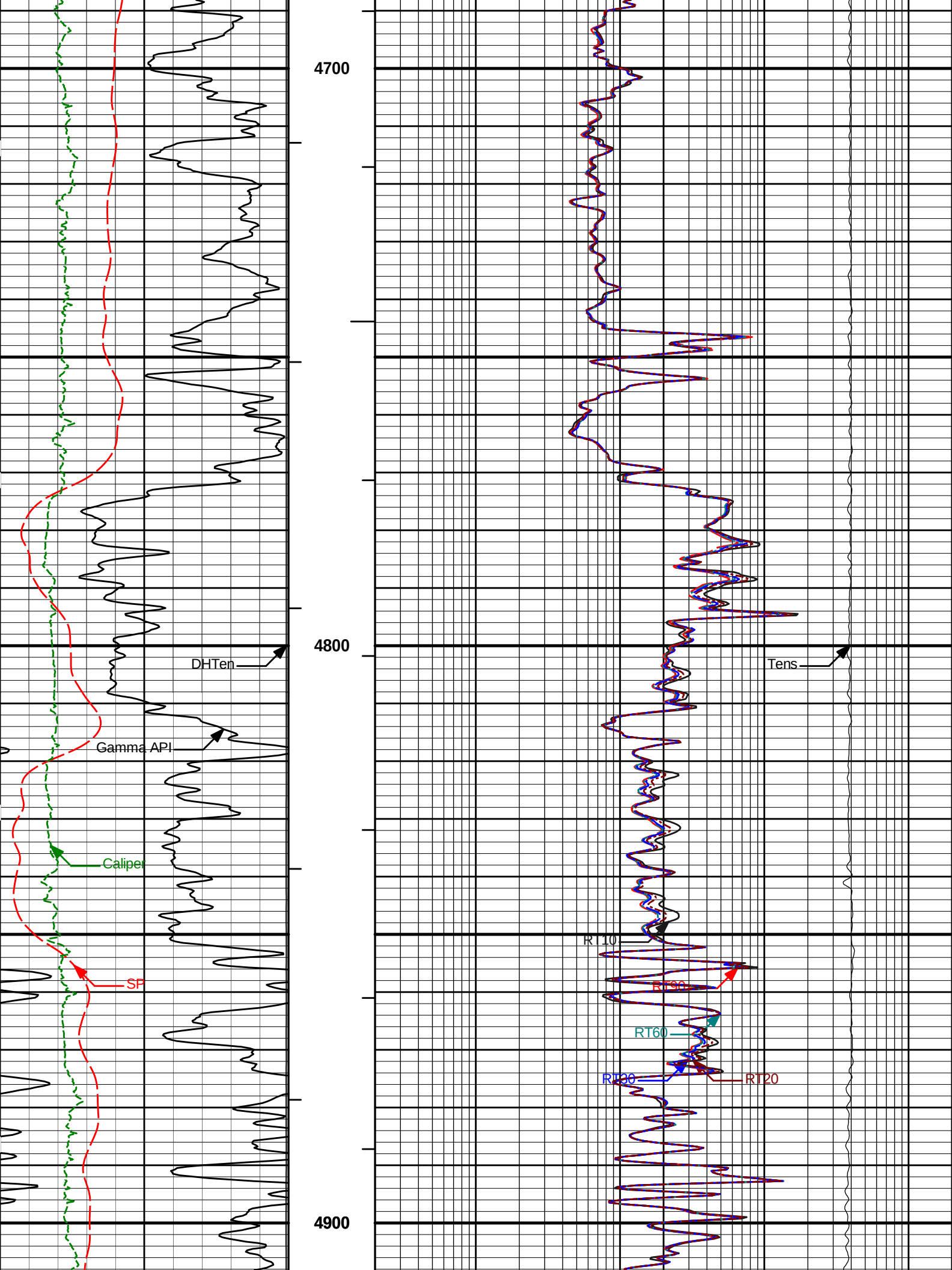
RT00
RT20
RT30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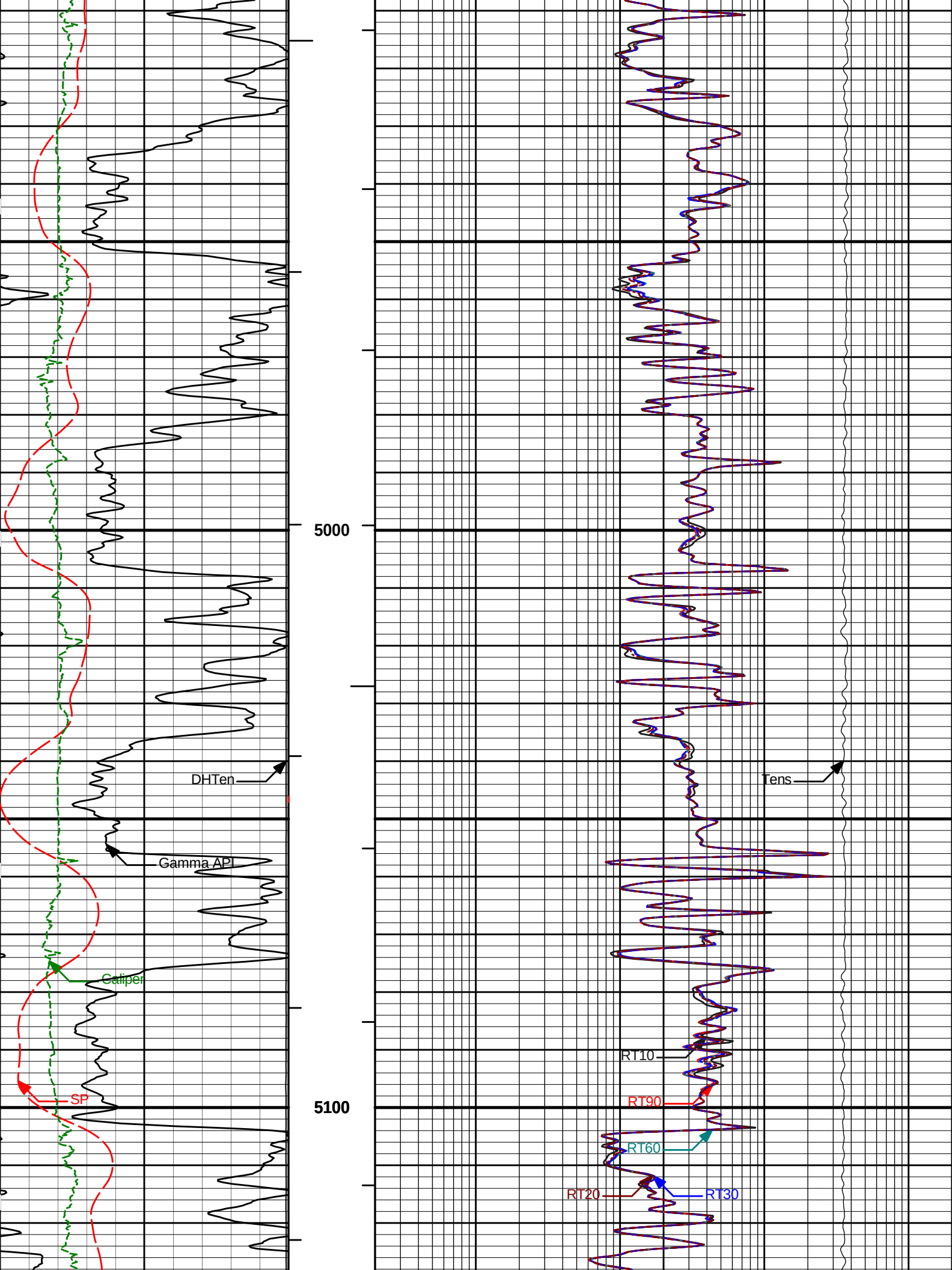
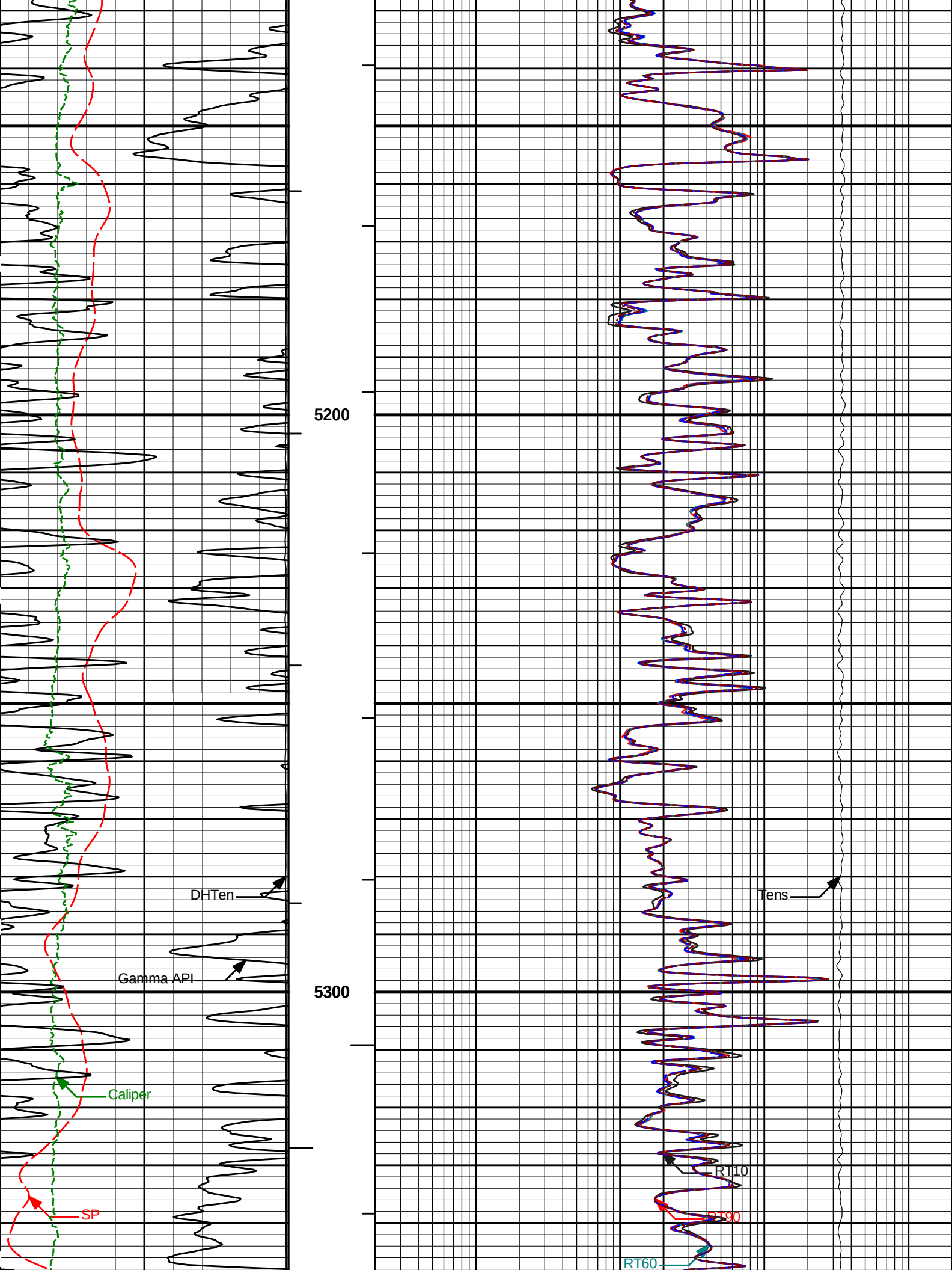
SP
Tens
RT10
RT60
RT20


5000
5100
DHTen
Gamma API
Caliper
SP
Tens
RT10
RT90
RT60
RT20
RT30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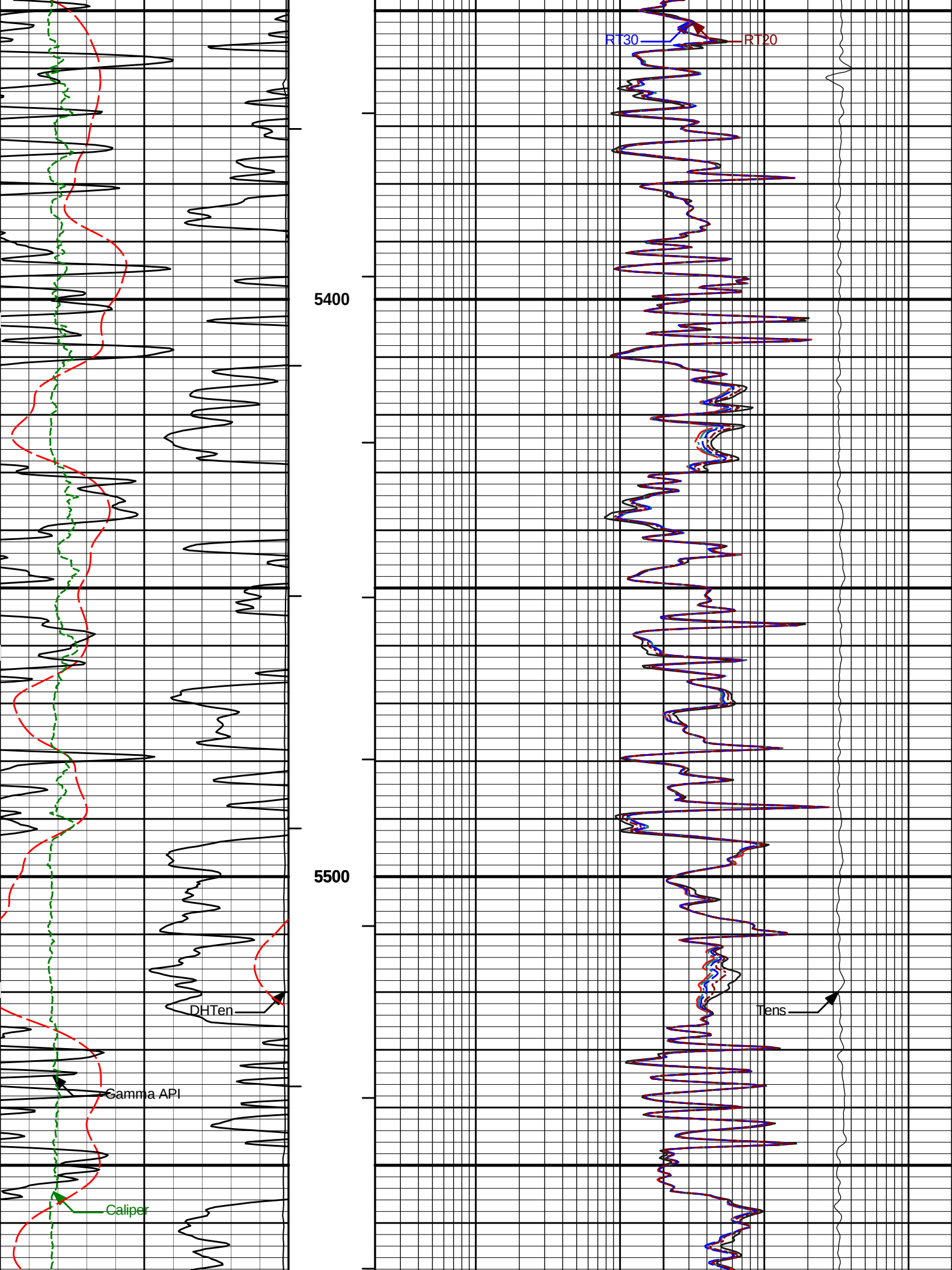
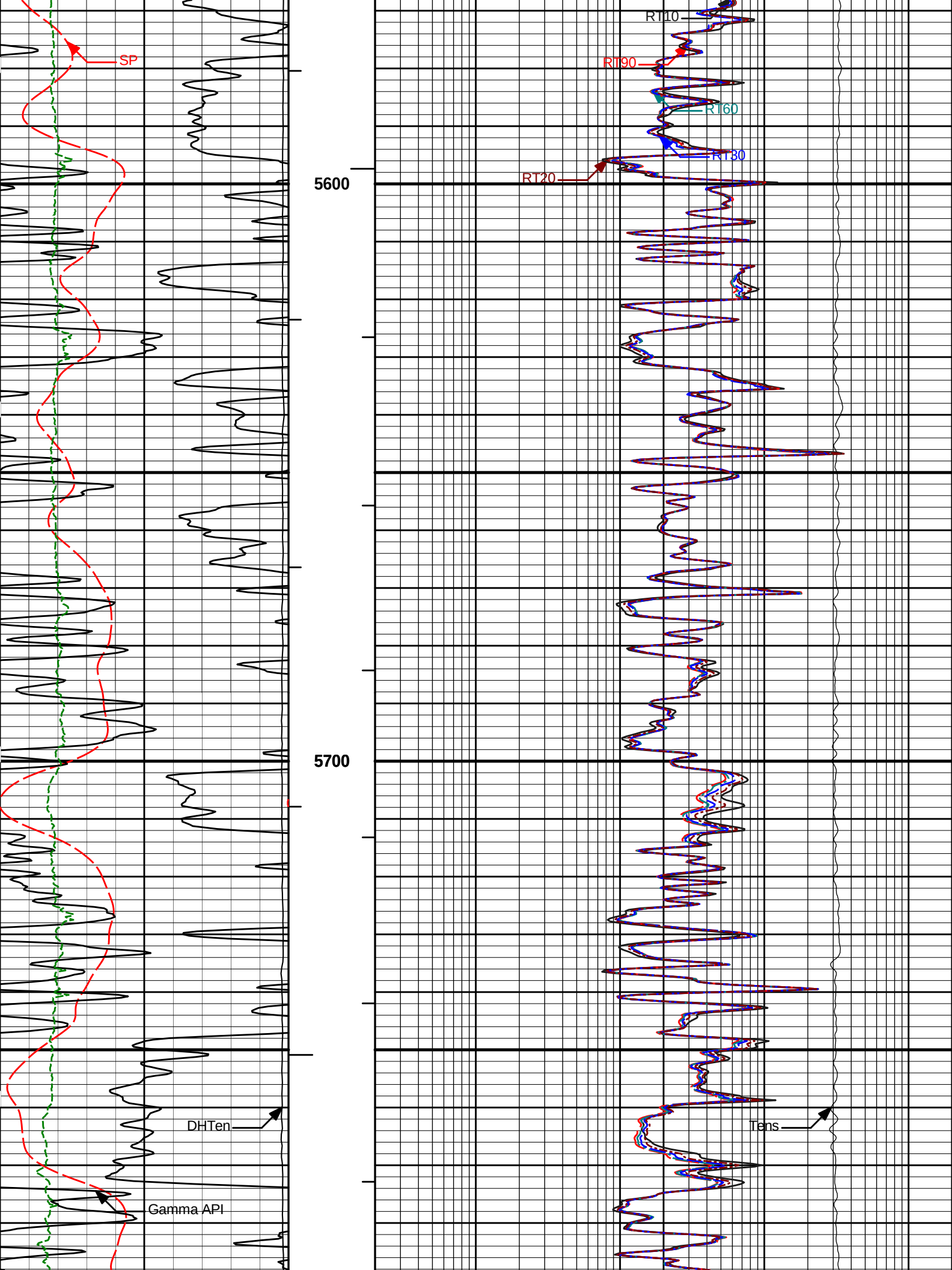
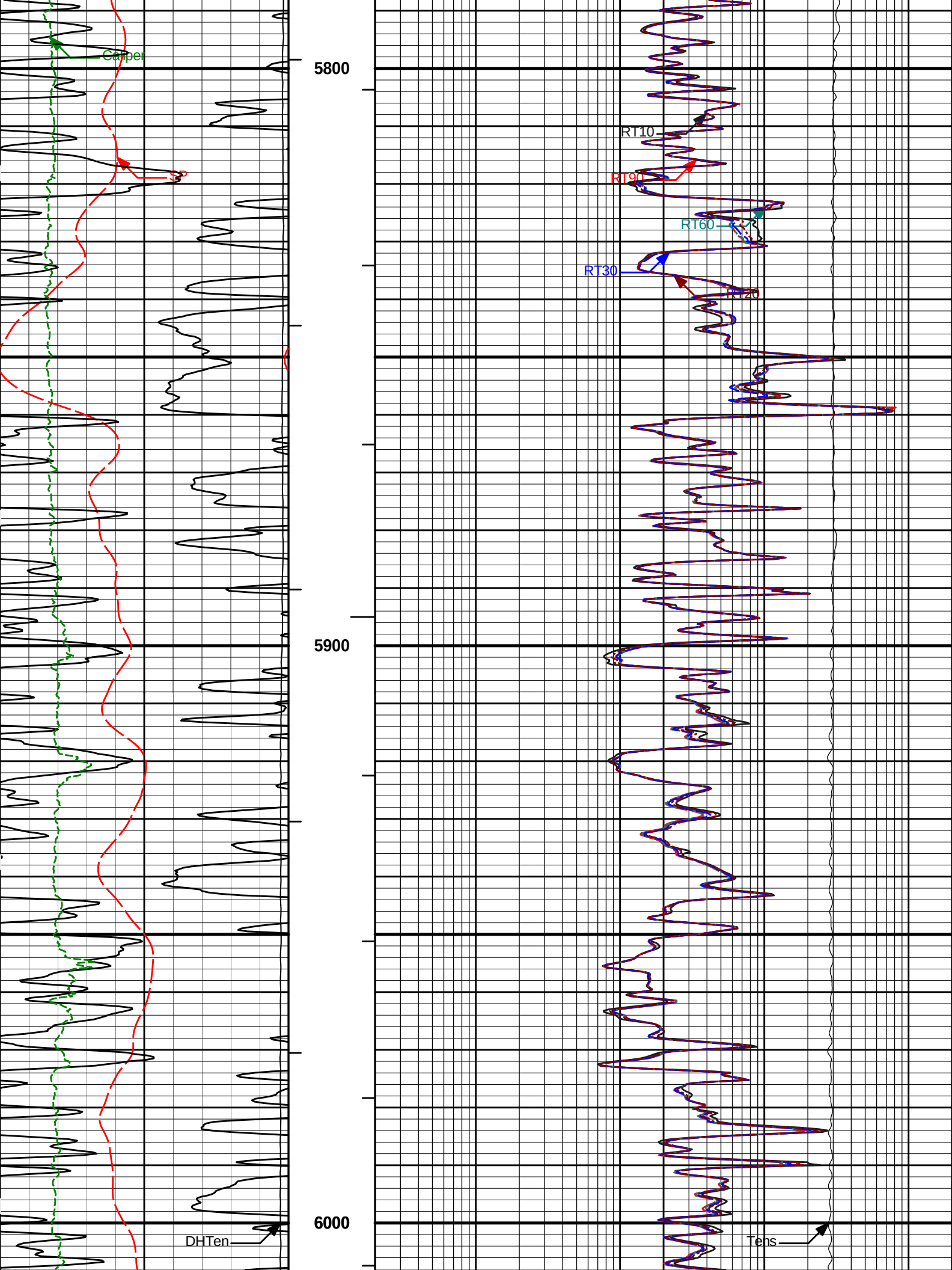
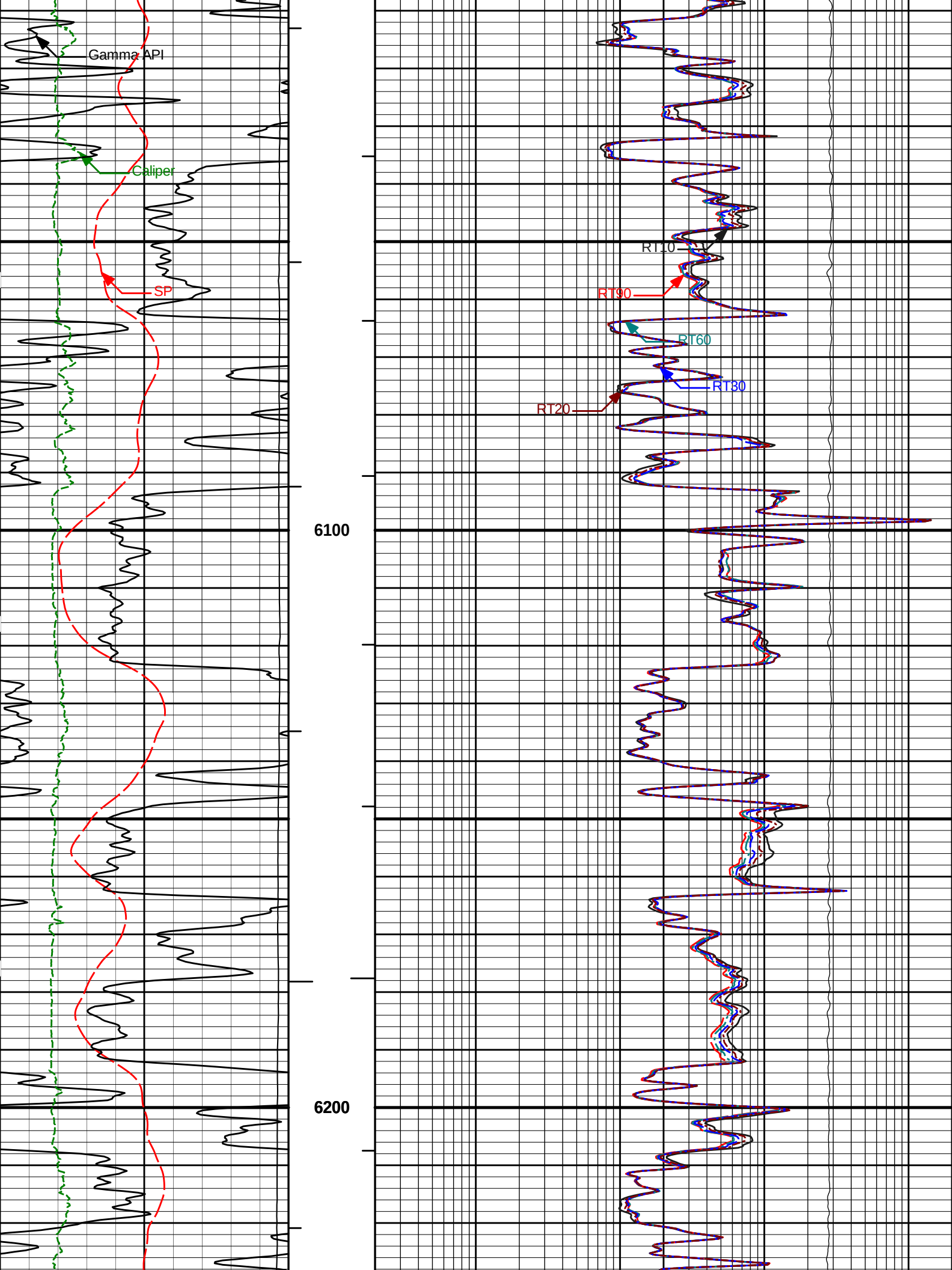
5300
DHTen
Gamma API
Caliper
SP
Tens
RT10
RT90
RT60


RT30
RT20
5400
5500
DHTen
Tens
Gamma API
Caliper


SP
RT10
RT90
RT60
RT30
RT20
5600
5700
DHTen
Tens
Gamma API


Caliper
5800
RT10
RT90
RT60
RT30
RT20
5900
6000
DHTen
Tens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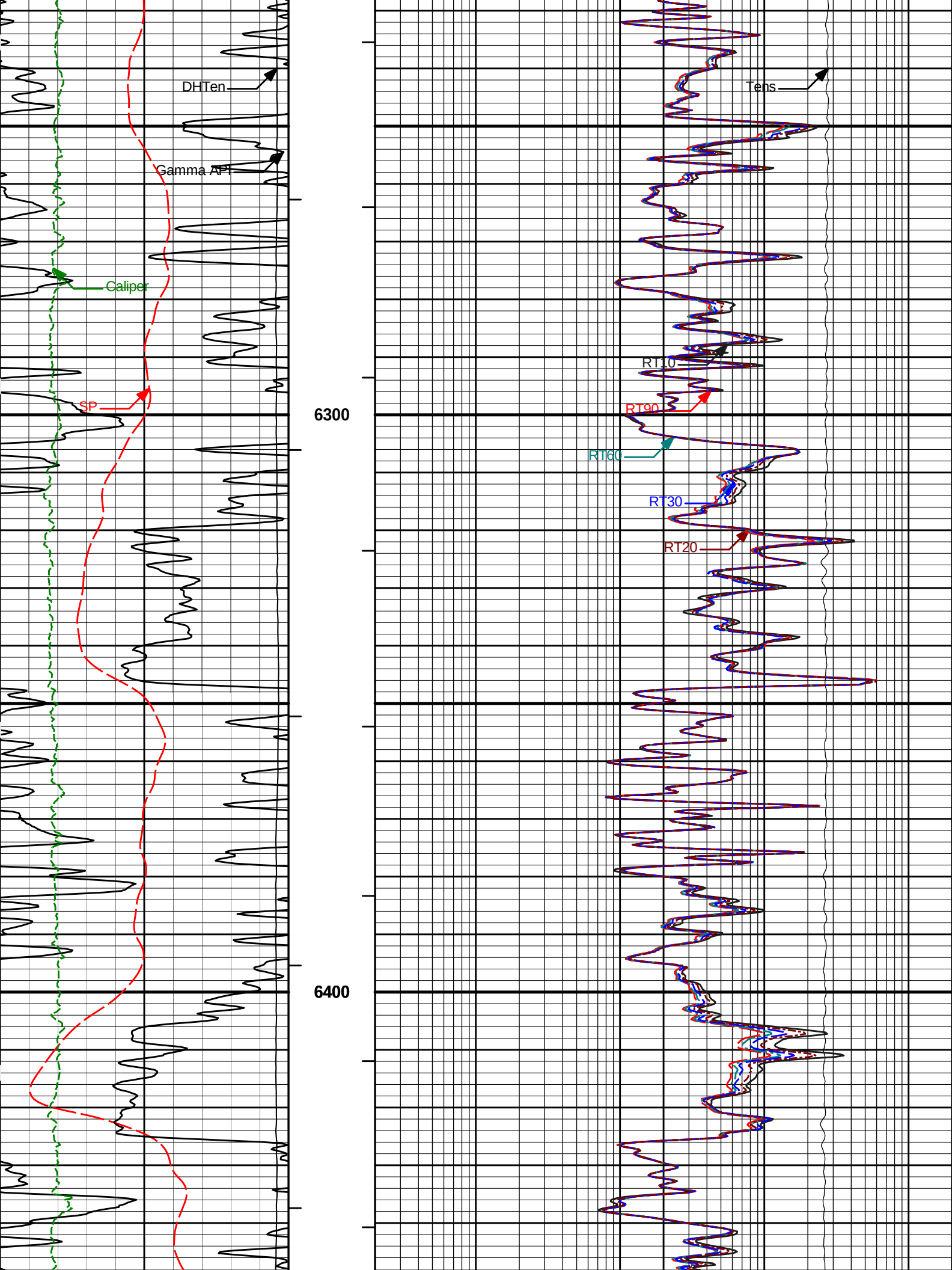
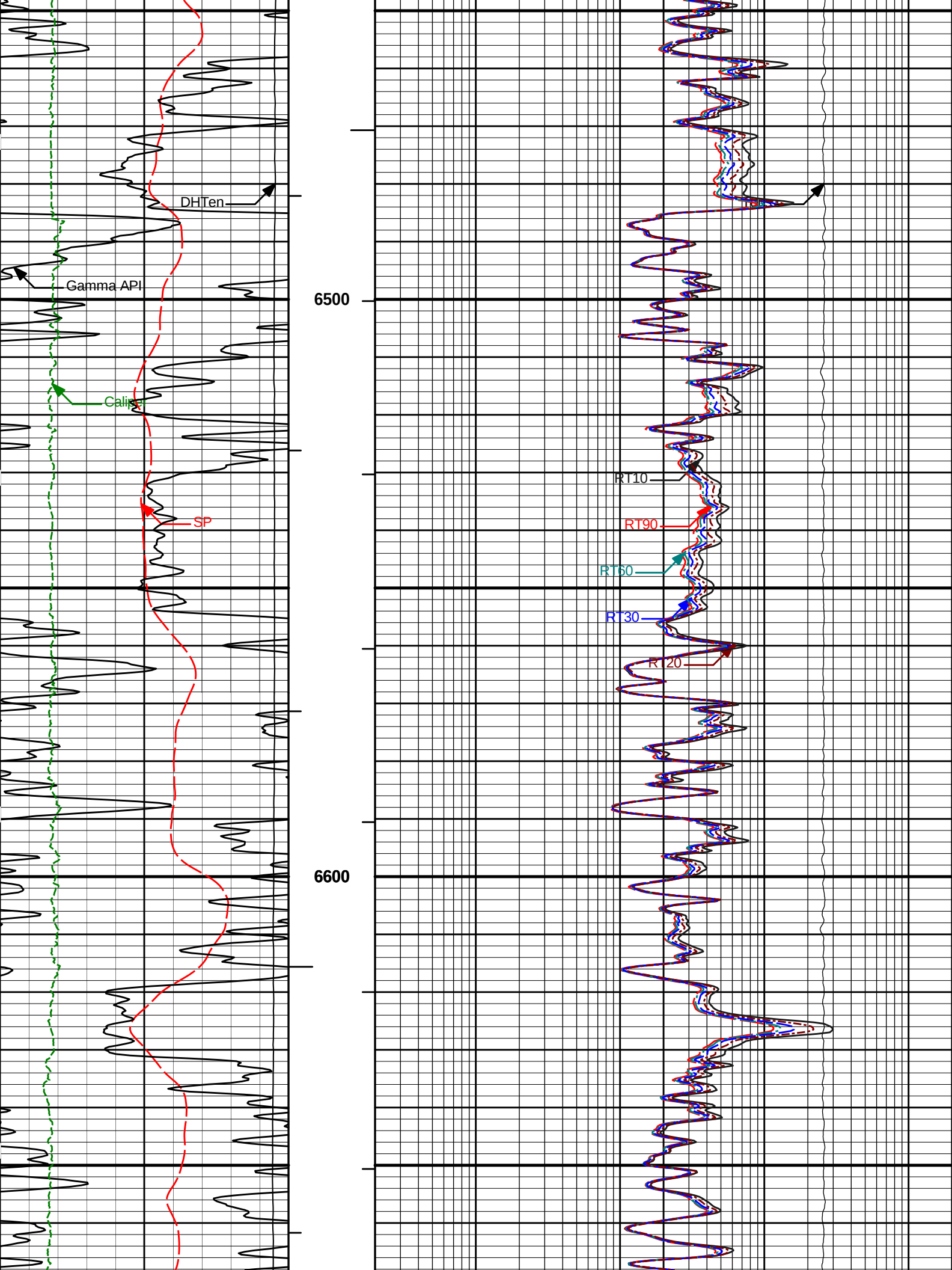
Caliper
SP
RT10
RT90
RT60
RT30
RT20
6100
6200


DHTen
Gamma API
Caliper
SP
6300
6400
Tens
RT10
RT90
RT60
RT30
RT20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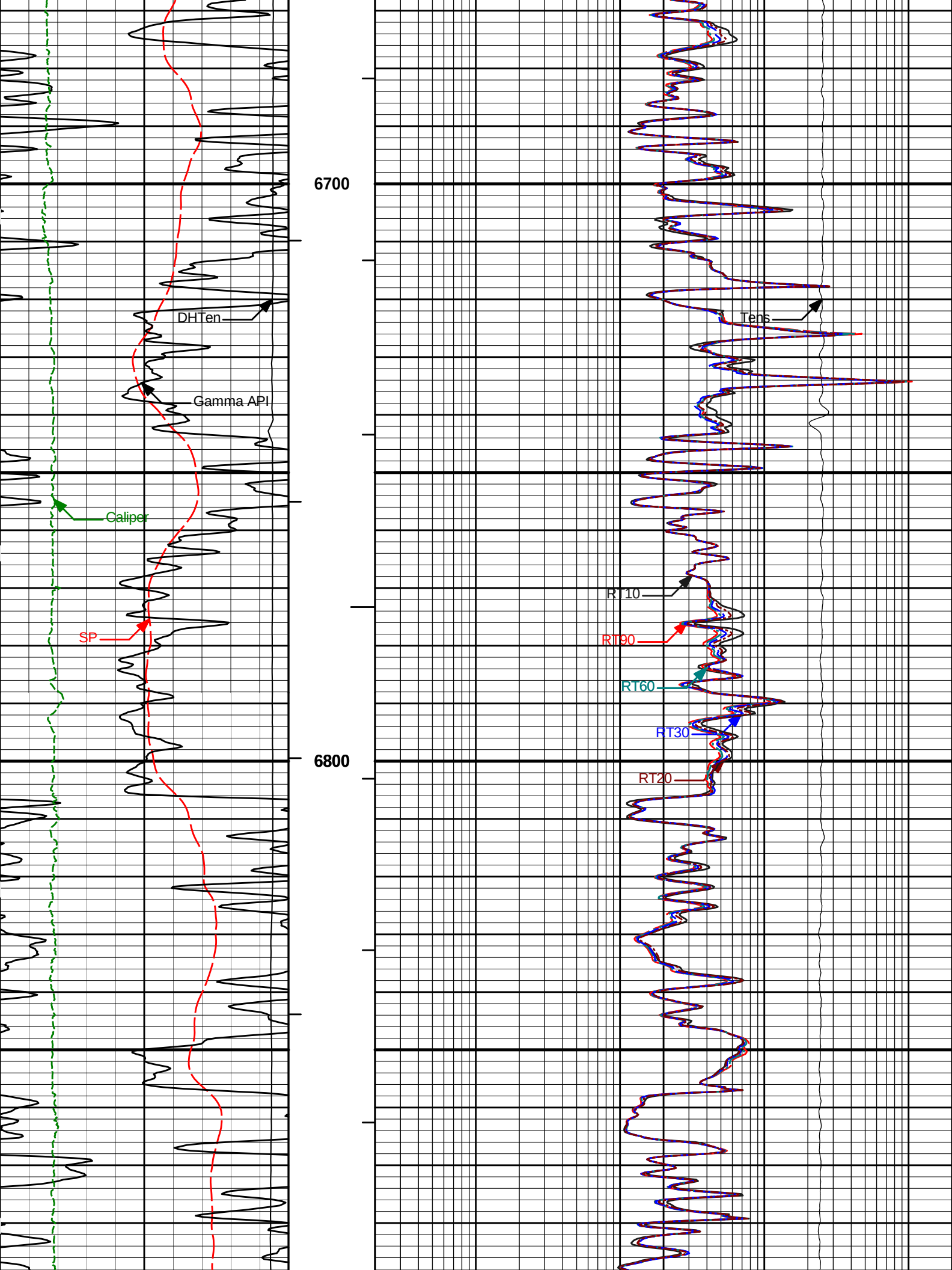
Gamma API
Caliper
SP
RT10
RT90
RT60
RT30
RT20
6500
6600


6700
6800
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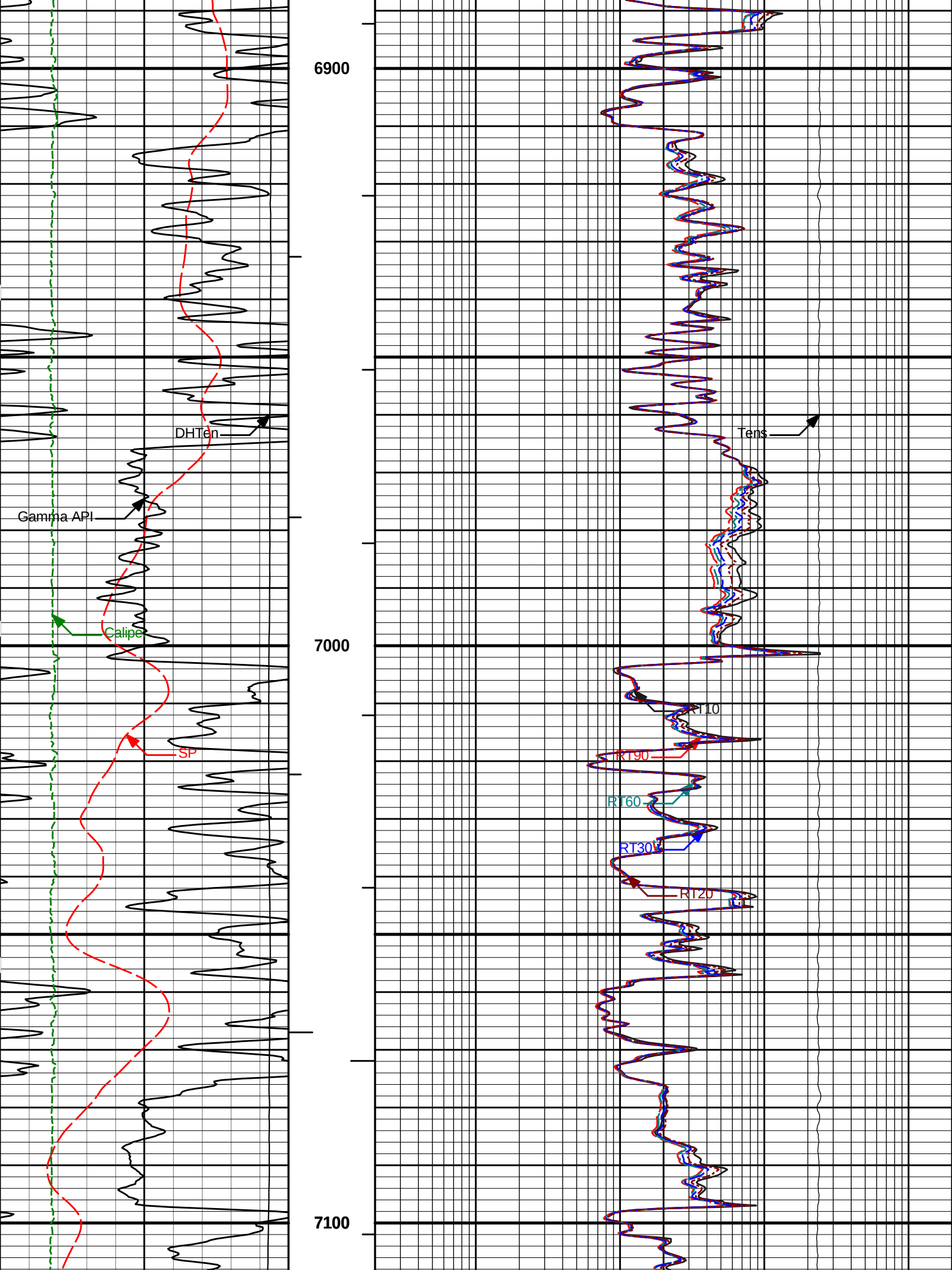
Gamma API
Caliper
SP
Tens
RT10
RT90
RT60
RT30
RT20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Gamma API
Caliper
SP
Tens
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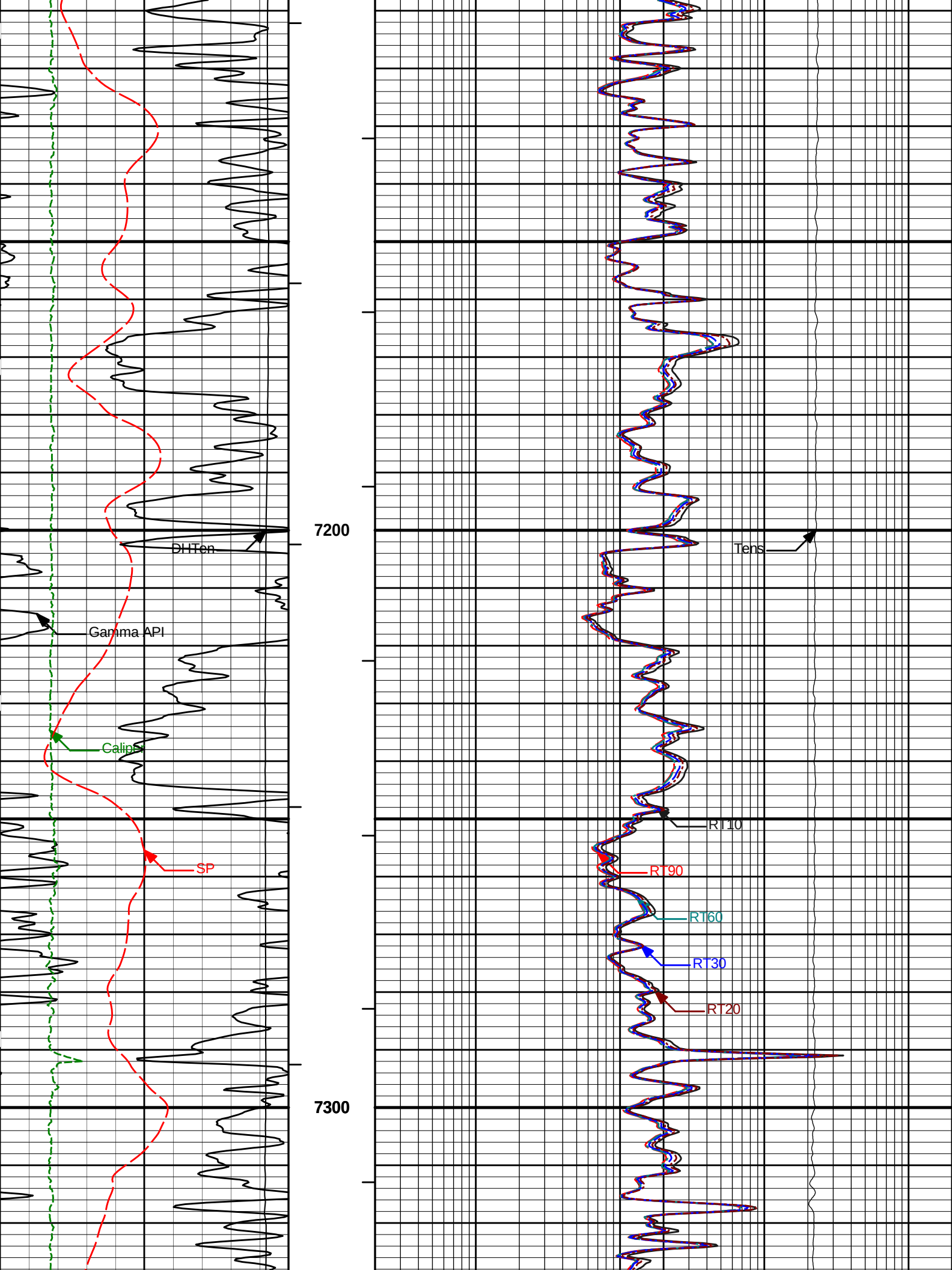
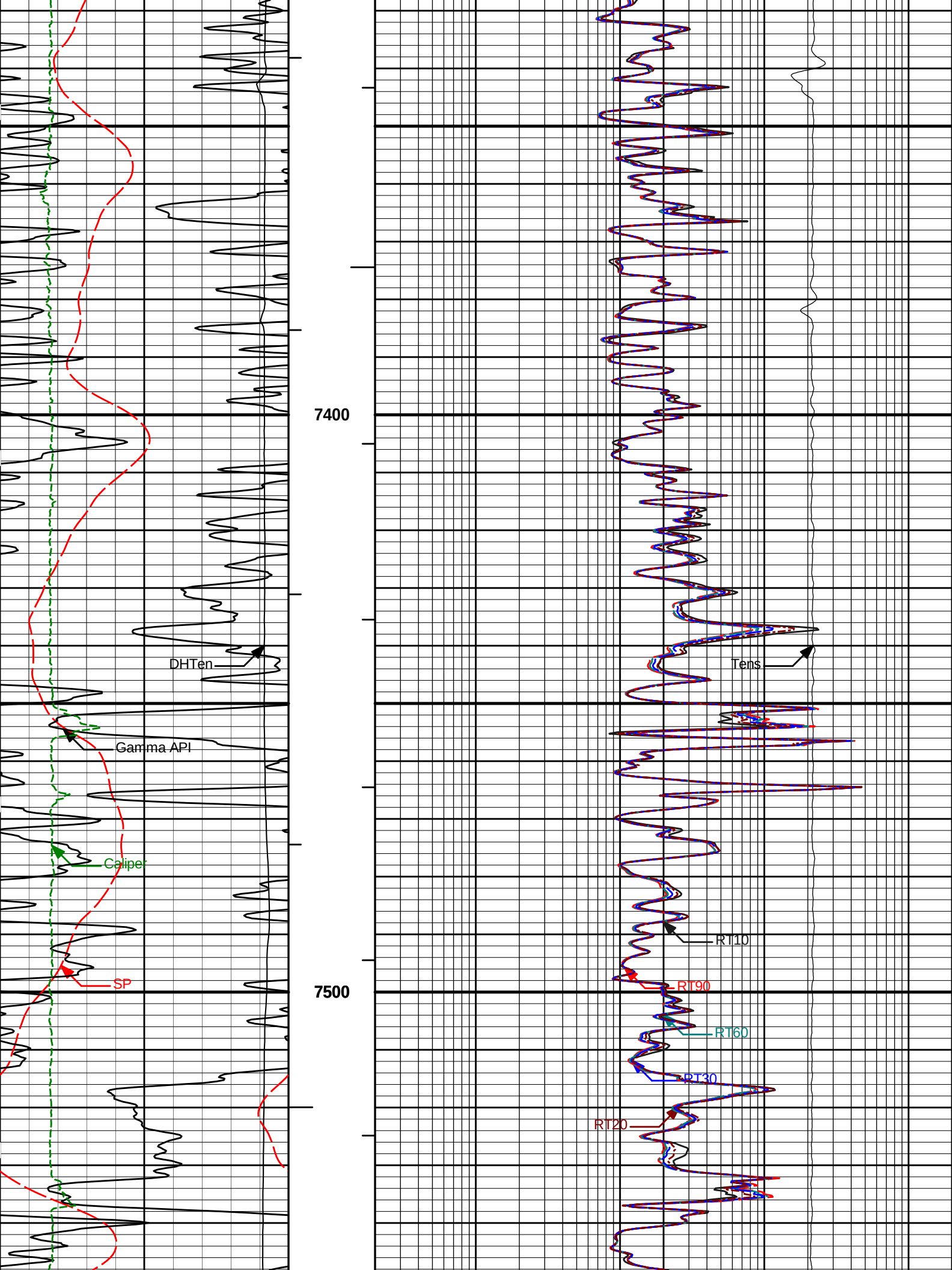
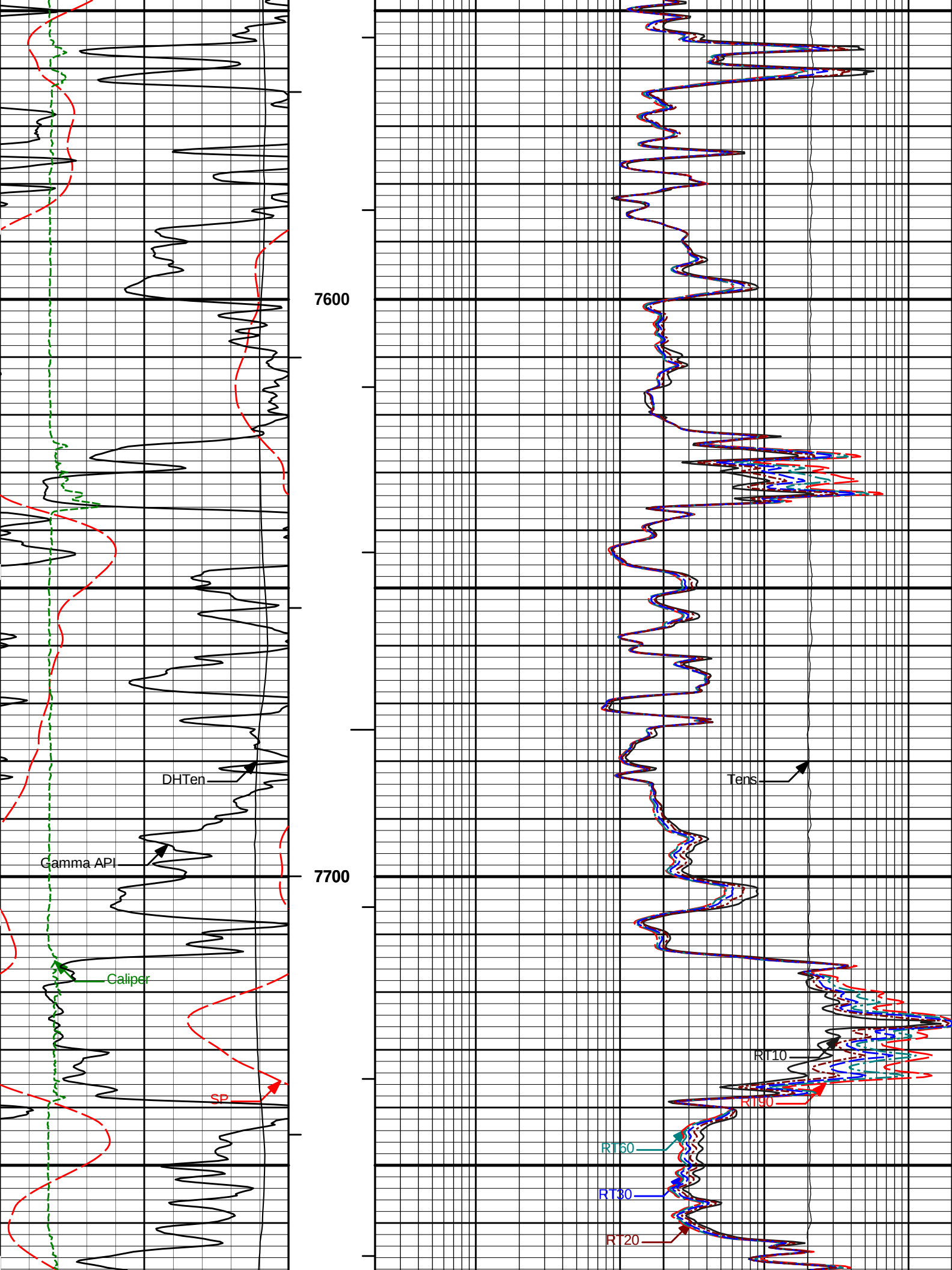
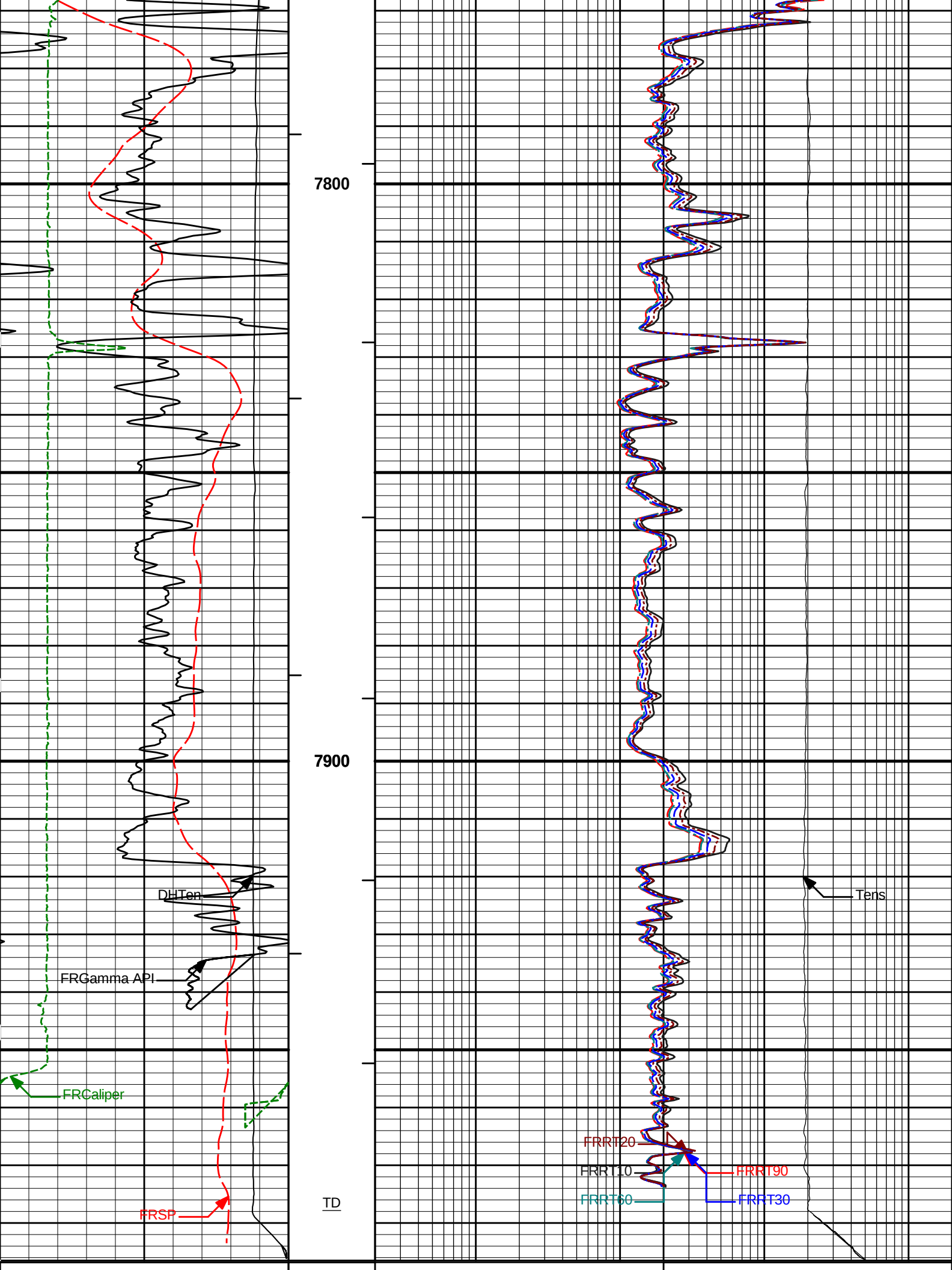
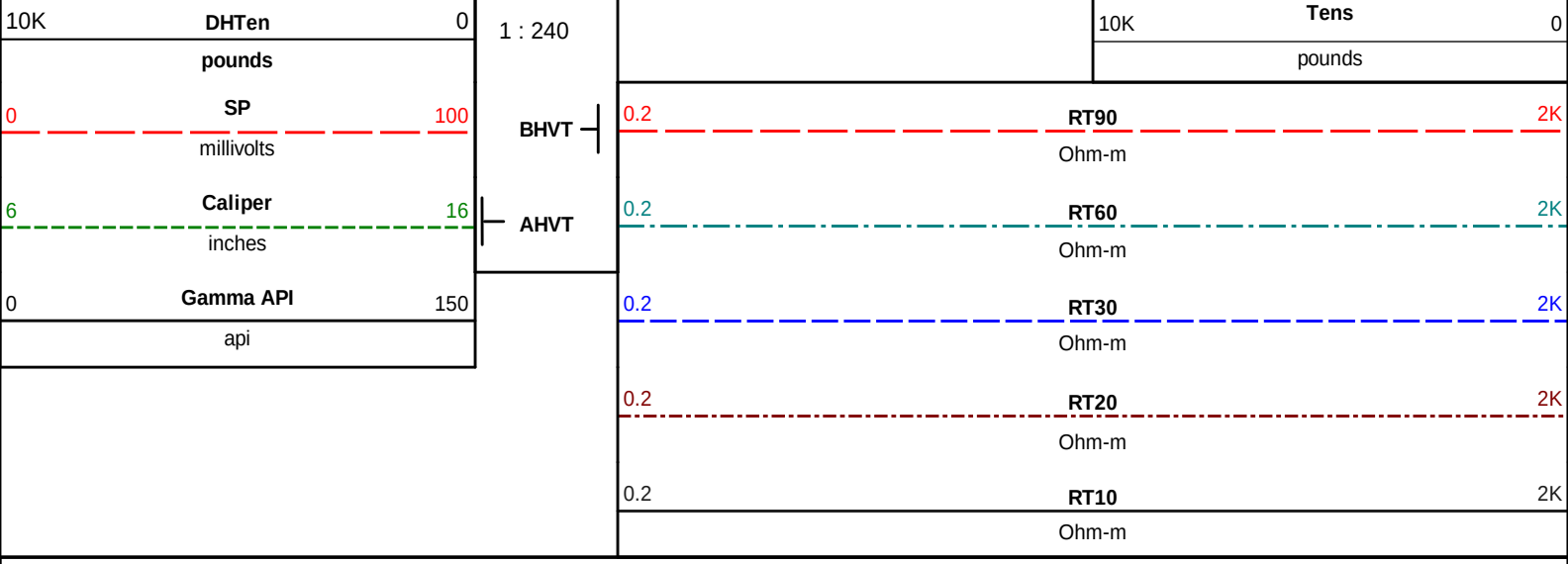
RT90
RT60
RT30
RT20


7200
7300
DHTen
Gamma API
Caliper
SP
Tens
RT10
RT90
RT60
RT30
RT20


7400
7500
DHTen
Tens
Gamma API
Caliper
SP
RT10
RT90
RT60
RT30
RT20


7600
7700
DHTen
Gamma API
Caliper
SP
Tens
RT10
RT90
RT60
RT30
RT20


7800
7900
DHTen
FRGamma API
FRCaliper
FRSP
TD
Tens
FRRT20
FRRT10
FRRT60
FRRT90
FRRT30



HALLIBURTON

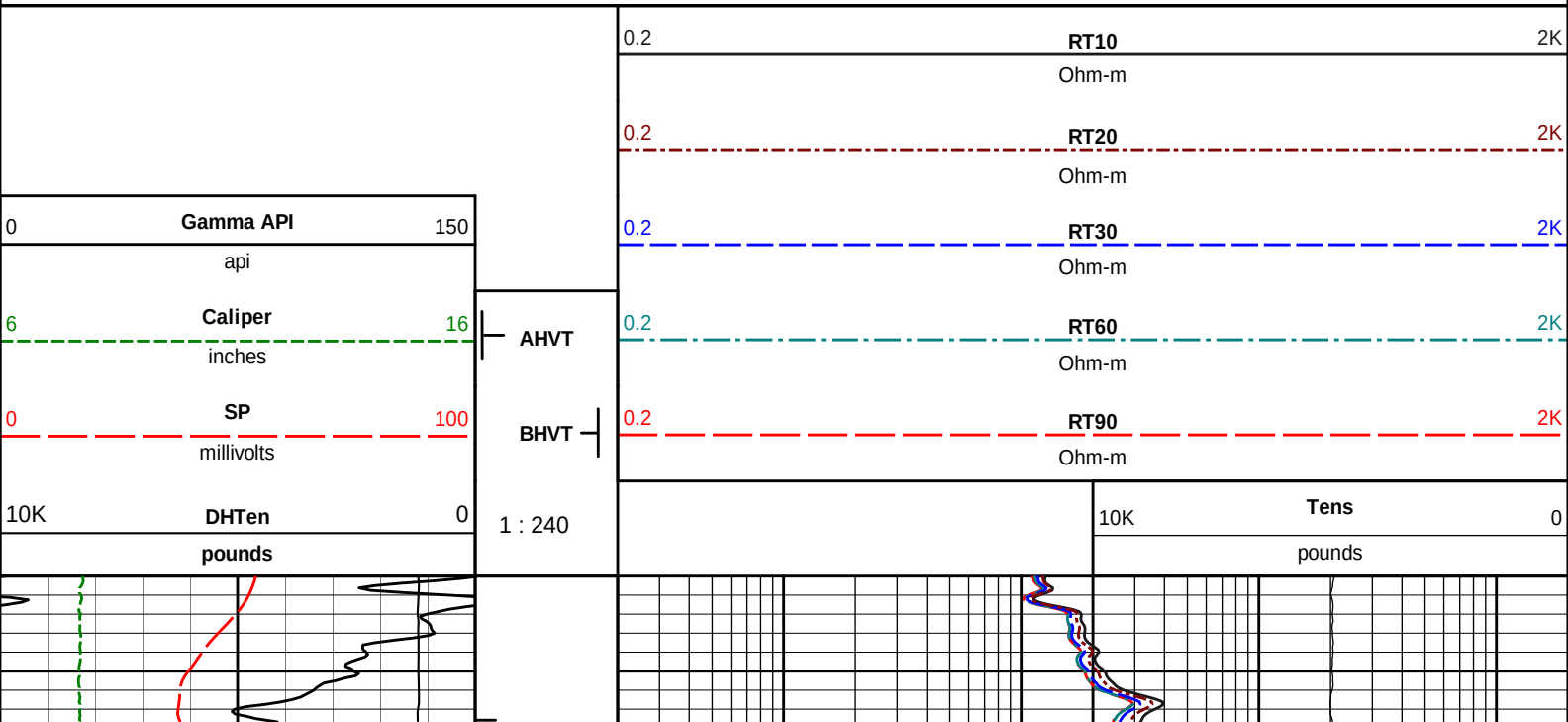
Plot Time: 13-Feb-12 00:28:42
Plot Range: 1540 ft to 7986.5 ft
Data: {ActiveWell}\Well Based\MAIN
Plot File: \\ACRT\IQ_BP_ACRt_5IN_DHT

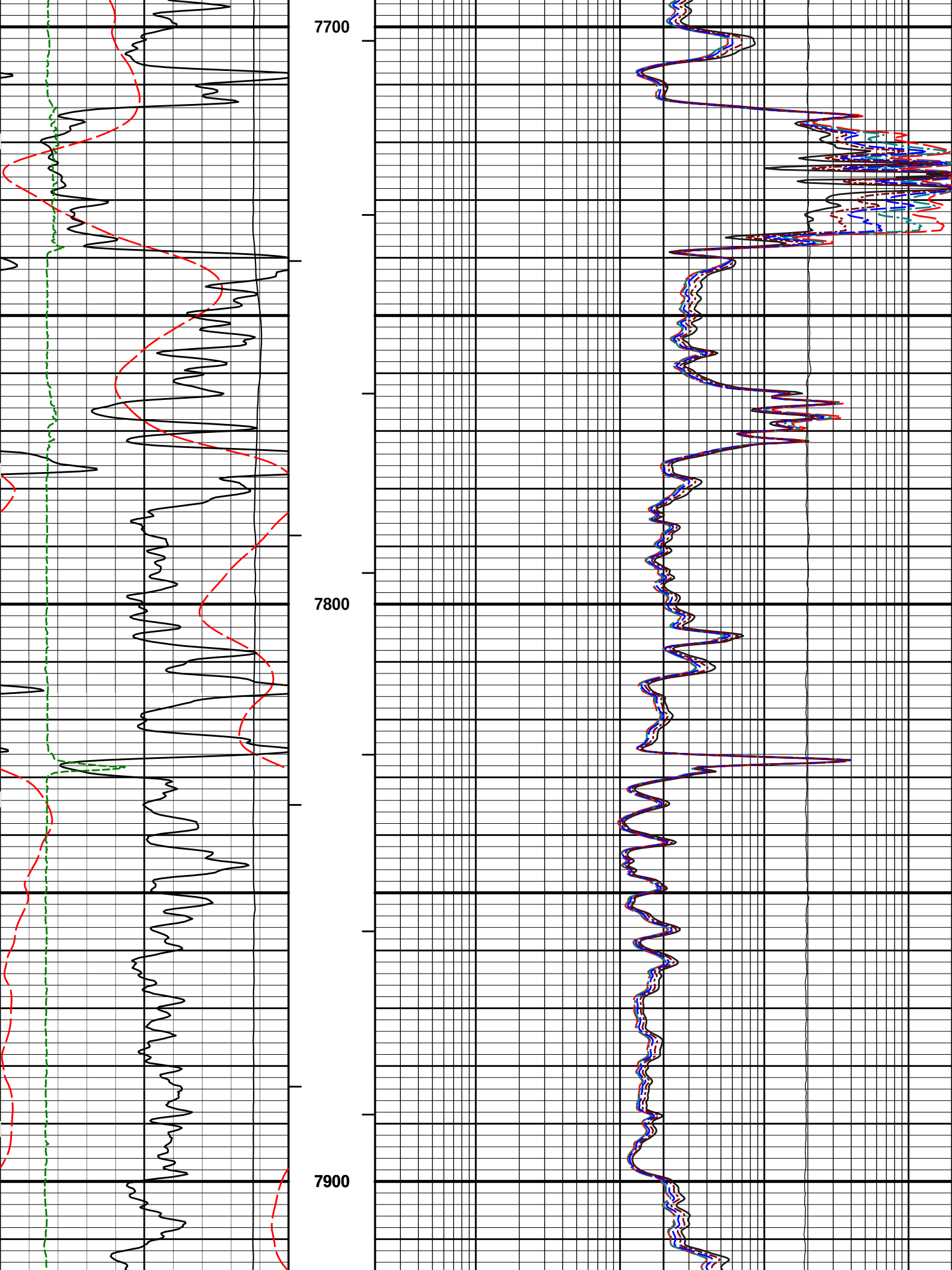
MAIN PASS 5" = 100'

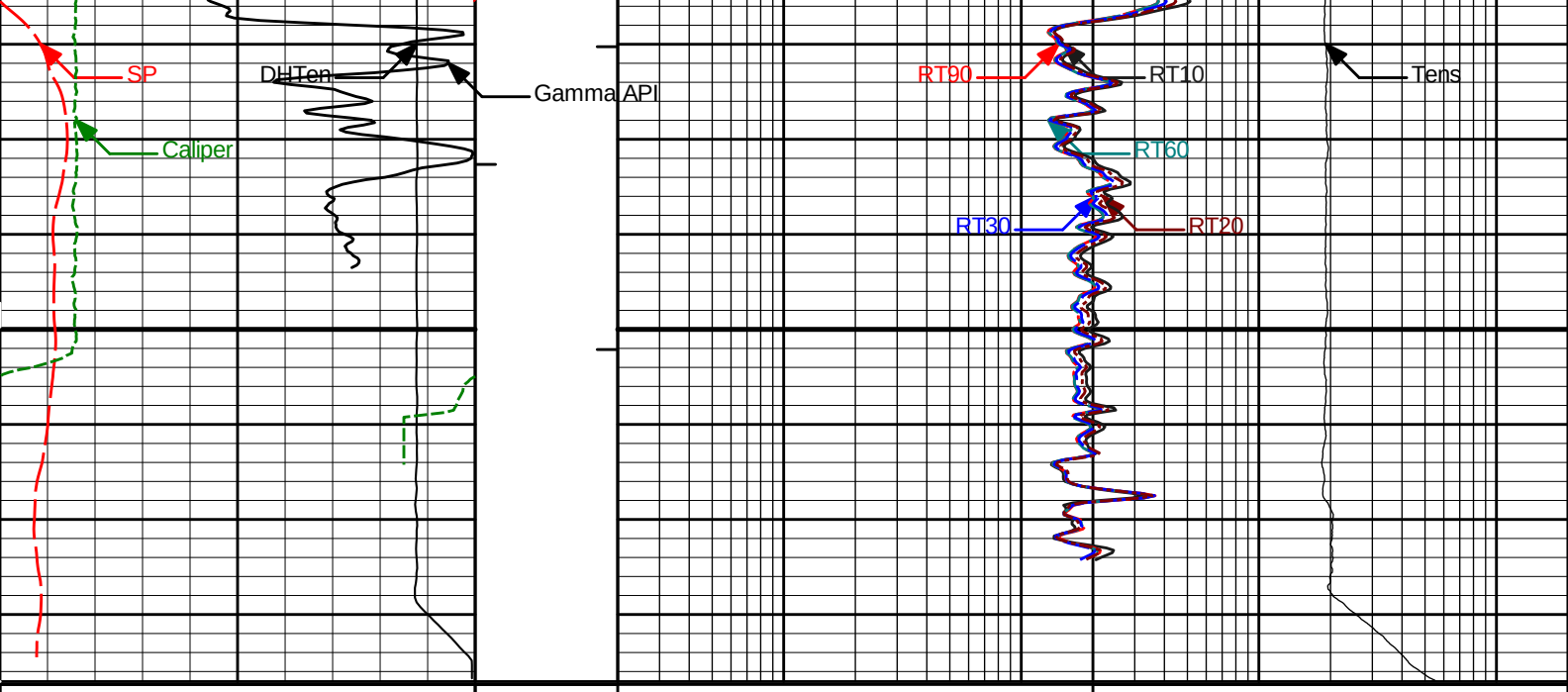
HALLIBURTON

Plot Time: 13-Feb-12 00:28:42
Plot Range: 7680 ft to 7987.08 ft
Data: {ActiveWell}\Well Based\REPEAT
Plot File: \\ACRT\IQ_BP_ACRt_5IN_DHT_RPT

REPEAT SECTION 5" = 100'




7700
7800
7900



10K	**DHTen**	0
	pounds	
0	**SP**	100
	millivolts	
6	**Caliper**	16
	inches	
0	**Gamma API**	150
	api	

1 : 240

BHVT

AHVT

10K	**Tens**	0
	pounds	
0.2	**RT90**	2K
	Ohm-m	
0.2	**RT60**	2K
	Ohm-m	
0.2	**RT30**	2K
	Ohm-m	
0.2	**RT20**	2K
	Ohm-m	
0.2	**RT10**	2K
	Ohm-m	

HALLIBURTON

Plot Time: 13-Feb-12 00:28:43
Plot Range: 7680 ft to 7987.08 ft
Data: {ActiveWell}\Well Based\REPEAT
Plot File: \\ACRT\IQ_BP_ACRt_5IN_DHT_RPT

REPEAT SECTION 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11016182**	**Reference Calibration Date:**	**18-Jan-12 10:28:56**
Engineer:	**D. CULVER**	**Calibration Date:**	**26-Jan-12 14:42:04**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-11
Calibrator API Reference:246.00 api

Equivalent Calibrator API Reference:250.3 api

Measurement	Measured	Calibrated	Units
Background	56.4	56.1	api
Background + Calibrator	308.1	306.4	api
Calibrator	251.7	250.3	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11016182 **Reference Calibration Date:** 26-Jan-12 14:42:04

Engineer: B. PEDERSEN **Calibration Date:** 11-Feb-12 15:13:51

Software Version: WL INSITE R3.4.2 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: TB-11

Calibrator API Reference:246.00 api

Equivalent Calibrator API Reference:250.3 api

Field Verification	Shop	Field	Units
Background	56.1	53.0	api
Background + Calibrator	306.4	305.1	api
Calibrator	250.3	252.1	api

Shop	Field	Difference	Tolerance
250.3	252.1	-1.8	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11004663 **Reference Calibration Date:** 30-Dec-11 09:30:54

Engineer: D. CULVER **Calibration Date:** 26-Jan-12 16:13:34

Software Version: WL INSITE R3.4.2 (Build 2) **Calibration Version:** 1

Logging Source S/N: DSN-431

Tank Serial Number: 105039

Reference value assigned to Tank: 51.650

Snow Block S/N: SNOWBLOCK

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.955	0.959	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):	0.2096	0.2108	0.0012	+/- 0.0020
Calibrated Ratio:	9.68	9.72	0.040	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0764	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 - 11004663**	**Reference Calibration Date:**	**26-Jan-12 16:13:34**
Engineer:	**B. PEDERSEN**	**Calibration Date:**	**11-Feb-12 15:41:59**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-431

Snow Block S/N: SNOWBLOCK

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0764	0.0778	0.0014	+/- 0.0150

PASS/FAIL SUMMARY

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	**SDLT - 10948155**	**Reference Calibration Date:**	**12-Feb-12 01:48:03**
Engineer:	**B. PEDERSEN**	**Calibration Date:**	**12-Feb-12 01:51:55**
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	-2669.19	-2615.16	-7000.00 - -1000.00
Pad Gain	0.0003853	0.0003813	0.000200 - 0.000600
Arm Offset	-3293.73	-3349.44	-5000.00 - 3000.00
Arm Gain	0.0005207	0.0005235	0.000300 - 0.000700
Arm Power	-0.000001786	-0.000001739	-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)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.23	8.25	0.02	+/- 0.20
Large Ring (in)	14.94	15.00	0.06	+/- 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 - 10948155**	**Reference Calibration Date:**	**12-Feb-12 01:51:55**
Engineer:	**B. PEDERSEN**	**Calibration Date:**	**12-Feb-12 01:53:44**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

MEASURED CALIPER VALUES

				Control Limit On

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.66	-0.09	+/- 0.10
Ring Diameter	8.25	8.25	-0.00	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - E171_S970 **Reference Calibration Date:** 09-Jan-12 10:41:15

Engineer: B. PEDERSEN **Calibration Date:** 11-Feb-12 12:21:07

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	1.0143	1.05	0.95	1.0138	1.05	0.95	1.0111	1.05
A2 (50")	0.95	1.0182	1.05	0.95	1.0200	1.05	0.95	1.0197	1.05
A3 (29")	0.95	1.0099	1.05	0.95	1.0104	1.05	0.95	1.0081	1.05
A4 (17")	0.95	1.0097	1.05	0.95	1.0081	1.05	0.95	1.0076	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0074	1.05	0.95	1.0059	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9938	1.05	0.95	0.9916	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	-0.693	2	-6	-3.754	-2	-8	-4.895	-2
A2 (50")	-7	-2.209	-1	-6	-3.657	-2	-7	-4.595	-2
A3 (29")	-27	-12.626	-9	-9	-3.530	-3	-7	-3.157	-1
A4 (17")	-180	-100.975	-60	-45	-31.261	-15	-39	-25.477	-13
A5 (10")	N/A	N/A	N/A	-150	-107.765	-50	-80	-51.232	-10
A6 (6")	N/A	N/A	N/A	175	349.922	525	90	169.044	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.9162	1.3
36K	1.0	1.9566	2.0
72K	1.0	1.1604	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.007	1.05

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 10948155 **Reference Calibration Date:** 30-Dec-11 09:00:12

Engineer: D. CULVER **Calibration Date:** 26-Jan-12 15:35:06

Software Version: WL INSITE R3.4.2 (Build 2) **Calibration Version:** 1

Logging Source S/N: 5116GW

Aluminum Block S/N: ROCK SPRINGS Density: 2.602g/cc Pe: 3.110

Magnesium Block S/N: ROCK SPRINGS Density: 1.690g/cc Pe: 2.610

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0171	1.0170	0.90 - 1.10
Near Dens Gain	1.0035	1.0088	0.90 - 1.10
Near Peak Gain	1.0094	1.0249	0.90 - 1.10

Near Lith Gain	0.9888	1.0064	0.90 - 1.10
Far Bar Gain	1.0067	1.0027	0.90 - 1.10
Far Dens Gain	0.9975	0.9970	0.90 - 1.10
Far Peak Gain	0.9911	0.9929	0.90 - 1.10
Far Lith Gain	0.9641	0.9754	0.90 - 1.10

Near Bar Offset	0.0608	0.0611	NONE
Near Dens Offset	0.1567	0.1108	NONE
Near Peak Offset	0.1014	-0.0292	NONE
Near Lith Offset	0.2383	0.1022	NONE
Far Bar Offset	0.0544	0.0809	NONE
Far Dens Offset	0.1222	0.1268	NONE
Far Peak Offset	0.1320	0.1283	NONE
Far Lith Offset	0.2869	0.2260	NONE

Near Bar Background	810.81	810.07	700 - 1450
Near Dens Background	269.86	267.17	230 - 480
Near Peak Background	116.14	115.83	100 - 210
Near Lith Background	142.57	143.22	125 - 260
Far Bar Background	513.97	513.27	450 - 900
Far Dens Background	201.02	200.96	175 - 345
Far Peak Background	82.03	81.86	70 - 140
Far Lith Background	85.16	85.26	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.689	1.690	0.001	+/- 0.015
Pe	2.620	2.558	-0.062	+/- 0.150
ALUMINUM				
Density (g/cc)	2.602	2.602	0.000	+/- 0.01500
Pe	3.113	3.063	-0.050	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0005	+/- 0.0110	-0.0003	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0000	+/- 0.0140
Aluminum Block	-0.0000	+/- 0.0110	0.0016	+/- 0.0140
Resolution	9.57	6.00 - 11.50	9.03	6.00 - 11.50
Internal Verifier(B+D+P+L)	1336	1200 - 2700	881	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 - 10948155**	**Reference Calibration Date:**	**26-Jan-12 15:35:06**
Engineer:	**B. PEDERSEN**	**Calibration Date:**	**11-Feb-12 15:34:50**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Pad Temperature: 51.7 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1336.290	1329.670	-6.620	14.786
Far (B+D+P+L) cps	881.348	882.193	0.845	16.196
Near Resolution	9.57	9.57	0.000	0.50
Far Resolution	9.03	9.16	0.130	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
GTET-11016182						
Gamma Ray Calibrator	250.3	252.1	----------	-1.8	+/- 9.00	api
DSNT-11004663						
Snow-Block Porosity	0.0764	0.0778	----------	-0.0014	+/- 0.0150	decp
SDLT-10948155						
Pad Extension	3.75	3.66	----------	0.09	+/-0.10	in
Ring Diameter	8.25	8.25	----------	0.000	+/-0.15	in
ACRt Sonde-E171_S970						
Mud Cell	1.007	----------	----------	0.000	----------	ohm-m
SDLT Pad-10948155						
Near(B+D+P+L)	1336.290	1329.670	----------	6.620	+/-14.786	cps
Far(B+D+P+L)	881.348	882.193	----------	-0.845	+/-16.196	cps

Data: BRUTON_30_06_B\0001 LOGIQ_TRIPLE\IDLE **Date: 12-Feb-12 23:08:28**

HALLIBURTON

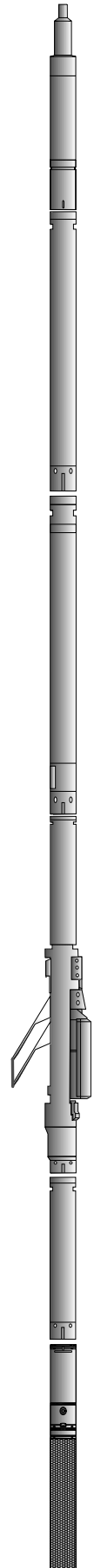
CUSTOMER EVENT LOG

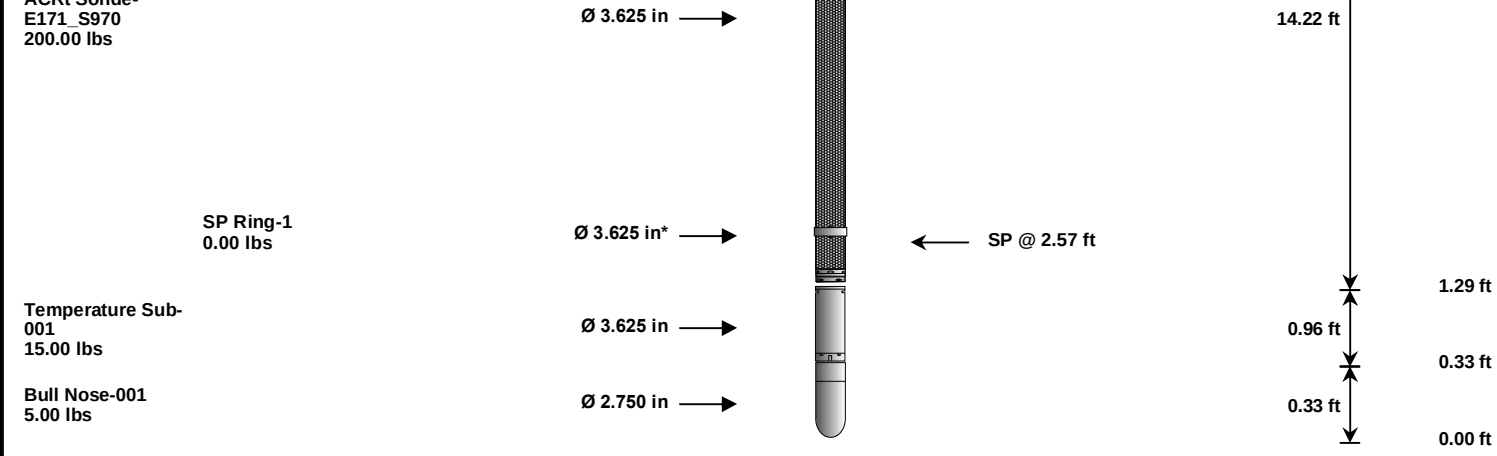
Event Type	Time & Date	Depth (ft)	Event Description
	12-Feb-12 21:23:48	1364.75	Logging 001 12-Feb-12 21:23 Dn @1364.8f
	12-Feb-12 21:27:11	1691.82	Halting 001 12-Feb-12 21:23 Dn @1364.8f
	12-Feb-12 21:27:23	1698.50	Logging 002 12-Feb-12 21:27 Up @1698.5f
	12-Feb-12 21:31:16	1489.94	Halting 002 12-Feb-12 21:27 Up @1698.5f
	12-Feb-12 21:31:49	1486.25	Logging 003 12-Feb-12 21:31 Dn @1486.3f
	12-Feb-12 21:46:47	4647.83	Halting 003 12-Feb-12 21:31 Dn @1486.3f
	12-Feb-12 21:47:22	4654.25	Logging 004 12-Feb-12 21:47 Dn @4654.3f
	12-Feb-12 22:04:31	7893.74	Halting 004 12-Feb-12 21:47 Dn @4654.3f
	12-Feb-12 22:07:34	7988.25	Logging 005 12-Feb-12 22:07 Up @7988.3f
	12-Feb-12 22:15:46	7536.77	Halting 005 12-Feb-12 22:07 Up @7988.3f
	12-Feb-12 22:19:18	7988.00	Logging 006 12-Feb-12 22:19 Up @7988.0f

Data: BRUTON_30_06_B\0001 LOGIQ_TRIPLE\HW11111 **Date: 12-Feb-12 23:08:01**

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						55.81 ft
RWCH-001 135.00 lbs		Ø 3.625 in →		← Load Cell @ 52.13 ft ← BH Temperature @ 51.56 ft	6.25 ft	
						49.56 ft
GTET-11016182 165.00 lbs		Ø 3.625 in →		← GammaRay @ 43.50 ft	8.52 ft	
						41.04 ft
DSNT-11004663 174.00 lbs		Ø 3.625 in →		← DSN Far @ 34.11 ft ← DSN Near @ 33.36 ft	9.69 ft	
						31.36 ft
SDLT-10948155 360.00 lbs		Ø 4.500 in →			10.81 ft	
	SDLT Pad-10948155 65.00 lbs	Ø 4.750 in* →		← SDL Caliper @ 23.36 ft ← SDL @ 23.35 ft		
						20.54 ft
ACRt Instrument-E171_S970 50.00 lbs		Ø 3.625 in →			5.03 ft	
						15.51 ft
				← Mud Resistivity @ 14.15 ft		
				← ACRt @ 10.17 ft		
ACRt Sonde-						



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	001	135.00	6.25		49.56	300.00
GTET	Gamma Telemetry Tool	11016182	165.00	8.52		41.04	60.00
DSNT	Dual Spaced Neutron	11004663	174.00	9.69		31.36	60.00
SDLT	Spectral Density Tool	10948155	360.00	10.81		20.54	60.00
SDLP	Density Insite Pad	10948155	65.00	2.55	*	22.75	60.00
ACRt	Array Compensated True Resistivity Instrument Section	E171_S970	50.00	5.03		15.51	300.00
ACRt	Array Compensated True Resistivity	E171 S970	200.00	14.22		1.29	300.00
SP	SP Ring	1	0.00	0.25	*	2.57	300.00
TMAX	Temperature Sub - 3 625 OD	001	15.00	0.96		0.33	300.00
BLNS	Bull Nose	001	5.00	0.33		0.00	300.00
Total			**1,169.00**	**55.81**			

* Not included in Total Length and Length Accumulation.

Data: BRUTON_30_06_B\0001 LOGIQ_TRIPLE\IDLE **Date: 12-Feb-12 20:19:17**

COMPANY	**LARAMIE ENERGY**		
WELL	**BRUTON 30-06-B**		
FIELD	**BRUSH CREEK**		
COUNTY	**GARFIELD**	STATE	**CO**

HALLIBURTON

ARRAY COMPENSATED TRUE RESISTIVITY