HALLIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
ARRAY COMPENSATED
TRUE RESISTIVITY

COMPANY	ENERGY SUMMIT RESOURCES
WELL	BELL 17-2
FIELD/BLOCK	WILDCAT
COUNTY	BONNEVILLE STATE ID

API No. 11019200150000

Location SURFACE HOLE LOCATION:
2088' FNL & 245' FWL
SEC. 17 T. 3S R. 43E

BOTTOM HOLE LOCATION:
2215' FNL & 734' FWL
SEC. 17 T. 3S R. 43E

Sect. 17 Twp. 3S Rge. 43E

Other Services:
RWCH

Permanent Datum	GL	Elev. 6407.0 ft	Elev.: K.B. 6420.0 ft
Log measured from	KB	13.0 ft above perm. Datum	D.F. 6420.0 ft
Drilling measured from	KB		G.L. 6407.0 ft

Date		13-Nov-18					
Run No.		ONE					
Depth - Driller		7014.0 ft					
Depth - Logger		6928.0 ft					
Bottom - Logged Interval		6926.0 ft					
Top - Logged Interval		100.0 ft					
Casing - Driller		9.625 in	@ 2038.0 ft		@		@
Casing - Logger							
Bit Size		8.750 in			@		@
Type Fluid in Hole		Water Based Mud					
Density	Viscosity	8.60 g/cc	38.00 s/qt				
PH	Fluid Loss	9.50 pH					
Source of Sample		MEASURED					
Rm @ Meas. Temperature		2.10 ohmm	@ 46.50 degF		@		@
Rmf @ Meas. Temperature		1.52 ohmm	@ 56.00 degF		@		@
Rmc @ Meas. Temperature		2.53 ohmm	@ 61.00 degF		@		@
Source Rmf	Rmc	MEASURED	MEASURED				
Rm @ BHT		0.36 ohmm	@ 301.0 degF		@		@
Time Since Circulation		11:59 hr					
Time on Bottom		13-Nov-18 21:14					
Max. Rec. Temperature		301.58 degF	@ 6901.1 ft		@		@
Equipment	Location	11335318	R.S. WY				
Recorded By		A. TATE		N. ANDERSON			
Witnessed By		R. WALCK					

Fold here

PGM Version: WL INSITE R5.6.5 (Build 2)

Service Ticket No.: 905270673 API No.: 11019200150000

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

	Sample No.				Type Log	Depth	Scale Up Hole	Scale Down Hole
Date								
Depth-Driller								
Type Fluid in Hole								
Density	Viscosity							
Ph	Fluid Loss							
Source of Sample								
Rm @ Meas. Temp		@	@	@				
Rmf @ Meas. Temp.		@	@	@				
Rmc @ Meas. Temp.		@	@	@				
Source Rmf	Rmc							
Rm @ BHT		@	@	@				
Rmf @ BHT		@	@	@				
Rmc @ BHT		@	@	@				

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	ONE	ACRT	N/A	0.25 in S.O.	N/A
		I: 11231104			
		S: 11231103			

EQUIPMENT DATA

GAMMA		ACOUSTIC			DENSITY		NEUTRON	
Run No.	ONE	Run No.			Run No.	ONE	Run No.	ONE
Serial No.	11277436	Serial No.			Serial No.	10844769	Serial No.	11046266
Model No.	GTET	Model No.			Model No.	SDLP	Model No.	DSNT
Diameter	3.625 in	No. of Cent.			Diameter	4.500 in	Diameter	3.625 in
Detector Model No.	GTET	Spacing			Log Type	GAMMA/GAMMA	Log Type	NEU/NEU
Type	SCINT				Source Type	Cs-137	Source Type	Am241Be
Length	8 in	LSA [Y/N]			Serial No.	5235GW	Serial No.	DSN-431
Distance to Source	10 ft	FWDA [Y/N]			Strength	1.78 Ci	Strength	15 Ci

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	
ONE	6928 ft		REC	0 api	150 api				0.3 decp	-0.1 decp	2.68 g/cc	0.3 decp	-0.1 decp	SAND
ONE		100 ft	REC	0 api	150 api							0.3 decp	-0.1 decp	SAND

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: RWCH-GTET-DSNT-SDLT-IDT-ICT-WSTT-ACRT-BN RUN IN COMBINATION

BOREHOLE RUGOSITY, TENSION PULLS, WASHOUTS, AND MUD WEIGHTING AGENT MAY AFFECT LOG QUALITY

ANNULAR HOLE VOLUME CALCULATED FOR 5.5 in CASING SDLM S/N: 10947725

UNABLE TO REACH TD DUE TO BOREHOLE CONDITIONS

REMAINING ABOVE 6875 ft WITH TOP OF TOOL AT CUSTOMER REQUEST

LATITUDE: 43.160202°N

LONGITUDE: 111.449031°W

TODAY'S CREW: D. PIEGER

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

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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PARAMETERS REPORT

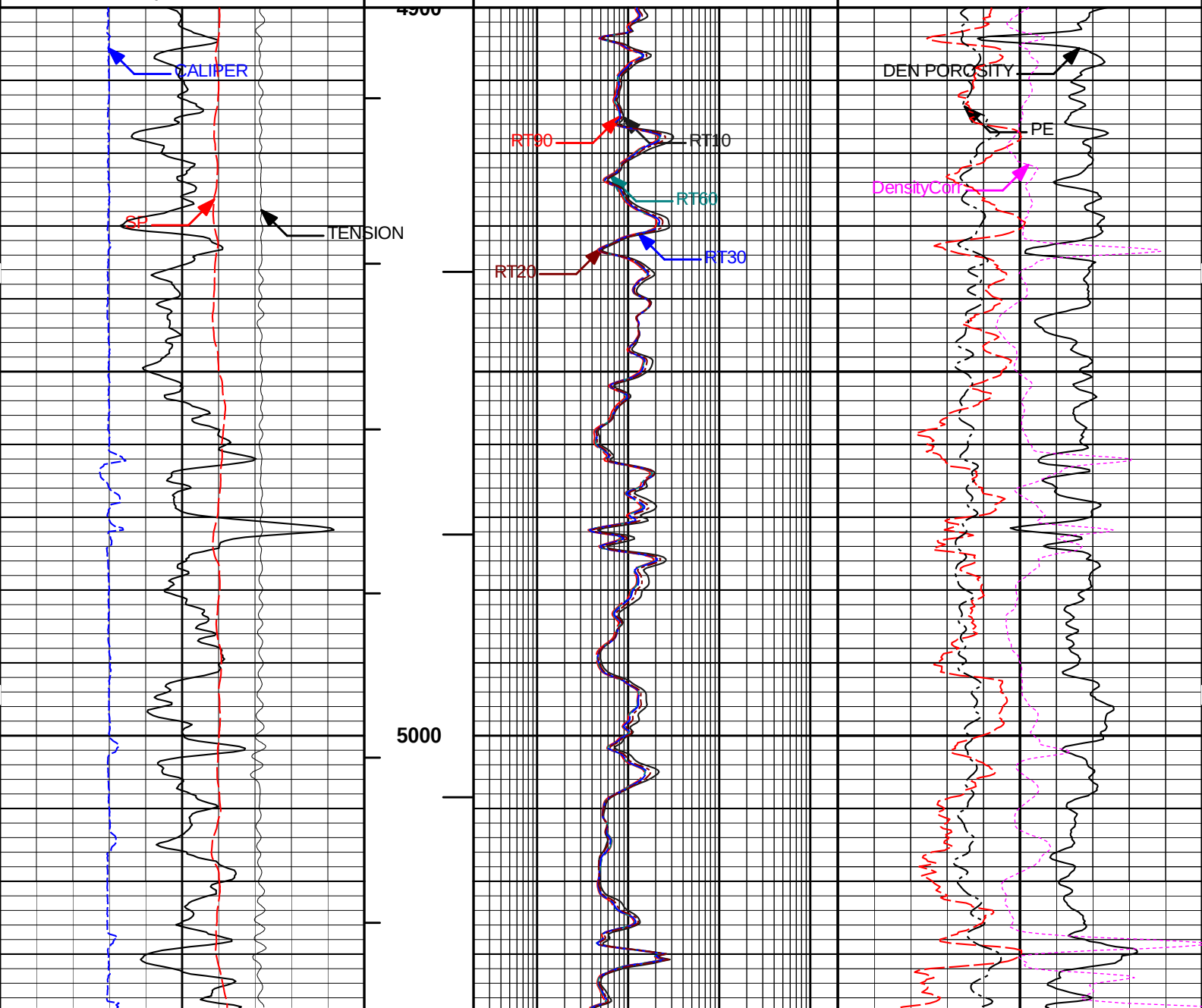
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	8.750	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.600	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	400.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.100	ohmm
	SHARED	TRM	Temperature of Mud	46.5	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	7014.00	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	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 /				

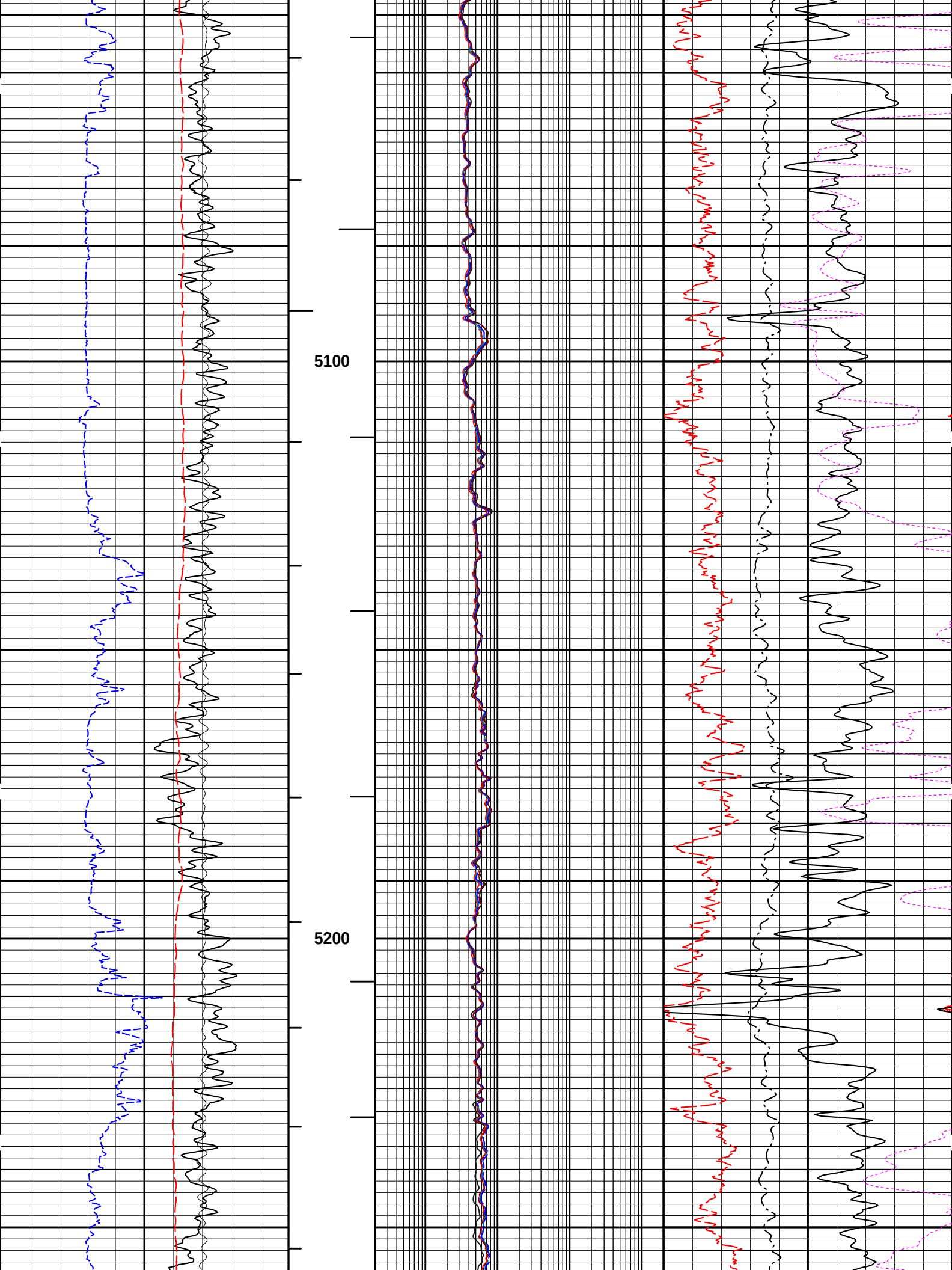
Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	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	Sandstone	
DSNT	DNSO	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	
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
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	0.25	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Eccentered	
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				

Plot File: \\COMP\ESR_TRIPLE_M

MAIN PASS 5" = 100'

0 GAMMA RAY 150 (api)		0.2 RT90 2000 (ohm-m)
6 CALIPER 16 (inches)		0.2 RT60 2000 (ohm-m)
0 SP 100 (millivolts)	AHV	0.2 RT30 2000 (ohm-m)
10000 TENSION 0 (pounds)	BHV	0.2 RT20 2000 (ohm-m)
	1 : 240 FT.	0.2 RT10 2000 (ohm-m)
		0.3 DEN POROSITY -0.1 (2.68 g/cc)
		0.3 NEU POROSITY -0.1 (sand)
		0 PE 10
		-0.25 DensityCorr 0.25 (gram per cc)

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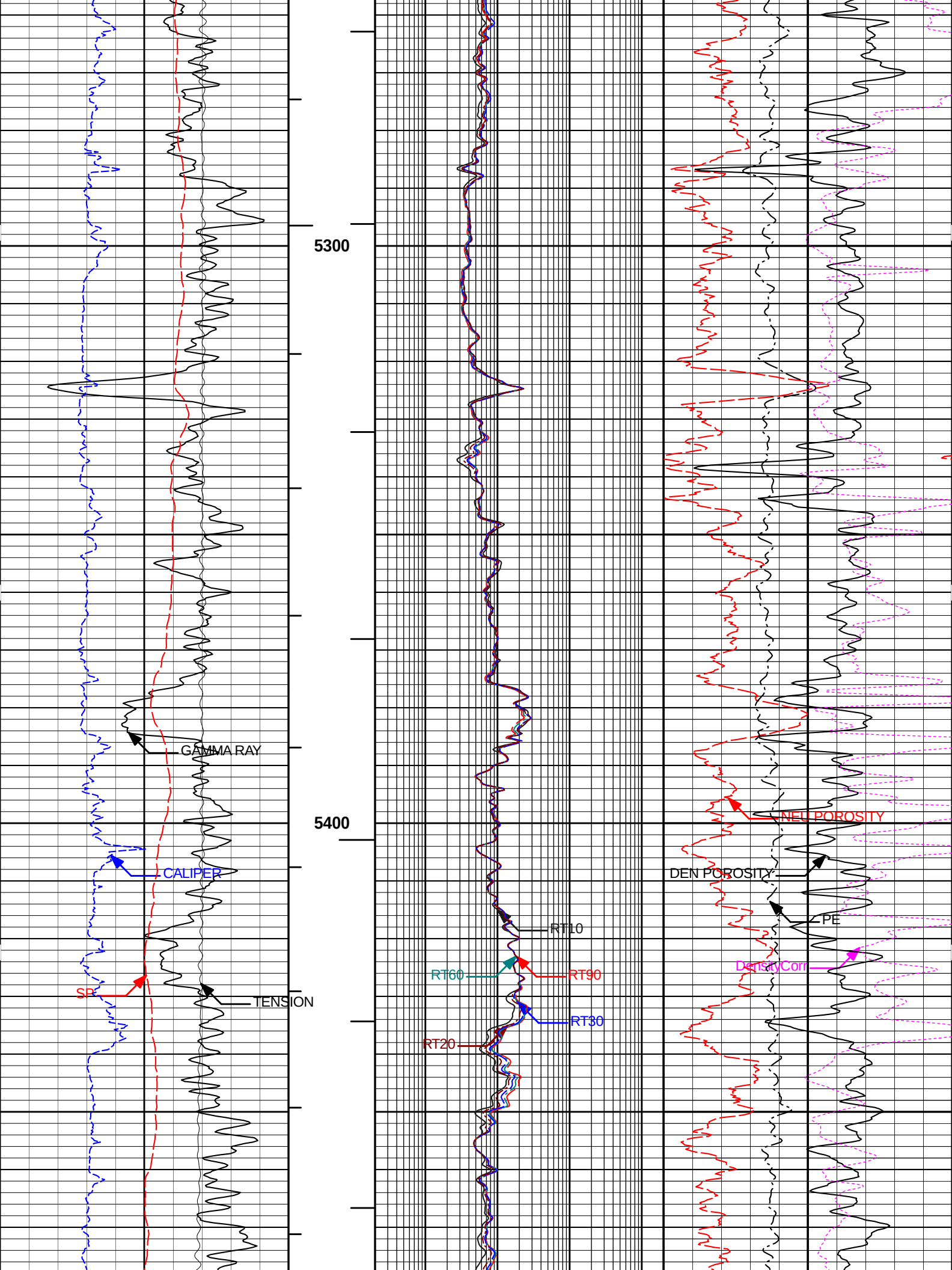
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RT10
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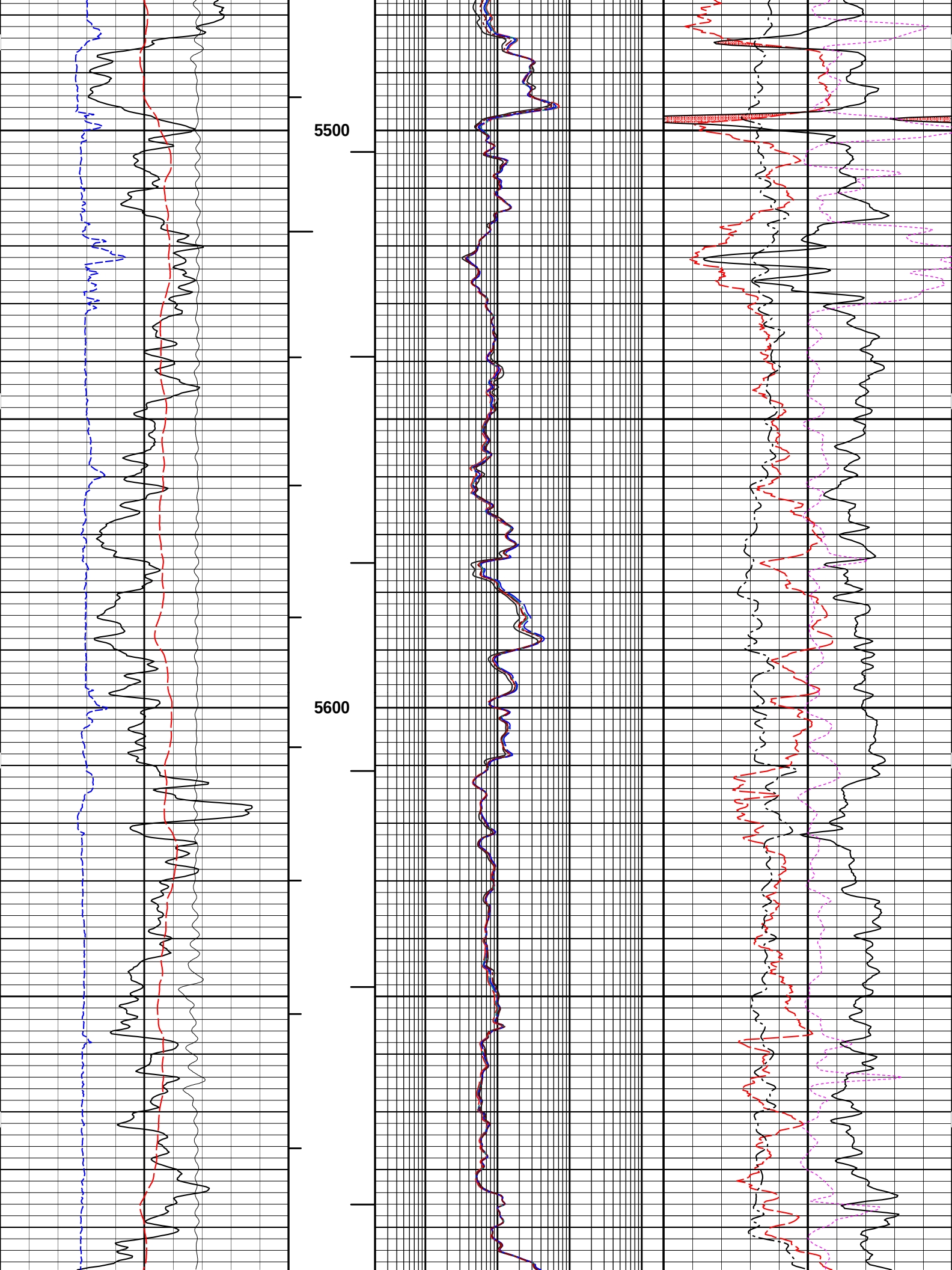
DEN POROSITY
PE
DensityCorr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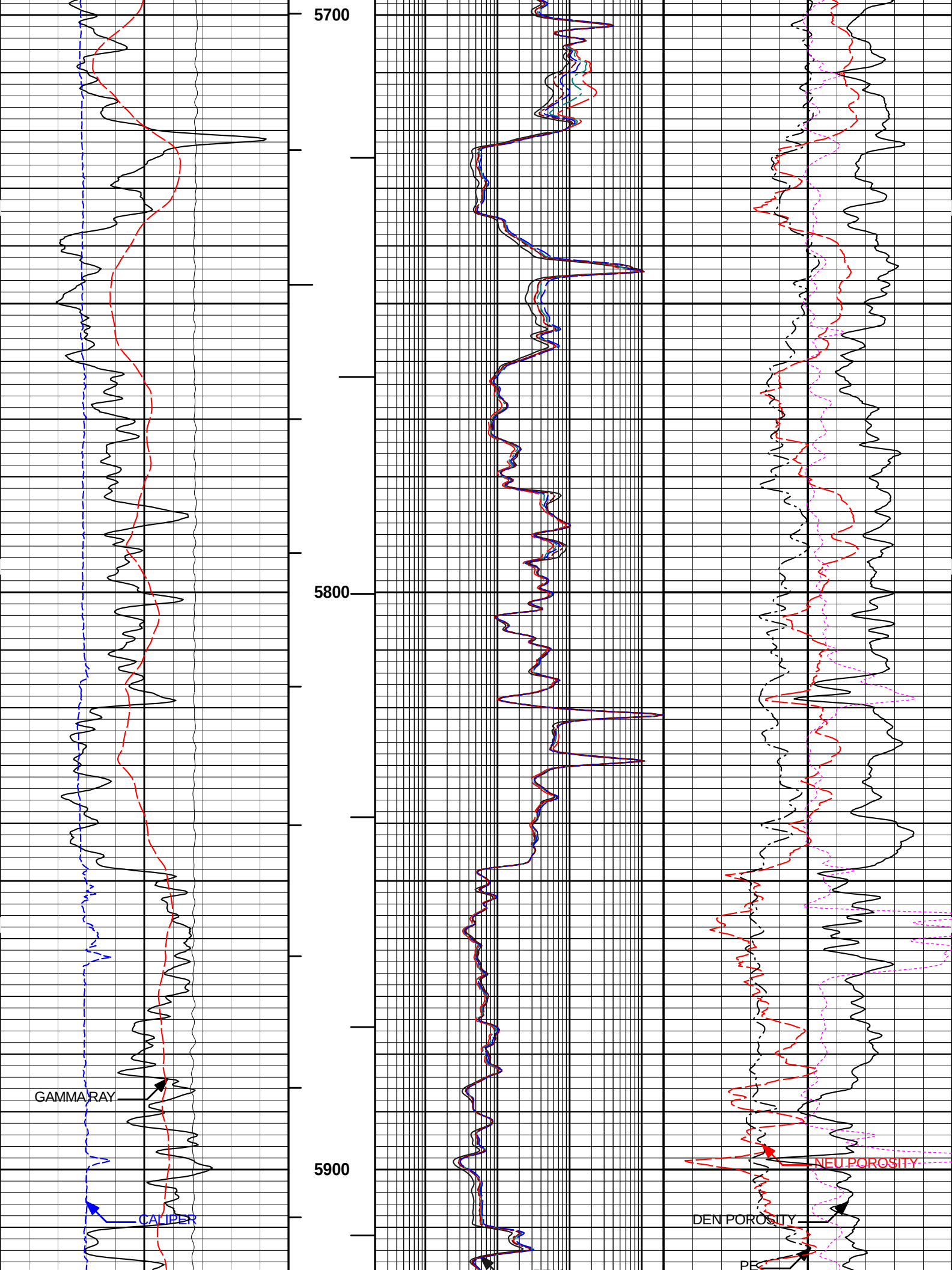
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DEN POROSITY
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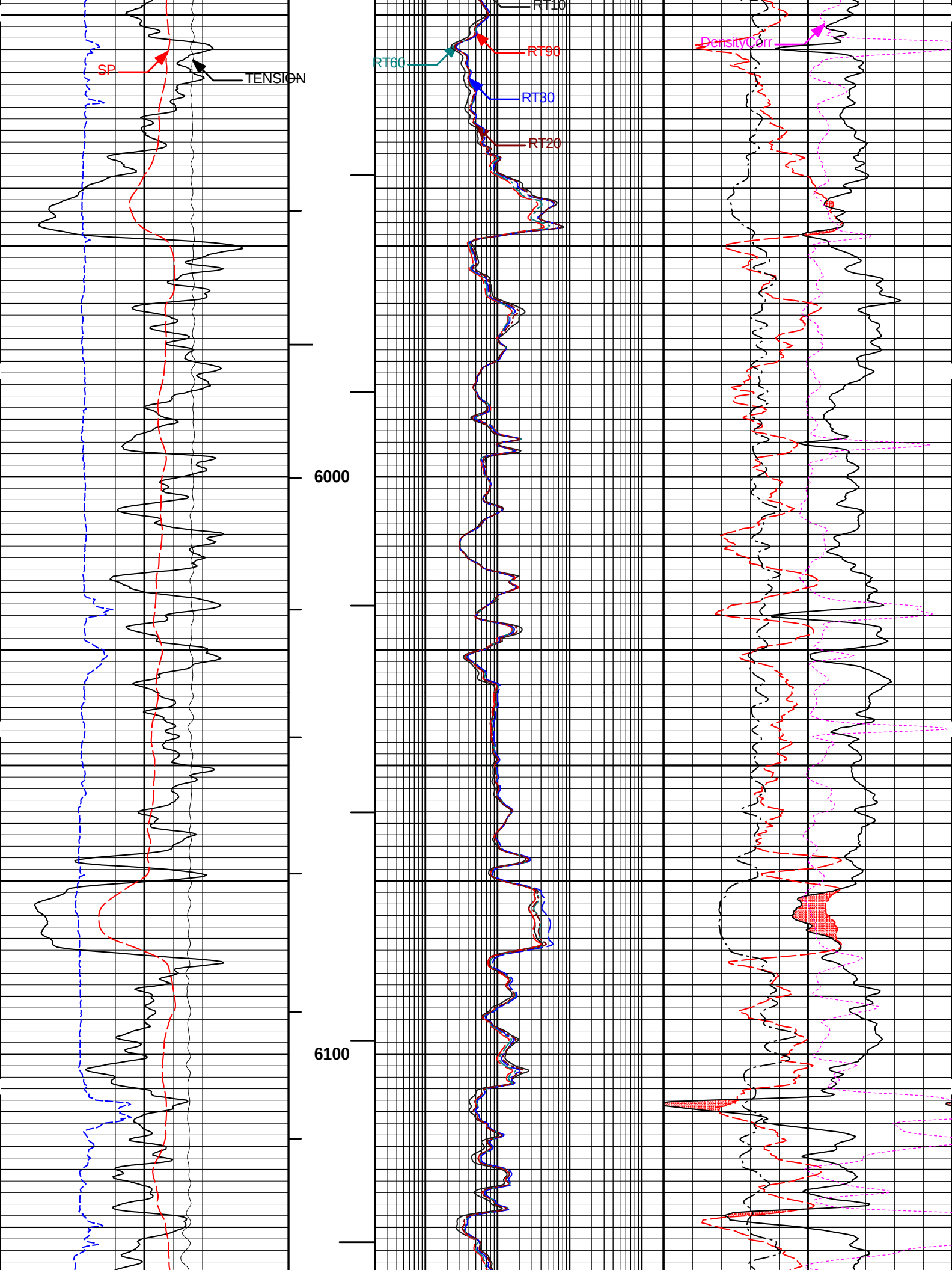
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RT20
DensityCorr
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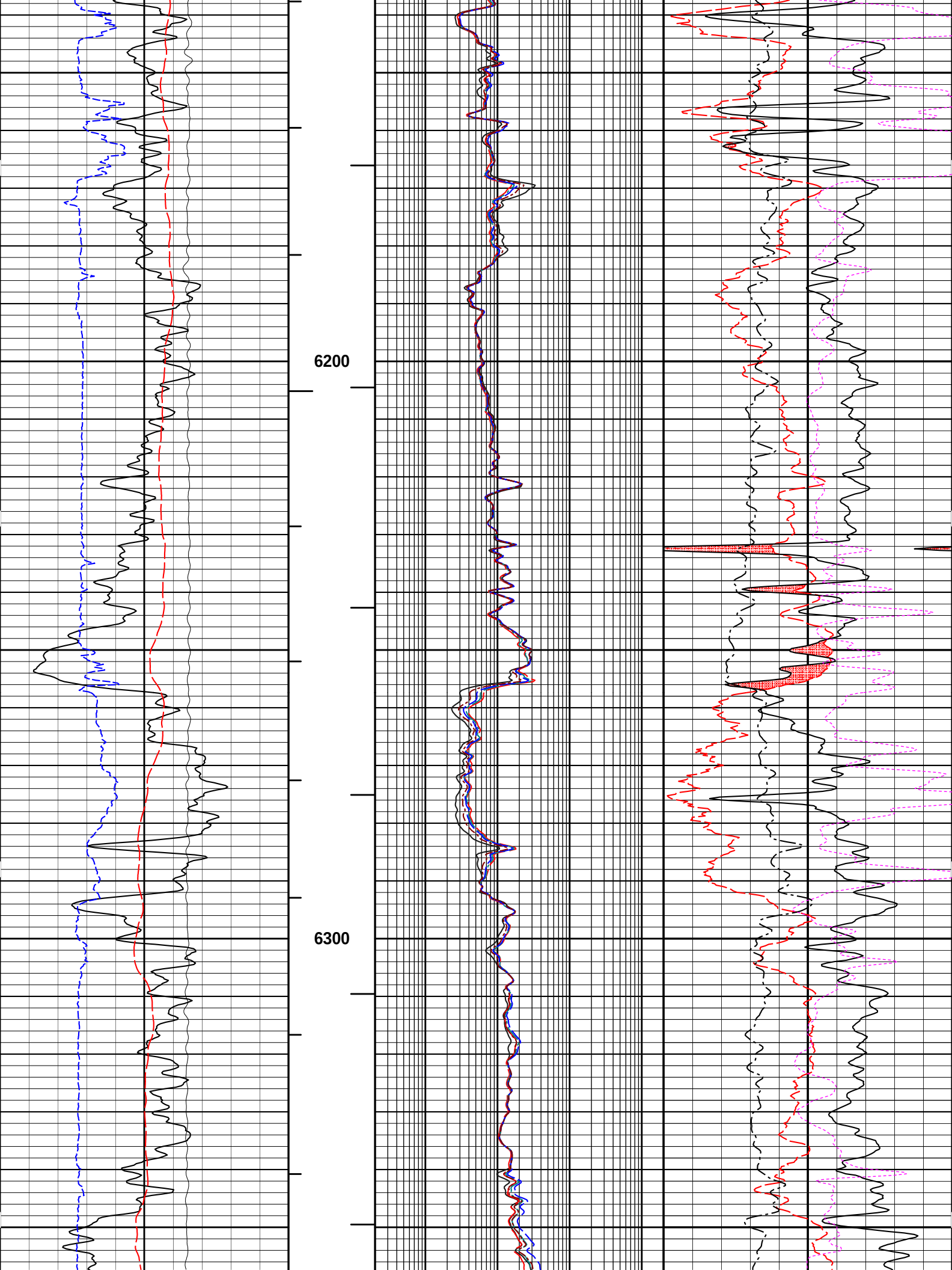
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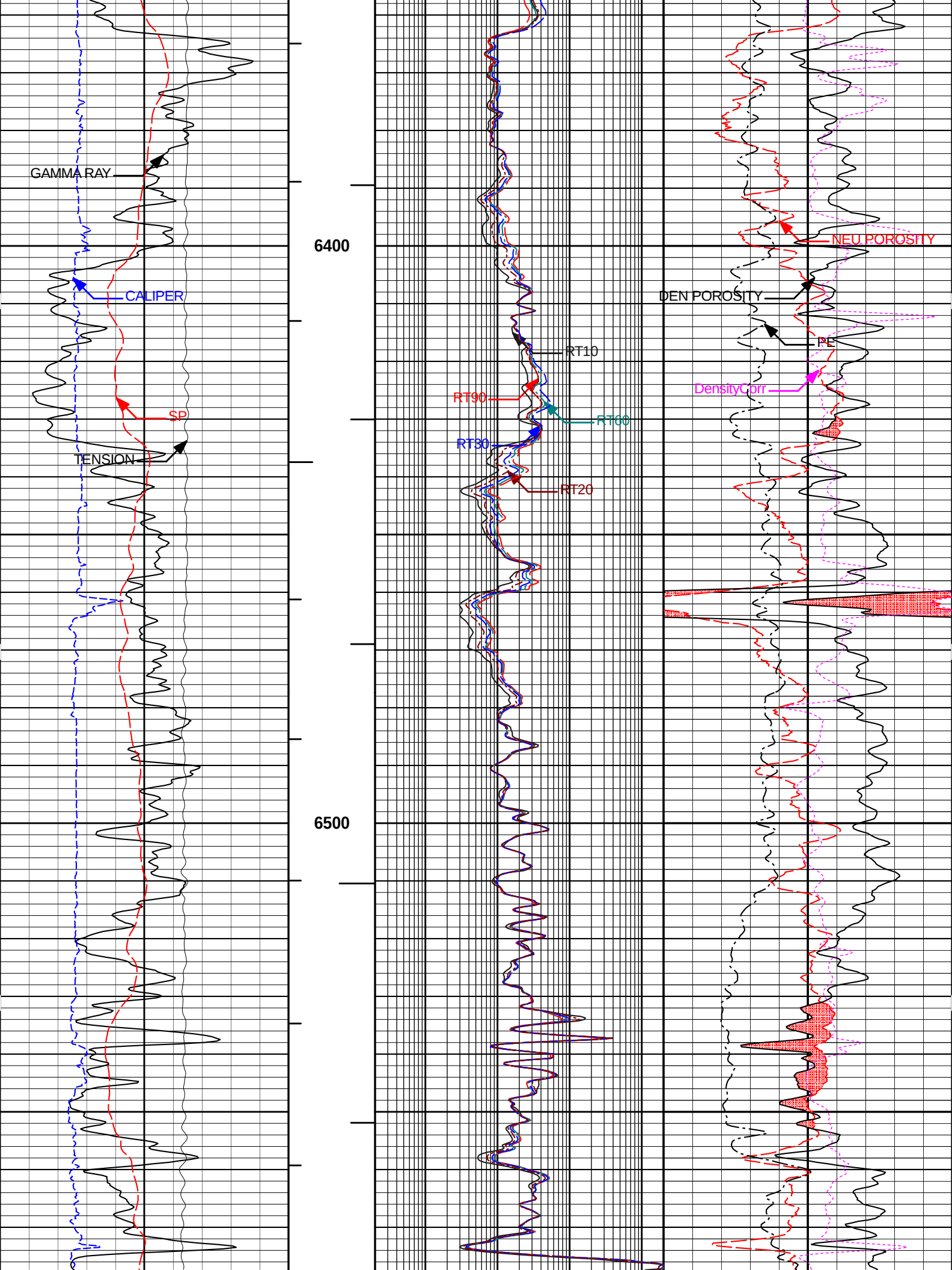
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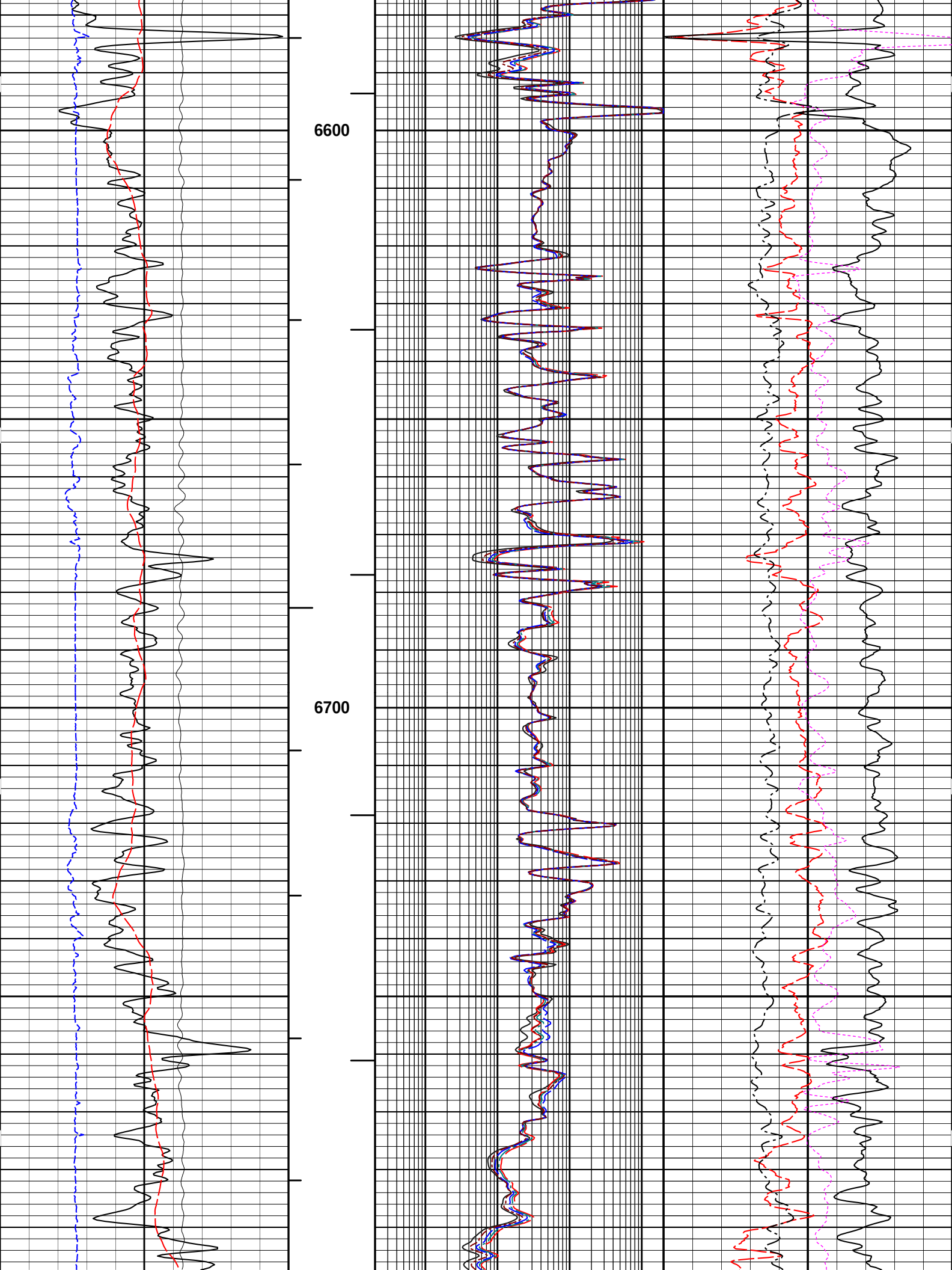
PE
DensityCorr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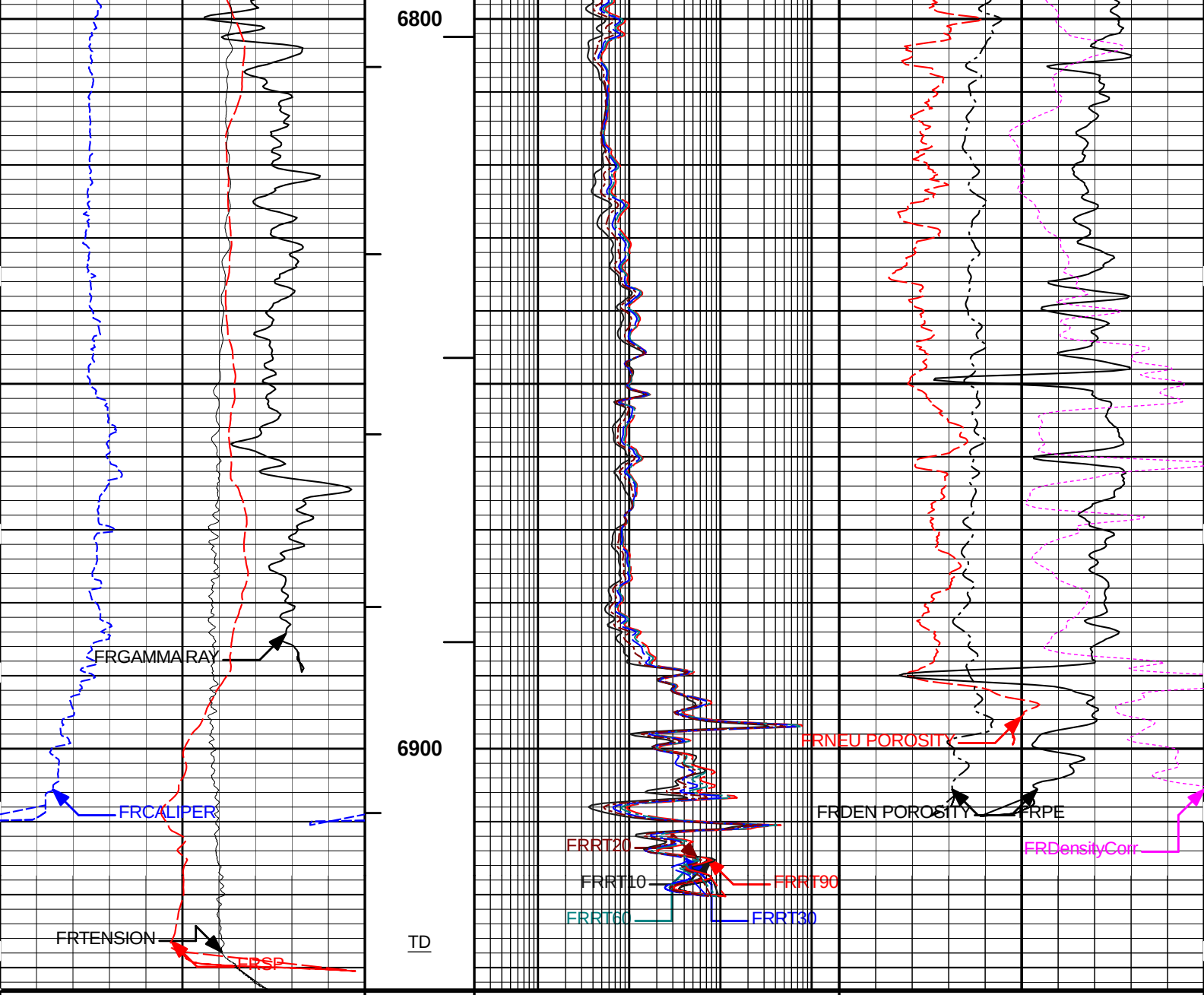

10000	TENSION	0	1 : 240 FT.	0.2	RT10	2000	-0.25 DensityCorr 0.25
	pounds				ohm-m		gram per cc
0	SP	100	BHV	0.2	RT20	2000	0 PE 10
	millivolts				ohm-m		
6	CALIPER	16	AHV	0.2	RT30	2000	0.3 NEU POROSITY -0.1
	inches				ohm-m		sand
0	GAMMA RAY	150		0.2	RT60	2000	0.3 DEN POROSITY -0.1
	api				ohm-m		2.68 g/cc
				0.2	RT90	2000	
					ohm-m		

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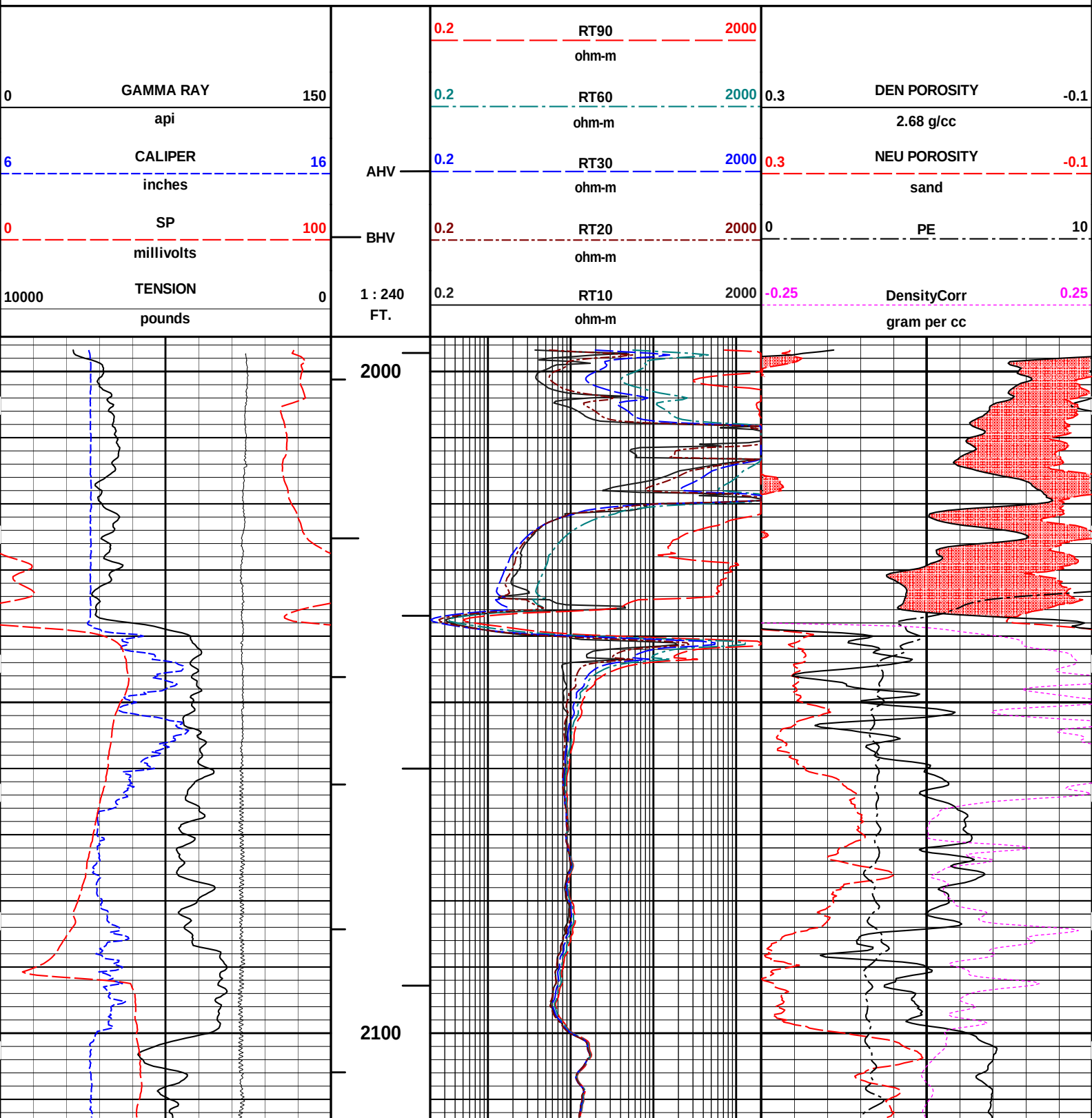
Plot Time: 14-Nov-18 06:40:04
Plot Range: 4900 ft to 6933 ft
Data: ESR_BELL_17-2\Well Based\MAIN\
Plot File: \\COMP\ESR_TRIPLE_M

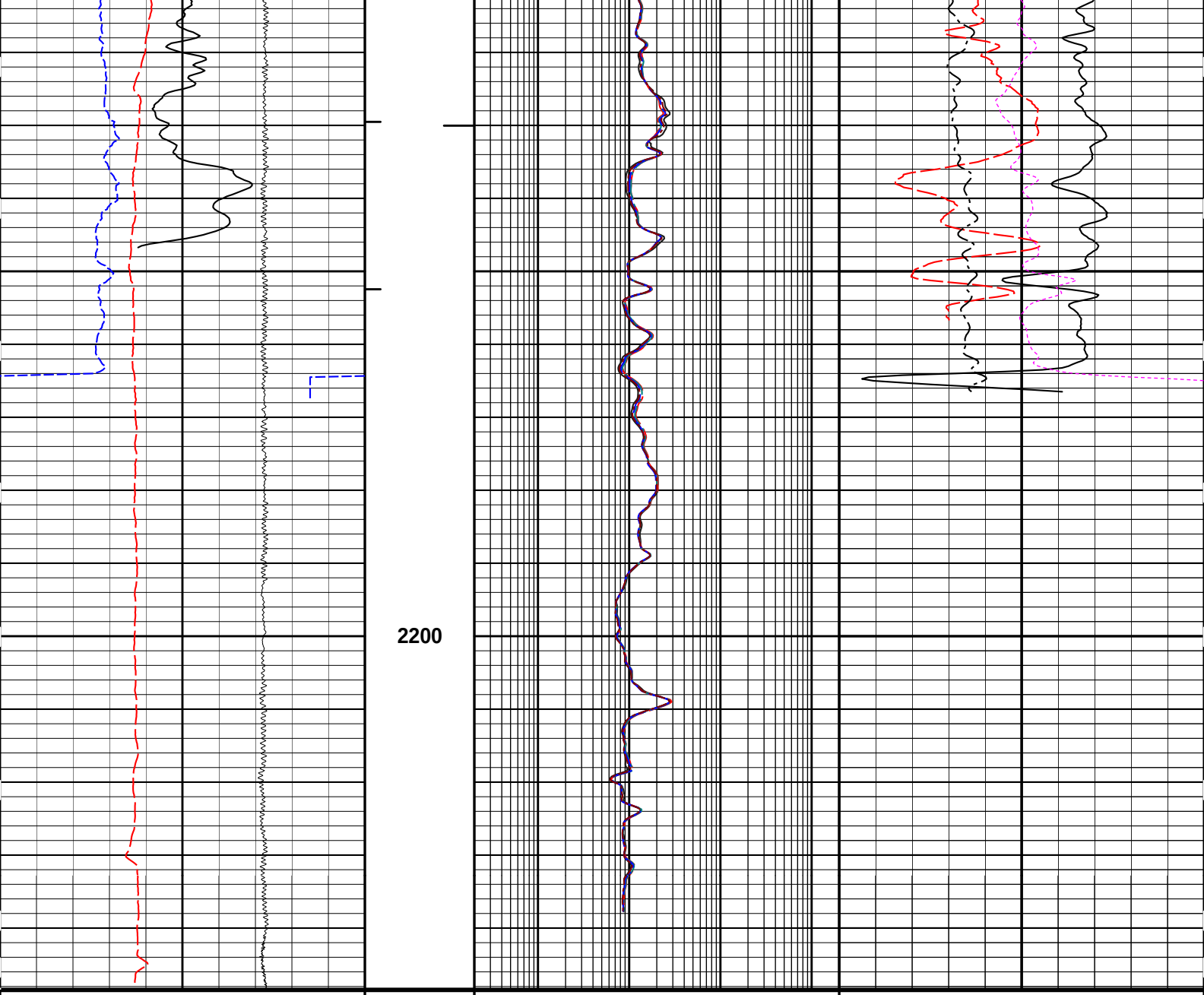
MAIN PASS 5" = 100'

HALLIBURTON

Plot Time: 14-Nov-18 06:40:04
Plot Range: 1994.75 ft to 2248.33 ft
Data: ESR_BELL_17-2\Well Based\REPEAT\
Plot File: \\COMP\ESR_TRIPLE_R

REPEAT PASS 5" = 100'





10000	TENSION	0	1 : 240 FT.	0.2	RT10	2000	-0.25	DensityCorr	0.25
	pounds				ohm-m			gram per cc	
0	SP	100	BHV	0.2	RT20	2000	0	PE	10
	millivolts				ohm-m				
6	CALIPER	16	AHV	0.2	RT30	2000	0.3	NEU POROSITY	-0.1
	inches				ohm-m			sand	
0	GAMMA RAY	150		0.2	RT60	2000	0.3	DEN POROSITY	-0.1
	api				ohm-m			2.68 g/cc	
				0.2	RT90	2000			
					ohm-m				

HALLIBURTON

Plot Time: 14-Nov-18 06:40:06
Plot Range: 1994.75 ft to 2248.33 ft
Data: ESR_BELL_17-2\Well Based\REPEAT\
Plot File: \\COMP\ESR_TRIPLE_R

REPEAT PASS 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11277436 **Reference Calibration Date:** 06-Aug-18 08:51:21

Engineer: A. TATE **Calibration Date:** 23-Oct-18 13:15:25

Software Version: WL INSITE R5.6.5 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: TB-689

Calibrator API Reference:243.00 api

Equivalent Calibrator API Reference:247.3 api

Measurement	Measured	Calibrated	Units
Background	46.4	46.0	api
Background + Calibrator	295.8	293.3	api
Calibrator	249.4	247.3	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11277436 **Reference Calibration Date:** 23-Oct-18 13:15:25

Engineer: A. TATE **Calibration Date:** 10-Nov-18 11:35:06

Software Version: WL INSITE R5.6.5 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: TB-689

Calibrator API Reference:243.00 api

Equivalent Calibrator API Reference:247.3 api

Field Verification	Shop	Field	Units
Background	46.0	43.4	api
Background + Calibrator	293.3	289.8	api
Calibrator	247.3	246.5	api

Shop	Field	Difference	Tolerance
247.3	246.5	0.8	+/- 9.00

ACCELEROMETER SHOP CALIBRATION

Tool Name: GTET - 11277436 **Reference Calibration Date:** 14-May-18 13:33:41

Engineer: A. TATE **Calibration Date:** 24-Oct-18 10:11:02

Software Version: WL INSITE R5.6.5 (Build 2) **Calibration Version:** 1

Horizontal-1 Telemetry	Horizontal-2 Telemetry	Vertical Telemetry	Units
-240.64	-221.73	-16561.82	cnts

Coefficient	Coefficient Value	Tolerance
Gain	-0.000061	-----
Offset	-0.014	-----
Noise	0.0007	0.0000 - 0.0030

Orientation	Measured	Tolerance	Calibrated	Tolerance
Horizontal	0.00	-0.10 - 0.10	0.00	-0.10 - 0.10
Vertical	1.00	0.90 - 1.10	1.00	0.90 - 1.10

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11046266 **Reference Calibration Date:** 01-Aug-18 13:31:29

Engineer:	**A. TATE**	**Calibration Date:**	**24-Oct-18 09:44:01**
Software Version:	**WL INSITE R5.6.5 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-431
Tank Serial Number: 105039
Reference value assigned to Tank: 49.230
Snow Block S/N: 11335318
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:	0.92683	0.92615	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):	0.1976	0.1974	0.0002	+/- 0.0020
Calibrated Ratio:	9.2732	9.2664	0.007	+/- 0.050

VERIFIER		
Measurement	**Value**	**Control Limit**
Snow-Block Porosity (decp):	0.0677	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 - 11046266**	**Reference Calibration Date:**	**24-Oct-18 09:44:01**
Engineer:	**A. TATE**	**Calibration Date:**	**10-Nov-18 11:43:40**
Software Version:	**WL INSITE R5.6.5 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-431
Snow Block S/N: 11335318

NEUTRON FIELD-CHECK SUMMARY				
	Shop	**Field**	**Difference**	**Control Limit On Change**
Snow-Block Porosity (decp):	0.0677	0.0690	0.0013	+/- 0.0150

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	**SDLT - 10947725**	**Reference Calibration Date:**	**24-Oct-18 08:46:25**
Engineer:	**A. TATE**	**Calibration Date:**	**24-Oct-18 08:51:21**
Software Version:	**WL INSITE R5.6.5 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**DSNT - 11046266**		

CALIBRATION COEFFICIENTS			
			Control Limit On

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2990.53	-3091.30	-7000.00 - -1000.00
Pad Gain	0.0003775	0.0003796	0.0002000 - 0.0006000
Arm Offset	-3999.99	-3840.02	-5000.00 - 3000.00
Arm Gain	0.0005595	0.0005462	0.000300 - 0.000700
Arm Power	-0.000005002	-0.000004097	-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)	2.03	2.00	-0.03	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20
Medium Ring (in)	8.27	8.25	-0.02	+/- 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 - 10947725 **Reference Calibration Date:** 24-Oct-18 08:51:21

Engineer: A. TATE **Calibration Date:** 10-Nov-18 11:39:49

Software Version: WL INSITE R5.6.5 (Build 2) **Calibration Version:** 1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	0.00	+/- 0.10
Ring Diameter	8.25	8.33	0.08	+/- 0.15

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 10844769 **Reference Calibration Date:** 23-Oct-18 14:56:16

Engineer: A. TATE **Calibration Date:** 23-Oct-18 15:18:40

Software Version: WL INSITE R5.6.5 (Build 2) **Calibration Version:** 1

Logging Source S/N: 5235GW

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	1.0519	1.0524	0.90 - 1.10
Near Dens Gain	1.0314	1.0276	0.90 - 1.10
Near Peak Gain	1.0461	1.0308	0.90 - 1.10
Near Lith Gain	1.0083	0.9985	0.90 - 1.10

Near Lith Gain	1.0083	0.9985	0.90 - 1.10
Far Bar Gain	1.0168	1.0194	0.90 - 1.10
Far Dens Gain	1.0047	1.0052	0.90 - 1.10
Far Peak Gain	0.9991	0.9990	0.90 - 1.10
Far Lith Gain	0.9768	0.9773	0.90 - 1.10
Near Bar Offset	-0.3266	-0.3310	NONE
Near Dens Offset	-0.1449	-0.1117	NONE
Near Peak Offset	-0.2808	-0.1522	NONE
Near Lith Offset	-0.0011	0.0807	NONE
Far Bar Offset	-0.0698	-0.0896	NONE
Far Dens Offset	0.0579	0.0561	NONE
Far Peak Offset	0.0979	0.0989	NONE
Far Lith Offset	0.2575	0.2518	NONE
Near Bar Background	797.63	795.11	700 - 1450
Near Dens Background	262.96	261.96	230 - 480
Near Peak Background	115.16	115.33	100 - 210
Near Lith Background	141.15	141.56	125 - 260
Far Bar Background	578.98	580.36	450 - 900
Far Dens Background	227.54	229.39	175 - 345
Far Peak Background	91.12	91.44	70 - 140
Far Lith Background	93.30	93.81	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.692	1.690	-0.002	+/- 0.015
Pe	2.556	2.570	0.014	+/- 0.150
ALUMINUM				
Density (g/cc)	2.601	2.602	0.001	+/- 0.01500
Pe	3.073	3.075	0.002	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0006	+/- 0.0110	-0.0004	+/- 0.0140
Magnesium Block	-0.0002	+/- 0.0110	-0.0010	+/- 0.0140
Aluminum Block	0.0005	+/- 0.0110	-0.0011	+/- 0.0140
Resolution	8.74	6.00 - 11.50	8.97	6.00 - 11.50
Internal Verifier(B+D+P+L)	1314	1200 - 2700	995	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 - 10844769**	**Reference Calibration Date:**	**23-Oct-18 15:18:40**
Engineer:	**A. TATE**	**Calibration Date:**	**10-Nov-18 11:32:54**
Software Version:	**WL INSITE R5.6.5 (Build 2)**	**Calibration Version:**	**1**

Pad Temperature: 43.5 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1313.961	1311.713	-2.248	14.670
Far (B+D+P+L) cps	994.998	989.702	-5.296	16.896
Near Resolution	8.74	8.75	0.010	0.50
Far Resolution	8.97	9.25	0.280	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 11231103**	**Reference Calibration Date:**	**14-Mar-18 11:03:51**
Engineer:	**A. TATE**	**Calibration Date:**	**27-Oct-18 12:09:11**
Software Version:	**WL INSITE R5.6.5 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**ACRt Instrument - 11231104**		

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0095	1.05	0.95	1.0098	1.05	0.95	1.0053	1.05
A2 (50")	0.95	1.0132	1.05	0.95	1.0138	1.05	0.95	1.0125	1.05
A3 (29")	0.95	1.0178	1.05	0.95	1.0160	1.05	0.95	1.0104	1.05
A4 (17")	0.95	1.0086	1.05	0.95	1.0056	1.05	0.95	1.0030	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9953	1.05	0.95	0.9918	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9868	1.05	0.95	0.9824	1.05

SONDE OFFSET

Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	0.737	-3.252	-4.846
A2 (50")	-0.238	-3.065	-4.278
A3 (29")	-11.128	-3.466	-2.787
A4 (17")	-99.716	-31.692	-25.967
A5 (10")	N/A	-77.584	-36.424
A6 (6")	N/A	312.682	155.112

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.89	1.3
36K	1.0	1.88	2.0
72K	1.0	1.16	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

PASS/FAIL SUMMARY

GAIN RANGE CHK	PASS

GAIN RANGE CHK	PASS
SONDE OFFSET CHK	PASS

TOOL OK TO LOG

QUALITY CHECK SHOP CALIBRATION

Tool Name:	**ACRt Sonde - 11231103**	**Reference Calibration Date:**	**14-Mar-18 11:05:30**
Engineer:	**A. TATE**	**Calibration Date:**	**27-Oct-18 12:11:27**
Software Version:	**WL INSITE R5.6.5 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**ACRt Instrument - 11231104**		

STANDARD DEVIATIONS

	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	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A2 (50")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A3 (29")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A4 (17")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A5 (10")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A6 (6")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass

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")	-0.003	> -0.500	Pass	-0.008	> -0.500	Pass	-0.027	> -0.500	Pass
A5 (10")	-0.012	> -0.500	Pass	-0.019	> -0.500	Pass	-0.037	> -0.500	Pass
A6 (6")	0.017	< 0.500	Pass	0.070	< 0.500	Pass	0.149	< 0.500	Pass

GAIN TOLERANCE

R12KHz

	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-212070368.000	-210896736.000	1173632.000	10544836.800	Pass
A2 (50")	-209531136.000	-208361376.000	1169760.000	10418068.800	Pass
A3 (29")	-206471584.000	-205350896.000	1120688.000	10267544.800	Pass
A4 (17")	-215440320.000	-214423280.000	1017040.000	10721164.000	Pass
A5 (10")	-204410288.000	-203429104.000	981184.000	10171455.200	Pass
A6 (6")	-202730080.000	-201793072.000	937008.000	10089653.600	Pass

R36KHz

	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	53541632.000	52644368.000	897264.000	2632218.400	Pass
A2 (50")	39183356.000	38348388.000	834968.000	1917419.400	Pass
A3 (29")	37179592.000	36279456.000	900136.000	1813972.800	Pass
A4 (17")	37552912.000	36688664.000	864248.000	1834433.200	Pass
A5 (10")	33470474.000	32644750.000	825724.000	1632237.500	Pass
A6 (6")	33277084.000	32443582.000	833502.000	1622179.100	Pass

R72KHz

	Measured	Last Month	Difference	Tolerance	

	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-88085144.000	-87655288.000	429856.000	4382764.400	Pass
A2 (50")	-84278552.000	-83835448.000	443104.000	4191772.400	Pass
A3 (29")	-82399800.000	-81948024.000	451776.000	4097401.200	Pass
A4 (17")	-84870128.000	-84479856.000	390272.000	4223992.800	Pass
A5 (10")	-79284944.000	-78879312.000	405632.000	3943965.600	Pass
A6 (6")	-78853536.000	-78469456.000	384080.000	3923472.800	Pass

PASS/FAIL SUMMARY	
Std Deviation Verification	Pass
Average Verification	Pass
Gain Tolerance Verification	Pass

Data: ESR_BELL_17-2\0003 TRIPLE YELLOW\004 14-Nov-18 05:56 Up @6933.5f **Date: 14-Nov-18 06:17:43**

HALLIBURTON

CUSTOMER EVENT LOG

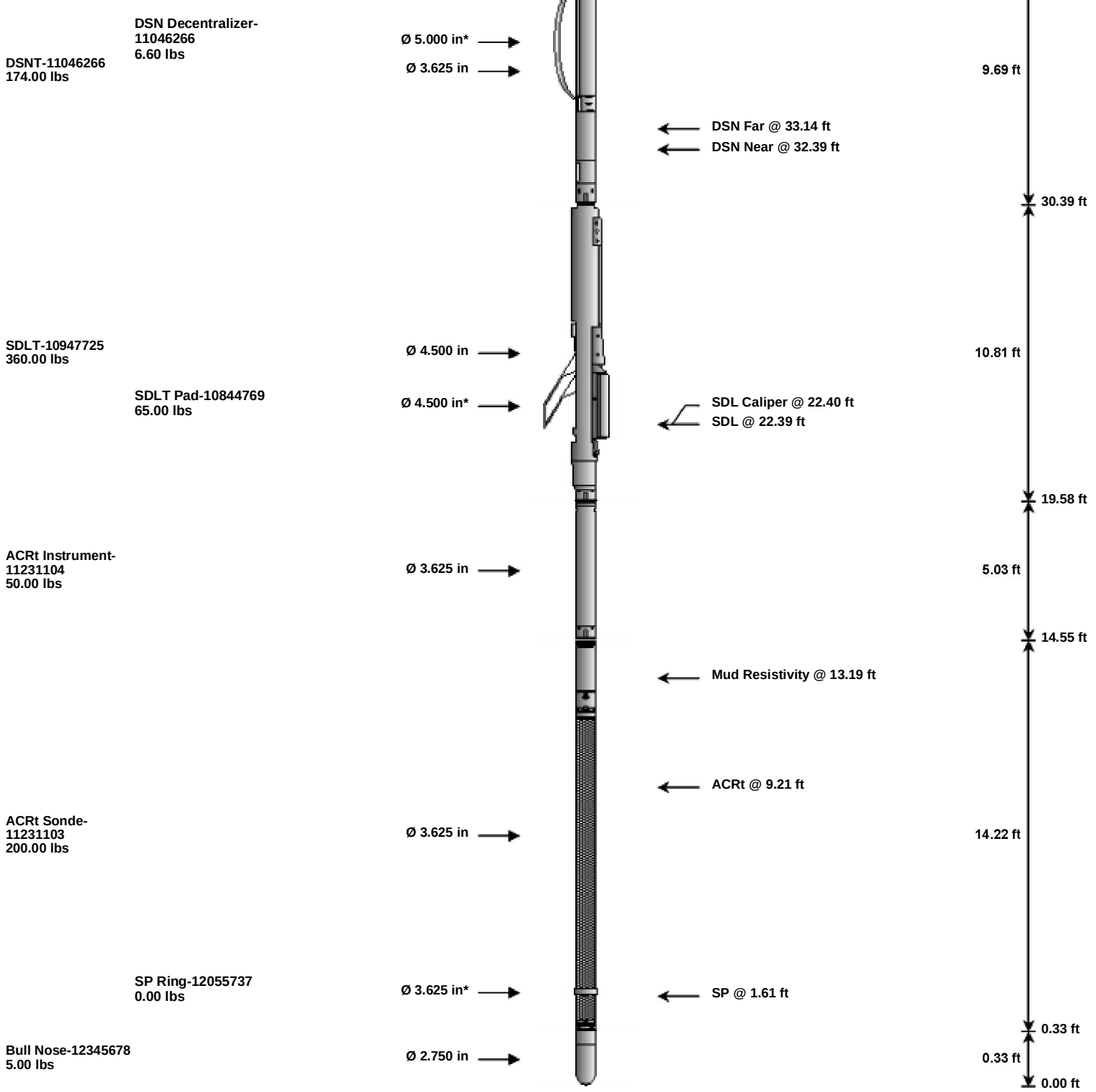
Event Type	Time & Date	Depth (ft)	Event Description
	14-Nov-18 04:37:09.363	62.50	Logging 001 14-Nov-18 04:37 Dn @62.5f
	14-Nov-18 04:39:36.842	300.54	Halting 001 14-Nov-18 04:37 Dn @62.5f
	14-Nov-18 04:39:57.308	245.25	Logging 002 14-Nov-18 04:39 Dn @245.3f
	14-Nov-18 05:46:36.307	6769.91	Halting 002 14-Nov-18 04:39 Dn @245.3f
	14-Nov-18 05:54:54.932	6933.25	Logging 003 14-Nov-18 05:54 Up @6933.3f
	14-Nov-18 05:55:32.454	6929.88	Halting 003 14-Nov-18 05:54 Up @6933.3f
	14-Nov-18 05:56:58.516	6933.50	Logging 004 14-Nov-18 05:56 Up @6933.5f

Data: ESR_BELL_17-2\0003 TRIPLE YELLOW\HW12124 **Date: 14-Nov-18 06:37:56**

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
		Ø 2.310 in		Fishing Neck @ 53.97 ft		54.85 ft
RWCH-11078326 135.00 lbs		Ø 3.625 in		Load Cell @ 51.17 ft BH Temperature @ 50.60 ft	6.25 ft	
				Z-Accelerometer @ 48.15 ft		48.60 ft
GTET-11277436 165.00 lbs		Ø 3.625 in		GammaRay @ 42.54 ft	8.52 ft	
						40.08 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11078326	135.00	6.25		48.60	300.00
GTET	Gamma Telemetry Tool	11277436	165.00	8.52		40.08	60.00
DSNT	Dual Spaced Neutron	11046266	174.00	9.69		30.39	60.00
DCNT	DSN Decentralizer	11046266	6.60	5.13	*	33.72	300.00
SDLT	Spectral Density Tool	10947725	360.00	10.81		19.58	60.00
SDLP	Density Insite Pad	10844769	65.00	2.55	*	21.79	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11231104	50.00	5.03		14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11231103	200.00	14.22		0.33	120.00
SP	SP Ring	12055737	0.00	0.25	*	1.61	300.00
BLNS	Bull Nose	12345678	5.00	0.33		0.00	300.00
Total			**1,160.60**	**54.85**			

* Not included in Total Length and Length Accumulation.

Data: ESR_BELL_17-2\0003 TRIPLE YELLOW\004 14-Nov-18 05:56 Up @6933.5f **Date: 14-Nov-18 06:18:27**

COMPANY	**ENERGY SUMMIT RESOURCES**		
WELL	**BELL 17-2**		
FIELD	**WILDCAT**		
COUNTY	**BONNEVILLE**	STATE	**ID**

HALLIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
ARRAY COMPENSATED
TRUE RESISTIVITY